



Land-Ocean Interactions in the Coastal Zone



INPRINT

- Nutrient fluxes, Eutrophication, Algalblooms; LOICZ elaborates on processes, links and advanced modeling of these still challenging links.
- The recent US national estuarine eutrophication assessment looks into ecosystem change applying ASSETS and Typology approaches.
- Headways are made in the governance baseline assessments with IAI and IHDP supporting, and a certification program for practitioners takes off in Latin America partnering with EcoCoastas.
- IASC and LOICZ embark on transdisciplinary coastal change assessment in the Arctic – Humans and Environment – what's at stake?
- SCOPE touches upon the critical role of an “exploding” bio economy – the link between biofuel and water quality.
- BACC – A Regional Climate Change Assessment for the Baltic Sea Basin is published. The assessment is an example for a type of urgently needed reports helping to put global climate change into regional context.

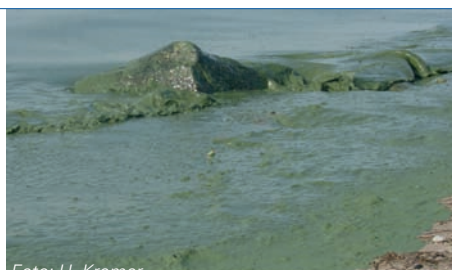


Foto: H. Kremer

The southern Baltic coast is subject to regular blooms of blue-algae (cyanobacteria) affecting coastal tourism (Coast of Mecklenburg Vorpommern, Germany, August 2006).



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Scientific Highlights

Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change, National Estuarine Eutrophication Assessment

The recently released report "Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change" (Bricker et al., 2007) is an update to the 1999 National Estuarine Eutrophication Assessment (Bricker et al., 1999) that examines conditions in the early 2000s and the changes that have occurred since the early 1990s, the timeframe of the 1999 report. One of the main aims of these assessments is to provide the basis for development of a national strategy to limit nutrient enrichment problems affecting US estuarine and coastal water bodies. The 2007 assessment provides context for recent and planned activities designed to address these issues such as the Clean Water Act, the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 (reauthorized in 2004; P.L.105-383), the multi-agency National Coastal Condition report and the Gulf of Mexico Alliance Governors' Action Plan. It should be noted, that eutrophication problems are not limited to US coastal waters. These problems are global in scope and have led to legislative actions elsewhere also, such as the European Union Water Framework Directive, Urban Waste Water Treatment Directive, and Nitrates Directive (http://www.eutro.org/documents/nitrates_directive.pdf) and the People's Republic of China Law on Prevention and Control of Water Pollution 1996/05/15 and its implementation provisions 2000/03/20. Comparison of eutrophication impacts and successful management measures in US and international coastal waterbodies in the 2007 report highlights the scope and magnitude of these problems and the knowledge that with effort, these problems can be reversed. This is a brief summary of results of the 2007 National Estuarine Eutrophication Assessment report (additional results are included in the full report, see <http://ian.umces.edu/nea>).

Assessment Method

The National Estuarine Eutrophic Assessment method and modifications, called Assessment of Estuarine Trophic Status (hereafter called NEEA/ASSETS) have been well described and will be only briefly summarized here. Details of the method can be found in Bricker et al. (1999, 2003, 2007), Ferreira et al., (2007) and Scavia and Bricker (2006). Discussion of comparison with other assessment methods can be found in Bricker et al. (2006) and Xiao et al. (2006). ASSETS is also considered to contribute into the portfolio of biogeochemical assessment approaches. One of the most significant modifications in the recent assessment was the development of an online survey tool to collect data and information for the 141 estuaries included in the study. Once data is entered

by the investigator, assessment results are automatically generated along with graphics of results which can be downloaded from the site. The online survey also allows access to original data sources. This tool allows investigators to share data and information effectively, providing a common language by which they can communicate with one another in a standardized manner and will facilitate the updates of the assessment in the future (every two to five years). A stand alone assessment tool using the NEEA/ASSETS method is also now available at: www.eutro.org/register

The NEEA/ASSETS assessment method evaluates eutrophication by examining influencing factors overall eutrophic condition and future outlook, and the results are then combined into a single overall rating. A completeness and reliability of the overall eutrophic condition rating assessment is based on the temporal and spatial availability of data. In this way, an assessment can be made with minimal data that provides some insight to the condition within the system:

- **Pressure-Influencing Factors (IF)** are determined by a matrix that combines the magnitude of nutrient inputs from the watershed with a measure of the system's ability to dilute or flush the nutrient inputs (i.e., susceptibility). The magnitude of loads is determined by a model that compares anthropogenic loading, from monitoring data or model estimated, with natural background concentrations. The model factors in possible oceanic sources providing insight to the success of potential watershed-based management measures.
- **State-Overall Eutrophic Condition (OEC)** is based on five variables that are divided into two groups: 1) primary symptoms that indicate early stages of eutrophication (chlorophyll a (Chl) and macroalgae); and 2) secondary symptoms, indicative of well-developed problems (low dissolved oxygen (DO), losses of submerged aquatic vegetation (SAV), and occurrence of nuisance and/or toxic algal blooms (HABs); Figure 1). An area-weighted-estuary-wide value for each variable is determined based on concentration, spatial coverage, and frequency of occurrence of problem conditions. The overall OEC, falling into one of five categories (i.e. High, Moderate High, Moderate, Moderate Low or Low) is determined by a matrix that combines the average score of primary symptoms and the highest score (worst impact) of the three secondary symptoms, giving the secondary symptoms a higher weighting in a precautionary approach.

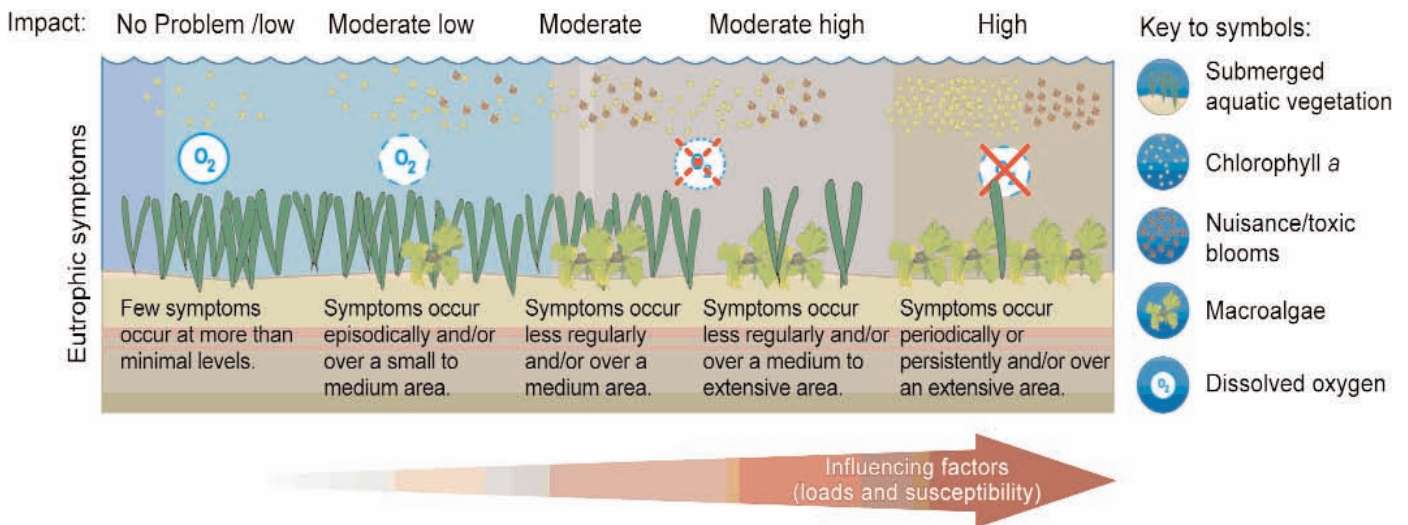


Figure 2: Conceptualization of the relationship between influencing factors (nitrogen load and susceptibility) and associated eutrophic symptoms.

- **The expected Response-Future Outlook (FO) or future condition** (worsen, no change, improve) is determined by combining susceptibility of the system with expected changes in nutrient loads. Predictions of future loading (increase, decrease, unchanged) are based on predicted changes in population and watershed uses, mitigated by planned management actions.
- **ASSETS Synthesis:** IF, OEC and FO are then combined into a single rating for the estuary resulting in a rating of: Bad, Poor, Moderate, Good or High.

Key Assessment Results

Influencing Factors: The majority of US estuaries assessed were highly influenced by human-related activities with high nitrogen loads compared to the estuary's dilution or flushing capacity. High nitrogen loads were largely attributed to the influence of expanding and dense coastal human populations. Influencing factor ratings were high along the mid and south Atlantic and Gulf of Mexico coasts but were low in the North Atlantic, and mostly unknown in the Pacific region.

Overall Eutrophic Condition: Eutrophication is a widespread problem, with the majority of assessed estuaries showing signs of eutrophication – 65 % of the assessed systems, representing 78 % of assessed estuarine area, having eutrophic conditions rated as moderate to high. The most common symptom of eutrophication was high spatial coverage and frequency of elevated Chl (phytoplankton) – 50% of the assessed estuaries, representing 72 % of assessed area, had a high Chl rating. Most estuaries also exhibited at least one other moderate to high symptom expression in addition to chlorophyll a.

There were no regional or national patterns, highly eutrophic conditions were found in systems along all coastlines. However, the mid-Atlantic region, the region of highest population density, was the most impacted overall. The North Atlantic region was the least impacted region with no estuaries rated as having a high overall eutrophic condition most likely the result of low population density and high tidal flushing (Figure 2).

Direct comparison of eutrophic status between assessments was impeded by reduced data availability in 2004 (70 % of systems in 2004 vs. 88 % in 1990s) due in part to changes in the data collection method; the online survey for the 2004 data versus use of site visits and workshops in addition to a survey for the 1999 assessment. Change analysis using only assessed systems showed that conditions have mostly remained the same since the early 1990s (32 systems, 77 % assessed area). Changes were observed in smaller systems; 13 systems (9 % assessed area) improved and 13 systems (14 % assessed area) worsened.

Figure 2a:
A high chlorophyll a rating was observed in a large number of the Nation's estuaries.

