

LOICZ NEWSLETTER

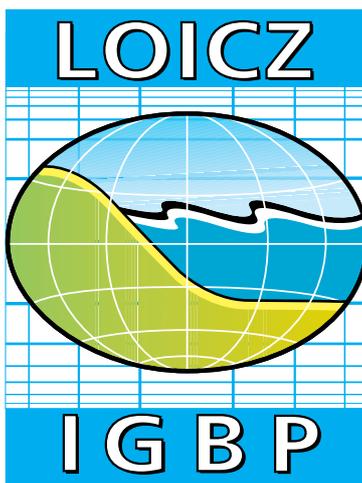
Links and partners for the "New" LOICZ:

Global Nutrient Export from Watersheds (Global NEWS)

LOICZ does not work in isolation and looks to introduce other efforts or agencies that, while operating formally outside the LOICZ core project, work on common issues and are worth considering as mutual partners in the implementation of the "New" LOICZ. In the following paragraphs we feature the Global NEWS task force. Global NEWS investigates the links between anthropogenic drivers/pressures on land and nutrient loading to coastal waters, which are reflected in changing coastal ecosystem structure and function. NEWS aims to provide scientific understanding of this coupling through the development of sophisticated models. Mutual agendas and fields for cooperation with the "New" LOICZ occur in the area of model evaluation and further development, i.e. at the interface of LOICZ themes 3-4, including the evaluation of the filter functions in estuaries and in translating this information to inform management and policy, (LOICZ Theme 5). The global character of NEWS is likely to facilitate the further development of the LOICZ typology database and, classification of coastal areas against their land/water use – nutrient change characteristics. Another important field of cooperation between LOICZ and NEWS may be the development and application of scenarios to better understand how coastal systems are likely to respond to anthropogenic change. This will be a priority task in the "New" LOICZ and relevant also to our long lasting co-operation with IOC, e.g., in the implementation of the coastal GOOS:

What Is Global NEWS?

Global NEWS is an international, interdisciplinary, scientific taskforce, focused on understanding the relationship between human activity and coastal nutrient enrichment. Global NEWS was formed in spring of 2002 as a workgroup of UNESCO's Intergovernmental



This is the thirtieth newsletter of the Land Ocean Interactions in the Coastal Zone (LOICZ) International Project of the IGBP. It is produced quarterly to provide news and information regarding LOICZ activities

Oceanographic Commission (IOC) (with co-sponsorship by UNEP, US-NSF, and US-NOAA). The primary aim of Global NEWS is to construct and apply the next generation of spatially explicit, global nutrient export models. Dr Sybil Seitzinger of Rutgers University's Institute of Coastal and Marine Sciences is the chair of this workgroup.

Why Global NEWS?

- Humans have dramatically altered the earth's nitrogen (N), phosphorus (P), silica (Si), and carbon (C) cycles, resulting in considerable coastal environmental degradation (e.g., increased algal growth and harmful blooms, alteration and loss of seagrass habitats, increase in extent and duration of anoxic and hypoxic water, and coral reef degradation.)
- Sources of nutrients entering the coastal zone such as fertilizer use, sewage, livestock production, and fossil fuel combustion are projected to increase rapidly over the next decades.
- Uneven spatial distribution of human population, agriculture, and industrial activity leads to spatial differences in nutrient inputs to coastal ecosystems (Fig. 1).
- Future nutrient export to the coastal zone is likely to be spatially diverse as well, with enormous relative and absolute increases concentrated in developing regions such as Africa, South America, and Eastern and Southern Asia (Fig. 2). Increases are also predicted for Eastern Europe and N. America.
- Previous spatially explicit global models of nutrient export have focused on a single element or nutrient form. Because the relative availability of different nutrients and different nutrient forms (dissolved vs. particulate, inorganic vs. organic) can influence ecosystem response, single element approaches are

DIN Export from Watersheds to Coastal Systems

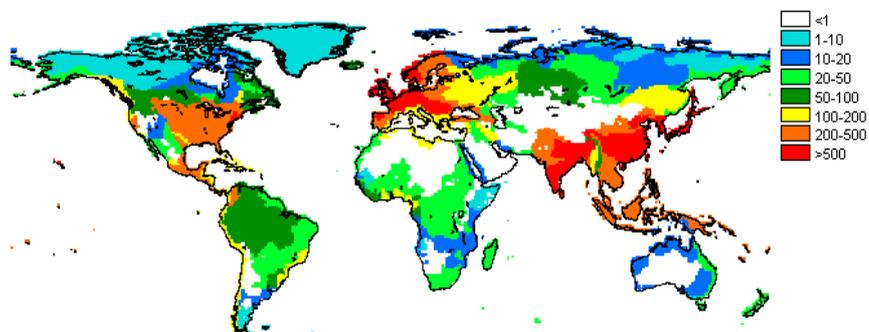


Figure 1 - Nitrogen (inorganic N) export from watersheds to coastal systems. units: kg N km⁻² watershed y⁻¹. (S.P. Seitzinger and C. Kroeze 1998.)

often insufficient to predict ecosystem vulnerability or response. NEWS will take a multi-element, multi-form approach to generate improved scientific understanding and management tools.

