

LAND COVER AND CHANGE

Newsletter of the GOFC-GOLD Land Cover Project Office

FEBRUARY 2007

NUMBER 13

GLOBCOVER

The GLOBCOVER team is in the final stages of delivering version 1 of the GLOBCOVER product. Please find updated status information on page 6.

SYMPOSIA & WORKSHOPS

This newsletter provides information about upcoming events: 17-19 April are the dates for the 2nd GOFC-GOLD Workshop on Reducing Emissions from Deforestation held in Bolivia. During the ESA ENVISAT Symposium from 23-27 April, in Montreux, Switzerland one session specially focuses on the support of earth observations to environmental conventions and the release of the GLOBCOVER V1 product.

THE PROJECT OFFICE IN 2006

In January, the Land Cover Project Office released its 2006 Annual Report summarizing key activities and achievements in its third year of operation. They are briefly presented on page 4.

Content

Forest Community of Practice	1
GOFC-GOLD contributions to GEO land cover tasks	3
GOFC-GOLD LC-PO in 2006	4
New Members join the LC-IT	4
GLOBCOVER	6
ESA Envisat Symposium	7
GOFC-GOLD REDD Workshop	8
NEESPI	9
Calendar	10

TOWARDS INTEGRATED IN-SITU AND SPACE-BASED FOREST OBSERVATIONS

GOFC-GOLD HELPS EVOLVE A GEO COMMUNITY OF PRACTICE FOR FOREST OBSERVATIONS

Background

Forests are a key terrestrial ecosystem and habitat with important impacts on biodiversity, the carbon and water cycle and the global climate system. Forest mapping and monitoring is essential with regards to the sustainable use of global forest resources and in the context of UN environmental conventions.

Effective monitoring of forest ecosystems could strongly benefit from consistent, sustained, and integrated in situ and space-based observations. However currently, terrestrial mapping and monitoring is the least operational Earth Observation component compared to other parts of the earth system, such as the atmosphere and oceans. There are numerous potentials of earth observations if adopted by forest user communities, but there is a large heterogeneity of users whose needs are not fully articulated.

The combination of remote and in situ observations has a great potential that is not yet fully realized. There is a need to develop an

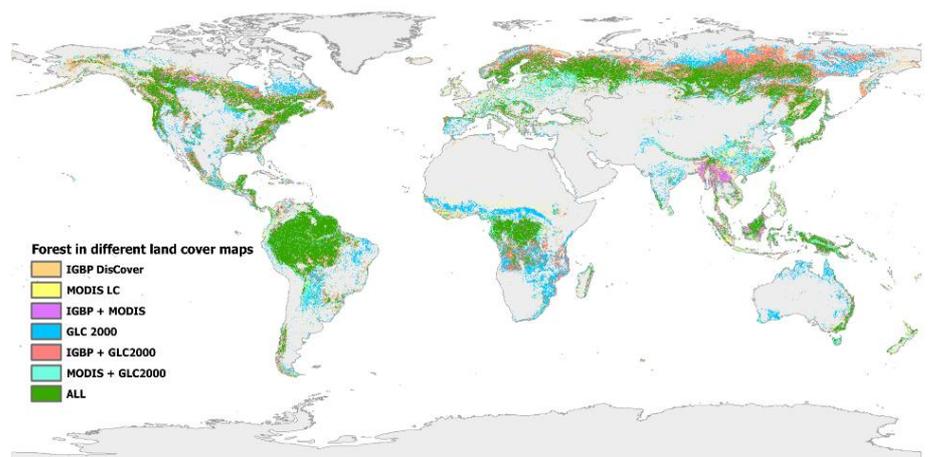


Fig. 1: Heterogeneity of forest estimates in global land cover maps

operational spaced based land observation framework, which would contribute to the development of operational forest observation systems at different levels, national and global. Key earth observation challenges are:

- observation continuity (satellite, in situ),
- data access issues (regional/national data sets, in situ),
- moving from research to operations given varying user requirements and
- capacity building and outreach.

Role of GEO

The Group on Earth Observation (GEO) was established in 2002 to address the need for a general coordinated global system of earth observation. In its 10 year implementation plan GEO identified forest information as crucial for all societal benefit areas (disasters, health, water, climate, agriculture, weather, ecosystems and energy). Thus, GEO and its User Interface Committee (UIC) have started to evolve a Community of Practice for forest observations (FCP) to respond to user requirements and to address the GEO Work Plan targets and its societal benefit areas. The FCP was officially established at the GEO II plenary in December 2005 and since then has worked on a number of objectives (see box).

regional forest assessment organizations (i.e. FAO FRA and the European GSE forest monitoring). Additional members are intended from other countries and stakeholders, including NGO's, developing country representation through established networks (i.e. GOFC-GOLD regional networks), and the UN conventions.

The activities to date have focused on **organizational issues** in building the FCP and on interaction with key contributors and user organizations. The framework followed the guidance materials and experiences issued by the GEO UIC. Co-leads, a point of contact and a work routine have been established and active interaction with the relevant GEO bodies exists.