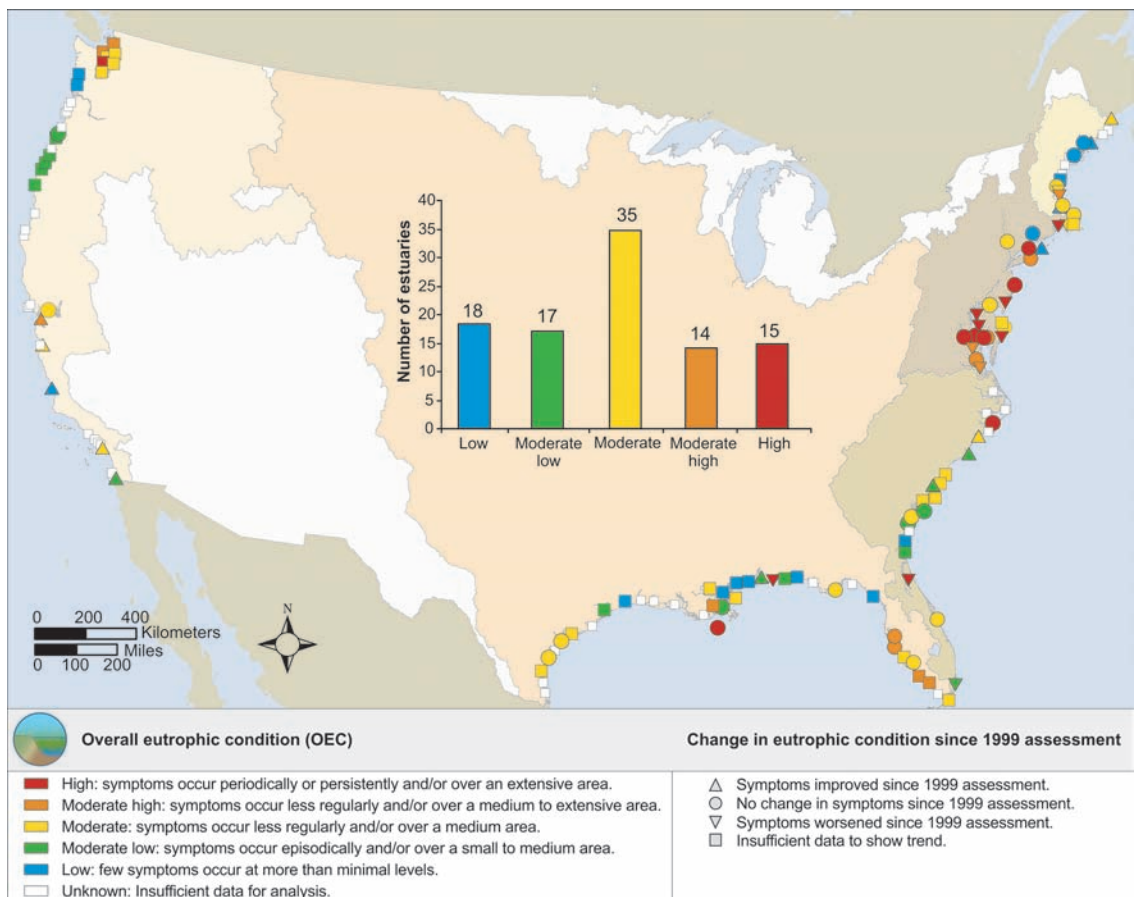
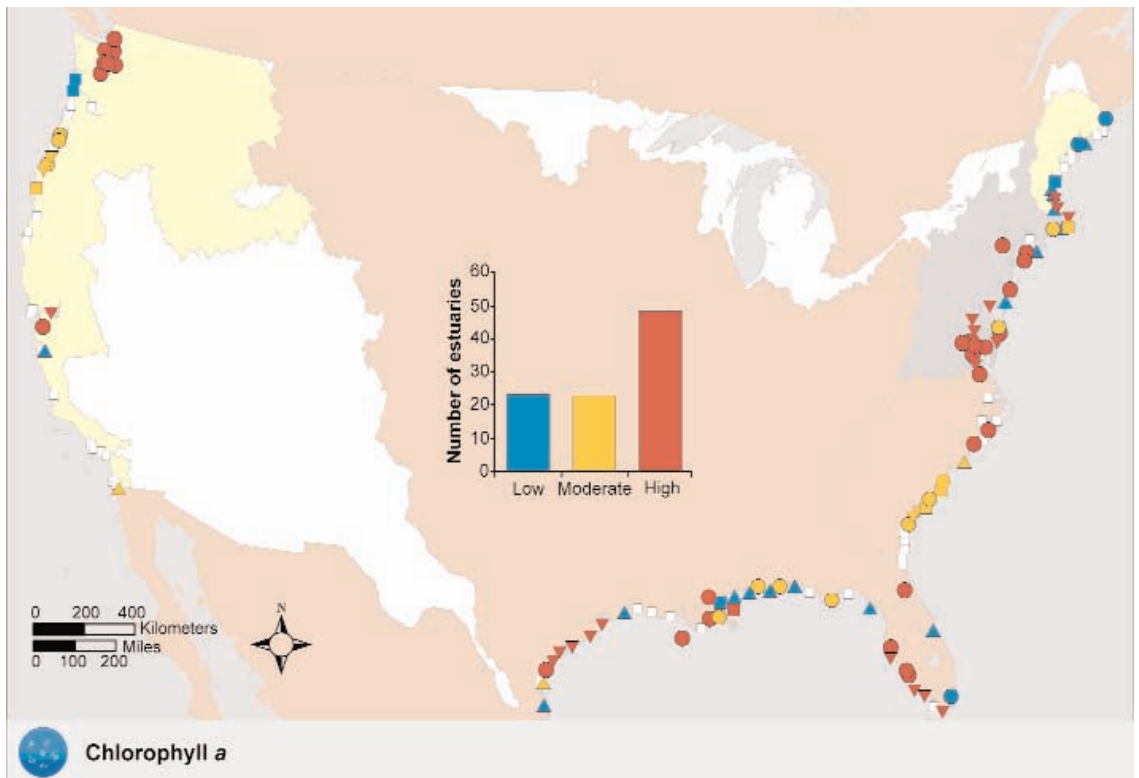


Figure 2b:
Overall eutrophic condition ratings were geographically variable.

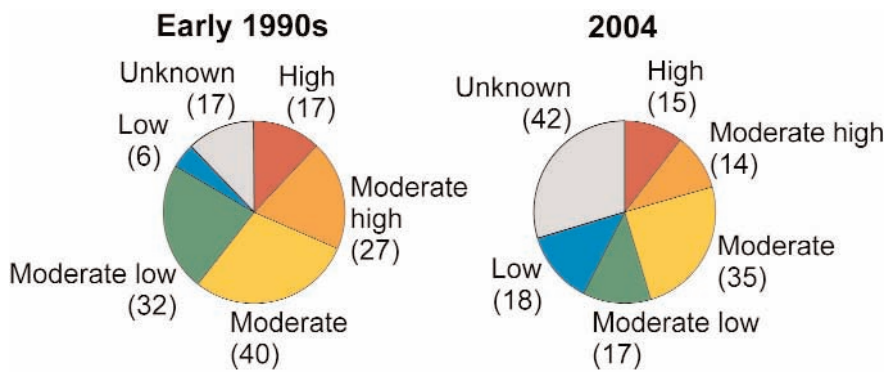


Figure 3:
Number of estuaries in each eutrophication category in the early 1990s (1999 assessment) and 2004 (2007 assessment).

Future Outlook: Survey participants predicted worsening conditions by 2020 in 65 % of estuaries and improvements in 20 % of estuaries.

National and International Case Studies: Several national and international case studies were presented to illustrate the various impacts of eutrophication and share information about successful management efforts that reduced observed problems (Figure 4). Themes of the case studies include:

- Deteriorating dissolved oxygen conditions occurring in a well mixed coastal waterway (Skidaway River Estuary).
- Seagrass recovery after historic losses due to nitrogen load reductions (Tampa Bay).
- Rapid large scale increase in eutrophic symptoms (nuisance/toxic blooms, chlorophyll a, and dissolved oxygen) have occurred (Changjiang Estuary, China).
- Sewage plume mapping tracks nutrient reductions (Moreton Bay, Australia).
- Diversion of sewage effluent to offshore discharge reduced eutrophic symptoms (Boston Harbor).
- Predictable large scale hypoxia from nation's largest drainage basin due to nutrient loads (Mississippi-Atchafalaya Plume).

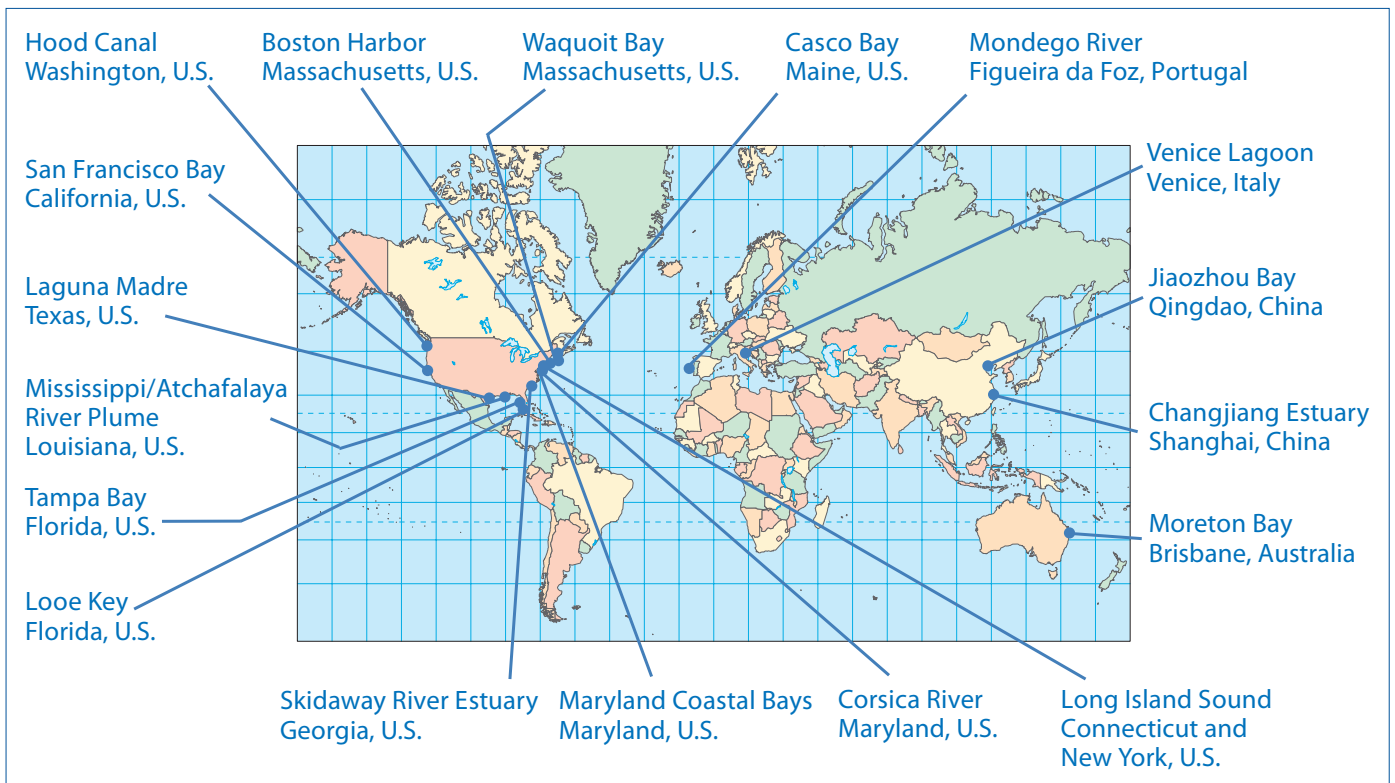


Figure 4: National and International Case Study locations.

Conclusion and Recommendations

Reducing eutrophic conditions in estuaries requires coordinated and integrated action that balances management action, efficient monitoring to assess the effectiveness of the management, targeted research, and a communication campaign aimed at engaging the broader community. Major recommendations by participants include:

- **Method improvements:** explore linkages with EPA's National Coastal Assessment; continue development of indicators of socioeconomic/human-use impacts for the nation by extending the present approach from the northeast to other coastlines:
<http://ccma.nos.noaa.gov/news/feature/GulfofMaine.html>
continue development of the type classification scheme for the nation's estuaries by testing the DICSO typology results with water quality data:
<http://www.loicz.org/products/budget/assets/index.html.en> and improve indicators for evaluating eutrophic condition, especially for submerged aquatic vegetation and macroalgae abundance.
- **Management:** Implement more aggressive action to achieve nutrient reductions for widespread reductions in eutrophic conditions. Notable improvements have been achieved (e.g., Tampa Bay and Boston Harbor) with aggressive management intervention, but these are isolated cases.
- **Monitoring:** Capitalize on technology (e.g., observing systems, remote sensing) to improve comprehensive assessment of eutrophication in a coordinated and timely fashion. Future national assessments would benefit from rigorous, easily accessible data (both in situ and remotely sensed) provided on the web by local and regional assessment programs.
- **Research:** Focus on improving monitoring and assessment of eutrophication, resolving uncertainties, and establishing criteria and thresholds. In particular, macroalgae and submerged aquatic vegetation indicators should be improved. Elucidate potential and evaluate current management options.

LOICZ and the EU Integrated Project SPICOSA

LOICZ and the EU Integrated Project SPICOSA are seeking a closer and more synergistic affiliation.

This project has a methodological objective of generating a "Systems Approach Framework" (SAF) designed to deliver prognostic assessments of policy options for the sustainable management of coastal zones. The SAF is based on an adaptation of the Systems Approach that incorporates the ecological, social, and economic dimensions of the coastal zones together with emerging concepts on system complexity. The framework is being

- **Communication:** Engage resource managers, researchers, policy makers, and the community with frequent assessment updates at local, regional, and national levels. Environmental report cards, illustrative graphics, and maps, will foster interest and inform, and empower the public to support critical management action.

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tested throughout the Europe Region over a diverse set of eighteen coasts zones, each of which differs in geomorphology, environmental conditions, cultures, and human activities. The SAF is deliberately designed to be self-evolving in order to accommodate new methodologies and to address new challenges arising through Europe's priority of pursuing Sustainable Development.

More information can be found at www.spicosa.eu and interim results will be presented in the next issue of INPRINT.



Priority Topics

PRIORITY TOPIC 1

Linking social and ecological systems in the coastal zone

Berlin Conference on the Human Dimensions of Global Environmental Change

Long-Term Policies: Governing Social-Ecological Change

The IHDP conference "Governing Social-Ecological Change" at Berlin Free University (FUB) assembled 400 participants, accepted roughly 200 abstracts, and was held in up to eight parallel sessions. The conference was mainly financed by the German Federal Ministry of Education and Research (BMBF). Two LOICZ SSC members, Bernhard Glaeser and Marion Glaser; both chaired specific individual sessions.

One of the semi-plenary sessions was devoted to social-ecological research, a German language program which over the years received a 70 million euros grant from BMBF. The program was presented to this international audience by Thomas Jahn, one of the scientific "fathers" of this research style, stressing problem formulation and the integrative process of the individual research projects. Jahn underlined that two attributes were still missing or at least not prominently included: the systems approach and transdisciplinarity, meaning the inclusion of non-scientific stakeholders. This is where the by far more modest LOICZ endeavors on social-ecological systems (SES) may find their niche; LOICZ aims to stress precisely the coupled systems aspect in its approach and here as well as in Priority Topic 3 (Governance) strives to bring in and interact with non science practitioners.

Additional topics in the conference accommodated issues of priority interest in the IHDP community. Former IDGEC (Institutional Dimensions of Global Environmental Change) representatives, Oran Young and Amory Lovins, featured two video life lectures.