Goals of Global NEWS

- Development of next generation of spatially explicit, multi-element (N, P, Si, and C), multi-form model systems to predict nutrient transport to coastal systems as a function of natural processes and human activities on the landscape
- Advance understanding of the relationships between human activities and natural processes on land and nutrient inputs to coastal systems
- Analysis of past, current, and future scenarios
- Inform environmentally sound economic development, particularly in developing regions, through improvement and distribution of scientific understanding and analysis of nutrient sources and fates at the regional scale (e.g., through links with the UNEP-Mediterranean Action Plan and UNESCO/IOC)
- Career development for postdoctoral fellows and training for graduate students

Possible Applications

- Identification of areas prone to nutrient over-enrichment and ranking of potential sources
- Explanation of regional patterns in coastal nutrient enrichment
- Prediction and mitigation of environmental impacts of nutrient over-enrichment (e.g., occurrence of harmful algal blooms)
- Evaluation of potential environmental impacts of economic and policy decisions at the national, regional, and global levels.

Project Co-chairs

S. Seitzinger, Rutgers University, USA, A.F. Bouwman, RIVM, Netherlands, N. Caraco, Institute Ecosystem Studies, USA, D. Conley, National Envir. Res. Inst., Denmark, J. Garnier, UMR Sisyphe, France, J. Harrison, Rutgers University, USA, C. Kroeze, Univ. Wageningen, Netherlands, W. Ludwig, Univ. Perpignan, France

For more information about Global NEWS and other partners involved, please visit <http://marine.rutgers.edu/globalnews/>.

If you would like to contribute river nutrient or discharge data to Global NEWS, please contact Dr John Harrison at harrison@imcs.rutgers.edu.

IGBP SC, Moscow, approves in principle the “New” LOICZ draft Science Plan/ Implementation Strategy; IHDP SC in Bonn considers scientific partnership with LOICZ

Based on the last version (No. 11) of the LOICZ Futures Document, drafted after the Banff SSC Meeting in June 2003, a first official “Draft Science Plan and Implementation Strategy” for the “New” LOICZ has emerged. Following IGBP’s peer review process, the document was recently presented to the IGBP SC for approval. We are glad to say that during this meeting, held in Moscow 2-5 March, the document received in principle approval subject to some editorial change. Reviewers comments (3 from IGBP and 3 from experts engaged by IHDP) were very positive in general. More specific comments centre around issues of (i) strengthening the rationale for the themes and topics for LOICZ’ future work, and

(ii) bringing out the niche of the “New” project more visibly. The SSC Chair and IPO have engaged with the whole LOICZ SSC and, in particular, the designated theme leaders to revise the document looking specifically at (i) state of the science, (ii) gaps identified and, (iii) thematic prioritisation. In common with other draft project plans, IGBP has appointed two SC members, Sybil Seitzinger and Seth Krishnaswami, to assist LOICZ to finalise the document. We aim to have the revised draft ready for circulation by the end of May allowing the 15th LOICZ SSC Meeting, to be hosted by the Singapore IPO Node between 4-5 June, to finally review the draft and produce a final version for circulation to the IGBP in July.

We wish to express our sincere thanks for all the valuable comments received. They came from the joint LOICZ/IHDP scoping team as well as from within and beyond the LOICZ SSC irrespective of having put tremendous pressure on people in the final phase of drafting. We hope that this last effort will generate the broadest possible joint ownership by the science and user community. Our special thanks also go to the IGBP and IHDP secretariats which circulated the document immediately to their team experts.

Subsequently, by invitation, the IPO also presented the draft plan at the IHDP SC held in Bonn, Germany, 22-24 March. This derived as a logical consequence from earlier considerations about mutual agendas and potential for a scientific partnership with LOICZ. Tracing back to 1999, they entered the level of SC considerations in Banff in 2003. Supported by the chairs of the LOICZ SSC, Han Lindeboom (until 2003), Liana Talaue McManus (from 2004), and the IGBP (Guy Brasseur), and based on the strong and serious interest in a close scientific partnership with IHDP, the IHDP SC discussed the matter of how LOICZ can be value adding to the global efforts of human dimensions sciences. In return LOICZ is expected to benefit from a formalised relation with the HD community that would seem pivotal to accomplishing the complex interdisciplinary goals of its science plan. We are looking forward to IHDP’s decision regarding the shape and timelines for such a partnership link, which will also be reflected in membership of initially 4 HD experts in the LOICZ SSC.

