



## UN Global Environment Monitoring System - Water Programme

December 2004

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### Good News

- New Youth Initiative: Living on the Edge with UNEP's Regional Office for North America in Washington and the Steven's Institute
- Ongoing collaboration with UNESCO-ISI offers potential for building a coordinated sediment quality database
- Two new co-op students are helping with work on database maintenance, data integrity and data analysis.

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## Results: Great Water Quality Data Drive Online

GEMStat: a new global water quality online database— a key result from the June call to action for data

To mark World Environment Day 2004, we launched "The Great Water Quality Data Drive," designed to strengthen the scientific basis for global and regional water assessments, indicators and early warning.

GEMS/Water's mandate is to collect data and information on inland water quality for international assessments and reports. Our water quality data cover both surface and groundwater resources. However, there are many gaps that need to be filled, especially in terms of geo-spatial and temporal coverage.

Water quality experts and stakeholders from around the world responded with zeal. More than 30 people replied, from institutes and agencies, to

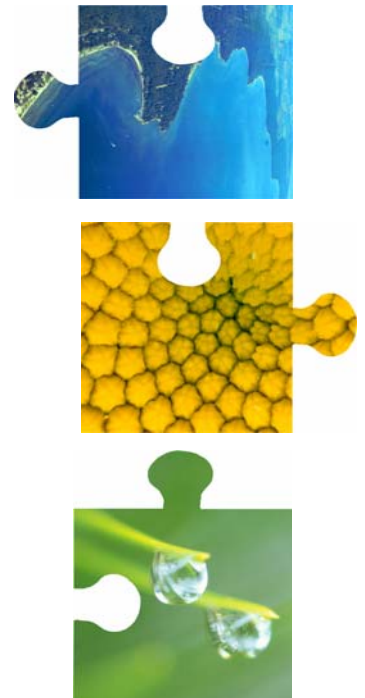
individuals. Several agencies have expressed interest in joint projects, and all suggestions are being followed up. There has been encouraging interest expressed at sub-national levels. The amount of awareness and information generated was encouraging and appreciated.

The main results of the "Great Water Quality Data Drive" were:

1. www.GEMStat.org— a new searchable database of global water quality data and statistics
2. new data and information sources, such as metadata, BOD, pathogens, POPs, nitrogen and phosphorus, suspended solids and sediment quality
3. renewed focus on groundwater data and monitoring as a regional and global priority
4. integration of alternate technology: from indigenous knowledge to remote sensing.

These four results will serve to strengthen our data warehouse, which contains over two million data points of over 100 pa-

*(Continued on page 4)*



## Harmonizing Water Quality Data Reporting

How can the plethora of requests for data and reporting be handled more effectively?

GEMS/Water-Belgium focal point provides some answers.

There is a number of international environmental reporting processes taking place at sub-regional, regional and global levels, calling for water quality data submissions. For example, UNSD, UNEP, UN-WWAP, the CBD, OECD, EU, and many

regional and basin treaties include provisions for assessments and reporting. These reports are important tools for tracking progress, policy evaluation, and for informing the general public.

The trouble is, the number of reports and processes brings a heavy reporting burden to national governments who are responsible for submitting water quality data and information to each report. This burden can

be particularly great for developing countries, small islands, and economies in transition.

To help cope with multiple reporting requirements, our Belgium NFP has developed a synthesized work sheet for data collection, as a tool to manage data reporting. The UN Statistical Division is also helping by holding a work session on water statistics in June 2005.

For details, contact Sabrina Barker. 💧



[www.biodiv.org](http://www.biodiv.org)

## Biodiversity Convention Works on Water Indicators

The Convention on Biological Diversity (CBD) convened a trio of working groups between 18 and 27 October in Montreal, Canada.

To implement a Conference of the Parties decision, the meetings were designed to cover the “2010 Biodiversity target” including indicators and targets for water ecosystems.

A key issue under discussion included draft proposals for outcome-oriented targets for the programme of work on inland water ecosystems and marine and coastal biodiversity.

Suitable indicators and datasets will be considered for use in the Global Biodiversity Outlook 2006.

