

SCIENTIFIC PROGRAM

Saturday, June 14 2003

8:00 a.m. Registration

9:00 a.m. Welcome and Opening Remarks: *R. DeFries and G. Asner*

Implications of Land Use Change for Water Quality and Quantity

9:45 a.m. Session Introduction: *K. Eshelman, G. Moglen and K. Potter*

10:00 a.m. *INVITED* Predicting the hydrologic implications of land use change in forested catchments: *D. Lettenmaier*

10:30 a.m. *INVITED* Hydro-ecologic responses to land use in four small catchments within the Chesapeake Bay watershed: *G. Moglen*

11:00 a.m. ***POSTERS (Water Quality and Quantity) and COFFEE***

POSTER Promoting sustainable human settlements in eco-city planning approach: Case study of southeastern Anatolia region and Southeastern Anatolia Project (GAP) in Turkey: **Acma, B.**

POSTER Effects of historical plantation agriculture on soil and streams of the Blue Ridge foothills: A case study at Sweet Briar College, Virginia: **Ambers, R.K.R.**

POSTER Hydrology for environment, life, and policy (HELP): A new UNESCO program generated by the hydrologic community to address sustainability and equitability issues: **Bowden, W.B.**

POSTER Modeling impacts of land cover change on critical water resources in the Motueka River Catchment, New Zealand: **Cao, W.**

POSTER Hydro-ecological linkages in urbanizing watersheds: A process-based assessment of land-use change impacts on nitrogen export: **Claessens, L.**

POSTER Development of a high resolution infiltration surface from measurements in western Kenya: **Cohen, M.J.**

POSTER What's the use: does stream flow reflect land use change?: **Dickey, J.**

POSTER Mapping and monitoring changes in the built environment and their impacts on watershed health: **Goetz, S.J.**

POSTER Classifying long-term data sets for rainfall-runoff models based on information and complexity measures: **Hauhs, M.**

	<i>POSTER</i>	A watershed approach to characterize the influence of land use change on aquatic resources: Klaine, S.J.
	<i>POSTER</i>	The Impact of Changing Cropping Practices on Nitrate Export by the Mississippi River Since 1960: Kucharik, C.J.
	<i>POSTER</i>	The impacts of polluted lands use on Dneister River water quality: Munteanu, V.
	<i>POSTER</i>	Multi-scale impacts of land use changes on stormflow dynamics utilizing NEXRAD and GIS: Negley, T.L.
	<i>POSTER</i>	Timing and delivery of major ion flux via throughfall to headwater streams in Maine, USA: The influence of antecedent climate conditions: Nelson, S.J.
	<i>POSTER</i>	Understanding controls on historical river discharge in the World's largest drainage basins: Potter, C.S.
	<i>POSTER</i>	Millions of ponds: distribution and significance of small artificial impoundments in the conterminous United States: Renwick, W.H.
	<i>POSTER</i>	Land use and sedimentation in southern Appalachian streams: Riedel, M.S.
	<i>POSTER</i>	How does water price affect land use choices? An estimation of the short-run and long-run effects: Schoengold, K.
	<i>POSTER</i>	Spatial information system for the assessment of impact of land use/ land cover (LULC) changes on water quality and bio-diversity - A case study of Nakkavagu Catchment Area, India: Thatipati, V.L.
	<i>POSTER</i>	Impact of water resources development on the land use change in high altitude agriculture in certain tribal areas in India: Vasudevarao, P.
	<i>POSTER</i>	Development of the optimal land use pattern with minimal nonpoint source pollution: Yeo, I-Y
12:00 p.m.	<i>INVITED</i>	Hydrologic impacts of agriculture in the Midwestern United States: past, present, and future: K. Potter
12:30 p.m.	<i>ORAL</i>	From remote sensing to policy: land-use and land-cover change in Owens Valley, California: A. Elmore
12:45 p.m.	<i>ORAL</i>	The role of land use and agricultural practices on the trophic status and structure of stream communities: R. Kiesling
1:00 p.m.	<i>ORAL</i>	Validation and use of a distributed modeling system to predict the short-term effects of clear cutting on the hydrologic regime of a forested watershed in southern Quebec: A. Rousseau

1:15 p.m.