The meeting provided an excellent forum to present and discuss initial plans for joint activities with the IHDP SC and core projects. We are grateful for this opportunity. In addition LOICZ continued a

DIN Export by Rivers for World Regions 1990 and 2050 (BAU Scenario)

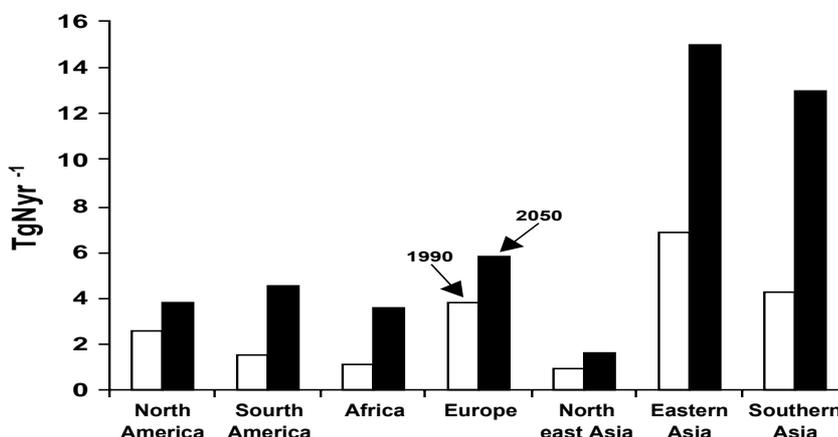


Figure 2 - Predicted increases in N export to coastal systems by the year 2050 under a Business as Usual (BAU) scenario. Model predictions from C. Kroeze and S. P. Seitzinger. 1998.

series of substantial considerations with interfacing projects of the ESSP, such as the GWSP and GECAFS, that had started in Moscow. This process is ongoing and will considerably assist the SSC to clearly identify and communicate the niche for the “New” LOICZ.

AfriCat I

Synthesis and Futures Meeting, Mombasa, Kenya, 16-18 February

The New Partnership for African Development, NEPAD, Coastal and Marine Sub-theme office in Nairobi, hosted the START/LOICZ AfriCat I Synthesis and Futures Meeting supported by local organizer, IOC Mombasa, UNESCO-IHP and START. The meeting invited the AfriCat I principal investigators, together with a broad African and international community of scientists/ projects as well as a number of institutions from within and beyond the UN system. Damming of river systems in response to increasing freshwater and energy demand was reviewed as a key major driver of coastal change against a background of climate change. Based on the draft synthesis papers submitted by the four AfriCat I PI's covering

- the Sebou and Moulouya rivers in Morocco, both of which have been dammed;
- the Senegal River, dammed in its lower course;
- the Tana and Sabaki rivers in Kenya, the former having been dammed; and
- the Rufiji River in Tanzania, for which damming has been proposed,

the scientists identified common and integrative as well as individual features between the studies and developed a ranking of catchment-based coastal issues and change trends. At the same time the participating stakeholder agencies and policy makers provided their ranking of the issues based also on the priorities for information needs. Though there was broad agreement between the findings of the two approaches, with priority being put on coastal salinisation and geomorphological change, views and priorities differed in detail and in individual catchments. Adaptation strategies and a need to properly inform management on sustainability options ranked particularly high in the views of the agency/policymaker group.

In order to determine the nature of future research needs, the workshop also considered the methodologies and tools; structures and management; organisation and institutional arrangements; funding and mechanisms that would be needed for a research programme. The design should aim to improve linkages between socio-

economic drivers and impacts as well as biophysical, biogeochemical fluxes in order to analyse human dimensions of major biophysical and biogeochemical changes in catchments. It has to have both a retrospective and future oriented part, which in the end should cater for the development of scenarios for strong vs. weak sustainability options. The workshop participants recognised the need to improve practices within three broad areas:

1. Identifying user-friendly indicators/ thresholds for state changes in the coastal zone.
2. Validating socio-economic linkages to coastal change.
3. Elucidating environmental system functioning.