Of particular interest to LOICZ and embedded in the IHDP New Science Plan are some of IHDP's new focal areas "Who are the agents of Earth systems governance? What are the sources of such agents?" They were presented by Frank Biermann complemented by Joyeeta Gupta and Louis Lebel. The outline to this new long-term IHDP research program build on the findings of IDGEC. Earth system governance is one of the new pillars in the future strategy of the IHDP – see full strategy under:

<http://www.ihdp.unu.edu/file/public/IHDP+Update+1.2008+Complete?menu=1>

The program in its final stage will be presented at the IHDP Open Meeting in Delhi, October 2008. The problem of "adaptiveness" will be addressed, describing an approach towards global adaptation governance including social, institutional learning. Crosscutting themes so far are power, knowledge, norms, and scale. The key question is: What is Earth system governance? As a consequence, strategies for Earth system governance and management will be developed.

In comparison, LOICZ through its work on coupled social-ecological system characterization and modeling as well as on linking scientists and practitioners for developing governance baseline studies on regional and global scales takes a rather practical approach to the issue of governance. It is likely to be highly complementary to the IHDP direction which rather concentrates on global scale and has a strong focus on the political sciences.

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PRIORITY TOPIC 2

Assessing and predicting impacts of environmental change on coastal ecosystems

Progress in Providence: Notes from the LOICZ Nutrient Budget Methodology and Applications Workshop, Providence, Rhode Island, November 9–10, 2007

The fall, 2007 meeting of the Coastal and Estuarine Research Federation (CERF), formerly the Estuarine Research Federation (ERF), was held in Providence, Rhode Island in November. It was generally regarded by the participants as a very successful meeting, with broad topical coverage of coastal science and management issues. In particular, the meeting was very rich in sessions related to nutrient fluxes in coastal systems and their watersheds. One session, targeted specifically at budget methodologies and applications, entitled "Nutrient Budgets for Coastal Waters: Methodologies and Applications" included a range of talks on methodological issues and case studies, several of which related directly to LOICZ (abstracts at: www.erf.org).

It is worth noting that the model of using CERF meetings as venues for discussing LOICZ-related topics, either in workshops or special sessions, has proven to be a very good one; CERF and LOICZ share many scientific interests and goals (as well as members) and the synergies realized from participating in the biennial CERF meetings are significant. With this in mind, the LOICZ community should also note that the next CERF meeting is scheduled for November 1–5, 2009 in Portland, Oregon, USA, and the call for workshops and sessions begins 15 May 2008 (see www.erf.org for more information).

Budget Methodology and Applications Workshop

The nutrient budget session at the 2007 CERF meeting mentioned above was a prelude to a workshop which immediately followed the meeting, entitled “Nutrient Budget Methodology and Applications,” with the goal of investigating potential improvements and extensions to LOICZ budgeting methodology, and possible new appli-

cation to coastal management issues. While most of the participants were based in the US, the meeting included scientists from Europe, New Zealand, Brazil and the Philippines, and the experimental use of SKYPE with web-cam to accommodate the tele-presence of a participant from Italy! Participants and their institutions are shown in Table 1.

Table 1: Workshop Participants.

Name	Affiliation
Walter Boynton	Chesapeake Biological Laboratory, University of Maryland, Solomons, USA
Laura David	Marine Science Institute, University of the Philippines, Quezon City, Philippines
Frédéric Gazeau	NIOO-KNAW, Centre for Estuarine and Marine Ecology, Yerseke, The Netherlands
Gianmarco Giordani (via teleconference)	Dipartimento di Scienze Ambientali, Università di Parma, Parma, Italy
Haejin (Jinny) Han	School of Natural Resources, University of Michigan, Ann Arbor, USA
Bongghi Hong	Dept of Ecology and Evolutionary Biology, Cornell University, Ithaca, USA
Bastiaan Knoppers	Departamento de Geoquímica, Universidade Federal Fluminense, Niteroi, Brazil
Karin Limburg	Dept of Environmental and Forest Biology, SUNY-College of Environmental Science and Forestry, Syracuse, USA
Liana McManus	Rosenstiel School of Marine and Atmospheric Science, University of Miami, USA
Don Scavia	School of Natural Resources, University of Michigan, Ann Arbor, USA
Joan Sheldon	Dept. of Marine Sciences, University of Georgia, Athens, GA
Dennis Swaney (organizer)	Dept of Ecology and Evolutionary Biology, Cornell University, Ithaca, USA
Jeremy Testa	University of Maryland Center for Environmental Science, Cambridge, USA
Cathy Wigand	U.S. E.P.A, Atlantic Ecology Division, Narragansett, USA
John Zeldis	National Institute of Water & Atmospheric Research (NIWA), Christchurch, New Zealand

The two-day workshop was structured to elicit individual contributions from participants on day 1 in order to stimulate discussions across the disciplines represented, and collaborative contributions and recommendations for future work, developed in three breakout sessions on day 2, with the following topical areas:

- Budget methodology improvements and extensions.
- New applications of nutrient budgets.
- Tool development.

Following an overview and introduction to LOICZ II by Liana McManus, presentations on day 1 covered a wide range of topics, including:

- Lessons learned from developing budgets in LOICZ I (David).
- Comparisons of LOICZ budgets and other methods for estimating ecosystem metabolism (net ecosystem production and nfixation-denitrification) (Gazeau).

- A modified LOICZ biogeochemical budgeting application for the Sacca di Goro, Italy (Giordani).
- Improving estimates of watershed nitrogen loads to the coast using the Net Anthropogenic Nitrogen (NANI) approach in Great Lakes watersheds (Han).
- Possible points of intersection for LOICZ and its mission to inform sustainable development: fisheries and ecological economics (Limburg).
- Relationships between hypoxic volume and nutrient loading, and simple approaches for modeling hypoxia based on a variant of the Streeter-Phelps equation (Scavia).
- SqueezeBox: A Tool for Creating Flow-Scaled 1-D Box Models of Riverine Estuaries (Sheldon).
- Analysis of long-term water quality of the Patuxent estuary using a multi-compartment model approach (Testa).
- Management Outcomes from LOICZ Biogeochemical Budgeting (Zeldis).



Highlights from Day 2

Budget methodology improvements and extensions

This group addressed LOICZ budget methodology as documented on the budget website (nest.su.se/mnode) and in Gordon et al. (1996), and considered errors, corrections and extensions to the method, with the goal of improving budgeting guidelines for LOICZ II. Among the issues raised and recommendations made, were:

- The need for consistency among 0-, 1-, and 2-D models.
- The need for special handling of negative estuaries, due to the role of evaporation in these systems.
- The desirability to develop built-in error analysis in the methodology (either using first or second order error analysis, or Monte Carlo methods).
- The importance of performing seasonal and non-steady state analyses (where possible) for systems subject to transitional or seasonal variation.
- The need to compare LOICZ models to sophisticated hydrodynamic models in systems where this is possible, to test how well the budget approach evaluates residence time and exchange coefficients.

Tool development

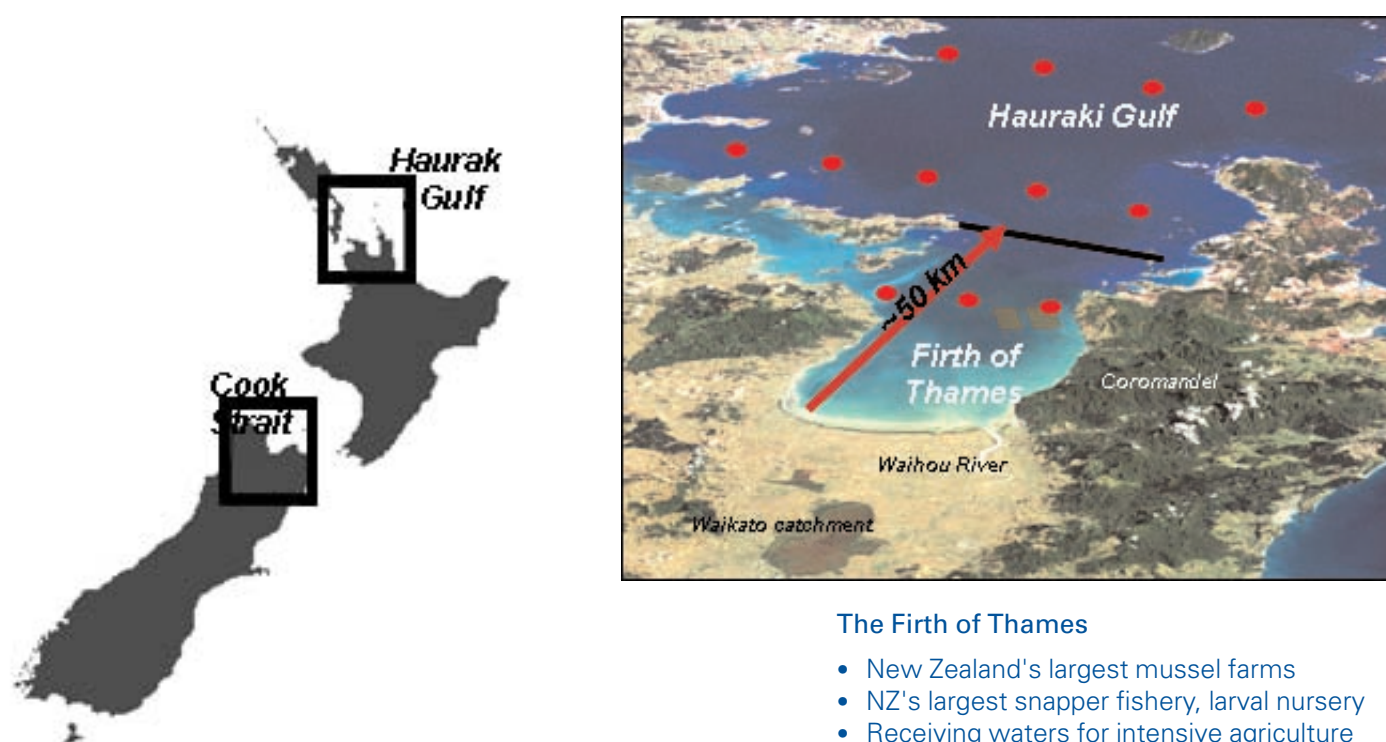
As the LOICZ workshop mantra (“We’re not just budgets anymore!!”) suggests, this group recognized a need for extending the original LOICZ budgeting approach to a broader context. One approach to achieving this is to expand the LOICZ toolbox. Following the lead of LOICZ I, the toolbox should provide an easy-to-use user interface, minimizing difficulties in dissemination and use. Suitable application development platforms include spreadsheets (augmented with VBA programming to facilitate calculations), standalone applications (with source code), or web-based programs. Desired additions to such a new toolbox discussed in this group include:

- Approaches to deal with missing data or other data quality issues in LOICZ budgets (e.g. providing supplemental lookup tables to provide default values or best guesses based on available information, and qualifying this in model estimates; facilitating uncertainty and data “pedigree” analysis, etc).

- Improved user guides and manuals for LOICZ software tools.
- Addition of relatively simple models with low input data requirements for specific purposes beyond nutrient budgets, such as estimating estuarine residence time, watershed nutrient loads, riverine discharge, etc, to provide at least approximate estimates of environmental variables of interest to managers (with uncertainty estimates when possible). Again, depending on data availability the toolbox may suggest appropriate tools (e.g., 3-D circulation model instead of SqueezeBox) that are not included in the toolbox.
- Procedures for facilitating inputs from other datasets and tools, e.g. GIS, by developing protocols that can be used to estimate model inputs. For example, if the user has a watershed boundary map, a protocol for overlaying it onto a land use map to calculate agricultural area. Examples of such protocols for some GIS procedures are online at:
http://www.eeb.cornell.edu/biogeo/nanc/GIS_methods/GIS_methods.htm

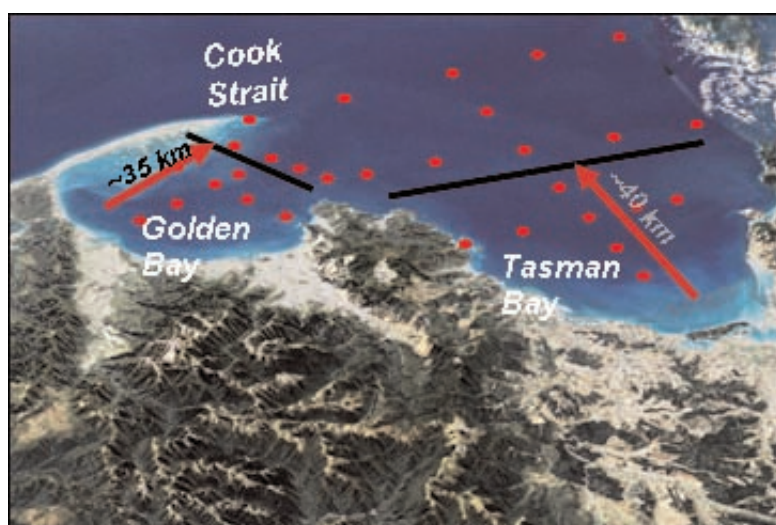
Management applications arising from LOICZ and other mass-balance studies

This group addressed a range of issues of interest to estuarine environmental and resource managers using outputs from mass-balance studies, a few of which we touch on here. Overall, coastal ecosystem information, framed in terms of nutrient budgets and auxiliary descriptive material (i.e. data synthesized to appropriate time and space scales and sufficiently integrated), can contribute toward managing for healthy aquatic resources. Nutrient accounting methods, including budgets, which account for sources and relative sizes of loadings, can help managers and stakeholders evaluate impacts on ecosystems (figs 1–3). Advice on the nature, magnitude, types of loadings, and the position of the coastal system along the continuum of terrestrial to oceanic dominance is useful to the management community. Inter-comparison of nutrient budgets of coastal systems helps to inform managers of “where their system stands” compared to others. Aspects of coastal nutrient fluxes and their balance (e.g. net denitrification) can be placed in the framework of “ecosystem services” to help managers realize the value of their local coastal ecosystem.



