Annual NASA LCLUC Science Team Meeting
UMUC Inn and Conference Center
November 20 – 22, 2002

Day 1 Wednesday, November 20th

9:00 *Programmatic Presentation* LCLUC Status and Program Report – Garik Gutman (NASA HQ), Chris Justice (U. of Maryland)

9:45 *Programmatic Presentation* Status and Future of the IGBP LUCC Program – Helmut Geist (Universite Catholique de Louvain)

10:00 *Programmatic Presentation* Status of GOFC/GOLD and the Regional Networks – Dave Skole (Michigan State U.)

10:15 – 10:30 Coffee Break

10:30 *Invited Presentation* The current state of understanding of Land Cover Change processes and suggested priority research areas – B.L. Turner (Clark U.)

11:10 – 12:30 Poster Session Reporting NASA Project Results

1. Steve Sader (U. of Maine)
2. Dan Brown (U. of Michigan)
   Developing Land Cover Scenarios in Metropolitan and Non-Metropolitan Michigan, USA: A Stochastic Simulation Approach - D. Brown, A. Burnicki, K. Bergen, P. Goovaerts and M. Li.
3. Chris Elvidge (NOAA/NGDC)
   Development Sprawl Impacts on the Terrestrial Carbon Dynamics of the U.S.
4. Marc Imhoff (NASA GSFC)
   The consequences of urban land transformation on biodiversity in the United States: A Carbon cycle approach – by M. Imhoff, T. Ricketts, L. Bounoua, D. Stutzer and W. Lawrence
5. Guoqing Sun (NASA GSFC)
   Monitoring Forest Change in Northeastern China With MODIS and Landsat - by G. Sun, J. Masek, L. Rocchio et al
6. Janet Franklin/ John Rogan (San Diego State U.)
   Operational Monitoring of Land Cover Change in California Using Multitemporal Remotely Sensed Data - by J. Franklin P.I., D. Stow Co-P.I., J. Rogan Project Manager
7. Youngsinn Sohn (U. of Maryland Baltimore Campus)
   Operational Forest Monitoring at Regional Scale using Thematic Mapper (TM) Data
8. Alice Altstatt (U. of Maryland, representing John Townshend)
   Subtropical Deforestation: Paraguay in the 1990s
9. Bruce Chapman (NASA JPL, also presenting for Kyle McDonald)
   The Development of a fine-resolution continental scale forest monitoring systems using SAR imagery (Chapman)
   Monitoring boreal landcover and ecosystem dynamos at regional scales using integrated spaceborne radar remote sensing (McDonald)
10. B.L. Turner/Ron Eastman (Clark U.)
    Land Cover Change Analysis in a Dynamic Environment: An Evidential Reasoning Approach

11. Peter Wolter (U. of Minnesota Duluth, representing John Pastor)
    Mapping and Modeling Forest Change in a Boreal Landscape – by J. Pastor, P. Wolter
12. Jiaguo Qi/Bob Walker (Michigan State U.)
    GOFC Data and Information for Tropical Forest Assessment and Management – by J. Qi, D. Skole, J. Samek, R. Walker and Cuizhen Wang Center for Global Change and Earth Observations Michigan State University
13. Nadine Laporte (U. of Maryland)
    Monitoring Logging in Central Africa – by N. Laporte, T. Linn and D. Devers
14. Andy Hansen (Montana State U.)
    Poster 1: Monitoring Forest Response to Past and Future Global Change in Greater Yellowstone – by A. Hansen, S. Powell, L. Graumlich and W. Cohen
    Poster 2: Land Use Change Around Protected Areas and Consequences for Biodiversity – by A. Hansen, R. DeFries, L. Curran, J. Liu, E. Moran, R. Reid and B.L. Turner
15. Grenville Barnes/Michael Binford (U. of Florida)
    Reconstructing Cadastral history for decadal-scale investigation of land ownership, LULCC and carbon dynamics in Northern Florida – by G. Barnes et al.

12:30 – 1:30 Lunch

1:30 *Invited Presentation* A review of methods for quantifying land cover change and suggested priority research areas – Curtis Woodcock (Boston U.)