The initial **thematic focus** has been on integrating in-situ and space based forest observations with an initial involvement in the planning process for the upcoming global forest assessment (FRA 2010). The user needs assessment starts as a compilation of existing requirements in the forest community. A number of essential user needs have been identified including the consistency and continuity of observations, data access at low/no cost, the user-driven process moving from observations to applications and adapting emerging approaches and technologies.

At the 3rd GEO Plenary meeting, held in Bonn in November 2006, Michael Brady and Martin Herold presented the FCP to the GEO members. At the plenary, GOFC-GOLD was recognized as a GEO member.

Further information & contact:
<http://www.fao.org/gtos/gofc-gold/>
<http://www.gofc-gold.uni-jena.de>
 Michael Brady (MBrady@)
 Martin Herold (m.h@uni-jena.de)

Objectives for the Community of Practice:

- Create a community of practice (FCP) with broad representation of producers and users of forest data and information
- Identify, gather, and seek agreement on user community requirements for forest observations, their present status, priorities and gaps to be filled
- Advise the User Interface Committee, other CoPs and GEO on matters relating to forest observations and related societal benefits, and on cross-cutting issues of interest
- Provide GEO with information about organizations and networks that could help carry out forest observation related GEO tasks
- Support the forest observation community with information about activities and plans in the GEO process

Members

The FCP team was based upon existing experiences and resources, led by Canada (M. Brady), Sweden (H. Olsson and G. Boberg), Finland (E. Tomppo) and Germany (M. Herold and C. Schmuilius). GOFC-GOLD of the Global Terrestrial Observing System (GTOS) provided the initial platform to establish the FCP. The membership of the FCP includes producers, developers and users of forest observations and observation systems. It is open, voluntary, and

on a best efforts basis. Current members are representatives from GEO member states (i.e. from Sweden, Canada, Finland), international observation networks (i.e. ENFIN and GTOS/GOFC-GOLD), active and global and

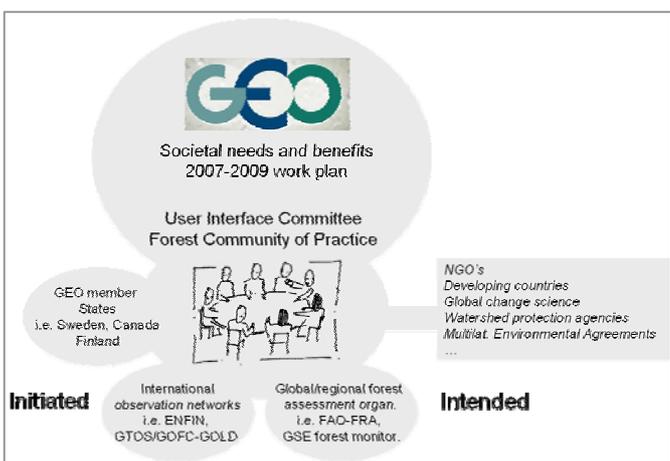
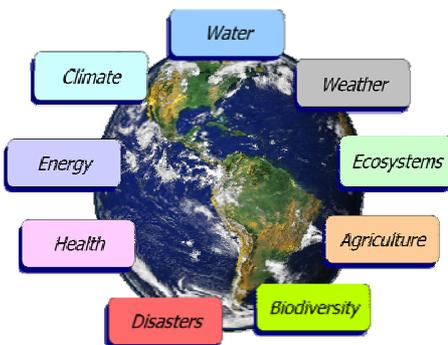


Fig. 2: The FCP acting as link between GEO and users and producers of forest information

CONTRIBUTION OF LAND COVER PROJECT OFFICE TO GEO 2007-2009 WORKPLAN



Since 2006, GEO has started the operation of the GEOS 10-Year Implementation Plan that formulates specific tasks for nine societal benefit areas and five transverse areas (i.e. activities relevant across different areas), such as data management or capacity building (www.earthobservation.org).



Societal benefit areas in GEOS

The LC Project Office has coordinated and prepared the GOFC-GOLD response to GEO for the implementation of the 2007-2009 GEOS Work Plan. GOFC-GOLD has contributed to a number of work packages based on the targets defined by the GEO Secretariat. In particular, the following GEOS societal benefit areas have been addressed: Agriculture, Disasters, Ecosystems, Climate, Capacity building, and Weather. The project office ensures that GLOBCOVER and related activities are recognized in GEO activities.

Within the 2007-2009 GEO work plan, GOFC-GOLD will continue to contribute to eight tasks, including three that are of particular importance for the Land Cover Implementation team.

In the area of *User Engagement* the task **US-06-02** (see box) addresses the assessment of user needs in the earth observation community. GOFC-GOLD is co-leading this task with Canada and Sweden. The recently established Community of Practice for Forest Observation is directly linked to this task.