The Firth of Thames

- New Zealand's largest mussel farms
- NZ's largest snapper fishery, larval nursery
- Receiving waters for intensive agriculture



Golden and Tasman Bays

- Large and variable scallop fisheries
- Increasing mussel and scallop farming
- National Parks and important wildlife refuges

Figure 1: Locations and ecological features of Firth of Thames and Golden and Tasman Bays in New Zealand, sites of contrasting land use and also significant aquacultural activities. Sampling positions and system boundaries for LOICZ budgets are shown. Nutrient loading to the Firth is catchment-dominated, whereas Golden and Tasman Bays are fertilized by oceanic mixing – important findings for understanding ecosystem services (Zeldis 2008), including riparian management and sustainability of shellfish and finfish aquaculture.

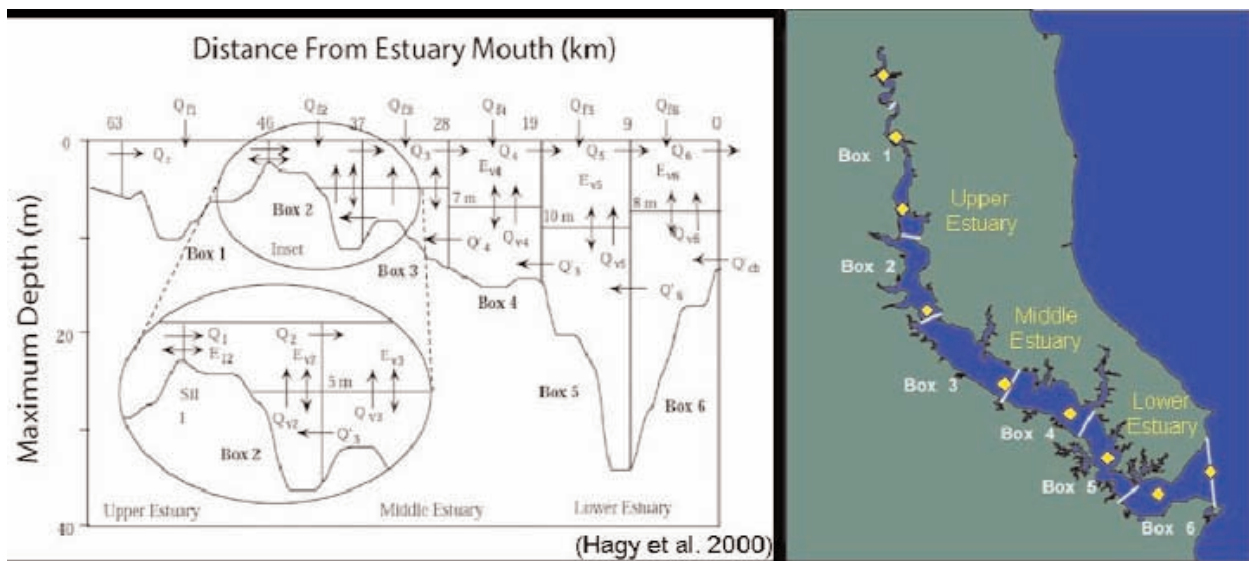


Figure 2: Patuxent River estuary including compartment boundaries (Hagy et al. 2000), water quality monitoring stations, and transports computed using a multi-compartment model.

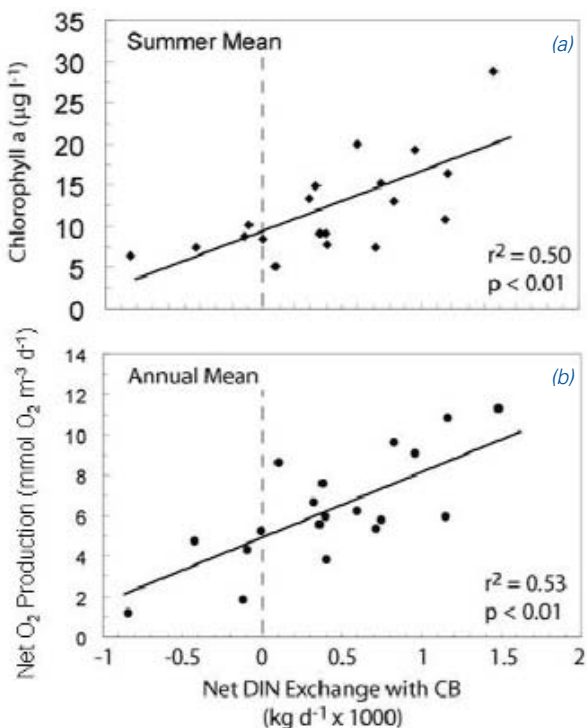


Figure 3:

Regressions of annual mean net DIN exchange between the Patuxent River estuary and mainstream Chesapeake Bay with (a) summer mean Chl-a and (b) annual mean net O_2 production in the surface layer of Box 5 (lower estuary). This suggests that productivity of the lower Patuxent estuary may be driven by nutrient loads external to Patuxent watershed (e.g. the Susquehanna watershed, or other watersheds of the Chesapeake Bay) due to the significant nutrient exchange between the Bay and the Patuxent estuary. Budget approaches help elucidate these relationships. (Testa and Kemp 2008, Testa et al., submitted).

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Workshop Follow-up

As of this writing (early March, 2008), workshop participants are currently working to finalize their contributions to the workshop report, making use of a project wiki hosted at Cornell University's Mann Library to upload and edit their presentations and collaborative writings. Upon completion, the material will be assembled into a contribution in the LOICZ Reports and Studies Series.

SCOPE Biofuels Planning Meeting held in January, 2008, Miami FL (USA)

New global biofuels project

The Scientific Committee on Problems of the Environment (SCOPE) recently initiated a new biofuels project which will provide a comprehensive analysis of the environmental impacts of bioenergy. The project is headed by Bob Howarth of Cornell University. The first meeting of the advisory panel, consisting of environmental and energy experts from the Americas, Europe, Africa and Asia, was held in Miami FL (USA) January 17, 2008. The meeting's primary goal was to plan for the project's upcoming Rapid Assessment Process (RAP) on currently viable biofuel options. The RAP will be instrumental in preparing a science-based comprehensive assessment of the trade-offs that international policy makers and industry will be faced with in navigating the current and future bio-economy. The meeting was funded by the United Nations Foundation.

Water quality and Biofuels

Of special interest to the LOICZ community is the effect of biofuels on water quality, especially coastal water quality. Recent research indicates that the expansion of crop production of some biofuels, particularly corn-based ethanol, could exacerbate nitrogen losses to rivers and coastal waters, with possible increased risk of eutrophication and hypoxia (Donner et al., 2008; Simpson et al., 2008). The SCOPE Biofuels project plans to assess coastal water quality issues in the broader context of environmental effects of biofuels development, and through its affiliation with LOICZ, to extend its findings to the coastal community.

Near term plans for SCOPE Biofuels

The SCOPE Biofuels project will develop rapid assessments in a series of workshops addressing biofuels-related issues. The goal of the first RAP workshop, to be held in Germany in September, 2008, will be to analyze current commercial feedstocks and technologies for liquid

biofuels. Participants will address the full range of positive and negative environmental effects and cross-cutting issues associated with biofuel production including:

- Past and near-term trends and capacity
- Direct and indirect (displacement) land use effects
- Ground and surface (fresh and coastal marine) water quality
- Soil quality
- Water quantity
- Greenhouse gas emissions
- Local air quality
- Biodiversity
- Social, economic and political drivers
- Food v. fuel

The workshop, hosted by The Wuppertal Institute for Climate, Environment & Energy, will be jointly funded by the German government and the United Nations Foundation. It will bring together 40–50 of the world's leading environmental, economic, technical, and social researchers to address the above issues. Representatives from various stakeholders will also be invited to comment. The meeting is co-chaired by Robert Howarth (Cornell University) and Stefan Bringezu (Wuppertal Institute). A science volume consisting of 10–12 background papers (submitted prior to the workshop) and the conclusions of the working groups, as well as a policy brief in the UNESCO-SCOPE Policy Brief Series is expected to be made available in 2009.

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Renee Santoro (rls75@cornell.edu) or visit www.eeb.cornell.edu

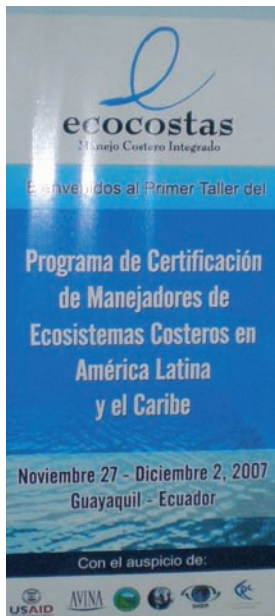
PRIORITY TOPIC 3

Linking
governance and
science in coastal
regions

Regional Certification Workshop on Governance for Latin American and Caribbean Coastal Practitioners in Guayaquil, November 27th to December 2nd, 2007

From 27 November to 2 December, 2007, team members of EcoCostas (Centro Regional para el Manejo de Ecosistemas Costeros) and associates gathered in Guayaquil, Ecuador, to hold the first meeting towards the certification of the first group of practitioners in marine

and coastal ecosystem governance. The activity was supported by LOICZ, the Inter-American Institute for Global Change Research, IAI, and the IHDP. It feeds directly into the implications of the governance analysis for future capacity building and action.



The Workshop was the first of three events to certify Latin America practitioners in the Governance of Ecosystem Management, assess governance baselines in various sites across Latin America, and develop a web-based knowledge management system database with their project cases governance baselines.

The first workshop focused on understanding the context of baselines development and the issues facing coastal communities in Latin America. A governance characterization is aimed to look and study the past eras of each site, in order

to know tendencies, past and current governance systems, and what have been answers or results obtained from these government and ecosystems quality. This first stage is necessary for characterization and to identify what needs to be changed at a local and a regional level, and to implement changes to the administration design and to the way in which coastal initiatives are assessed.

The workshop was divided in seven modules that were imparted during a six days period as follows:

1. How do socio-ecological systems work and change
2. 21st Century challenges
3. Mechanisms and generations of governance
4. Governance results
5. Field observation
6. Looking towards future in participants project cases, vision and goals
7. EcoCostas future and the network

The meeting agenda included discussion on global topics, such as climate change and habitat depletion, presentation of case studies, work sessions for the construction of governance baselines and planning sessions for EcoCostas institutional activity. Under the guidance of LOICZ Priority Topic Leader, Stephen Olsen, participants committed to include climate change as one fundamental topic for action as well as to further promote collective learning among certification candidates.

For the end of the first regional workshop, participants will be in capacity of:

1. Describing the most important environmental changes, and the basic functions of coastal ecosystems at a global and regional scale.

2. Exchanging reflections and knowledge at a local and regional scope, linking these outcomes to direct, or indirect, uses of environmental resources.
3. Sharing site or project scale coastal management experiences, through documentation of specific project cases, in the notebook section "looking to the past":
 - a. Identification of the biggest changes in sites (basic chronology for the last 30 to 40 years, principal tendencies, and a minimum of maps).
 - b. Identification and selection of coastal management affairs and goals.
 - c. Key actors network conformation.
 - d. Graphical representation and interpretation of the trajectory of change (cycles).
 - e. Generation and interpretation of a chart with the results by scale and orders of outcomes.
 - f. Identification of the gaps regarding actors and key behavior changes for the goals accomplishment.
4. Describing the type of sequence that follows a selected outcome, showing the roles of market, public actors, and civil society in each case, and regarding the capacity of giving sustainable uses to ecosystems.
5. Describing the links between the uses of coastal ecosystems, and particular interests of ecosystems users, government, and the changes in the basic functioning of ecosystems.
6. Doing projections on what is desirable and possible on participants' sites, using graphics, retrospective analysis, and scenarios.
7. Describing which are the capacities, and how do planning, decision, and policy execution work for the uses of ecosystems in their sites, viewing critical aspects in socio economical systems and how to deal with them.
8. Identifying what needs to be improved in the documentation of each of their project case "looking to the past", and proposing alternatives of interest for the design of "looking to the future".
8. Defining the tasks that need to be done before second regional workshop in April 2008.

In conclusion, 24 LAC Coastal Practitioners received common and unified governance baseline preparation concepts, methodologies, frameworks, examples, and cross site comparative data. Moreover, 13 potential project cases have been initiated as governance baselines (looking to the past), which will be completed by participants as a prerequisite for attending the second workshop in April 2008. The information resulting from the workshop will be critical input for future activities. In the next workshop, participants will focus work on defining actions and initiatives that should be planned for the future, in context of what they have developed from their governance baselines.

