



GRID-Geneva Quarterly Bulletin

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Global Resource Information Database-Geneva

Message from the Regional Coordinator

GRID-Geneva entered 1999 with great hope and anticipation, since we have initiated major plans for expansion of our activities and the personnel to carry them out, along with a re-organisation of the office structure. The staff has been augmented, with consultants engaged for specific database projects and interns beginning work on early-warning activities, which lends a truly dynamic nature to the office, and offers the possibility of significantly broadening the range of projects being implemented.

A wide range of activities are being carried out this year by GRID-Geneva on behalf of its tripartite partnership (UNEP, Swiss Federal Agency for Environment, Forests and Landscape or BUWAL, and the University of Geneva). Prominent on this agenda is work on:

- Strengthening Regional coordination activities, particularly with European GRID centres and other European partner institutions, and preparing UNEP's involvement in such major events as the International Decade for Natural Disaster Reduction (IDNDR) Forum and the UNISPACE-III

Conference.

- Developing an early warning information system through "PREVIEW: Project for Risk Evaluation, Information and Early Warning", in partnership with a wide range of UN and regional organisations, to assist decision-makers and for general public awareness raising purposes.
- Undertaking Mediterranean and Gulf region environmental information capacity building activities in collaboration with regional partners, namely the UNEP Regional Office for Western Asia, CEDARE, and MAP. More information on this topic is provided in this issue.
- A cluster of metadata-related activities on behalf of UNEP, BUWAL, the Canton of Geneva and NASA's Goddard Space Flight Center (GSFC). See this issue for more information.
- An exploratory project, undertaken jointly with the United Nations Institute for Training and Research (UNITAR) and the Sahara and Sahel Observatory (OSS) leading to development of an

Environmental Information System (EIS) for Africa, allowing for on-line viewing, querying and analysis of geo-spatial data and related information.

- A new case study in the series entitled "Use of GIS for Conflict Prevention and Resolution" covering the Nile River basin, and development/improvement of relevant databases for this region.

As a UNEP centre conducting active outreach, GRID-Geneva looks forward to fostering new partnerships and reinforcing existing ones, and to constructive achievements in the field of environmental information networking during 1999. ?

Ron Witt, Regional Coordinator

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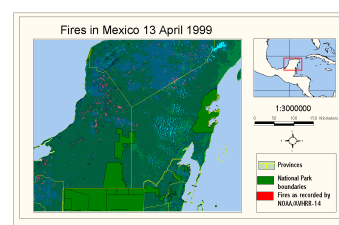
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Wildfires monitoring and early warning activities

Monitoring of major forest and wildfire occurrences, initiated in early 1998 by GRID-Geneva, continued throughout the first quarter of 1999 and has now been expanded to include other environmental disasters such as tropical cyclones and major floods. Weekly reports on the fire situation are prepared, which include maps and images downloaded from the WWW. The weekly reports, as well as a recent study entitled "Wildland Fires

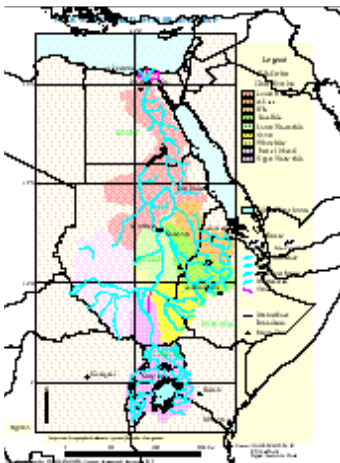
and the Environment: a Global Synthesis", prepared in conjunction with GRID-Sioux Falls and several U.S. government agencies, are available at GRID-Geneva's website.

In a related activity, work is underway to develop a historical database of natural hazard occurrences, from which maps illustrating emerging environmental threats and risks will be derived. This activity is being undertaken in consultation



GRID-Geneva prepares weekly reports on fire outbreaks around the world which may be accessed from our website, (Source NOAA).

with the European Space
(Continued on page 2)



Sustainable management of River Nile waters requires that responsible authorities in the 10 riparian countries have access to reliable information.

Nile 2002 Conference

In the context of on-going GRID-Geneva work on the "Use of GIS for Conflict Prevention and Resolution", Diana Rizzolio participated at the seventh "Nile 2002 Conference" held in Cairo from 15-19 March. Conceived as a series of conferences focusing on the River Nile water resources, the forum provides an informal venue to exchange views and foster co-operation for Nile Basin development. The GRID-Geneva Nile watershed poster was exhibited and a document summarising the project was distributed to participants. Ms.