LUNCH

2:15 p.m. **Summary and Synthesis of Morning Session:**

K. Eshelman, G. Moglen, and K. Potter

Effects of Land Use Change on Biodiversity

3:00 p.m. **Session Introduction: *G. Daily***

3:15 p.m. *INVITED* Biodiversity and land cover change in the matrix:
Examples from West Kalimantan: ***L. Curran***

3:45 p.m. *INVITED* Patterns of land use impacts on biodiversity: ***J. Liu***

4:15 p.m. *ORAL* Moving beyond a horizontal definition of landscape
structure: The importance of vegetation multi-
dimensional structure to biodiversity analyses in
changing landscapes: ***K. Bergen***

4:30 p.m. *ORAL* Forest resurgence in El Salvador: Dynamics and
implications for biodiversity: ***S. Hecht***

4:45 p.m. ***POSTERS (Biodiversity) and COFFEE***

POSTER Biological feedbacks to land-use change in Central
Amazonia: The role of mound-building termites:
Ackerman, I.L.

POSTER Ecological and cultural remnants of landscape changes
in the Peruvian Amazon floodplain: ***Arce, J.A.***

POSTER Invasive species in the Great Basin, US: Identifying
regional anomalous vegetation response and local land
use drivers using AVHRR and Landsat TM: ***Bradley,
B.A.***

POSTER Remotely sensed changes in the land use / land cover
and bio-diversity changes in the Kakinada Bay, India:
Gopal, V.

POSTER Modeling socioeconomic drivers and biodiversity
impacts of deforestation in southeastern Madagascar:
An integrative approach: ***Keitt, T.H.***

POSTER Impacts of large-scale selective logging on ecosystem
services in the northern Republic of Congo: ***Lin, T.S.***

POSTER Effects of the establishment of mixed forest stands
originating from monocultures of pine and spruce on
functional soil microbial biodiversity involved in N-
cycling and N-storage: ***Papen, H.***

5:15 p.m. *ORAL* Biodiversity and ecosystem functioning under
alternative land-uses in the rainforest of West
Kalimantan, Indonesia: ***D. Lawrence***

5:30 p.m. **Summary and Synthesis of afternoon session: *G. Daily***

Evening

ICE BREAKER

Keynote Address:

"Forecasting Ecosystem Change: Science, Economics, and Policy"

***Gretchen Daily*, Stanford University**

Sunday, June 15 2003

Linkages Across the Landscape: Place-based Integrated Analyses of Ecosystem Interactions with Land Use Change

8:30 a.m. Session Introduction: ***D. Ojima***

8:45 a.m. *Integrated* Integrative regional studies in the Mississippi Basin: Investigating the effects of land use/land cover change on land and water resources: ***J. Foley***

Soil Biogeochemistry and Land Use Change

9:15 a.m. Session Introduction: ***G. Asner and A. Townsend***

9:30 a.m. *INVITED* Nutrient losses following Amazonian deforestation: ***E. Davidson***

10:00 a.m. *INVITED* Effects of Land-Use Change from Urbanization on Nutrient Dynamics in Arid-land Streams: ***N. Grimm***

10:30 a.m. *ORAL* Land use relation to the nitrogen budget of a tropical agricultural watershed: Guayas, Ecuador: ***M. Borbor***

10:45 a.m. ***POSTERS (Biogeochemistry) and COFFEE***

POSTER Conversion of equatorial alpine grasslands to pine plantations: effects on nutrient cycling and water retention: ***Farley, K.A.***

POSTER Ecological assessment of different forest conversion practices: C- and N- cycling and trace gas exchange at the soil/atmosphere interface: ***Gasche, R.***

POSTER Ecosystem legacies of past land uses in the White Mountains, New Hampshire: ***Goodale, C.L.***

POSTER Regional soil biogeochemical response to land-cover change: A database scaling approach: ***Holmes, K.W.***

POSTER Global distribution of human NPP appropriation: ***Imhoff, M.L.***

POSTER The microbial ecological approach to set Norms

		Pollutant Content in soil: Khalimov, E.M.
	<i>POSTER</i>	Determination of isotopomer fractionation associated with microbial nitrification and denitrification: Pitt, A.J.
	<i>POSTER</i>	From historical survey data to future forest scenarios: Changes in Land use, forest competition, and carbon storage in Wisconsin: Rhemtulla, J.M.
	<i>POSTER</i>	Distribution of trace metal in a mangrove habitat of Karachi, Indus Delta: Saifullah, S.M.
	<i>POSTER</i>	Forest management effects on carbon sequestration at Howland Forest, Maine, USA: Scott, N.A.
	<i>POSTER</i>	Soil Quality Co-steering the planning and management of land-use; relationship between use and ecological, economical and cultural quality of soil: van Wezel, A.
	<i>POSTER</i>	Regional NPP and carbon stocks in southwestern rangelands: Land-use impacts on the grassland-woodland balance: Wessman, C.A.
	<i>POSTER</i>	Effects of fire free land preparation on the water and nutrient dynamics of a tropical agricultural watershed in the Amazon region: Wickel, A.J.
11:45 a.m.	<i>ORAL</i>	Vegetation changes impact carbon and nitrogen cycling in semi-arid grasslands: D. Martens
12:00 p.m.	<i>ORAL</i>	Nutrient cycling and biomass recovery in secondary dry tropical forest of the southern Yucatan Peninsula: L. Read
12:15 p.m.	<i>ORAL</i>	Anthropogenic modifications influence the interactions between the geomorphology and biogeochemistry of an urban desert stream: W. Roach
12:30 p.m.		Summary and Synthesis of afternoon Session: G. Asner and A. Townsend
12:45 p.m.		LUNCH