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Activity Reports

„Arctic Coastal Zones at Risk“ – A physical and socio-ecological perspective on Arctic coastal change

2nd LOICZ, IASC, Workshop in Tromsø, Norway, January, 2008, back to back with Arctic Frontiers “Balancing human use and ecosystem protection”

Symposium Organizers: Volker Rachold (IASC), Hartwig Kremer (LOICZ), Götz Flöser (LOICZ) and Georg Heinrich Hansen (NILU)

Arctic coasts are not only exposed to changes in the view of natural processes and geophysics (e.g., melting sea ice and permafrost), ecology, and biogeochemistry (e.g., increased carbon and nutrient input from eroding coasts), but also to fast growing economic development including land and sea use (e.g., increased shipping along the Northern sea routes; contaminant pressures from lower latitudes, as well as pressures from on- and offshore oil and gas mining) and to social developments.

The recent release of the AMAP Oil and Gas report (<http://www.amap.no/oga/>) at the 2008 Arctic Frontiers conference underlined the complexity of these pressure – impact – response relations in the Arctic. Conflicting sectoral and transboundary issues and interests were obvious and range from territorial (i.e. access rights) issues to those of disaster preparedness and contingency planning. Last but not least the critical position of indigenous peoples is at stake where global interests face strong natural change and there is little evidence for tangible success in applied ecosystem-based management approaches that consider humans a central element of the system. Not surprising that Arctic Frontiers 2008 under the headline of “Balancing human use and ecosystem protection” became a showcase of these regional and partly globally driven conflicts. The Arctic Council representing the intergovernmental member forum of Arctic states didn't reach consensus on the AMAP report recommendations and in return the WWF Arctic Program by taking a global perspective called for a moratorium on oil and gas exploitation. The key argument quoted in support of such a general i.e. global review and change in energy policy was based on recent IPCC assessment results and findings of the Earth system science community. Our current knowledge might provide enough evidence to simply force society to put a question mark on whether or not the exploitation of the estimated 25 % undiscovered oil and gas resources in the Arctic can be in any way sustainable. Both the rejection of the recommendations as well as the call for a moratorium at least found an immediate global media response in successful competition to the Asian and US stock market shock waves hitting global economy in late January.

It is this complex interaction between rapid global envi-



Foto: H. Kremer

Hurtigrouten's famous Steamer "Polarlys" (Aurora borealis) provided an excellent surrounding for the annual Arctic Frontiers dinner. Private sector, science and policy as well as representatives of the indigenous peoples used the opportunity to talk across traditional barriers.

ronmental change and human dimensions that make the Arctic a priority region for the new LOICZ. Key interest for the coastal change science community at this stage and in building on the findings of the earlier ACIA and AHDR reports on the whole Arctic is to zoom in on the coastal systems and to provide a regional interdisciplinary investigation of changes and related human dimensions in this very sensitive part of the Arctic.

Therefore and following the first LOICZ-IASC workshop in October 2007 (see INPRINT 2007/3 and <http://w3k.gks.de/events/arctic07/>), a second meeting discussing the outline of such an Arctic coastal assessment was held in Tromsø on 24th and 25th January 2008, with the 2008 Arctic Frontiers conference setting the stage. Among the participants were representatives of the October 2007 working groups, former LOICZ SSC member Elena Andreeva, the director of the WWF Arctic Program, Neil Hamilton, the IASC Executive Officer, Volker Rachold, Odd Rogne from IASC Norway and representing AMAP, representatives from CICERO, Oslo, and the CSDMS program in Boulder, Colorado as well as a representative from the GKSS Research Centre, Geesthacht, representing LOICZ Topic 3 (governance) and other experts.

The group agreed that in a first step a coastal assessment shall review the climate driven and anthropogenic changes occurring in Arctic coastal systems in the natural, economic and social context. In a second synthesising step the focus shall however be on integration. Here the report aims to test the use of new scientific paradigms in the assessment such as the socio ecological system approach and it wants to focus specifically on issues of governance and adaptation. A set of recommendations is anticipated as part of the conclusions. Among the ultimate target addresses for the report will be the Arctic Council, the intergovernmental forum of Arctic States.



A road map for the composition of the Arctic Coastal report was fixed, including a preceding EOS publication and the presentation of the finalized report during the Arctic Science Summit Week in Bergen in March 2009. The report shall be in the form of a white paper. A first draft is anticipated to be ready for presentation at Arctic Frontiers in January 2009.



The LOICZ IASC group met with international experts at the Tromsø Polar Institute to design a first interdisciplinary coastal assessment report; from left: A. Kannen (GKSS), A.H. Hoel (Univ. Tromsø), P. Overduin (AWI-Potsdam), N. Hamilton (WWF Arctic, Oslo), D. Forbes (GSC, Dartmouth), I. Overeem (CSDMS, Boulder), V. Rachold (IASC Stockholm), G. Flöser (GKSS). Foto H. Kremer

The draft overall structure of the white paper as it looks at this stage is listed below:

Introduction: Why is the Arctic coast an important region?

- Role of IASC and LOICZ
- Arctic coastal systems and communities: integrative approach

Disciplinary perspectives

- Physical assessment
- Ecological assessment
- Human dimensions: social, economic, institutional, governance aspects

Integration

- An integrated socio-ecological approach to coastal change and resilience in the Arctic
- Monitoring and detecting change
- Modelling and Prognosis
- Governance and Adaptation

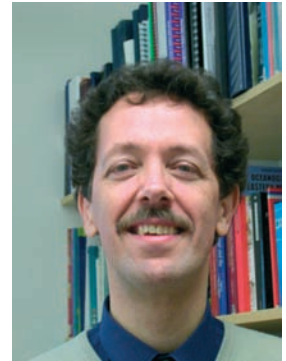
Synthesis/gaps and capacities

For further detail or interest to join the team of authors please contact Götz Flöser: floeser@gkss.de

LOICZ News

Professor Laurence Mee – new director of The Scottish Association for Marine Science (SAMS)

Professor Laurence Mee, LOICZ SSC Member and Leader of Topic 1 (Linking Social and Ecological Systems in the Coastal Zone) will become the new director of SAMS, one of the oldest marine science organizations in the world. SAMS is a collaborative centre of the UK Natural Environment Research Council.



He will be taking up the new position in September.

Professor Mee is currently the Director of the Marine Institute at the University of Plymouth and has an international reputation for his work in marine policy.

Professor Laurence Mee is the UK's first Professor of Marine and Coastal Policy and has a strong research reputation for work on modeling coupled social and ecological systems. He is Chair of the Advisory Committee on the Protection of the Sea and he recently acted as Special Advisor to the House of Commons Select Committee inquiry on Investigating the Oceans. Before his move to Oban, Professor Mee worked for the UN – among other positions as Head of the Marine Environmental Studies Laboratory of IAEA-MEL in Monaco – and before that he was at the National Autonomous University in Mexico.

SAMS is a learned society with an international membership and its 140 staff conduct independent research and provide higher education in marine science. It was formed in 1884 as the 'Scottish Marine Station' by Sir John Murray. The SAMS mission is to improve understanding and stewardship of the marine environment through research, education, maintenance of facilities and technology transfer.

For more details see www.sams.ac.uk

The backbone of LOICZ: Affiliated Projects

LOICZ has a mandate to address key issues of coastal change and use in the context of scenarios of future human activity and environmental change. LOICZ endorses and seeks to support both fundamental coastal zone research and research that synthesizes and up-scales results for dissemination within the scientific community, and outreach to policy makers and the public. An important part of this research is carried out by scientists who affiliate their projects to LOICZ thereby becoming part of the global network of LOICZ. These projects build the backbone for up- and down-scaling of LOICZ results and the LOICZ synthesis.

LOICZ provides a forum to assimilate, integrate and synthesize the outputs of its affiliated projects. Additionally, it provides an opportunity to communicate and disseminate these outputs making them available not only to other scientists, but also the public, decision-makers and managers. Information on affiliated projects is held in a central database that is accessible online through the LOICZ website. It makes basic information and regular updates available to the wider community as well as to LOICZ for its reporting requirements.

Once a project has been entered to the database by its Principle Investigator (PI), it will be reviewed by the IPO and the coordinator of the theme/topic it is contributing to most. As soon as the project is accepted it will appear in the public part of the database. This lean procedure allows LOICZ to maintain an up-to-date record of global research activity that relates to the LOICZ Science Plan as well as ensure that affiliated projects are given opportunity to fully participate in LOICZ activities such as workshops and joint projects.

Moreover, the database accomplishes an essential element that applies for all LOICZ interdisciplinary studies within and beyond the project namely data sharing and exchange. To facilitate this exchange LOICZ has developed a Data Policy to help affiliated projects and LOICZ to fully benefit from each other. Both documents, the Terms of Reference for affiliated activities and the Data Policy, can be found on the LOICZ website.

LOICZ protects its community members by restricting access to contact details in the public part

of the database. But every community member and person interested in the activities affiliated to LOICZ is invited to register and then view full contact details and be able to submit and edit own projects. As the database is linked to the LOICZ contact database, all newsletter recipients are already recorded. If you wish to receive your login name and password for the database, please do not use the form as shown in figure 1, but send us an email to loicz.ipo@loicz.org

Do we hold your current contact details?

To receive LOICZ INPRINT it is sufficient that we know your email address, or if you receive the newsletter in hardcopy your postal address. But there is much more information available at the LOICZ IPO that does not make it into the newsletter, for various reasons. If you are interested in receiving information targeted to your field of expertise, please request your login details from us and update your profile online.

Land-Ocean Interactions in the Coastal Zone

Registration in LOICZ database online

If you are already a member of the LOICZ community get your account from our administrator: [Contact Us](#)

* TIP Fields with (*) - Value required

Title: [] = Name: [] = Surname: []

Organization: []

Department: []

Position: []

Field Of Experience: []

Street: [] Phone: []

Postal Code: [] eMail: []

City: [] FAX: []

Country: [] Second Phone: []

Online Resource: [] Second eMail: []

* Select one or more LOICZ Themes for your activities (required):

Theme 1: Vulnerability of coastal systems and hazards to society

Theme 2: Implications of global change for coastal ecosystems and sustainable development

Theme 3: Human influences on river basin - coastal zone interactions

Theme 4: Biogeochemical cycles of coastal and shelf waters

Theme 5: Towards coastal system sustainability by managing land - ocean interactions

get Newsletter per:

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Select one or more LOICZ Topic:

Topic 1: Link social and ecological systems in the coastal zone

Topic 2: Assess and predict impact of environmental change on coastal ecosystems

Topic 3: Link governance and science in coastal regions

Your login information:

Name: []

Password: []

Register

Registration form of the LOICZ database. Recipients of LOICZ INPRINT and other active or formerly active members of the LOICZ community should contact the IPO for registration. Everybody else is invited to fill in this form.



Call for research proposals concerned with Land-Ocean Interactions in the Coastal Zone

LOICZ seeks to expand its network of scientists by endorsing research activities concerned with any of its priority topics on a global, regional or national level. Within these topics LOICZ strives to develop:

- methodologies or models that allow data assimilation, processing and synthesis, including up and/or down scaling;
- scenarios of change and/or response to change in socio-ecological systems;
- scientific context for the evaluation of existing policies and structures;
- globally applicable tools for scientific synthesis, decision support and structure development; and
- dissemination interfaces to provide information and assist sustainable coastal development on appropriate scales.

To achieve this, LOICZ is calling for proposals to bring high quality research activities into the LOICZ cluster of Affiliated Projects. As well as fundamental science projects, LOICZ also seeks projects that have a multidisciplinary perspective, especially combining natural and social sciences. Projects can have global, regional or local scales and be focused on coastal sciences and/or coastal management. Projects that collaborate with other Earth Science System Partnership (ESSP) projects, especially with other Core Projects of IHDP and IGBP, are sought in particular, as well as projects that synthesize and analyze research outcomes already available or involve dissemination and outreach that will lead to better public knowledge. Details about projects already affiliated to LOICZ can be found in the LOICZ Project database accessible through the LOICZ website. Although LOICZ cannot offer funding to Affiliated Projects, its endorsement provides the following benefits:

- support in proposing for funding;
- promotion of the project and associated activities, its contributing team, outputs and outcomes through the LOICZ website and/or newsletter;
- contribution to workshops, conferences and meetings organized by LOICZ and hence establish linkages to other projects operating in similar fields and/or addressing similar issues; and
- access to a wide circle of information related to funding and the science community that is available through the LOICZ database.

Researchers whose work fits into the LOICZ portfolio are encouraged to submit proposals to the LOICZ IPO as soon as possible. The required form is accessible after registration to the LOICZ project database and additional information can be obtained from the LOICZ website or via contacting the LOICZ IPO.

LOICZ Nodes

Workshop on “Science-Policy Interactions Towards Enhanced Management of Coastal Systems in South Asia” initiates Regional Project



Maldives: Kuda Huraa.