The NEPAD representative, Mr Ali Mohamed, concluded by underlining the need for expanding the AfriCat process and networks and using this as a platform to inform the formulation and implementation of the NEPAD action plan, in particular the Coastal and Marine Sub theme. A future strengthening of the role of the “New” LOICZ in Africa, including options to establish an IPO Node, are under consideration and will be endorsed by NEPAD. The collaboration with START, IOC and IHP is seen to provide a fruitful and strong mechanism in this respect. The results of the AfriCat pilot project are now in a peer review and publication of the case studies and a synthesis is foreseen for 2004 with editing support provided by LOICZ and Mr Russell Arthurton.

IPO NOTES



Martin Le Tissier joins LOICZ IPO

LOICZ has a new Deputy Executive Officer who comes with the backing of a spin-out environmental consultancy company from the University of Newcastle upon Tyne UK. Martin Le Tissier is seconded from Envision Partners LLP a new environmental consultancy company that formed from the Centre for Coastal Management (CCM) at the University of Newcastle. CCM had a long track record

in research, education, capacity building and consultancy, particularly in the area of science underpinning management, and is well known for its association with the MSc programme in tropical coastal management offered by the University of Newcastle: these activities are being continued by Envision. Martin brings to LOICZ a wide experience of working with coastal scientists, academics Governmental and non-Governmental officers developing capacity to address the multiple scales of coastal issues and stakeholder conflict in the coastal zone across the spectrum of science to management, as well as a broad network of contacts to contribute to the “New” LOICZ. His work has led to keen interest in the application of science to the management of the coastal zone that has resulted in programmes to design and implement capacity building courses, work related learning and curricula for Government organisations, academics and NGOs for integrated coastal management.

Martin graduated from the University of Newcastle with a degree in Zoology. He took a one year programme in teacher training before studying for a PhD investigating the formation of skeletons by corals, a theme that he continued in post-doctoral positions at the Universities of Reading and Newcastle. His studies have broadened to include the ecology and ecophysiology of corals particularly in response to environmental change. The benefits of studying corals and coral reefs have included ample opportunity to travel and work with scientists and organisations throughout South and South-East Asia, the Middle East and the Caribbean.

Martin will split his time between the IPO at Texel, the Netherlands and Newcastle when not travelling in support of LOICZ ensuring that the transition to the “New” LOICZ and establishment of IPO Nodes leads to a programme every bit as successful and more as the “Old” LOICZ.

First LOICZ Regional Thematic IPO Node in Singapore

As the Land-Ocean Interactions in the Coastal Zone (LOICZ) crosses into its second decade of addressing key global system research in land-ocean programmes, its core strategic thrust is to direct its efforts towards bridging the gap between biogeochemistry, coastal system functioning and the human dimension. Five different themes, have been drawn up for the next decade: 1) Vulnerability of Coastal Systems and Hazards to Human Societies; 2) Implications of Global Change and Land and Sea Use on Coastal Development; 3) Anthropogenic Influences

on the River Catchment and Coastal Zone Interaction; 4) Fate and Transformation of Materials in Coastal and Shelf Waters; and 5) Towards Coastal System Sustainability by Managing Land-Ocean Interactions. These themes would act as a backbone of the scientific activities.

To assist in the implementation of research initiatives under the "New" LOICZ (2003-2012), a regional IPO Node has been established in Singapore at the **Environmental Engineering Research Centre (EERC)** of the Nanyang Technological University (NTU). Managed by the centre, a full-time Research Executive is supporting the operation of this Node.

The Singapore Node aims to link the regional scientists to the global LOICZ activities. Its role is to coordinate regional research collaborations, to build and maintain scientific linkages with other programs as well as to disseminate information. It will emphasize on the integration and synthesis required to develop a regional picture of changes in material fluxes in coastal zones and their links to socio-economic drivers. Collaborative links with other programs and international agencies will be a priority task.

So far the Node presented LOICZ at the recent "Advanced Training Workshop on South China Sea Regional Carbon Issues" held on 16–29 November 2003 in Taiwan. This was part of a regional capacity building program Global Carbon Project (GCP) aiming to promote GCP-related research programs. Member countries of the Southeast Asian Regional Committee for START (SARCS) received advanced training on the carbon measurement, monitoring and modeling techniques, and were guided to develop a GCP research collaboration team within SARCS. Funded by the National Science Council of Taiwan and co-organized by multiple academic institutions and the SARCS Secretariat, it saw a gathering of young talented scientists from around the Southeast Asian region and a pool of distinguished world-leading experts on GCP research. This two-week long workshop facilitated knowledge and technology transfer through a series of discussions, presentations and hands-on experience on carbonate parameter measurements. Most importantly, it presented a good chance for organizers, speakers and participants to share thoughts about new developments in carbon and land-ocean issues in their countries as well as to promote regional research collaboration.