UNEP-GEMS/Water was invited to chair one of the sessions. It also will provide up-to-date information on the water quality indicators selected (BOD, NO<sub>3</sub>+NO<sub>2</sub>-N and SS) and graphical presentations. It will work with the CBD Secretariat to develop text that more strongly links water quality to biodiversity. Also, the meeting asked us to consider creating a water quality index of the three

indicators by, for example, setting start values in 1977 and calculating decadal changes relative to this for each indicator. The mean of the sum of the calculated values for each time period could then be shown as “changes in water quality.”

Participants included CITES, Ramsar, FAO, UNESCO, UNEP-WCMC, FAO, IUCN, WWF, EEA, CGIAR, and other agencies and governments.

For additional information, contact Richard Roberts. ♦

*More about UNEP-IETC at [marshlands.unep.or.jp/](http://marshlands.unep.or.jp/) and ILEC at [www.ilec.or.jp/](http://www.ilec.or.jp/)*

Important opportunities for environmental cooperation and peace

The Iraqi Mesopotamian Marshlands constitute the largest wetland ecosystem in Western Asia. The global community recognizes the ecological and cultural importance of the Marshes, as well as the need to restore them.

In response, UNEP International Environmental Technology Centre (IETC) has prepared

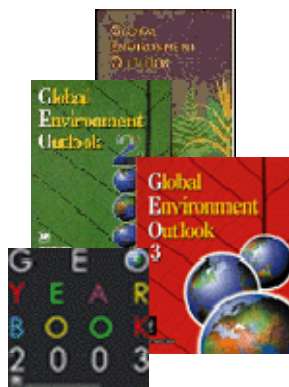
a series, “Training Courses on Water Quality and Wetlands Management,” in cooperation with the International Lakes Environment Committee (ILEC). One course is being held 6-17 December 2004 in Shiga, Japan. Participants included 28 officials from the Iraqi Ministry of Environment, Ministry of Natural Resources, Ministry of Water Management, provincial and local officials and one NGO.

UNEP-GEMS/Water was in-

invited to give the opening lecture on International Water Governance, followed by a second session on Global Water Quality Monitoring and Assessment. The presentations were well received, including a demonstration of the new GEMStat website.

GEMS/Water welcomes renewed participation by Iraq in core data activities.

For further details, contact Sabrina Barker. ♦



[geodata.grid.unep.ch](http://geodata.grid.unep.ch)

## UNEP GEO Design Group and Data Portal

Strengthening the science behind GEO-4

UNEP is responsible for a publishing global state of the environment reports on a periodic basis. The main report is the Global Environment Outlook (GEO). In November, UNEP-DEWA convened a design group for GEO-4, which is to be published in 2007, as well as the annual GEO Yearbook.

More work needs to be done to produce better datasets on emerging environmental issues and trends. To help fill this need, DEWA-Europe maintains the GEO Data Portal.

The online database for GEO Data Portal holds more than 400 variables, on themes such as freshwater, population, forests, emissions, climate, disasters, health and GDP.

GEMS/Water provides datasets and information on water quality to both the Data Portal and the GEO reports.

There is also a youth-oriented state of the environment report, Pachamama, which covers freshwater quality issues.

Contact Sabrina Barker for information or leads. ♦

## Strategic Monitoring Guidelines from UN ECE

### Europe leads with monitoring guideline development

A new strategy was tabled at the 5<sup>th</sup> UN Economic Commission for Europe (ECE) Water Convention's Working Group on Monitoring and Assessment (WGMA) meeting held in St. Petersburg, in October 2004. The scope covers all types of transboundary waters (rivers, lakes and groundwater).

The main objective is to show the key principles of monitoring and assessment of transboundary waters to people responsible for establishing and carrying out official co-operation between riparian countries.

UNEP-GEMS/Water attended the working group with a view to providing input on water quality monitoring and assessment from a multilateral perspective.

The strategic guidelines present a common view of the main principles applied to joint monitoring of transboundary watercourses. Although the strategy is not legally binding, the Meeting of Parties when adopting it in Berlin, in 2006, will strongly recommend it for the entire UNECE region.

The guidelines are linked to other European monitoring systems, as well as to our opera-

tions. They allow a step-by-step approach, taking into account the EU Water Framework Directive, with more emphasis on institutional arrangements, and have an integrated basin approach to fresh and coastal waters. Extreme events, climate change effects, as well as human health, are also to be covered.

The Finish Environment Institute, as chair of the process, is leading the development of the guidelines.

