



Workshop on Land Use/Land Cover  
Change and the Carbon Cycle  
8-9 June 2009, Ann Arbor, Michigan

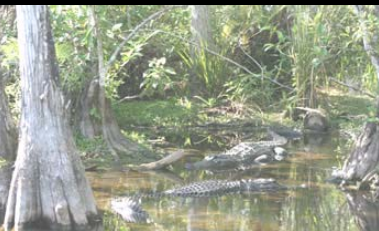


NATURAL RESOURCES  
AND ENVIRONMENT  
UNIVERSITY OF MICHIGAN

# Land Use/Land Cover Change and the Carbon Cycle

*A workshop organized by the  
Land Use and Carbon Cycle Steering groups of the USGCRP  
8-9 June 2009, Ann Arbor, Michigan*

**Sponsored By:**





# Workshop Purpose



- To bring together scientists in land use/land cover change science and carbon cycle science to
  - share research results
  - identify uncertainties
  - caucus on approaches to reduce those uncertainties
  - foster collaboration in land use/land cover change and carbon studies across traditional disciplinary lines.
  
- Discussion focused on
  - Science needs in land management
  - Data gaps and needs
  - Opportunities and challenges in integrated modeling



# Demands for the Science

## ■ Drivers

- Development of carbon markets
  - Needs for monitoring, assessment, management
- Biofuels – policies mandate increases in use
- Climate change affects productivity and diversity of terrestrial ecosystems

## ■ Users:

- USFS directed to use best available science on climate change in forest plan revision
- BLM faces management choices
- Local, State and Federal climate action plans
- Interest groups: forest industry (NCASI), conservation groups
- Private industry transitioning to bio-economy in a carbon-constrained world.
  - Carbon compliance markets, assessments, risk disclosures, certification and labeling.
- Climate treaty negotiators and implementations





# Bridging Social and Natural Sciences



- The Land Use and Carbon Cycle communities
  - have had success within their separate realms.
  - recognize the scientific opportunities to join forces.
- Lens of *coupled human and environmental systems* provides a fresh approach to take on these questions.
- Integration of social and natural sciences can help us answer important questions like
  - How do we reconcile bottom-up and top-down approaches to understanding the global carbon budget?
  - How will land use systems adapt to climate change?
  - What is the role and response of land use in implementing mitigation policy strategies (e.g., cap and trade)?
    - How much carbon sequestration is available on land at what price?
  - How do and should competing demands for land be allocated, including renewable energy, food and fiber production, ecosystem services (including carbon sequestration) and human settlement?



# Recommendations



- Establish on-going organizational linkages between land use and carbon working/steering groups within the USGCRP. Possible options:
  - a new ad hoc WG
  - joint meetings of SSGs and WGs
  - reorganization of USGCRP WGs
- The meeting makes clear that land use is an important stand-alone element.
  - Need to continue to develop theory, data and models in land use science to support these questions, as well as others like biodiversity, water quality, etc.
- On-going improvement of land use and land cover observations, refinement of methods to combine satellite and ground based measurements, and archiving and distribution of data are all on-going needs.