EERC is a multi-disciplinary research and development centre established jointly by NTU and the Ministry of the Environment (ENV) of Singapore. It aims to

establish a focal point for upstream research & development in environmental engineering and to develop appropriate environmental technologies and innovative approaches to cater to the national and regional needs. It also acts as a regional environmental engineering resource and technology transfer centre through organizing regular conferences, exhibitions and training courses and workshops. Covering a combined area of more than 13,200 sq ft of laboratory and research space, the centre has a wide range of scientific and laboratory equipment. In February 2003, another research centre has been set up in the new \$40 million state-of-the-art Research Technoplaza in NTU.

The Centre is under the direction of Professor Lawrence Koe, who has been involved with the activities of LOICZ since 1993, when global change programmes started in the region. Professor Koe is a past Chairman of SARCS and was instrumental in the establishment of IGBP and START activities in Southeast Asia. He will be assisted by Ms Jasmine Foo, a full-time research executive at the Centre. Similar to the SARCS Secretariat, the Singapore Node aims to bring regional scientists, here with focus on land-ocean research, closer together under the "New" LOICZ.

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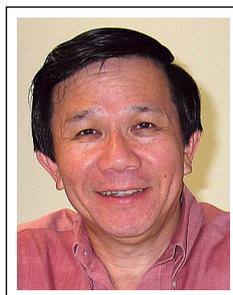
Second LOICZ Regional Thematic IPO Node to be established in Germany

Planning for a second LOICZ IPO Node has reached a final phase. In principle approval was received from the GKSS Research Centre in Geesthacht, Germany, some 50 km upstream of the city of Hamburg at the banks of the Elbe river. As with other Regional/Thematic IPO Nodes, the German Node will represent a national and institutional commitment to support the implementation of the "New" LOICZ. The regional focus beyond core Europe should include the new independent states in Eastern Europe and the Arctic.

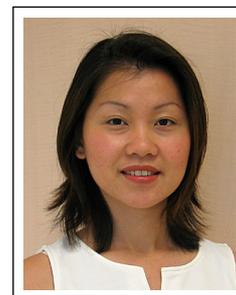
GKSS is one of 15 national research centres under the Helmholtz Association. Founded in 1956 as a research centre for nuclear power ship propulsion, GKSS started with environmental research in the mid-seventies. Today, GKSS focuses on material and coastal research. With more than 700 employees it is one of the largest research institutions in Northern Germany. One of the focal points in the past was the analysis of the then highly polluted Elbe river and its impact to the Wadden Sea and the German Bight. Following the German reunification in 1990, GKSS monitored the gradual cleaning of the Elbe resulting from the breakdown of the Eastern German industry and improvement of wastewater treatment (e.g., ammonia concentration decreased by factor 18 since 1988).

Mapping the sensitivity of the Dutch, Danish and German Wadden Sea with respect to oil spills has been on-going for more than ten years. This activity has gained growing attention in particular following recent ship accidents off the Spanish coast and in the North Sea.

Other developments include the so-called Ferry Box system, an automated device designed to monitor water quality parameters along the track of ferry lines. Along with satellite information (mainly from ESA's ENVISAT) and additional water quality data, the development and application of ecosystem models (and data assimilation) is a future aim.



Associate Professor Lawrence Koe
Director of EERC



Ms. Jasmine Foo,
Research Executive, EERC

Interdisciplinary science bridging into the human dimensions is a challenge, GKSS already addressed some five years ago. It took part in a study, for the Port of Rotterdam, on the future environmental quality of dredged material in relation to different management scenarios in the Rhine catchment. GKSS also works in the co-ordination of the EU-project EuroCat, a LOICZ-ELOISE regional project, where integrated management and sustainable use of water and coastal resources is strived for at the catchment scale.

The question "how are statements of climate researchers transferred into and perceived by the public?" was addressed in a recent successful GKSS project. It looked at the transformation of scientific results while being communicated to the general public by the media.

An initial common effort of three German coastal research centres, GKSS, the Baltic Sea Research Institute (IOW; Rostock-Warnemünde) and the Alfred Wegener Institute (AWI; Bremerhaven/Sylt) is the annual Coastal Research Summer School for PhD students and young scientists which started in 2002

(3rd run from 30 Aug. to 10 Sep. 2004, www.gkss.de/summerschool).