Feedbacks to Climate From Land Use Change

1:45 p.m.		Session Introduction: G. Bonan and J. Foley
2:00 p.m.	<i>INVITED</i>	Land-atmosphere interactions at various spatial and temporal scales: persistence and teleconnections: R. Avissar
2:30 p.m.	<i>INVITED</i>	Effects of land cover and land use change on climate: G. Bonan
3:00 p.m.	<i>INVITED</i>	The effects of land use change on terrestrial carbon stocks: R. Houghton

3:30 p.m.	<i>ORAL</i>	The role of biospheric feedbacks in moderating human-induced land-cover change: Narisma, G.T.
3:45 p.m.	<i>ORAL</i>	Influence of land-use change on reactive carbon fluxes and the central composition of the troposphere: A. Guenther
4:00 p.m.		<i>POSTERS (Climate and Feedbacks) and COFFEE</i>
	<i>POSTER</i>	Effects of land-use changes on sources, sinks, and fluxes of carbon in European mountain areas: Cernusca, A.
	<i>POSTER</i>	Effect of harvest on regional climate and soil moisture and temperature: Cooley, H.S.
	<i>POSTER</i>	Future expansion of agriculture and pasture acts to amplify atmospheric CO ₂ levels in response to fossil fuel emissions: Gitz, V
	<i>POSTER</i>	Remote sensing of urban sprawl in semi-arid western grasslands: Discerning regional shifts in ANPP: Golubiewski, N.
	<i>POSTER</i>	The role of changing crop area and yields in driving increases in net primary productivity in the Central US: Hicke, J.A.
	<i>POSTER</i>	Examining Canopy Transpiration Dynamics with Heat Balance Stem Flow Gauges: Kjelgaard, J.
	<i>POSTER</i>	Land use change and carbon balance in forest regions: Challenges and opportunities for remote sensing: Krankina, O.N.
	<i>POSTER</i>	Hydrologic impacts of irrigated land expansion in southeastern Turkey: Ozdogan, M.
	<i>POSTER</i>	Major disturbance events in terrestrial ecosystems detected using global satellite data sets: Potter, C.S.
	<i>POSTER</i>	The vertical influences of land-surface heterogeneity on the global climate: Salmun, H.
	<i>POSTER</i>	Land-use change is a major factor influencing New Zealand's national greenhouse gas emissions: Scott, N.A.
	<i>POSTER</i>	Regional climatic warming and associated twentieth century land-cover changes in northwestern North America: Skinner, W.R.
	<i>POSTER</i>	Accounting for agriculture in global terrestrial carbon cycle modeling studies: Smith, P.C.
	<i>POSTER</i>	A new technique for studying trace-gas-exchange between biosphere and atmosphere of human impacted biodiversity change in rainforests: Steinbrecher, R.
	<i>POSTER</i>	The global teleconnections of tropical deforestation: Werth, D.

- POSTER* Net ecosystem CO₂ exchange of mountain grassland differing in land use: **Wohlfahrt, G.**
- POSTER* Climatic response to fire-induced land-cover change in the Boreal Forest: **Wu, W.**
- POSTER* Urbanizing and agricultural influences on global vegetation phenology observed using MODIS data: **Zhang, X.**
- 4:30 p.m. *ORAL* How do croplands influence climate and vice versa? **N. Ramankutty**
- 4:45 p.m. Summary and Synthesis of Afternoon Session: **G. Bonan and J. Foley**
- 5:00 p.m. *Integrated* The Large Scale Biosphere Atmosphere experiment in Amazonia: Analyzing regional land use change effects: **M. Keller**

Evening

Special Presentation on Chaco Canyon: **Dr. Charles Redman**

Monday, June 16 2003

FIELD TRIP TO CHACO CANYON

- 7:00 a.m. Depart Courtyard Marriott hotel
- 10:00 a.m. Arrive Chaco Canyon
- 10:30 a.m. Tour with Park Ranger
- 12:00 p.m. Lunch in picnic area
- 1:00 p.m. Hike
- 4:00 p.m. Depart Chaco Canyon
- 7:00 p.m. Arrive back at Courtyard Marriott in Santa Fe