Foto: Juergen Weichselgartner

A Regional Workshop on “Science-Policy Interactions Towards Enhanced Management of Coastal Systems in South Asia” was held from 24th to 27th October, 2007, in Male, Maldives. This workshop was the start of a regional project entitled “Developing and Integrated Framework for Science-Policy Interactions towards enhanced Management of Coastal Systems in South Asia”.

The workshop was organized jointly by the LOICZ South Asia Regional Node, based at the National Science Foundation in Sri Lanka, and the Coastal Zone Management Centre of the South Asian Association for Regional Cooperation (SAARC), which was established in Male in 2005. The SAARC CZM Centre provided the workshop venue, accommodation and handled all the local arrangements while the funds for airfare and per diems were provided by LOICZ.

The proposal for the project was the result of a previous Regional Scoping Workshop on Science-Policy Interactions in Coastal Zone Management held in Sri Lanka in October, 2005. This workshop brought together natural scientists, social scientists and managers from four countries to discuss how to combine natural and social science approaches to the assessment of coastal change and ensure the incorporation of these scientific results in the development of policies that affect coastal zones.

The results of the scoping workshop were the preparation of a proposal for a regional project, preliminary identification of case study sites and the development of inter-disciplinary teams. The proposal was submitted to

the Asia-Pacific Network for Global Change Research (APN), which had also funded the Scoping Workshop, by the LOICZ South Asia Regional Node. Partial funding for a three year regional project was approved by APN in 2007.

The objectives of the regional project are:

- 1) To develop an integrated framework that combines natural and social science approaches to the analysis of change in coastal systems
- 2) To assess the pathways by which scientific knowledge facilitates policy response to these changes
- 3) To develop a network of natural and social scientists at the national and regional levels to study coastal change issues
- 4) To formulate a policy portfolio for the case study areas
- 5) To share experiences and lessons learned between participating countries

The project involves the testing of the integrated framework at seven case study sites, four in India and one each in Bangladesh, Pakistan and Sri Lanka. The framework will be developed by a core group of regional scientists while the work at the case study sites will be handled by teams of scientists from institutions in the area.

The objectives of the regional project are closely linked to the five themes of the LOICZ Science Plan and Implementation Strategy. The objectives are also in line with the Priority Topics, particularly Topic 1 (integration of natural and social sciences) and Topic 3 (integration of science and governance).

It is planned to develop the case study sites as "coastal laboratories" so that they can be used to study many aspects of coastal change relevant to other LOICZ topics or other global change projects. The goal is to maximize the value of the field work and data collection carried out at the sites while also ensuring that the work under many international programs is coordinated at the local level.

Twenty one scientists representing eighteen institutions from six countries participated in the Inaugural Workshop. The participants included natural scientists, social scientists, coastal managers and policy makers. One scientist from Indonesia represented the LOICZ Southeast Asia Regional Node at the workshop and presented work carried out under the regional project on Coastal Vulnerability being implemented by the South-East Asian Node. LOICZ Senior Science Coordinator J. Weichselgartner

introduced LOICZ and its activities and presented an empirical study on barriers at the science-practice interface carried out at Harvard University (see <http://www.cid.harvard.edu/cidwp/grad/021.htm>).

The development of the integrated framework was initiated based on existing approaches in the areas of linking drivers of change to changes in natural systems, identification of critical issues, vulnerability and valuation of ecosystems. A review of the available information and the key issues for the case study sites was presented, and work plan for each case study site was developed. The development of the framework and the detailed planning of work in the case study sites have continued after the workshop.

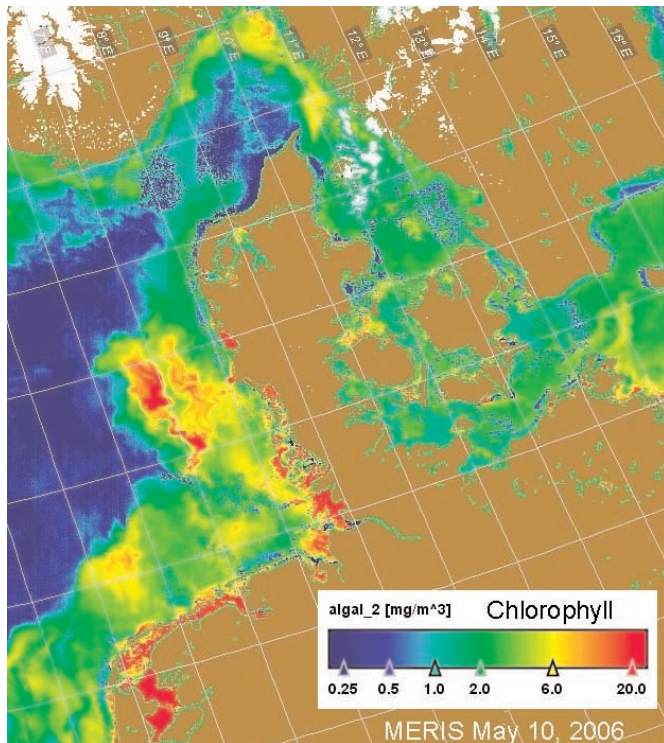
The participation of scientists from many disciplines and institutions at the Kickoff Workshop showed that the significant progress has been made in terms of the objectives regarding networking and knowledge sharing. The hosting of the workshop by the SAARC CZM Centre was an indication of the links between the project and coastal zone management initiatives at a regional level.

The funding approved by APN for a three year project is US\$65,000. Supplementary funds will be needed if the project is to be successful. The fact that the Inaugural Workshop was funded entirely from non-APN sources is an indication of some success in obtaining regional funds. However, the ability of the case study teams to raise additional funds at the national level would ensure both the success of the project and the incorporation of the scientific objectives of the project into national scientific agendas.

A summary paper on the integrated framework and its application to the case study sites was presented at the PIANC-COPDEC VII conference in February, 2008. Two abstracts based on case study sites have been submitted for the IHDP Open Meeting 2008 (in October in New Delhi). It is planned to present the details of the case study sites to a wider LOICZ audience through the submission of articles in INPRINT in succeeding issues.

The LOICZ South Asia Regional Node would like to acknowledge the financial and logistical support of the SAARC CZM Centre. Particular thanks are due to Dr. Mohamed Ali, the Director of the Centre and Ms. Aminath Nazneen, the Administrative Officer. The financial contribution of LOICZ is also acknowledged with gratitude. Thanks are also due to the LOICZ Southeast Asia Regional Node for facilitating the participation of a scientist from Indonesia.

PACES: A new research program at AWI and GKSS Research Center, the hosting institute of the LOICZ IPO



Within the Helmholtz Association (HGF) since several years a new strategy has been adopted for the implementation of research programs. Instead of financing these research programs through the Helmholtz centers, nowadays research programs have to be proposed, which after review by an international panel are performed.

For a second 5 year period a research program called PACES (Polar regions and coasts in the changing Earth System) has been jointly proposed by GKSS Research Center Geesthacht (Institute for Coastal Research) and AWI (Alfred Wegener Institute for Polar and Marine Research) within the Research Field Earth and Environment. The program is scheduled for the period 2009–2013 and is the follow up program of MarcoPoli (2004–2008).

The proposal has been reviewed by an international panel in January 2008 in Bremerhaven. The final decision on the finances is dealt with by the Senate of the HGF in September 2008.

The program comprises several elements: 4 scientific topics and 2 further topics describing the Infrastructure and large scale facilities. The latter comprises the research ships (Polarstern, Heincke, smaller ships: Mya, Prandtl) and the polar stations, including two aircraft. The infrastructure deals with management of the centers as well as the computing facilities (German Climate

Computing Center) as well as the data centers (a.o. PANGEA). The four scientific topics are: the changing Arctic and Antarctic; Coastal change; Lessons from the past and Synthesis: the Earth System from a Polar Perspective.

Altogether the total research costs for both institutes amount to about 100 Million for 2009. The personal resources foreseen for the proposed program are: 190 FTE for Topic 1, 200 FTE for Topic 2, 100 FTE for Topic 3 and 55 for Topic 4. Changes in these scheduled numbers will take place during the period of the program. Included in the program are a series of large investments, which however are financed separately when granted. Examples of these proposals are: COSYNA (Coastal Observation System for Northern and Arctic Seas), HAFOS (Hybrid Arctic Float system), a Drilling System for ice cores and subglacial environment and the replacement of the research catamaran Mya at the AWI Wadden Sea station on the island of Sylt. The topics deal with the following contents:

Topic 1: The changing Arctic and Antarctic deals with field studies, experimental work and modeling in order to assess, quantify and understand key processes in the six compartments in polar systems, namely ice sheets, atmosphere, sea ice, ocean, permafrost, and associated ecosystems. This is mainly motivated by the fact that the Polar Regions are at the same time shaping global climate and responding to it and they are the regions where we will be able to detect future change best.

Topic 2: Coastal change is a topic which is geared to reveal the consequences of global and regional change on functioning and diversity of coastal systems in temperate and Polar Regions. The importance of coastal regions for mankind is evident because they are the home to about 60 % of the world's population and support a large part of the marine harvest. In addition coastal regions are threatened by rising sea level, which in the future will possibly be directly affected by changes in the Polar Regions.

Topic 3: Lessons from the past will allow us to set present changes in the climate system in proper perspective of the natural changes during the past and at the same time allow for a qualified look into the future by learning from the past. At the same time this topic will enhance our understanding of the variability of the natural climate system against which we will have to measure anthropogenic change.

Topic 4: Synthesis: the Earth System from a polar perspective will focus on the contributions to an enhanced Earth System Model (ESM) with improved or newly developed model components, which are based on the findings of the first three topics. Present ESM's are unable to model the Polar Regions with the precision required for qualified predictions. This situation is not satisfactory and we aim to help rectify it.

Because the Topic 2 Coastal change is most relevant for LOICZ related studies a few more details on this topic are added. The two challenges for this topic are: "understanding the effects of global and regional change on coastal temperate and polar (eco-)systems, and responding to these diverse changing pressures". The Topic is composed of four different work-packages: 1. Food webs and diversity under global and regional change, 2. Integrating evolutionary ecology into coastal and shelf processes, 3. coastal systems under global and regional pressures, and 4. Integrating observations for coastal management. Both Institutes cooperate within these four work-packages, but the emphasis of AWI is stronger on WP1 and 2, whereas WP 3 and 4 are more related to the expertise and capacities at GKSS.

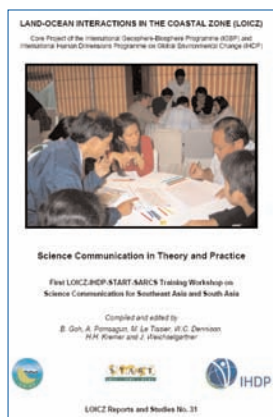
Topic 2 "Coastal Change" is led by Prof. Franciscus Colijn (GKSS) and Prof. Karen Wiltshire (AWI). The program spokesman is Prof. Heinrich Miller at AWI.



For more information please contact: Franciscus Colijn
colijn@gkss.de

Publications

LOICZ Reports and Studies No. 31



Science Communication in Theory and Practice

First LOICZ-IHDP-START-SARCS Training Workshop on Science Communication for Southeast Asia and South Asia

Effective science communication is the successful dissemination of knowledge to a wide range of audiences, from specialist scientists through managers and politicians to the public. Many scientists believe that

doing excellent science is enough and that this knowledge will be found and used at the appropriate time. Unfortunately, the public, politicians, and even environmental managers rarely read journal articles or highly specialized books-so these media alone do not constitute effective science communication. Increasingly, scientists are called upon to comment on current environmental problems and search for solutions-however, they are often left lacking tools to communicate the knowledge that they have, especially in the face of the uncertainty inherent in the scientific process. A scientist usually cannot be 100% certain, which is problematic to those responsible for decision-making. However, with appropriate communication tools, it is possible for scientists to better explain their messages to a broader audience-creating greater understanding and demystifying both scientific knowledge and the scientific process. Only when this is achieved by effective science communication will the relevance of science increase to society in general.

Read more about Science Communication in R&S Report No. 31. Download available on [new!](#) LOICZ website www.loicz.org

Integrated Coastal Zone Management (ICZM)

Editors: R. R. Krishnamurthy¹, Bruce C. Glavovic², Andreas Kannen³, David R. Green⁴, Al. Ramanathan⁵, Zengcui Han⁶, Stefano Tinti⁷, and Tundi Agardy⁸

¹ Department of Applied Geology, Centre for Ocean and Coastal Studies, University of Madras, Chennai, India

² Resource and Environmental Planning Programme, Massey University, New Zealand

³ GKSS Research Centre Geesthacht, Germany

⁴ Department of Geography and Environment, School of GeoSciences, University of Aberdeen, UK

⁵ School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India

⁶ Zhejiang Institute of Hydraulics and Estuary, Hangzhou, P.R. China

⁷ Geophysics, University of Bologna, Italy and

⁸ Sound Seas, USA

ISBN:978-981-05-8948-6 (Hardbound)

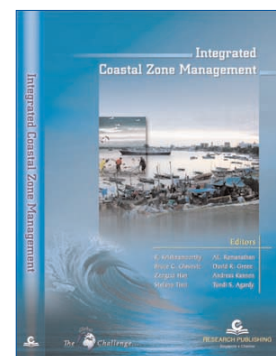
Pages: 800 pp(96 Color Figures)

Year: 2008

Price: US\$226 /161

About the Book

This book presents diverse case studies from around the World, including many Asian countries, Africa, North and South America, Europe, the Middle East, Island Nations, and elsewhere. The book's 39 chapters are organized according to seven interrelated themes including global to local scales of ICZM, human dimensions and social, physical and biological aspects, and key closely linked topics ranging from biodiversity conservation to hazards and risk management, the impact of climate change, and the application of remote sensing and geospatial technologies. The outcome of this compilation is to synthesize recent case study experiences, highlighting the changing global scenario of ICZM, the high demand for coastal resources, current lack of gover-





nance, and the need to import and export both techniques and expertise, including the importance of protecting more vulnerable coastal sites from natural calamities. Ultimately, this book provides a means to help address and solve the complexity that exists between coastal systems and anthropogenic activities.