GKSS also cooperates closely with the Carl von Ossietzky University of Oldenburg and the Terramare Research Centre in Wilhelmshaven (www.terramare.de). Whereas Terramare's task is to coordinate and support (coastal) marine research all over the state of Lower Saxony, the Institute of Chemistry and Biology of the Marine Environment at the University of Oldenburg (ICBM; www.icbm.de) focuses on environmentally-oriented coastal and shallow-marine research. At present, ICBM runs the DFG Research Group on the BioGeoChemistry of Tidal Flats, centred on the Wadden Sea. The goal is to obtain a sediment and nutrient budget for a particular back-barrier tidal flat system. It also looks at the microbial system and its metabolic role in the water column, across the sediment/water interface and down into the deeper anoxic sediments. An output is a broadly applicable mathematical model of the hydrodynamics and ecosystem functions, which also enables prediction of future developments. ICBM is also responsible for the diploma curriculum on Marine Environmental Sciences and the international masters programme on Integrated Coastal Zone Management.

In relation to the "New" LOICZ Science Plan and Implementation Strategy, GKSS has expressed an interest to focus on theme 2 (Implications of global change and land and sea use on coastal development) and 4 (Fate and transformation of materials in coastal and shelf waters), with an interest to

also contribute into the overarching theme 5 (Towards coastal system sustainability by managing land-ocean interactions). In principle the German Node seeks harmonisation and synergies based on mutual agendas between the LOICZ topics and MARCOPOLI, the common coastal Research Programme of AWI and GKSS. Following initial consultations with LOICZ, a first set of potential topics feeding into themes 2 and 5 have been identified including new forms of sea use such as wind-parks and related issues of fisheries, and aquaculture as well as oil and gas exploitation. Other suggestions comprise issues such as "coastal urbanisation" and its temporal and spatial footprint. All of these topics have considerable implications for the human dimensions challenging scientists to seek effective ways for interdisciplinary integration.

As part of a broader commitment to foster capacity building and training, the German Node will start planning for a LOICZ science oriented Summer School in October 2005. "Analysis, Visioning and Assessment of Coastal Environmental Change: the Cases of Climate and Pollution in a Changing Social World" will bring together scientists from geosciences, economists and social science. LOICZ is prepared to assist in identifying lecturers and seeking support for this activity as well as disseminating the results to its global network. A priority list of topics and immediate day to day tasks for the first years of the IPO Node will be refined at the 15th LOICZ SSC and Node meeting in June 2004. The official start of operations is anticipated to be in spring this year.

Contact partner at the Node will be



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LOICZ SSC Update

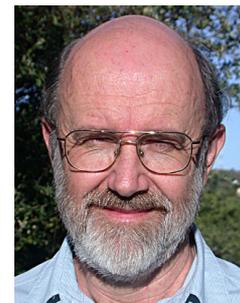
Besides new SSC members, who will be introduced in the following, a number of changes within the current SSC have taken effect from January 2004.

Liana Talaue-McManus has been assigned the new SSC Chair assisted by **Jozef Pacyna** as vice-chair. We look forward to their continued involvement in the SSC in their new positions. We take this opportunity to thank **Han Lindeboom** (SSC Chair 1997-2003), **Wim Salomons** (SSC vice-chair 2003) and **Gerardo Perillo**, who have officially finished their terms, for their fundamental input and dedication in the SSC as well as their contribution towards the future of LOICZ in the form of the new Science Plan. We hope to count on their continued involvement and also wish them all the best in their own future activities.

A warm welcome to our new SSC members who, together with the existing SSC are challenged with shaping the future of LOICZ. We look forward working with all of them.

An additional group of 4 new SSC members will be identified by the IHDP soon and join us thereafter. They will be introduced in the next issue of the LOICZ Newsletter.

The New SSC members:



Dr Alan Whitfield
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received his PhD from the University of Natal in 1983. He is currently a Principal Scientist and Research Manager at the South African Institute for Aquatic Biodiversity and has focused his research on the ecological interactions that occur within the estuarine environments of southern Africa. These investigations have covered a broad field, ranging from physico-chemical to botanical and zoological studies, with most of his work being directed towards assessing the importance of estuaries in the life cycles of individual fish species and monitoring the impacts of human developments on fish assemblages. A recent interest has

been the use of fishes as indicators of ecological and environmental changes within estuaries. Much of Dr Whitfield's research over the past decade has been directed at informing the scientific community and decision makers about the consequences of altered river flows on the functioning of estuaries, especially the influence of these changes on the fish communities occupying these systems. Apart from serving on the IUCN Species Survival Commission Fish Specialist Group he is also a founding member of the South African Consortium for Estuarine Research and Management and serves on the editorial boards of the journal Fisheries Management and Ecology and the African Journal of Zoology.