Tuesday, June 17

- 9:30 a.m. *Integrated* Integrated land-change science: the southern Yucatan example: **B. Turner**

Observing and Predicting Land Use Change

- 10:00 a.m. Session Introduction: **R. DeFries**
- 10:15 a.m. *INVITED* Footprints of the past: Blueprint for the future?: **K. Klein Goldewijk**

- 10:45 a.m. *INVITED* Spatially Explicit land use change modeling: current practice and research priorities: **T. Veldkamp**
- 11:15 a.m. ***POSTERS (Observing and Predicting) and COFFEE***
- POSTER* SYMOLAC: A system for monitoring land cover: **Aitkenhead, M.J.**
- POSTER* Land Use-Coastal Ecosystem Study (LU-CES): Simulation and Prediction of Future Urban Growth in the BCD/BCJ Region of South Carolina: **Allen, J.S.**
- POSTER* Incorporating socioeconomic factors in the remote sensing classification of land cover land use change in a rural Guatemalan community: **Anderson, S.J.**
- POSTER* Using remote sensing to update national land-cover classification in the upper Midwest, USA for mapping hotspots on land-cover change: **Bergen, K.M.**
- POSTER* Estimating the ecological footprint of human land use in the southern Blue Ridge from pre-Euroamerican times to present: **Bolstad, P.V.**
- POSTER* Modeling land use change in the Volta Basin of Ghana: **Braimoh, A.K.**
- POSTER* Land surface, phenology, climate variation, and institutional change: Analyzing land cover change in Kazakhstan: **de Beurs, K.M.**
- POSTER* Interpreting land use change through the consumption of land and other resources in urbanising villages in the National Capital Territory of Delhi, India: **Datta, R.**
- POSTER* Land use changes and land capability in Guanajuato, central Mexico: 1970-1997: **Garcia-Nieto, H.**
- POSTER* 100 years of land use changes along the Khabar River of northeastern: **Hole, F.**
- POSTER* Urban development planning policy and urban agriculture land use demand in the Niger Delta region, Nigeria: **Inyang, E.B.**
- POSTER* Modeling future land use change in the Chesapeake Bay Watershed to assess environmental vulnerabilities: **Jantz, C.A.**
- POSTER* Analyzing forest change in suburban environment: Exploring policy linkages using a land use modeling approach: **Jantz, C.A.**
- POSTER* Mapping patterns of land use change in monitoring ecological and economic impact on the Cumberland Plateau in southern Tennessee: **McGrath, D.A.**
- POSTER* Driving forces and land change in the forested Southeast: **Napton, D.**
- POSTER* Mapping global agriculture land use and land cover:

- Ramankutty, N.**
Demographic, Economic, Environmental, and Political determinants of statewide land development in the United States: **Templeton, S.**
- 12:15 p.m. *POSTER*
- 12:15 p.m. *ORAL* Measuring long-term ecological changes in the densely populated rural landscapes of China: **E. Ellis**
- 12:30 p.m. *ORAL* Geographic variability of the rates and types of land use and land cover change in the Eastern United States: **T. Loveland**
- 12:45 p.m. *ORAL* Dynamics of Forest-Savanna Boundary in Sub-Saharan Africa: Impacts of Land Use, Fire, and Climate: **S. Saatchi**
- 1:15 p.m. Summary and Synthesis of Morning Session: **R. DeFries**
- 1:30 p.m. **LUNCH**

Land Use and Human Welfare

- 2:30 p.m. Session Introduction: **J. Patz**
- 2:45 p.m. *INVITED* Alterations in land use and vector-borne disease: **D. Norris**
- 3:15 p.m. *INVITED* Vector-borne diseases in the north central US: from malaria to lyme disease and West Nile virus: **M. Ruiz**
- 3:45 p.m. *INVITED* Land use change and infectious disease transmission in West Africa: **M. Thompson**
- 4:15 p.m. **COFFEE**
- 4:45 p.m. *ORAL* Urban land use change, impending stress and deterioration in emerging developing region in Nigeria: **E. Etuk**
- 5:00 p.m. *ORAL* Urban heat island mitigation and public health in New York City: **J. Rosenthal**
- 5:15 p.m. *ORAL* Modelling the effects of urban sprawl on climate and air quality in Mexico City: **G. Schaedler**
- 5:30 p.m. Summary and Synthesis of Afternoon Session: **J. Patz**

Wednesday, June 18 2003

- 8:30 a.m. *Integrated* Land use impacts on rangeland productivity in Mongolia: **D Ojima**