GEO tasks co-led by the GOFC-GOLD Land Cover Project Office and Implementation Team:

- **Task US-06-02:** *Initiate pilot communities of practice to identify and further refine users' needs, in particular on cross-cutting areas, building upon the initial experience of community of practice and on information provided by national, regional and project-level surveys.*
- **Task DA-07-02 – Global Land Cover:** *Provide a suite of global land cover datasets, initially based on improved and validated moderate resolution land cover maps and eventually including land-cover change at high resolution.*
- **Task AG-06-04:** *Initiate an international assessment effort on forests and forest changes utilizing ongoing land cover mapping projects (e.g. GLOBCOVER). Ensure application of standardized classifications and harmonization of existing datasets.*

The task **DA-07-04** refers to the area of *Data Management* and is an evolution of the former task AG-06-03. The main objective is to initiate regular analysis and reporting on land cover change and promulgate the use of these products, especially in developing countries. It involves:

- advocating existing internationally-agreed approaches to systematic land cover characterization (LCCS) and validation (CEOS protocols)
- Utilizing and validate moderate resolution time series data and land cover data sets (i.e. GLOBCOVER, MODIS products) and earlier 1-km resolution maps (i.e. GLC2000, IGBP-DIS)
- Formulation of specifications and implement production of a global high-resolution land cover and land change data set and report
- Set up a centralized web-based access to existing land cover data
- Identifying opportunities for applying land cover data in areas related to key societal benefits.
- Strengthening national level capacities to produce and use these products especially in developing countries

Thus, this task is directly linked to GOFC-GOLD's participation in GLOBCOVER, the harmonization/validation initiative and efforts to evolve and implement the production of a global high-resolution land cover change dataset.

The task **AG-06-04** addresses international forest assessment efforts and is a close cooperation with FAO, to support the Forest Resources Assessment (FRA) 2010.

NEW MEMBERS JOIN THE LAND COVER IMPLEMENTATION TEAM

The GOFC-GOLD Land Cover Implementation Team (LC-IT) welcomes three new members in 2007.

Dr. **Matthew Hansen** is a remote sensing scientist at South Dakota State University and co-directs the university's Geographic Information Science Center. He specializes in large area land cover and land use change mapping. Dr. Hansen's research is focused on developing improved algorithms, data inputs and thematic outputs which enable the



mapping of land cover change at regional, continental and global scales. He is a member of the NASA MODIS Land Science Team. He also works on mapping deforestation. You can contact Matthew Hansen by email:

Matthew.Hansen@sdsstate.edu.

Dr. **Håkan Olsson** is a professor at the department of Forest Resource Management and Geomatics at the Swedish University of Agricultural Sciences. He is a council member of the European



Association of Remote Sensing Laboratories (EARSeL). You can contact Håkan by email:

Hakan.Olsson@resgeom.slu.se



Dr. **Espen Volden** from the Science, Applications and Future Technologies Department of the European Space Agency (ESA) coordinates, among other things, the UN Convention activities of ESA. He holds a PhD from the Ecole Nationale Supérieure des Mines de Paris (email: espen.volden@esa.int).

GOFC-GOLD LAND COVER OFFICE IN 2006

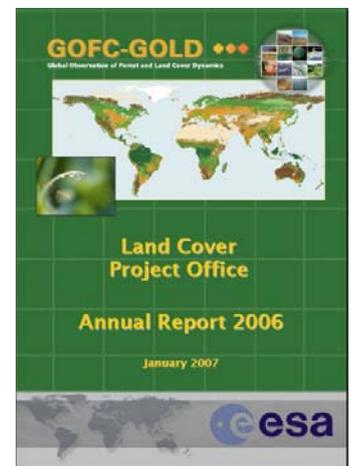
SUMMARY OF ACTIVITIES AND ACHIEVEMENTS

In its third year of operation, the GOFC-GOLD land cover project office (LC-PO) was able to successfully fulfill the requirements and challenges posed by the international community and ESA as the contracting agency.

The project office has evolved to an established international focal point for global and regional land cover observations, and is a key actor in GOFC-GOLD's implementation of operational land monitoring, both globally and on the European level. Such reliable environmental observations are of crucial importance to understanding climate change and its impacts to sustainable development, natural resources management, conservation, biodiversity and understanding ecosystems and biogeochemical cycling.

All activities and achievements are presented in the Annual Report 2006 of the Land Cover Project Office that is available on the web (<http://www.gofc-gold.uni-jena.de/sites/documents.php>).

The box (following page) summarizes them in brief. Key activities include; the contribution to several GEO tasks in the GEO work plan, the coordination of the GOFC-GOLD working group on Monitoring tropical deforestation and its contribution to the UNFCCC. The PO organized the Jena symposium in March (see Newsletter 10), including four independent workshops and was present at several conferences and meetings. In 2007, the LC-PO will further assist ESA in the development of GLOBCOVER products with a focus on harmonization, validation and the user assessment. Another main activity will be the issue of tropical deforestation. The LC-PO continues to coordinate the related GOFC-GOLD Working Group and thus the perspectives of the earth observation community to provide input to the UNFCCC and policy discussions. In the framework of the GEO 2007-2009 Work Plan the LC-PO will move forward the "Community of Practice for Forest Observation", related to the task of global land cover, and be actively involved in forest monitoring activities, and as such will assist in the FAO-FRA 2010 remote sensing component.