For more information, contact Sabrina Barker. ♦



[www.unece.org](http://www.unece.org)

## New MoU with UNESCO-IHP

UNESCO's International Hydrology Programme new ecohydrology group

GEMS/Water attended the 29<sup>th</sup> SIL Congress which took place in Lahti, Finland from August 8 - 14<sup>th</sup> at the request of UNESCO IHP Ecohydrology. Two main tasks were to organize a session on ecohydrology; and hold discussions with SIL officials on how UNESCO's Ecohydrology Project and SIL could collaborate on new activities. With the Polish Academy of Sciences,

Warsaw, a session entitled, 'Ecohydrology - a new paradigm for integrated water resources management,' was convened. Richard Robarts was also a co-author with Marley Waiser of Environment Canada on a paper entitled, 'The relationship between hydrology, climate and DOC concentrations in northern prairie wetlands' in the session.

Consultations with SIL determined that there should be a new SIL working group on ecohydrology. The result was a pro-

posal to form this working group, which was presented to the SIL International Committee, made up of the national representatives from each country, where a vote was taken and the proposal was accepted. The formation of a new working group on ecohydrology was announced at the Second General Assembly of SIL on August 14<sup>th</sup>.

For details, contact Richard Robarts, co-editor, SILnews. ♦

*More about  
UNESCO IHP  
at  
[portal.unesco.org](http://portal.unesco.org)*

## Country Participation Update

Governments, universities and institutes contribute to improve global data coverage

GEMS/Water relies on voluntary information exchanges with universities, governments and other data sources. A range of water quality data are submitted on an ongoing basis.

Over the past few months, several countries have been working to increase their submis-

sions to the global database. These include: Canada, Cote D'Ivoire, Mongolia, Sri Lanka, USA, and also Lake Victoria.

Several additional leads for country participation are currently being explored.

Links between national water quality data sources and our global database will ensure that knowledge about clean water improves for both humans and

ecosystems.

To promote your country's participation in data-related activities, to name a National Focal Point, or for more information, contact Richard Robarts. ♦



Global network covers 1,400 stations with over two million records and 100 water quality parameters.

### GEMS · Water Quality News

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Established in 1978, the UNEP GEMS/Water Programme is the primary source for global water quality data. It is a multi-faceted water science centre oriented towards building knowledge on inland quality issues worldwide. Key activities include monitoring, assessment and capacity building. The twin goals of the programme are to improve water quality monitoring and assessment capacity in participating countries, and to determine the state and trends of regional and global water quality.

These goals are implemented through the GEMS/Water data bank, with water quality data from more than 100 countries, and over two million entries for lakes, reservoirs, rivers and groundwater systems. GEMS/Water activities add value to country-level data by creating global and regional water quality assessments. The programme also carries out assessments on a range of water quality issues and methodologies. GEMS/Water data have been used by many organizations, including the UN system and universities around the world.

GEMS/Water is part of the Division of Early Warning and Assessment (DEWA), United Nations Environment Programme, (UNEP).



## Global Water Quality Database Online

(Continued from page 1)  
parameters covering nutrients, organics, metals, ions and is expanding to address emerging issues.

Data from all types of inland aquatic environments are important for GEMS/Water. These include surface waters such as lakes, reservoirs, streams, rivers, estuaries, and wetlands; and groundwater aquifers. Monitoring stations include baseline, impact, trend and flux stations.

All data received from the "Data Drive," and from other data submission initiatives are subject to the standard QA/QC review processes. The "Data Drive" was implemented over the past six months, closing in

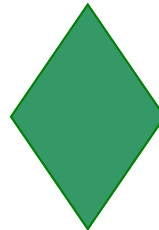
December 2004. Salient outcomes will be reported, as appropriate, to the upcoming UNEP GC23/GMEF followed by CSD-13.

Feedback from both data providers and data users would be invaluable to future developments of GEMStat website functionality.

Please visit [www.gemstat.org](http://www.gemstat.org), which was launched for testing in early December.

For more information on the Great Water Quality Data Drive, contact Sabrina Barker.

For a more information about GEMStat and data warehousing, contact Kelly Hodgson. 💧



## Upcoming...

- 23<sup>rd</sup> Governing Council of UNEP— February 2005
- 2<sup>nd</sup> Technical Advisory Group meeting— spring 2005
- Focus on indicators and index development
- Laboratory Performance Evaluation Study No. 6