Topics Covered

- ICZM – Global to Local Scales
- Human Dimensions in ICZM
- Coastal Erosion, Protection, and Development
- Special Areas and Species in the Coastal Zone
- Natural Hazards and Disasters in the Coastal Zone
- Climate Change Impacts and ICZM
- Tools for Data Gathering and Analysis in ICZM

More details:

<http://www.rpsonline.com.sg/books/iczm.html>

BACC – A Regional Climate Change Assessment for the Baltic Sea Basin

A regional climate change assessment report for the Baltic Sea basin was published in January this year (BACC Author Team, 2008). The assessment is an example for a type of urgently needed reports helping to put global climate change (as portrayed e.g. by the IPCC reports) into a regional perspective, which local stakeholders and

politicians can relate to. The so called BACC (BALTEX Assessment of Climate Change for the Baltic Sea Basin) report was compiled by a consortium of 84 scientists from 13 countries around the Baltic Sea and covers various disciplines related to climate research and ecological impacts. The book is divided in chapters on past and current climate change, on projected future anthropogenic climate

change, and on observed and projected impacts on terrestrial and marine ecosystems of the Baltic Sea basin. It aims to bring together consolidated (published) knowledge which has broad consensus in the scientific community. Still, this consensus may at times take the form of “consensus on dissensus”, as for certain points, contrary opinions cannot be resolved due to insufficient scientific evidence.

Major findings of the assessment include an observed average air temperature increase over the Baltic Sea basin of 0.85°C since 1871, which is slightly higher than reported by the IPCC (2007) for the entire globe. This has already lead to a decreased ice and snow cover and ice season over the Baltic Sea basin, a shift towards earlier

spring vegetation phases and an extended growth season, and changed species distributions and migration patterns. Regional climate models until the year 2100 project rising air temperatures of 3–6 °C over the entire basin, resulting in a possible reduction of sea ice in the Baltic Sea by up to 80%. Winter precipitation over the entire basin is projected to increase, while summers could be dramatically drier in the southern part of the basin. As to sea level changes and their impacts on coastal regions, the Baltic Sea is specific because the overlay of the projected global sea level rise and the regional post-glacial land uplift is expected to create regionally varying patterns of local sea level rise, leading to different requirements for potential coastal protection measures later in this century.

BACC is an ongoing project within the BALTEX programme (www.baltex-research.eu), the latter being a regional hydroclimate project of the Global Energy and Water Experiment (GEWEX) of WCRP. Similar initiatives to BACC, including, for example, a climate report for the greater Hamburg area in Germany, for China's Yellow Sea, or for the Laptev Sea north of Russia, have already been launched. A second BACC climate report is due in 2012. For more information on BACC, see www.baltex-research.eu/BACC.

References

BACC Author Team (2008). Assessment of Climate Change for the Baltic Sea Basin, Regional Climate Studies, Springer Heidelberg, 474 pp.

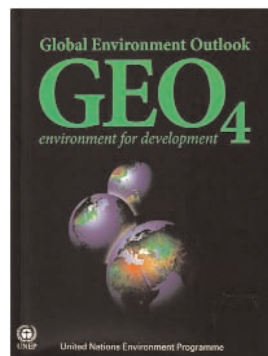
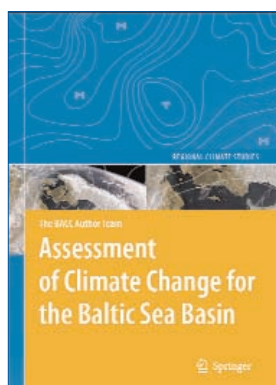
IPCC (2007). Fourth Assessment Report (available at www.ipcc.ch/ipccreports/ar4-syr.htm)

United Nations Environment Programme (2007)

Global Environment Outlook GEO-4: Environment for Development

This recent assessment report provides an overview of global social and economic trends and the state-and-trends of the global and regional environments over the past two decades, as well as the human dimensions of these changes. It highlights the interlinkages and challenges of environmental change, and opportunities that the environment provides for human well-being. It provides an outlook for the future, and policy options to address present and emerging environmental issues.

GEO-4 places sustainable development at the core of the assessment, particularly on issues dealing with intra- and intergenerational equity. The assessment uses the drivers-pressures-state-impacts-responses (DPSIR) frame-work



for analysis of the Atmosphere, Land and Water environments and Biodiversity. The analysis includes the need and usefulness of valuation of environmental goods and services, and the role of such services both in enhancing development and human well-being and in minimizing human vulnerability to environmental change.

Chapter 4 of the report reviews the pressures on water in the context of global and regional drivers. It covers the state-and-trends of the water environment, including its ecosystems and their fish stocks, emphasizing the last 20 years, and the impacts of changes on the environment and human well-being at local to global scales. It describes how the water cycle is being affected by long-term climate change, affecting precipitation patterns and the cryosphere, ocean salinity and acidification, and sea level. The chapter reviews water use and degradation at basin scales and the consequences for human well-being, emphasizing the catchment-to-coast continuum and impacts on the provision of aquatic ecosystem services. The review of fish stocks highlights the large-scale decline in freshwater and marine fisheries, caused mostly by persistent overfishing.

The Water chapter notes the continuing challenge for the management of water resources and aquatic ecosystems to balance environmental and developmental needs, requiring a sustained combination of technology, legal and institutional frameworks, and, where feasible, market-based approaches.

The report is available online at:
<http://unep.org/geo/geo4/media/>

Chapter 4 – Water is available online at:
http://unep.org/geo/geo4/report/04_Water.pdf

Have you seen

Coastal Cities Summit

www.coastalcities.org

Announcement
Call for Papers / Presentations

Academic and Professional Presentations, Coastal Cities Summit, November 17–20, 2008, St. Petersburg, FL

The International Ocean Institute, USA; the University of South Florida, St. Petersburg; and the Patel Center for Global Solutions are pleased to announce this preliminary call for papers for the Coastal Cities Summit, to be held Nov. 17–20, 2008, in St. Petersburg, FL.

Important dates:

- May 15, 2008: Deadline for Abstract Submission
- July 1, 2008: Authors will be informed on selection by e-mail
- October 15, 2008: Deadline for Final Submissions

Further Questions:

Please contact Conference Secretariat, Mara Hendrix:
E-mail: mara@ioiusa.usf.edu or phone: +1 (0)72) 873-4745.

International Conference on Implementing Environmental Water Allocations

23–26 February 2009: Port Elizabeth, South Africa

Call for Papers: Deadline for submission of abstracts 30th June 2008

Organized by the

Water Research Commission and the Department of Water Affairs and Forestry, South Africa

under the auspices of the

World Conservation Union (IUCN) and the International Association of Hydrological Sciences (IAHS).

Further details available from:

The Conference Secretariat: CTC, P.O. Box 82, Irene, 0062 South Africa,

Tel: +27 (0)12 667-3681, Fax: +27 (0)12 667-3680, e-mail: confplan@iafrica.com

or from the Water Research Commission's website:

www.wrc.org.za or view the full conference

Announcement/Call for Papers online at:

<http://ewa.innercirclestudios.co.za>

PhD Studentship in sediment biogeochemical modelling

National Oceanography Centre, Southampton

A three year fully funded PhD studentship is available to start in summer 2008 or sooner.

The aim of the work is to model the role of sediment re-suspension on nutrient (nitrogen, phosphorus, silicon) release and fate in shelf sea environments.

Shelf seas like the North Sea play a critical role in the Earth's climate. This is because about one third of global marine primary production takes place in these environments. This primary production is fuelled by algal nutrients (N, P and Si) mostly thought to be coming from rivers. However, it is becoming increasingly clear that nutrient inputs from sediments are an important but poorly understood source. This project will seek to model observational data, collected in an aligned research study (see below), focusing on a number of key questions such as how do resuspension events impact nutrient concentrations in the overlying water column? and what is the (cumulative) impact of (repeated) resuspension events of different intensities and duration? Development of this model will be at the cutting edge of this field of science. There will be opportunities to participate in research cruises in the North Sea as well as laboratory work.



The studentship will provide support at standard NERC rates (currently £12,000 p.a.) as well as pay UK/EU tuition fees. The work is aligned to a 3 year NERC funded research study on "Sediment-water column exchange of nutrients in coastal and shelf-sea waters".

Informal enquiries can be made to Dr Boris Kelly-Gerreyn. Tel: +44 (0)23 80 59 6334. E-mail: bag@noc.soton.ac.uk

How to apply: Please use the following link...
<http://www.noc.soton.ac.uk>

Please ignore the interview deadlines shown on the web site for this particular studentship.

For more details on the project go to
<http://www.soes.soton.ac.uk>

The ideal starting date is before or by the 1 July, 2008.

Job/Fellowship Reference: C2007-FCT/2006 – Coastal Geolog / INETI-DGM6 b

Main research field: Earth and Atmosphere Sciences

The Marine Geology Department of the INETI (Energy, Technology and Innovation Portuguese National Institute), has opened a research position, for a five year period, in Coastal Geology. The application, shown in detail at the web site

<http://www.eracareers.pt/opportunities/index.aspx?task=global&jobId=8818> as in the attached document, is opened until the 16 May, 2008.

CIMA – Centre for Marine and Environmental Research at Algarve University,

Faro, Portugal opened recently 2 vacancies for long term (5 year) post-doctoral research positions: one in coastal geochemistry/biogeochemistry and second in land-ocean interactions or paleoenvironmental proxies. I attach the detailed descriptions of these 2 vacancies which can be accessed also through the following link:
<http://www.eracareers.pt/index.aspx?idconcurso=2>

ECSA 44 Symposium – Bahía Blanca, Argentina Open Registration and Abstract Submission

The Estuarine and Coastal Sciences Association (ECSA) and the Instituto Argentino de Oceanografía (IADO) announce the ECSA 44 Symposium: Science and management of estuaries and coasts: A tale of two hemispheres, to be held in Bahía Blanca, Argentina, from September 29 to October 3, 2008. The symposium is aimed at promoting a fluid exchange between specialists of different disciplines and from both hemispheres, working on estuarine and coastal issues. It will provide a stimulating

frame for comparing results, and for discussing the ongoing scientific and management challenges, highlighting similarities and differences between northern and southern coasts and estuaries.

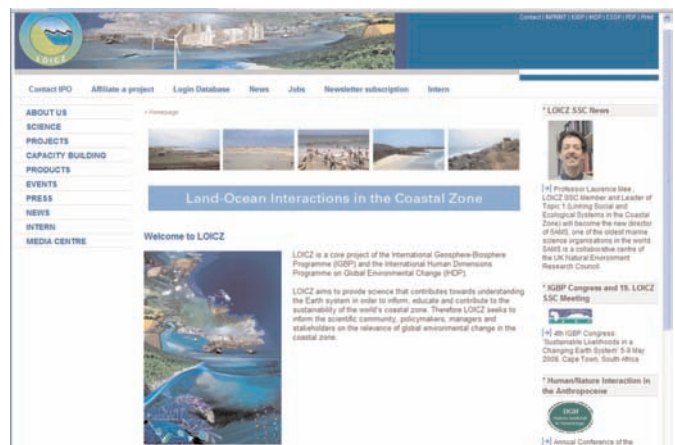
On behalf of the ECSA and IADO, the local Organization Committee invites you to participate on this event, which we envision will enhance communication among those working on both sides of the world, under different physical, biological, and social scenarios. Argentina welcomes you, and Bahía Blanca invites you to know our place and people. We are working to make sure you will enjoy an exciting and worthwhile meeting, and we hope you feel at home during your stay with us.

Deadline for Abstract submission: 20 May, 2008
Deadline for early full registration: 20 May, 2008

For more information regarding main meeting topics, abstract submission, registration, please look at:
<http://ecsa44.criba.edu.ar>

contact: ecsa44@criba.edu.ar

What's new on the web



New LOICZ website is online!

www.loicz.org

Welcome to our New Website!

We are happy to announce that our new LOICZ website, with clearly arranged and novel content, as well as improved accessibility and information retrieval, has now been launched.

Presented in the LOICZ corporate design, it replaces the old website. According to the EU Directive the new LOICZ website offers also web accessibility for people with disabilities.

It took us several month to design the website. Thanks to all who have supported Barbes work with patience in particular Patrick Kalb-Rottmann (GKSS-Forschungszentrum

Geesthacht GmbH) and the LOICZ Typology and Budget Tools people.