Progress and achievements of the Land Cover Project Office in 2006

- **State of the art in global land cover assessment**
 - Collect and summarize published materials and datasets
 - Documentation on land cover algorithms, change routines, data products, in situ facilities
- **Strategies for land cover harmonization and dataset interoperability**
 - Review of previous land cover harmonization approaches including advocating the UN Land Cover Classification System as common ground for land characterization
 - Translation, comparison and semantic similarity assessment of several land cover legends using the UN Land Cover Classification System, i.e. IGBP, GLC2000, CORINE, MODIS Land Cover, USGS Anderson, Continuous Fields Products and others
 - Development of strategic documents for harmonization of existing land cover datasets and guidelines for standardized development of land cover legends for future mapping
- **Global land cover validation strategies**
 - Strong cooperation with CEOS Cal-Val group on development of validation standards
 - Participation in ongoing validation activities (GLC2000, GLOBCOVER) and comparative accuracy assessment of existing global datasets using existing reference information
 - Outline implementation plan for an operational validation strategy to assess the accuracy of existing and future global land cover products and foster their interoperability/synergy
- **Land cover map product applications**
 - Develop advanced and refined global land cover maps for global process modeling
 - Dataset synergy for coarse scale land change analysis and long term trends
- **Support development of GLOBCOVER**
 - Comparative assessment of GLC2000 and CORINE for flexible development of GLOBCOVER
 - Contribution to GLOBCOVER legend development and validation framework
- **Participation in GEO process**
 - LC-PO acts as point of contact for GOFC-GOLD participation in GEO activities
 - Outline GEO 2006 work plan tasks for GEO to benefit from GOFC-GOLD implementation
 - Participation in GEO meetings and contribution to 2007-2009 work plan development
 - Coordination and presentation of GEO user Community of Practice for forest observations
- **Earth observation to support UN conventions**
 - Active contribution for land cover tasks described in the GCOS implementation plan
 - Participation in delegations to UNFCCC-COP12 and SBSTA
 - Coordination of GOFC-GOLD working group to evolve internationally agreed technical protocols for using Earth observation in monitoring avoided tropical deforestation
- **GOFC-GOLD science meetings and capacity building**
 - Active participation and preparation for GOFC-GOLD science and technical board meeting
 - Organization and co-hosting of the GOFC-GOLD capacity building on LCCS and evolving standards in land characterization in Ulan Bataar, Mongolia and at EARSeL in Bonn, Germany
- **Participation in key events to foster international cooperation**
 - Contacts and communications with GOFC-GOLD regional networks
 - Participation in meetings and workshops on: GLOBCOVER meetings, GTOS, IGOS-IGOL, GLC2000 validation, UN Global Land Cover Network (GLCN), GEOLAND, DLR
 - Participation and GOFC-GOLD representation in scientific conferences symposia
- **Documentation, publication, and outreach:**
 - 23 deliverables submitted to ESA
 - Maintenance of webpage and regular updates
 - Development and distribution of four GOFC-GOLD newsletters
 - Contribution to GOFC-GOLD report series
 - Scientific publications (2 peer-reviewed papers published, 1 accepted (2007), 2 submitted)
 - Assistance and review of key documents: CEOS Cal-Val 'best practice' document on validation of global land cover datasets, Integrated Global Observations of Land (IGOL) documents, GEO 2006 work plan, LCCS resources

GLOBCOVER V1 IN FINAL PRODUCTION STAGE

ESA AND THE GLOBCOVER CONSORTIUM WILL PRESENT AND RELEASE THE GLOBAL MERIS LAND COVER PRODUCT AT THE ENVISAT SYMPOSIUM IN APRIL 2007



At the recent GLOBCOVER progress meeting in February, MEDIAS France, leader of the project consortium, together with Brockmann Consult informed ESA on the development of the GLOBCOVER product processing.

of full resolution, full swath MERIS Level 1B data and the storage of all input, intermediate and final products, which amount to more than 45 TB of data. A complex pre-processing chain was developed including geometric and atmospheric corrections as well as a temporal compositing technique to generate bi-monthly and annual mosaics. The chain and its products are continuously examined and improved as appropriate. Furthermore, a classification algorithm was developed and tested. The first, preliminary, land cover classification result over Europe was delivered in September 2006 to ESA (see fig. 3).

The objective of the GLOBCOVER project is to produce a global land cover map of 2005-2006 based on MERIS full resolution data (300 m) that intends to complement and update existing global land cover data sets (e.g. GLC2000). In the first project phase the development of the GLOBCOVER system, consisting of hardware, software and execution environment has been finalized. It maintains the complete processing of one year

During the ongoing second project phase, Globcover products are generated covering the period between May 2005 and April 2006. The global products comprise a time series of bi-monthly mosaics, an annual mosaic and a land cover classification. In April 2007, ESA will present the first Globcover products (bi-monthly and annual mosaics) to the user community during the ENVISAT Symposium in Montreux (Switzerland). The products will be available through a newly developed map server tool that will be integrated in the ESA IONIA server (<http://dup.esrin.esa.it/ionia/>). This tool and its functionality will be presented at the symposium as well.