2:10 – 3:30 Poster Session Reporting NASA Project Results

16. Ron Rindfuss (U. of North Carolina)
17. Dennis Ojima/Xiangming Xiao (Colorado State U.)
    Land-use Change in Temperate East Asia: Land Cover Changes Impacts on Carbon Fluxes and Land Productivity
18. Lisa Curran/Eric Kasischke (Yale, U. of Maryland)
    Quantifying lowland forest cover change in Indonesian Borneo (1988-2002) using multiscale satellite imagery: Implications for carbon and biodiversity – by L. Curran, S. Trigg, A. McDonald, E. Kasischke
19. Nancy Bockstael/ Scott Goetz (U. of Maryland)
    Spatial Predictive Modeling and Remote Sensing of Land Use Change in the Chesapeake Bay Watershed – by N. Bockstael, S. Goetz
20. Ron Lacey/Marty Matlock (Texas A&M, U. of Arkansas)
    Quantifying Landscape Elements in a Semi-Arid Region: A GIS-based Approach – by R. Lacey, M. Matlock
21. David Roy (U. of Maryland)
    Burned area mapping of southern Africa: case study synthesis and regional application of MODIS data
22. John Barker (NASA GSFC, representing Brian Markham)
23. Catherine Lindell (Michigan State U. - IDS)
    Land Cover Patterns and Avian Biodiversity in Southern Costa Rica: General Model or Unique Case – by C. Lindell and W. Chomentowski
24. Karent Seto (Stanford - NIP)
25. Annemarie Schneider (Boston U.)
    Urban Growth as a Component of Global Change – by A. Schneider, C. Woodcock and M. Friedl

26. John Mustard/Bethany Bradley (Brown U.)
    Identifying Anomalous Landscape Response in the Great Basin: Initial Results from a Multi-resolution Approach – by J. Mustard and B. Bradley
27. Ivan Csiszar (U. of Maryland - NIP)
    Intercomparison and validation of AVHRR and MODIS fire products over Northern Eurasia
28. Y.Q. Wang (U. of Rhode Island - NIP)
    Multiple Innovative Models in Regional Land Cover Change Study

3:30 – 5:30 *Breakout Sessions* on the LCLUC Book Synthesis and Lessons

Group 1 *Regional Synthesis and Land-Change Trajectories*
(John Mustard, Paul Desanker)
Group 2 *Relevance of Land-Change to the Human Sciences*
(B.L. Turner, Ron Rindfuss)
Group 3 *Land-Change Science and Applications*
(Chris Justice, Ed Sheffner)
Group 4 *Challenges for Integrated Land-Change Science*
(Dan Brown, Andy Hansen)
Group 5 *Land Cover Mapping and Change Monitoring Towards Standards Approaches*
(Tom Loveland, Ruth DeFries)

Day 2 Thursday, November 21st
9:00 *Invited Presentation* A review of the impacts of Land-Use Change on the Carbon Cycle and suggested priority research areas – Skee Houghton (Woods Hole Research Center)

9:40 *Invited Presentation* A review of urban Land Use and Cover Change in the context of Carbon Cycle Science and Applications - Tom Wagner (U. of Michigan)

10:10 – 10:30 Coffee Break

10:30 *Invited Presentation* Land management, carbon storage and policy implications for the Southeast US Coastal Plain – Michael Binford (U. of Florida)

11:10 – 12:30 Poster Session Reporting NASA Project Results

1. Paul Desanker/Sarah Walker (U. of Virginia)
   The Impact of Land Use Change on the Soil Carbon Stock of the Miombo Woodlands
2. Doug McRae (NRC/Canadian Forest Service, representing Susan Conard)
   The Russian FIRE BEAR Project: Estimating and Monitoring Effects of Area Burned and Fire Severity on Carbon Cycling, Emissions, and Forest Health and Sustainability in Central Siberia – by D. McRae, S. Conard, G. Ivanova, A. Sukhinin, W. Hao and K. Koutzenogij
3. Tom Loveland/Shuguang Liu (U.S. Geological Survey)
   Contemporary Carbon Dynamics in U.S. Terrestrial Biosphere: The Southeastern Plains Ecoregion - by S. Liu, T. Loveland and R. Kurtz
4. Jon Ranson (NASA GSFC)
5. Peng Gong/Zhanqing Li (U. C. Berkeley, U. of Maryland)
   Long-term Inventory of Fire Burned Areas and Emissions of North America's Boreal and Temperate Forests – by P.Gong, Z. Li, I. Csiszar, W. Hao, R. Fraser and R. Pu
6. Ruth DeFries/Matt Hansen (U. of Maryland)