Rizzolio also attended the Africa High-Level Consultation on World Water Vision in Cairo on 19 March.

An on-line presentation summarising the Nile River Basin project has been prepared. It is comprised of four parts: a database on the Nile River (Contacts, Publications, Conferences, Organizations), the Nile ArcView/ArcInfo Project (Watershed delineation and Water balance), a report including data compilation (bibliography, data) and results (watershed delineation, water

balance) and a Website. These different components of the project are being completed in April, and a formal project proposal for external funding has been drafted and will be finalised with CEDARE staff and UNESCO. ?

Updating the GRID Meta-database Directory

The GRID Meta-data Directory (Mdd) is an electronic catalogue of environmental data sets and institutes. It is an important tool that allows GRID Centres to know "who holds what data and information assets and where". The GRID-Geneva project, which began in late 1998 with support from NASA's Goddard Space Flight Centre (GSFC), aims to update the Mdd and provide inputs for

NASA's Global Change Master Directory (GCMD) for a wider community of users. An updated version of the Mdd on CD-ROM has been prepared and distributed to the 15 GRID centres for their use, input of new meta-data entries and feedback. Later in 1999, harmonised and verified meta-data will be provided to NASA's GSFC for inclusion in the GCMD and thereby offer much wider

accessibility to users. ?



The GRID Meta-data Directory CD-ROM is available on request from GRID-Geneva.

Catalogue of Data Sources (CDS) for Geneva Canton

The Department of Interior, Agriculture, Environment and Energy (DIAEE), Geneva Canton, Switzerland, commissioned GRID-Geneva in early 1999 to develop a Catalogue of Data Sources (CDS). This product is a local version of the European CDS that identifies who has what information in Geneva, in what form, where the data are held as well as how to access them. The project is closely related to a broader one to develop a CDS at the national level for Switzerland and which is being carried out by GRID-Geneva on

behalf of BUWAL.

An inventory of existing data sources has been prepared and consultations are underway with information suppliers to verify their accuracy. This phase is scheduled for completion by late May 1999. An on-line version of the finalised Geneva-CDS will be placed on the Canton of Geneva's Intranet web-site. ?

Wildfires

(Continued from page 1)

Agency (ESA), Food and Agriculture Organisation (FAO), IDNDR and the Global Fire Monitoring Centre (GFMC). Some of the more specific aims of this project include: (i) developing an interdisciplinary network of partners; (ii) research on Early Warning system models; (iii) updating existing global databases and creating new layers; and (iv) assuring quick diffusion of products to users. ?

Mediterranean/West Asian Activities

In collaboration with the Centre for Environment and Development in the Arab Region and Europe (CEDARE) in Cairo, a joint proposal is being prepared for capacity building and data/information management activities between GRID-Geneva and the countries of the Eastern Mediterranean region. One specific project will aim to map marine pollution from land-based pollution sources along the coast of Lebanon, using remote sensing data and GIS techniques. Other potential

partners in the project are UNEP's Mediterranean Action Plan (MAP) in Athens and the Government of Lebanon.

Before embarking on the project, the main preparatory activities include an exploration of the potential interest of the different parties and their specific inputs, and a needs assessment for the study. Other activities include a review of existing information on the use of satellite imagery for detecting

marine pollution, as well as a review of different satellite products in order to develop the methodology of work. ?



Satellite imagery provides an invaluable tool in monitoring land based sources of marine pollution in the Eastern Mediterranean region. Source: SeaWiFS project, 1998

Environmental Information System on the Internet for Africa

In January 1999, GRID-Geneva and UNITAR launched a project to facilitate access to dynamic maps through the medium of the Internet, thereby providing opportunities to the remote user to consult and analyze environmental information. The project also offers map publishing services on the WWW using Internet Map Server (IMS) technology to ensure timely and efficient information provision to decision-makers, the academic community and general users around the world. In this

endeavor, the project draws upon GRID's data set archive as well as other sources of information to assess various environmental problems, particularly those related to drought and desertification in Africa.

The first phase of the project has been devoted to developing the program application, called Africa "GISWeb", which is used to create dynamic maps and build related databases. Before uploading to the

Internet, the Africa GISWeb will be made available in CD-ROM format and distributed to users not having access to the WWW. ?

Reconstruction of Past Human Migrations from Environmental and Genetic Data

Geographic distances calculated in terms of approximate length of migratory movements, explain a substantial part of the genetic diversity of human populations. Typically people visualise travelling distances in "straight-lines", whereas the actual routes followed by migrants are influenced by topography and environmental conditions.