The GLOBCOVER project provides an opportunity to implement the GOFC-GOLD objectives for harmonized and validated land cover mapping. The LC-PO plays an active role in the coordination and development of the products. It participates at project meetings and assists ESA in the development of a standardized and flexible definition of the land cover legends. Currently the project office is preparing an online questionnaire to assess user feedback. Furthermore, validation of the final land cover product is envisaged.

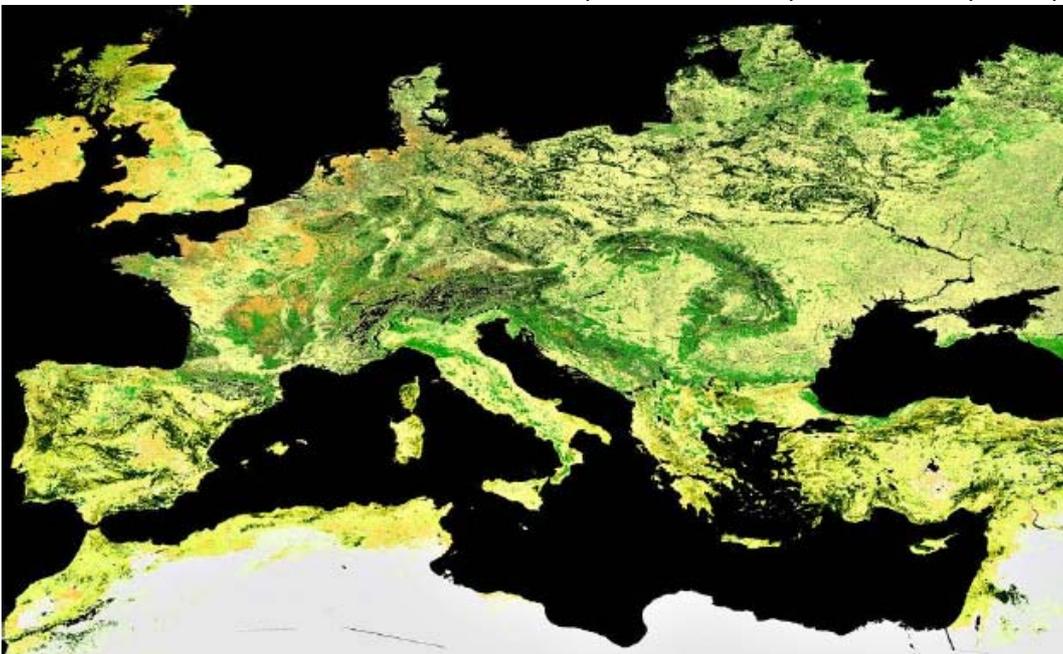


Fig. 3: Preliminary land cover classification of Europe based on MERIS 300 m mosaics of 2005, output of a classification test run (source: ESA)

Detailed project information is available on the following links:
ESA GLOBCOVER page:
<http://dup.esrin.esa.it/projects/summary68.asp>
 The GLOBCOVER project on the **POSTEL website:**
<http://postel.mediasfrance.-org/en/PROJECTS/Preoperational-GMES/GLOBCOVER/>

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GLOBCOVER in Conferences

March 2007
ISPRS
 (Davos, Switzerland)

April 2007
ENVISAT Symposium
 (Montreux, Switzerland)

July 2007
IGARSS
 (Barcelona, Spain)

EARTH OBSERVATION TO SUPPORT UN ENVIRONMENTAL CONVENTIONS

SPECIAL SESSION DURING ENVISAT SYMPOSIUM

From 23-27 April 2007, the ESA ENVISAT Symposium will be held in Montreux, Switzerland. At this symposium, one panel session on Tuesday 24th April, is especially dedicated to the use of Earth Observation techniques in support of the UN Environmental Conventions including:

- The UN Framework convention on Climate Change (UNFCCC),
- The Ramsar convention on wetlands,
- The Convention to Combat Desertification (UNCCD),
- The Convention on Biological Diversity (UNCBD).

Representatives from FAO, IGBP, WCRP and the convention secretaries are invited to the introductory panel discussion. The sessions focus on monitoring global ecosystems and present in detail the related ESA projects, e.g. GlobCarbon, GlobColour, GlobIce or GLOBCOVER (see Agenda).