Special thanks go to GKSS-Forschungszentrum Geesthacht GmbH who allocated their new Content Management System to LOICZ.

We hope you enjoy the new features. We would like to know what you think of the new site so we can continue improving it for your future visits. Please send your comments and suggestions to our editor and webmaster at ellen-barbe.goldberg@loicz.org.

Calendar

2008

International Conference on Deltas, Bangladesh, January 6–13, 2008

Deltaic Gateways: Linking Source to Sink. The Circular is available on these webpages: Asian Delta Web Page <http://unit.aist.go.jp/igg/rg/cug-rg/ADP.html>
Yoshi Saito's Web Page <http://staff.aist.go.jp/yoshiki.saito/>

Institute on "The Asian Monsoon System: Prediction of Change and Variability"

The global change System for Analysis, Research and Training (START) and the Asia Pacific Network for Global Change Research (APN) invite applications to the Institute on "The Monsoon System: Prediction of Change and Variability" to be held at The East-West Center and the University of Hawaii at Manoa in Honolulu, Hawaii from 2–12 January, 2008. Complete announcement and application download can be found at: <http://www.start.org/curfinopp.html>

9. Conference of Meteorology-Climatology and Atmospheric Physics, in Thessaloniki (Greece) in May 2008

For more information please have a look at: <http://icemte08.geo.auth.gr>

Contact: Barbara Zinecker
Max Planck Institute for Meteorology
Bundesstrasse 53, 20146 Hamburg, Germany
Phone: +49-(0)40-41173-226, Fax: +49-(0)40-41173-350
Email: barbara.zinecker@zmaw.de, www.mpimet.mpg.de

4th IGBP Congress, "Sustainable Livelihoods in a Changing Earth System" to be held in Cape Town, South Africa from 5–9 May 2008

(<http://igbp2008.co.za/>)

UNESCO-ERCE Floodplain Ecohydrology conference, May 19–23, 2008.

<http://www.erce.unesco.lodz.pl/>

Contact: Dr. Eric Wolanski
Australian Institute of Marine Science
PMB No. 3, Townsville MC, Queensland 4810, Australia
Phone: 07-47534243, Fax: 07-47725852
E-mail: e.wolanski@aims.gov.au
<http://www.aims.gov.au/ibm>

A Symposium on **Eastern boundary upwelling ecosystems: integrative and comparative approaches** will be held 2–6 June 2008, at Las Palmas de Gran Canaria, Spain, with conveners Pierre Freon (IRD), Manuel Barange (GLOBEC), Javier Aristegui (ULPGC).

A Scientific Steering Group has been established. Sponsors are IRD, GLOBEC, EurOceans, IMBER, SOLAS, ULPGC. The scientific programme is largely in place, a folder has been publicized and circulated.

Session: **Global Climate/Sea-Level Changes and Responses of Geo-environments in Tidal Shallow Seas and Coastal Zones June 15–18, 2008: 2008 AOGS Busan Meeting.** June 16–20, 2008.

See more information at <http://www.asiaoceania.org/aogs2008/public.asp?page=mars/confSessionList.asp>

Coping with Global Change in marine-social ecological system, FAO, Rome, Italy, July 2008.

<http://www.peopleandthesea.org/>

A Symposium on **Coping with global change in marine socio-ecological systems** will be held 8–10 July 2008, at Rome, Italy, with conveners Ian Perry (Canada), Rosemary Ommer (Canada), Philippe Cury (France).

A Scientific Steering Group has been established with members to be nominated by relevant Working Groups to assist the Convener in planning the Symposium. In consultation with the Convener, the General Secretary will solicit appropriate co-sponsorship.

World Water Week in Stockholm, 17–23 August 2008 "Progress and Prospects on Water: For a Clean and Healthy World"

<http://www.worldwaterweek.org>

The World Water Week in Stockholm is arranged by SIWI.

Contact: E-mail: katarina.andrzejewska@siwi.org
Phone: +46 (0)8 522 139 60

31. International Conference on Coastal Engineering (ICCE 2008), Hamburg, August 30 – September 5, 2008

<http://icce2008.hamburg.baw.de>

Contact:
Dr.-Ing. Holger Schüttrumpf
Bundesanstalt für Wasserbau (BAW)
Federal Waterways Engineering and Research Institute
Wedeler Landstr. 157, 22559 Hamburg
Tel.: (+49)-40-81908-332, Fax.: (+49)-40-81908-373
E-Mail: schuettrumpf@hamburg.baw.de



August 29 – September 1st, 2008: 6th International Conference on Asian Marine Geology (ICAMG-VI), Kochi, Japan

Call for Sessions, Deadline of abstract submission: May 1st, 2008 (planned)

<http://ofgs.ori.u-tokyo.ac.jp/ICAMG6/>

21–24 September, 2008: 7th International Conference on Tidal Environments (Tidalite 2008)

16–21 September, 2008: Pre-excursion (China coasts), 25–26 September, 2008: Post-excursion, Qingdao, China

Circular: <http://unit.aist.go.jp/igg/>

ECSA 44 Symposium – Bahía Blanca, September 29 to October 3, 2008, Argentina

Open Registration and Abstract Submission

Deadline for Abstract submission: 20 May, 2008

Deadline for early full registration: 20 May, 2008

<http://ecsa44.criba.edu.ar>

contact information: ecsa44@criba.edu.ar

The ICES/NAFO symposium on The Role of Marine Mammals in the Ecosystem in the 21st Century will be held on 29 September – 1 October 2008, at Dartmouth, Nova Scotia, Canada

with co-convenors Garry Stenson (NAFO) and Tore Haug (ICES).

A Symposium on the Ocean in a High-CO₂ World will be held 6–8 October 2008, at Monaco

<http://www.highco2world-ii.org>

Main sponsors are SCOR, IOC, IAEA, and IGBP.

IHDP 2008 International Human Dimensions Workshop (IHDW) October 12–15, 2008, New Delhi

Connected to the 7th Open Meeting – Social Challenges of Global Change until March 1, 2008.

Contact: Anna J. Wiczorek, Executive Officer, Industrial Transformation Project (IT)

International Human Dimensions Programme on Global Environmental Change (IHDP)

c/o Institute for Environmental Studies (IVM),

Vrije Universiteit,

Amsterdam (VU), De Boelelaan 1087,

1081 HV Amsterdam, The Netherlands

Tel: +31 20 5989504 , Fax: +31 20 5989553

E-mail: anna.wiczorek@ivm.vu.nl

Web: www.ihdp-it.org

IHDP 7th Open Meeting, "Social Challenges of Global Change", New Delhi, 16–19 October, 2008

<http://www.openmeeting2008.org>

5th International Conference on DELTAs October 26 to November 2, 2008, Shanghai – Qingdao venue, China

Morphodynamics, Strata Architecture & Environmental Assessment

With field excursions to the Yangtze and Yellow River Delta Coasts and Chinese Grand Canal.

Deadline of abstract & registration form submission: 15 July, 2008. Deadline of financial support application: 30 June, 2008. Registration fees: USD 600–700 including abstract issue, all meals, excursion and accommodation.

Registration form: <http://unit.aist.go.jp/igg/>

EMECS 8 International Conference, Shanghai, October 27–30, 2008

The EMECS 8 calls for its theme: 'Harmonizing River Catchment and Estuary

Conference web site: <http://www.emecs-8.ecnu.edu.cn>

Organized by: East China Normal University, Chinese Research Academy of Environmental Sciences (CRAES), SEPA International EMECS Center

Zhongyuan Chen, Conference Secretariat

East China Normal University, Shanghai China

E-mail: Z.Chen@ecnu.edu.cn, emecs8@mail.ecnu.edu.cn

A World Conference on Marine Biodiversity, 11–15 November 2008, Valencia, Spain

Carlo Heip (The Netherlands) and Carlos Duarte (Spain) as conference Chairs; Jake Rice, Canada, and Heye Rumohr, Germany as ICES co-conveners of the theme session. A Scientific Steering Group has been established including ICES membership.

International Conference on Deltas (China venue), October 27 – November 3rd, 2008

5th Annual Meeting of IGCP-475 DeltaMAP, Shanghai and Qingdao – In conjunction with EMECS-8 in Shanghai Excursions to the Yangtze Delta, Old-Yellow River Delta, Modern Yellow River Delta

2009

The biennial **ASLO Aquatic Sciences Meeting**, an international gathering of more than 2000 aquatic scientists, will be held at the Acropolis in Nice, France next January 2009. For more information a website will be opened soon on

<http://www.aslo.org/meetings/>

Session Proposals are due 15 April, 2008. Please submit session proposals online:

<http://www.aslo.org/>

If you have questions about the science program, please contact the meeting co-chairs:

Jean-Pierre Gattuso, CNRS and Université Pierre et Marie Curie, Paris 6, gattuso@obs-vlfr.fr

Markus Weinbauer, CNRS and Université Pierre et Marie Curie, Paris 6, E-mail: wein@obs-vlfr.fr

Peter Bossard, EAWAG, Switzerland

E-mail: Peter.Bossard@eawag.ch

An ICES Symposium on issues confronting the deep oceans will be held in the Azores in April 2009. The prime focus will be on the North Atlantic (ICES + NAFO Areas) but relevant contributions from elsewhere will be included. Conveners will be Robert Brock (USA) and Gui Menezes (Portugal). A scientific committee will be established to include relevant scientific disciplines and regulatory authorities. In consultation with the conveners, the General Secretary will solicit appropriate co-sponsorship.

The proceedings will be published in the ICES Journal of Marine Science in 2010.

An ICES Symposium on Rebuilding Depleted Fish Stocks – Biology, Ecology, Social Science and Management Strategies will be held during the autumn 2009 at Hamburg (Germany) with Cornelius Hammer (Germany), Olav Kjesbu (Norway) and Peter Shelton (Canada) as Conveners.

A Scientific Steering Group will be established comprising 12–15 leading scientists, approx. 5–8 leading scientists from the UNCOVER project and approx. 5–8 scientists from outside the project as well as from outside Europe.

The proceedings will be published in the ICES Journal of Marine Science in 2010.

2010

An ICES Symposium on the Collection and Interpretation of Fishery Dependent Data will be held during the summer 2010, in Galway, Ireland with N. Graham (Ireland), K. Nedreaas (Norway), and W. Karp (USA) as Conveners.

A Scientific Steering Group will be established with members nominated by relevant Working Groups to assist the Conveners in planning the Symposium. The Symposium will be co-sponsored by the Marine Research Institute of Ireland and the United States National Oceanic and Atmospheric Administration and will be held in association with FAO. In consultation with the Conveners, the General Secretary will solicit further co-sponsorship as appropriate.

An ICES/NASCO/NPAFC Symposium on Marine Mortality of Salmon will be held in October 2010 in Europe with Niall Ó Maoiléidigh (ICES), Malcolm Windsor (NASCO), and Jim Irvine (NPAFC) as Conveners.

A Scientific Steering Group will be established with members nominated by each organization to assist the Conveners in planning the Symposium.

Late announcement after editorial deadline

Dr. Nancy Rabalais will receive Ruth Patrick Award 8–13 June, 2008

Nancy N. Rabalais, Executive Director of LUMCON and LOICZ Vice Chair, has been named to receive the American Society of Limnology and Oceanography's Ruth Patrick Award. The award will be presented at ASLO's meeting in St. John's, Newfoundland, 8–13 June, 2008.

Read more: INPRINT 2008/2



Foto: E.-B. Goldberg

Update us so we can update you

LOICZ INPRINT informs you about the LOICZ Project and its activities. But LOICZ has access to much more information and wants to make this information available to you as effectively as possible. To be able to provide you with LOICZ information that fits your expertise and interests most, we need input from your side telling us what your interests in LOICZ are and how we can contact you. Please complete the form on our webpage www.loicz.org under "newsletter subscription"



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The LOICZ Newsletter is produced three times per year to provide news and information regarding LOICZ activities. The views and opinions in this newsletter do not necessarily represent the position of LOICZ or its sponsoring organizations.

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LOICZ in brief

LOICZ aims to provide science that contributes towards understanding the Earth system in order to inform, educate and contribute to the sustainability of the world's coastal zone. LOICZ is a core project of the International Geosphere-Biosphere Programme (IGBP) and the International Human Dimensions Programme on Global Environmental Change (IHDP).

The LOICZ IPO is hosted by the Institute of Coastal Research at GKSS Research Centre which is part of the Helmholtz foundation.

LOICZ research as outlined in the science plan and implementation strategy is organised around five themes:

- Vulnerability of coastal systems and hazards to society
- Implications of global change for coastal ecosystems and sustainable development
- Human influences on river-basin-coastal zone interaction
- Biogeochemical cycles of coastal and shelf waters
- Towards coastal system sustainability by managing land-ocean interactions

The Science Plan and Implementation Strategy is available electronically on the LOICZ website and in hard copy at the LOICZ IPO.

Get involved

If you wish to contribute to LOICZ INPRINT please send an e-mail to: loicz.ipo@loicz.org or visit the LOICZ website www.loicz.org for article requirements.

If you have a project you would like to affiliate to LOICZ please go to www.loicz.org and click on research for detailed information.