Dr Bill Dennison
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is a Professor of Marine Science and Vice President for Science Applications at the University of Maryland, Center for Environmental Science. Since obtaining his PhD from the University of Chicago in 1984 on seagrass ecophysiology, he has been conducting coastal marine research on a diversity of topics: seagrasses, corals, macroalgae, microalgae, bacteria and viruses, effects of toxicants, nutrients and sediments on marine ecosystems, harmful algal blooms, water quality and ecosystem health. He spent one decade based on the east coast of the US and another based on the east coast of Australia, and has been involved in various major coastal environmental studies on both continents. In addition to scientific publications, he has also produced a variety of science communication products: conceptual diagrams, books, newsletters, posters, video/DVDs, web sites. His focus has been on: a) studying the ecophysiology of marine plants and b) developing tools and techniques to solve environmental problems associated with the land-sea interface. He is currently leading the effort to develop an Integration and Application Network (www.ian.umces.edu), which attempts to involve scientists in solving, not just studying environmental problems.



Dr Nalin Wikramanayake
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is a Senior Lecturer in the Dept. of Civil Engineering at the Open University of Sri Lanka. He obtained a PhD in Civil Engineering from the Massachusetts Institute of Technology in 1993 for a study of sediment transport under the combined action of waves and currents. Over the last 10 years he has worked in Sri Lanka as a lecturer and a consultant in the fields of Coastal, Hydraulic and Environmental Engineering. His current research interests include the coastal wave climate of Sri Lanka, coastal hydrodynamics, sediment transport and shoreline change, nutrient fluxes to the coastal zone and appropriate sanitation for developing countries. Over the last three years Dr. Wikramanayake was the Deputy Principal Investigator and Team Leader, Sri Lanka for a LOICZ related project entitled "An Assessment of Nutrient, Sediment and Carbon Fluxes to the Coastal Zone in South Asia and their Relationship to Human Activities" under which research, capacity building and networking activities were carried out in five South Asian countries. He is a member of the Coastal IOGOOS Development Committee.



Dr Nancy Rabalais
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is a Professor at the Louisiana Universities Marine Consortium in Cocodrie, Louisiana where she has been since 1983. She is also an Adjunct Professor in the Department of Oceanography and Coastal Sciences at Louisiana State University. She earned a PhD in Zoology from the University of Texas at Austin in 1983. Dr Rabalais' research focuses on issues of

eutrophication, dynamics of oxygen-depleted waters and their effects, and river/ocean interactions. She has studied the effects of Mississippi River discharge and constituent flux on the adjacent coastal ecosystem of the northern Gulf of Mexico since 1985. She and her colleagues have documented the extent of bottom-water hypoxia and the physical, chemical, and biological parameters associated with it, the direct links of severity and extent of hypoxia with river constituent flux, especially nitrate, and the long-term response of the coastal system to changes in flux of materials from the river and climate change. Dr. Rabalais has participated in LOICZ workshops and provided written materials for the newsletter and synthesis documents. She is Fellow of the American Association for the Advancement of Science (AAAS), an Aldo Leopold Leadership Program Fellow, a Past President of the Estuarine Research Federation, a National Associate of the U.S. National Academies of Science, and currently she chairs the Ocean Studies Board of the National Research Council, National Academy of Science.



Professor Isao Koike
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is director of Ocean Research Institute, at the University of Tokyo, Japan. He received his DSc in microbiology from the University of Tokyo in 1975. After his DSc study on physiology of denitrifying bacteria, his first interest was to assess in situ denitrifying activity in coastal environments including sediments. Since then, his primary focus of research has been the coupling of microbial metabolisms and cycling of nitrogen and carbon in marine environments by participating and organizing many cruises in the region of Western Pacific, Bering Sea and Southern Ocean. He also conducted a project on nutrient dynamics and biological communities in tropical seagrasses for more than 20 years based on the field studies in Papua New Guinea, Fiji, Australia and Thailand. His current interest is dynamics of organic aggregates and dissolved organic matters and the role of microbial food webs in coastal environments

including estuaries. Since 1989 he has been involved in IGBP as JGOFS-SSC member and as IGBP-SC member, and served as Treasurer of IGBP. He has been chair of the Japan JGOFS, and Secretary of the IGBP Japan National Committee (Japan-NC), which he is currently chairing.