Preliminary Agenda of the Environmental Convention Panel, on 24th April, at the ENVISAT Symposium

The Context Panel

Invitees from ESA, the individual Conventions Secretaries, FAO, IGBP, WCRP

Break

Understanding and Monitoring the Global Environment

An Update on the DUE GlobCarbon initiative: Multisensor estimation of global biophysical products for global terrestrial carbon studies

A contribution to improved modelling of Arctic Sea Ice dynamics in Global Climate Models: Early results from the DUE GlobIce Project

DUE GlobColour: Developing a Merged Global Ocean Colour Data Set for Carbon-Cycle Research

Land Cover Observations to support the Rio-conventions

DUE GLOBCOVER - A Global Land Cover Service with MERIS

Break

Supporting the conventions

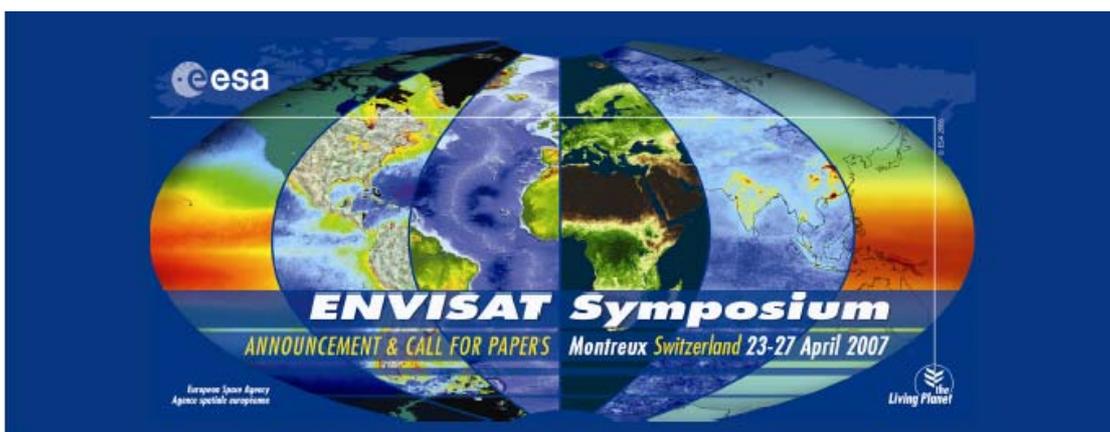
Space for UNFCCC and the DUE Kyoto Inventory and GSE Forest Monitoring projects

Space for UNCCD and the DUE DesertWatch project

Space for RAMSAR and the DUE GlobWetland project

Space for UNCBD and the DUE Biodiversity project

Space for the World Heritage Convention and the BEGo project



[ANNOUNCEMENT]

The ENVISAT Symposium dedicates a full day seminar for presenting the use of EO in support of International Environmental Conventions (UNFCCC, RAMSAR, UNCCD, UNCBD).

The seminar will commence with a panel providing the context. Presentations will follow showing results of ESA EO missions supporting the conventions. Among them, there will be projects as GLOBCOVER, GLOBCOLOUR, GLOBCARBON and GLOBICE.

INTERNATIONAL ENVIRONMENTAL CONVENTION SEMINAR >> 24 April 2007

MEASURING & MONITORING EMISSIONS FROM DEFORESTATION IN DEVELOPING COUNTRIES

2ND GOFC-GOLD WORKSHOP IN BOLIVIA ON ACTUAL CASE STUDIES

The GOFC-GOLD working group on monitoring tropical deforestation is pleased to announce the 2nd workshop on “Measuring and monitoring greenhouse gas emissions from deforestation in developing countries” from 17-19 April 2007, in St. Cruz, Bolivia, hosted by FAN Bolivia (Fundación Amigos de la Naturaleza) and the Superintendencia Forestal.

As highlighted in the GOFC-GOLD Newsletter No. 12 the issue of “reducing emissions from deforestation in developing countries” (RED-DC) is currently very important within the frame of UNFCCC. Methods are discussed and under development to provide incentives for developing countries to protect their forest resources and avoid deforestation.

To support this policy development process, at its 24th session, the UNFCCC’s Subsidiary Body for Scientific and Technical Advice (SBSTA) requested information and pilot study experiences from the scientific community. The upcoming 2nd GOFC-GOLD workshop will focus on such related case studies (e.g. Bolivia, Colombia, Papua New Guinea) and discuss experiences. It follows the first GOFC-GOLD workshop, held in March 2006 in Jena, Germany, that provided a consensus perspective from the earth observation community on scientific and methodological issues related to the item. The concerted view is documented in a report and has been presented at the UNFCCC RED-DC workshop in Rome, in August

2006 and at SBSTA-25/COP-12 in November.

The 2nd workshop will further discuss technical options for measuring and monitoring deforestation in developing countries and extrapolating/estimating related greenhouse gas emissions and aims to initiate the development of a more detailed technical-guidelines-type document with specific methodological recommendations based on recent case study experiences (see box).

Workshop objectives:

- Coordinate recent and ongoing case studies on the RED-DC issue and discuss and synthesize their practical experiences
- Discuss specifically key challenging issues (i.e. degradation monitoring, forest area change versus emissions, validation and accuracy, costs)
- Organize the development of methodological guidelines towards a detailed technical protocol for measuring and monitoring including ‘reliability’ assessments
- Formulate technical and methodological recommendations for implementation at regional and national scales

Participants include members of the GOFC-GOLD Executive Committee, Land Cover Implementation Team, Working group on Monitoring Tropical deforestation as well as representatives from developing countries and international specialists in that field.