7. Bob Walker/Catherine Lindell (Michigan State U.)
   Pattern to Process: Research and Applications for Understanding Multiple Interactions and Feedbacks on Land Cover Change: Human drivers and forest fragmentation in an Amazonian Region – by R. Walker, J. Qi, C. Lindell, D. Skole and W. Chomentowskii
8. Carol Wessman (U. of Colorado Boulder)
   Regional NPP and Carbon Stocks in Southwestern USA Rangelands: Land-Use Impacts on the Grassland-Woodland Balance
9. Olga Krankina (Oregon State U.)
   Modeling Change of Forest Carbon Stores in the St. Petersburg Region, Russia
10. Kathleen Bergen (U. of Michigan)
    Poster 1: Land-Cover Land-Use Change in Siberian Boreal Forests under Changing Economic Paradigms - by K. Bergen, L. Peterson, T. Zhao, D. Brown, H. Shugart, S. Kharuk, Y. Blam, E. Muratova, L. Vaschuk, and W. Kurz.

    Poster 2: Forest Land-Cover Change Detection in Russia Using Hybrid Landsat MSS, TM and ETM+ Data - by N. Miller, K. Bergen, S. Kharuk, J. Colwell, and E. Muratova

11. Allen Hope/Christina Tague (San Diego State U.)
    Poster 1: Analysis Of Post-Fire Recovery Patterns In California Shrublands UsingThematic Mapper Time Series Data – by A. Hope, M. Anaya, C. McMichael and C. Tague
    Poster 2: Use of TM-Derived LAI and Seasonal River Flow to Evaluate RHESSys as a Tool for Modeling Interactions Between Vegetation and Hydrology in Semi-Arid California Shrublands – by C. Tague, A. Hope, J. Choate, C. McMichael, M. Anaya and R. Bruce
    Poster 3: Uncertainty in Estimating Streamflow for a Semi-Arid Shrubland Basin Using the MIKE-SHE Distributed Model – by C. McMichael and A. Hope
12. Loretta Johnson (Kansas State U.)
    Scaling up the ecosystem consequences of forest expansion in the Great Plains – by L. Johnson, J. Blair, Division of Biology ,KSU, K. Price, Applied Remote Sensing Center, U. of Kansas, J. Ham, Dept. of Agronomy, KSU and B. McKane, EPA Corvallis
13. Jennifer Bourgeault (U. of New Hampshire, GLOBE project representing Russ Congalton)
    The GLOBE Land Cover Investigation
14. Steve Prince/Mingkui Cao (U. of Maryland - IDS)
    Using long-term satellite data to quantify changes in terrestrial productivity and carbon cycle
15. Marshall Shepherd (NASA GSFC - NIP)
    Downscaling Analysis of the Influence of the Houston Metropolitan Area on Rainfall Patterns – by J.M. Shepherd and Steven Burian
16. Mark Cochrane (Michigan State U. - NIP)
    Poster 1: Synergism between Fire, Forest Fragmentation and Selective Logging in Tropical Forests
    Poster 2: Simulating the Effects of "PlanColombia" on Land Use and Land Cover in the Ecuadorian Amazon: A Complex Systems Approach – by J. Messina and P. L. Delamate

12:30 -1:30 Lunch

1:30 *Programmatic Presentation* Landsat 7 Program Status and the LCDM –
Jeff Masek (NASA GSFC)

1:50 *Programmatic Presentation* NASA Applications and the Global Landsat Data Sets (1990 and 2000) – Ed Sheffner (NASA HQ)

2:10 *Programmatic Presentation* The USGCRP/CCRI Land Use Land Cover Change Research Element – Tom Loveland (U.S. Geological Survey)

2:30 – 4:30 *Breakout Sessions* Discussion of the Interagency Land Use and Land Cover Change Research Questions and NASA's potential role.
(Sub groups may be formed around sub-questions)

Group 1. What processes determine the temporal and spatial distributions of land cover and land use change at local, regional, and global scales and how can land use and land cover be projected over time scales of 10-50 years?

