

### ESSP OSC Parallel Session Details

Parallel Session #	Title	Keywords/Brief description
1	How Can the Amazon Continue as a Sustainable Hot Spot for the Earth System? Contributions of LBA Science	Integrated regional studies, global biogeochemical cycles, forest-atmosphere interactions, water-carbon interface, land use changes in the amazon, amazonian systems.
2	Arctic Environmental Change: a Cross-disciplinary, Pan-Arctic Perspective in the Context of Earth System Studies	The session will highlight new results delineating spatial and temporal evolution of changes in the physical, biogeochemical, and human domains of the Arctic system gained from observations, modeling studies and traditional knowledge in the context of the connection between the Arctic and the Earth System.
3	Biodiversity, Ecosystem Functioning and Carbon Sequestration	Biodiversity changes, ecosystem processes, biodiversity and carbon storage, biodiversity in carbon sequestration schemes.
4	Environmental Water Allocations: Conserving Ecological Goods and Services	Environmental flows, rivers, fresh water, biodiversity, freshwater goods and services, freshwater sustainability, freshwater governance, environmental water allocations.
5	From Climate Research to Risk Management	WCRP, climate research, risk management.
6	Earth System Research in Monsoon Asia	Case studies, interactions between the Monsoon climate system in Asia, natural changes and human activities are analyzed and lessons for future activities will be presented.
7	Can Cross-border Adaptation to Environmental Change in Africa Offer Lessons to Disaster Management?	Extreme events, land use and cover change, food insecurity, risk management, vulnerability assessment.
8	Interdisciplinary and Implementation-oriented Approaches in Research on Conservation and Use of Biodiversity: What are the Lessons (to be) Learned?	Policy and decision makers urgently need research-based advice on (1) how to harmonize the goals of conservation and use of biodiversity and (2) how to bridge the gap between science and practice in the field of biodiversity management. Examples and case studies on an interdisciplinary basis will be discussed.

9	Climate Change and Rising CO2: How Serious is the Future Threat to Biodiversity?	Observations, field experiments and models all suggest that predicted future changes in precipitation patterns and rising temperature and CO2 concentrations could fundamentally alter the abundance and distribution of plants and animals. How can conservation strategies adapt to minimize the impact on biodiversity?
10	Seasonal and Decadal Climate Prediction: From Basic Science to Societal Benefits	Seamless, monthly, seasonal and decadal climate prediction, societal benefits.
11	How Do Cities Drive the Global Carbon Cycle?	The session addresses how cities drive the carbon cycle and how carbon is and can be managed by urban centers.
12	Integrating Concepts and Indicators for the Analysis of Agro-Ecological, Social and Economic Resilience in Food Production	The session investigates progress in the development of concepts, management and indicators for the analysis of agro-ecological, social and economic resilience in food production needed to cope with regional challenges of global environmental change. This session shall promote in-depth dialog between scientists and managers from different scientific fields.
13	How Can Earth System and Socio-economic Information be Used to Better Understand and Manage the Local and Remote Effects Controls on Regional Water Resources?	Global water cycle, water resources applications, satellite data, global water system project, teleconnections, virtual water, climate.
14	Environmental Change and Disease Emergence: Predictive Approaches to a Global Problem	Environmental change, emerging diseases, deforestation, SARS, Avian influenza, malaria.
15	Urbanization, Global Environmental Change, and Human Health: Challenges and Prospects for Sustainable Development	Urban areas, global environmental change, human health, sustainable development.
16	Comparative Governance of Carbon, Water and Food	Institutional dimensions, carbon, water, food.
17	Ocean and Terrestrial Carbon Cycle and their Management in Asia	Ocean and terrestrial carbon cycle, rivers, Asia, global carbon project, SARCS.

18	Institutions for Sustainable Resource Management and Livelihood Security in Asia	Asia, decentralization, global change, institutions, institutional changes, livelihoods, natural resource management, participation, state policies, trade liberalization.
19	Global Environmental Change and Food Security in Africa	The influence of GEC on key elements in food security in Africa; information needs for decision makers and policy responses required to address effects of GEC on food security and long term feedbacks.
20	How Does Global Environmental Change Affect Health and How Can We Measure it?	This session will explore the complex pathways and mechanisms through which the global environmental change components affect health and how these can be approached scientifically.
21	What Do We Really Understand About Freshwater and Coastal Systems, and the Global Water System?	The session will cover issues common to freshwater and coastal systems, and the global water system such as effective and efficient governance, environmental flows, freshwater and coastal nutrient fluxes and the global nutrient cycles, impacts of river diversions, land use change, and climate change, etc. in order to develop a framework for linking science and resource management, and to define a strategy for collaboration and network for research.
22	Towards A Better Understanding of Vulnerability Assessment Methodologies and Adaptive Capacity To Climate Risks	Studies to ascertain vulnerability and adaptation to climate change for a better understanding of adaptive capacity to climate risk. Key words: impact, vulnerability, adaptation, adaptive capacity, climate risk, climate hazard, tools for vulnerability & adaptation assessment, integrated climate risk management, disaster risk management.
23	Designing a post-Kyoto Climate Change Regime	Climate change, institutional design, Kyoto Protocol, equity, sustainable development.
24	Integrating Past Records of Human-Environment-Climate Interactions for Future Sustainability	Palaeodata/monitored records, regional integration, long term modeling, ecosystem/landscape sustainability.