During the first day, one session will summarize the recent developments in the UNFCCC process wherein the outcomes of the 2nd UNFCCC ad-hoc workshop (to be held 7-9 March 2007 in Cairns, Australia) will be discussed and representatives from Colombia, Brazil, Bolivia and FAO will present their perspectives. Following sessions will focus on the experiences learned from related RED-DC case studies. Technical and methodological recommendations will be discussed in breakout groups on the second and third day (see Fig 4.).

Monday, April 16 th	Tuesday, April 17 th	Wednesday, April 18 th	Thursday, April 19 th	Friday, April 20 th
GOFC-GOLD Regional Network Meeting	GOFC-GOLD Workshop on Monitoring Tropical deforestation			Field trip (optional)
	Presentation of RED-DC case studies	Breakout group discussions	Breakout group discussions	

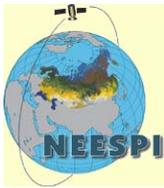
Fig. 4: Overview of the workshop agenda

All results of the workshop are intended to be presented at a side event at SBSTA-26 in May 2007 in Bonn and to be further published as a specific technical document. The results should allow the improved understanding of reducing emissions from deforestation in developing countries.

For further information see the GOFC-GOLD homepage (www.gofc-gold.uni-jena.de) or contact Martin Herold (m.h@uni-jena.de).

THE NORTHERN EURASIA EARTH SCIENCE PARTNERSHIP INITIATIVE IN 2006

RECENT PROGRESS AND DEVELOPMENTS



Background

The Northern Eurasia Earth Science Partnership Initiative (NEESPI) is a program of internationally-supported Earth systems science research that focuses on issues in Northern Eurasia that are relevant to regional and global scientific research and decision-making. NEESPI intends to identify critical science questions and establish an international program of coordinated research on the state and dynamics of terrestrial ecosystems in northern Eurasia to enhance scientific knowledge and develop predictive capabilities to support informed decision-making and practical applications.

The goal is to develop a comprehensive understanding of Northern Eurasian terrestrial ecosystem dynamics (incl. biogeochemistry, surface energy, water cycles and human activities). An anticipated outcome is the ability to measure, monitor, and model the processes that will provide accurate future projections of climatic and environmental changes in this region. About 400

scientists from about 200 institutions over the globe are involved in 70 NEESPI scientific projects.

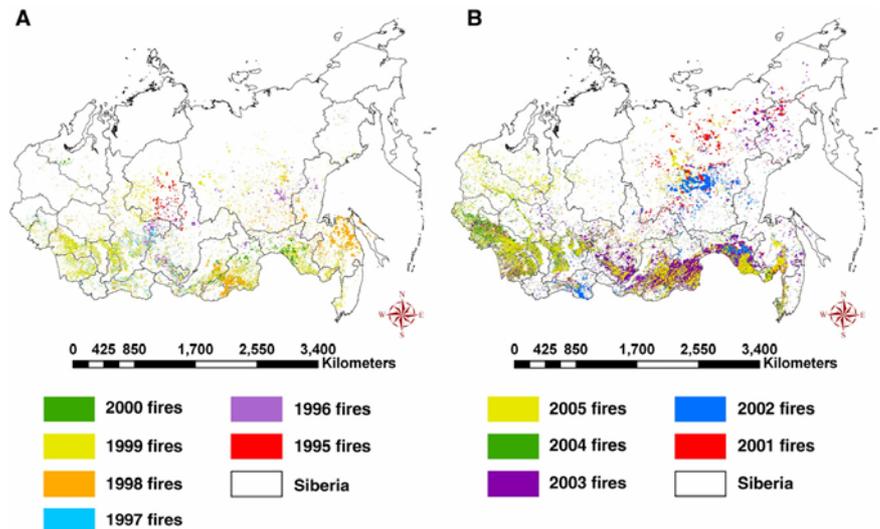


Fig. 4: Satellite-derived fires in Siberia from 1995 through 2005 (source: Soja, A.J.)

Recent Events

In 2006, the International Geosphere-Biosphere Program (IGBP) Science Steering Committee granted NEESPI the status as **IGBP External Project**. NEESPI benefits by access to, and support from, the international IGBP research network; IGBP benefits from access and input to NEESPI's research activities that contribute to the IGBP goals. In September, the "**Siberia Integrated Regional Study (SIRS)**" was launched. SIRS is a 3-year project that is linked to the NEESPI program, launched under the auspices of the Siberian Branch of The Russian National Committee for IGBP. Furthermore, the "International Symposium: Environmental change in Siberia: Insights from Earth Observation and modeling" was organized by **Sib-ESS-C** (SIBERIA-II Earth System Science Cluster Group, <http://www.sibessc.uni-jena.de/>) at The University of Leicester, United Kingdom. In November, the **Regional NEESPI**

Focus Research Centre on Dry Land Processes Studies in Beijing, China was inaugurated. Outcomes of NEESPI will be published in the **Special NEESPI Issue** of Global and Planetary Change (56, Issue 3-4, 2007) on www.sciencedirect.com, e.g. the study of Amber Soja et al.: "Climate-induced boreal forest change: Predictions versus current observations".