The objective of this project is to study the impact of present and past environmental variables on the genetic diversity of human populations by comparing the spread of Palaeolithic human

populations with present population distribution. On the basis of geo-referenced data sets, least-cost migrations will be simulated within a GIS framework. Genetic databases will also be used to help validate the models. Migration simulations with other animal species, and dispersion studies of genetic and vector-borne diseases may also be included for comparative purposes.

This project is one of several studies undertaken by post-graduate students from the University of Geneva in collaboration with GRID. It is funded by the Swiss National Research Foundation, and is carried out as a PhD thesis by Nicolas Ray under the

co-supervision of Dr. Jean-Michel Jaquet. It will draw on GRID's varied data set holdings, networks and GIS experience. Apart from its academic interest, the project also addresses the practical question of the role of environmental conditions in determining population migration patterns. ?

Global Resource Information Database-Geneva

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Calendar of Major Events & Missions Planned (April – June '99)

15-16 April

Working Group Meeting on Establishment of an Electronic 'Warehouse' of Geo-referenced Environment and Health Data, World Health Organisation, Bilthoven, Netherlands.

16-23 April

Mission to Agadir, Morocco, on use of GIS for waste management.

23 April

Mission to FAO on early warning system development and technical cooperation activities, Rome, Italy.

3-4 May

Earthwatch Working Party Five Meeting, Geneva, Switzerland.

1-7 May

Mission to the Gulf Region, Bahrain and Kuwait.

20 May

Mission to Global Fire Monitoring Centre (GFMC), Freiburg, Germany.

16-18 June 1999

WHO Ministerial Conference on Environment and Health London, United Kingdom.

22 June 1999

Interim Meeting of the GRID-Geneva Advisory Board. Geneva, Switzerland.

New Staff and Visiting Scientists

Ms. B. Bierhuizen; Junior Professional Officer (JPO) for Mediterranean GIS, remote sensing and capacity building activities, entry-on-duty 22 February.

Ms. P. Chapuis; Intern for Early Warning/drought modelling (half-time); entry-on-duty 1 April.

Mrs. D. Cataldi and Y. Guigoz; Interns for Early Warning/fire modelling (half-time); entry-on-duty 1 May.

Mr. C. Munoz; consultant for "EIS-Africa on-line" project

with UNITAR; entry-on-duty 1 January.

Mr. H. Partow; Information Officer (half-time); entry-on-duty 1 April.

Mr. J.-P. Richard; consultant on the Swiss CDS and Alpine CDS and Indicators project with BUWAL; entry-on-duty 1 April.

Ms. D. Rizzolio; Intern for Nile River Basin study; entry-on-duty 1 January. The GRID-Geneva website received over 11,000 visitors for the period January to March 1999.

Recent Publications and Other Products

Report of the European GRID Centres 1998 Meeting

The report of the "Euro-GRID 98" Meeting held at the GEC and sponsored by GRID-Geneva in November 1998 was completed in January of this year. Copies are available on request to the Regional Coordinator.

Wildland Fires and the Environment: a global synthesis

A new report released by GRID-Geneva and partner institutions providing an overview of the causes, impacts and some potential means for the international community to respond to widespread forest and wild fires. The report was officially launched during UNEP's 20th Governing Council Meeting in February 1999.

Maps and Posters

- ◆ UNEP in the European Region
- ◆ The European Region of UNEP – Physical Features and Surrounding Lands
- ◆ Nile River Basin Project poster and maps

Other Products

- ◆ Updated version of the GRID Meta-data Directory (Mdd) on CD-ROM.

Project Proposals Prepared/in Progress

- ◆ Extension of UNEP/DEIA&EW's ENRIN capacity building activities to the Mediterranean/West Asia Region (in collaboration with CEDARE)
- ◆ Project for Risk Evaluation, Information and Early Warning, "PREVIEW" in conjunction with UN agencies and other partners.
- ◆ Proposal for GRID-Geneva's participation in the University of Geneva's "pole of research for environment and sustainable development".
- ◆ Early-warning indicators for fresh water-related environmental conflicts.
- ◆ Geographic Information Systems (GIS) for urban waste management in collaboration with the Secretariat of the Basel Convention (SBC).

GRID-Geneva Website

New services on the website include the Biodiversity-related Clearing House Mechanism development site for BUWAL, and the first version of the Cities' State-of-Environment on Internet (SoEI) for Geneva. A number of new publications and maps on global forests and wildfires, and the Nile River Basin study are now also available on-line. ?

Visit the GRID-Geneva website at:
<http://www.grid.unep.ch/>