25	Biodiversity, Land Management and Ecosystem Responses	Human activities directly or indirectly affect terrestrial and freshwater ecosystems worldwide. The intensity of land management modifies the rates of biogeochemical processes and exchange, biodiversity, and flows of energy and water. Research studies which characterise how ecosystems are affected by changes in land management activities will be presented, especially as they relate to effects on the biogeochemistry, biodiversity and biophysics of land systems.
26	Global Environmental Change, Natural Disasters, and their Implications for Human Security in Coastal Urban Areas	Climate change, coastal zone, human security, lessons learned, natural disaster, urbanization, vulnerability.
27	Are Extreme Climate Events Changing?	The session will consider the evidence from climate records for changes in the frequency and magnitude of extreme climate events, including techniques for monitoring and analysing extreme events. The character of climate extremes in the future will also be considered.
28	Towards a Global Observation System of Biodiversity and Land Cover Changes: Solutions for Sustainable Development	This session aims to discuss approaches on how to design, finance, implement and sustain a feasible global observation system of biodiversity and land cover changes, which is meaningful for science and for users and which supports sustainable development. Keywords: biodiversity, monitoring, observation system, land cover, earth observation, ecosystem, degradation, migration, conservation, sustainable management.
29	Transitions to Sustainability in Asia: Analysing the Dynamics of Industrial Transformation	Industrial transformation, sustainability, socio-technical transitions, industrialisation processes and pathways, alternative environmental trajectories, transformation policy and management.
30	Improving the Interface between Biodiversity Science and Policy	Biodiversity, science-policy interface, policy, social science and biodiversity science.

31	Building Bridges: Global Environmental Change and Development Aid	Global environmental change and development aid, common agenda, sustainable and resilient livelihoods, regional scale research, adaptation and mitigation strategies, science-policy dialog.
32	Planning for Natural Disaster Mitigation - Issues On Ecological and Social Risk	Natural disasters, ecological risks, GIS and GPS applications for disaster management, social issues in disaster rehabilitation, geo-disasters, climate change and disasters, environmental management for climate change, global climate change.
33	Integrated Coupled Human Environment Research Developments in Land Science: Analytical Frontiers of Land Use Change and Vulnerability of the Coupled System under Global Environmental Change	Recent efforts toward integrative approaches to land system change at multiple scales which provide a research framework to assess coping and adaptation strategies of the coupled human-environmental system will be presented. Issues related to integrated modeling of land use change, evaluation of ecosystem services and linkages to decision making and research on vulnerability will be incorporated as part of the session.
34	Collaborative Regional GEC Networks in the Americas: Opportunities for Stakeholders and Governance	Collaborative research networks supported by the Inter-American Institute for Global Change Research (IAI) have been instrumental in shaping relationships between the GEC science communities and public policy agencies, resource managers, educators and NGOs. It is now widely recognized that GEC science must contribute to solutions which reduce constraints on future human development. This session provides a forum for discussing how the governance of GEC science in the Americas is expected to evolve over the next decade as well as how it will need to develop new partnerships in order to enhance its relevance within the policy, resource management and education communities. More specifically, the session welcomes papers which address emerging GEC

		<p>science governance issues needing attention over the medium term, including:</p> <ul style="list-style-type: none"> <li>• the changing context of GEC science funding and governance,</li> <li>• establishing and maintaining engagement with diverse stakeholders,</li> <li>• enhancing the policy relevance of GEC science</li> </ul> <p>Keywords: integrated regional studies, science-policy interface.</p>
35	Are Changing Aerosol Levels Affecting Regional Temperature, Cloud and Precipitation Patterns?	Aerosols, pollution, mega-city, radiation, clouds, precipitation, impacts.
36	Modelling Coupled Dynamics and their Uncertainties in the Earth System	AIMES, CEOP CLIVAR, GEWEX, WCRP, hydrologic cycle, climate models, carbon cycle, scaling, uncertainty.
37	Sea-level Rise, Vulnerability and Impacts	Given present uncertainties in sea-level rise and variability and expected impact scenarios, what determines the vulnerability of coastal systems and how can the impact of sea level rise be avoided and/or mitigated.
38	Mining Museum Data to Address Global Environmental Change Issues	Biodiversity, museum specimens, taxonomic databases, distribution areas, ecosystem service.
39	Marine Ecosystems: Trends, Feedbacks and Predicting Future States	Marine ecosystems, biogeochemical states, ecosystem services, future scenarios.
40	Chemistry and Climate in the Upper Troposphere/Lower Stratosphere (UT/LS) Region	In this session we solicit papers covering all the aspects of chemistry climate interactions in the UT/LS region and the impact of these changes to other Earth System components.
41	Future Directions in Earth System Modelling	The session, featuring an inter-disciplinary focus on Earth system modelling, will explore the four drivers for increased computational power and understanding, the needs to represent the breadth of the coupled Earth system (including socio-economic conditions), to employ higher resolution, to perform large ensembles and to evaluate the ability to simulate environmental change phenomena, and also the data and data

		assimilation requirements for predictions and the links with applications.
42	How Are Satellites Changing Our View of the Earth?	This session addresses the way in which satellites are changing the way we view the Earth, including providing global views of an ever-increasing set of environmental parameters, providing long-term data sets that can be used to document changes in the Earth, and facilitating the improved forecasting of weather, climate, and natural hazards.
43	Mountains Under Change	Mountains, biodiversity, watershed, catchment, hydrology, soils, risk, grazing, forests, climatic change, land use, crops, carbon, tourism.
44	Climate Mitigation and Sustainable Development - How can they be reconciled?	Post-kyoto process, efficiency versus equity in mitigation, international policy instruments, developing countries and mitigation.