Further information on the NEESPI homepage: <http://www.neespi.org>
Or please contact: Pasha Groisman (pasha.groisman@noaa.gov)

Upcoming events in 2007

- **A special NEESPI issue.** The "Global and Planetary Change" journal will publish a special NEESPI Issue based on the papers prepared as a result of the 2004 AGU Fall meeting. The publication is expected in April 2007. Its articles are currently available at: <http://www.sciencedirect.com>.
- **NEESPI Summit in May.** The leadership of the iLEAPS International Program Office has kindly agreed to host the NEESPI Summit (NEESPI Steering and Coordination Committee). The Summit will be held in Helsinki, Finland on May 3-4, 2007.
- **NEESPI-IPY Summer School in July.** The International Arctic Research Center at the University of Alaska Fairbanks in collaboration with the Institute of Ecology and Evolution in Moscow has organized a two-week summer school on environmental studies in the boreal forest zone on 14-28 July 2007.

UPCOMING LAND COVER EVENTS

EVENTS / CONFERENCES / WORKSHOPS

February 2007

2nd Space & Society Conference "Space Options for the 21st century"

Venue: Noordwijk, The Netherlands

Date: 27 February – 1 March

Info: <http://www.congrex.nl/06a12/>

FAO FRA global Assessment working group meeting

Venue: Ispra, Italy

Date: tbd

Info: <http://www.fao.org/forestry/site/fra/en/>

GEO Architecture and Data Committee meeting, Geneva

Venue: Geneva, Switzerland

Date: 28 February - 1 March

Info: <http://www.earthobservations.org>

March 2007

GTOS Steering Committee

Venue: Nairobi, Kenya

Date: 7-9 March

Info: <http://www.fao.org/gtos/>

UNFCCC Workshop on Reducing Emissions from Deforestation in Developing Countries

Venue: Cairns, Australia

Date: 7-9 March

Info: <http://unfccc.int>

April 2007

GEO User Interface Committee and FCP meetings, Geneva

Venue: Geneva, Switzerland

Date: 2-3 April

Info: <http://www.earthobservations.org>

LCLUC Science Team Meeting: Land Use and Climate Meeting

Venue: College Park, Maryland

Date: 4-6 April

Info: <http://lcluc.umd.edu/>

GEO Global Land Cover task Meeting

Venue: Washington, USA

Date: 3-6 April

Info: <http://www.earthobservations.org>

2nd GOFc-GOLD Workshop on Reducing Emissions from Deforestation in developing countries

Venue: Santa Cruz, Bolivia

Date: 17-19 April, following an optional field trip (1-2 days)

Info: <http://gofc-gold.uni-jena.de>

Contact: Martin Herold (m.h.@uni-jena.de)

ESA ENVISAT Symposium

Venue: Montreux, Switzerland

Date: 23–27 April

Info: <http://www.envisat07.org/>

May 2007**26th UNFCCC SBSTA****Venue:** Bonn, Germany**Date:** 7-18 May**Info:** <http://unfccc.int>**4th International Wild land Fire Conf., Fire IT & Regional Network meeting****Venue:** Seville, Spain**Date:** 13-17 May**Info:** http://www.fire.uni-freiburg.de/course/meeting/2007/meet2007_01.htm**ISPRS Workshop on High-Resolution Earth Imaging for Geospatial Information, Hanover****Venue:** Hanover, Germany**Date:** 29 May-1 June**Info:** <http://www.ipi.uni-hannover.de/>**International Standard Organisation ISO/TC 211 Geographic information/Geomatics Conference****Venue:** FAO, Rome**Date:** 31 May-1 June**Info:** <http://www.africover.org/LCCS.htm>**June 2007****Joint Annual Conference of Swiss, German and Austrian Remote Sensing Organizations (SDPBF, DGPF and OVG)****Venue:** Muttentz/Basel, Switzerland**Date:** 19-21 June**Info:** <http://www.dgpf.de/>**ISRSE Meeting with Fire IT & Conabio fire session, San Jose****Venue:** San José, Costa Rica**Date:** 25-29 June**Info:** http://www.fire.uni-freiburg.de/course/meeting/2007/meet2007_08.htm**Newsletter archives of related projects****GLOBCOVER Newsletter:** <http://dup.esrin.esa.it/projects/summary68.asp>**GLCN Newsletter** (Global Land Cover Network): <http://www.glcnet.org/news/>**The ESA GOFc GOLD Land Cover Project Office Newsletter:**

The Newsletter is distributed free of charge to all members listed in the ESA Land Cover Project Office database. To update your information, to subscribe or to be removed from our database, please contact us or visit the newsletter website:

<http://www.gofc-gold.uni-ena.de/sites/letter.html>

If you have any suggestions or recommendations for future contributions in this Newsletter please feel free to contact us.

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