Group 2. How will the dynamics of land use, management, and cover change affect global environmental changes and regional-scale environmental and socioeconomic conditions and vulnerability, including economic welfare and human health?

4:30 – 5:30 Report back sessions from Days 1 and 2 by Breakout Chairs.

Day 3 Friday, November 22nd
9:00 *Invited Presentation* A review of the impact of Land Use Change on Water Resources and the policy implications - John Mustard (Brown U.)

9:40 *Invited Presentation* A review of Land Use and Land Cover Change Effects in Coastal Zones - Tom Fisher (U. of Maryland Center for Environmental Science)

10:30 – 11:30 Poster Session Reporting NASA Project Results

1. Gordon Bonan (National Center for Atmospheric Research)
   Land Cover and Land Use Change as a Climate Forcing
2. Dave McGuire (U. of Alaska Fairbanks)
   Poster 1: The role of land-cover change in high latitude ecosystems: Implications for carbon budgets of North America – by A. D. McGuire, D. Verbyla, J. Melillo and R. Myneni
   Poster 2: The role of land-cover change in high latitude ecoystems: Implications for the global carbon cycle – by A.D. McGuire, D. Verbyla, J. Melillo and R. Myneni
   Poster 3: Carbon cycling in extratropical terrestrial ecosystems of the Northern Hemisphere during the 20th Century: A modeling analysis of the influences of soil thermal dynamics – by Q. Zhuang, A.D. McGuire, J.M. Melillo, J.S. Clein, R.J. Dargaville, R.B. Myneni, J. Dong, V.E. Romanovsky, J. Harden and J.E. Hobbie
   Poster 4: Changes in water levels associated with climate warming in Alaska – by B. Riordan and D. Verbyla
   Poster 5: Controls on vegetation distribution and implications for climate change in Interior Alaska – by M. Calef, A.D. McGuire, S. Rupp, H. Epstein and H. Shugart
3. Paul Bolstad (U. of Minnesota)

4. Geoff Henebry (U. of Nebraska Lincoln, representing Anatoly Gitelson)
   Poster 1: Landscape dynamics in Kazakhstan: seasonal baselines for land cover change detection
   Poster 2: Land surface phenology in Kazakhstan: climatic variability and institutional change
5. Mike Coe (U. of Wisconsin Madison)
   Climate and Human Impacts on Water Resources in Semi-Arid Africa
6. Curtis Woodcock/Mutlu Ozdogan (Boston U., representing Guido Salvucci)
   Monitoring changes in irrigated area in SE Turkey and its impacts on regional Hydrology – G. Salvucci, C. Woodcock, M. Friedl, B. Anderson, M. Ozdogan
7. Mohamed Sultan (U. at Buffalo, SUNY)
   Land Cover and Land Use Changes and Their Impacts on Groundwater Resources, and Carbon Cycling in SW Egypt – by M.Sultan, R. Becker, J. D. Jastrow, R.M. Miller, J. Kim and Z. El Alfy
8. Ron Smith (Yale - IDS)
   Landscape Changes in the Middle East
9. Stefania Korontzi (U. of Maryland – NASA Fellowship)
   Estimating the spatio-temporal distribution of fire emissions in southern Africa: A prototype model – S. Korontzi, C. Justice and D. Roy
10. Chris Hlavka (NASA AMES Research Center)
    Improving land cover product-based estimates of the extent of fragmented cover types

11:30 *Programmatic Presentation* The NEESPI Program – Don Deering (NASA GSFC)

11:50 Program Summary and Next Steps – Garik Gutman/Chris Justice

12:45 Close of Meeting