Dr Alice Newton
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works in the Department of Chemistry at the University of Algarve, Portugal. Since obtaining her PhD from the University of Wales, Bangor in 1995, she has been involved in research on water and coastal management with a particular interest in the biogeochemical cycles involved in eutrophication, especially with regard to coastal lagoon systems. Alice is the coordinator of the European Joint Masters course in Water and Coastal Management, involving 35 Universities at present. It has been developed with the help and guidance of the EUA, the European University Association. The major objective is to link integrated river basin management and integrated coastal zone management, focussing on the socio-economic consequences and other effects of human activity. Importantly, the programme will also provide a mechanism to maximise the benefits of new research findings by fast-tracking their incorporation into the training of coastal water researchers and managers. Following the launch of the European masters programme, a second, ERASMUS MUNDUS, programme will be developed.

Alice represents the University of Algarve on a number of international organisations, including ETNET (Water Education Thematic Network) and ESSENCE (Environmental Education Thematic Network). She also works closely with IMAR, the Portuguese Institute of Marine Research, CMQA (Environmental Chemistry Research Centre), CIMA (Environment and Marine Research Centre), as well as the Fundação Oceanis in Sagres and EUROCOAST Portugal.

In addition to her responsibilities at the University of Algarve, Alice works with the ELOISE secretariat and links into the EHEA 9 European Higher Education

Area). She has delivered postgraduate courses at the Universities of Wales, Bergen, Szczecin, Portsmouth and Gdansk on Eutrophication and on Coastal lagoons. Alice is a member of the Steering Committees of the Centre for Excellence for Baltic Development, Research at Gdynia, Poland, as well as a member of the Centre for Excellence for the Black Sea at Varna, Bulgaria and the proposed SPICES (Science and Policy Integration for Coastal Ecosystems Sustainability) Network of Excellence. She is an enthusiastic member of ASLO (American Society of Limnology and Oceanography), ERF (Estuarine Research Federation) and the EUCC (The Coastal Union).



Dr Juan D. Restrepo
(jrestre@eafit.edu.co)

is an Associate Professor of Geological Sciences at EAFIT University, Colombia. He obtained his PhD in Environmental Oceanography of Estuaries, Deltas, Lagoons, and Coastal Waters from the University of South Carolina. Following on from his PhD, Dr Restrepo has continued his research direction with focus on factors controlling water discharge, sediment load, and dissolved material loads to the ocean from the Pacific and Caribbean rivers of Colombia. Currently, his research focuses on improving the understanding of the natural and anthropogenic causes affecting denudation rates and sediment transport to the Caribbean Sea from the largest fluvial system of Colombia, the Magdalena River. He has carried out numerous field studies in coastal environments of Colombia, including the Pacific estuaries and deltas; coastal lagoons and coral reefs in the Caribbean. Since 2000 Dr Restrepo has been involved as a resource scientist for the sub-programs of LOICZ Basins, SAmBas (South American Basins) and CariBas (Caribbean Basins). Currently he is one of the co-authors in the Coastal Communities and Systems and Caribbean Assessment Chapters of the Millennium Ecosystem Assessment (MA), and also, a member of the Scientific Steering Committee of Colciencias (Colombia) in the Marine Science Program.

HAVE YOU SEEN

GLOSS Training course: **Sea Level Changes-Observation, Interpretation, Application. Sea Level Training Course** at the University of the West Indies, St. Augustine, Trinidad from 5-16 July 2004. For more information visit: http://eseas.org/sealevel_course/

PUBLICATIONS

LOICZ R & S volumes are downloadable from the LOICZ web-site.

For hard copies (as long as stocks last) e-mail: loicz@nioz.nl

Klein, R.J.T., R.J. Nicholls and F. Thomalla, 2003: **The resilience of coastal megacities to weather-related hazards.** In: *Building Safer Cities: The Future of Disaster Risk*, A. Kreimer, M. Arnold and A. Carlin (eds.), Disaster Risk management series No. 3, World Bank, Washington, DC, USA, pp. 101-120.

The paper can be downloaded from: www.proventionconsortium.org/files/conference_papers/klein.pdf

New **open access** journal of the European Geosciences Union: **Biogeosciences** (BG). BG has an innovative two-stage publication process which involves a scientific discussion forum (**Biogeosciences Discussions**) and exploits the full potential of the internet. For more detailed information go to: www.biogeosciences.net

Special Issue: **River Catchment-Coastal Sea interaction and human dimensions.** Guest editor Hartwig H. Kremer, March 2004, Springer Regional Environmental Change, Volume 4, No. 1.

Hard copy available, please visit: www.springeronline.com

WHAT'S ON THE WWWEB

*The LOICZ IPO has launched a **new web-site** which is still under construction but gives easy access to the current web-site. Please check regularly to see when it is fully operational and then please update your links to the LOICZ web-site with the new url: www.loicz.org*

A database compiling data on metabolism in Europe was designed in the framework of the EU project EUROTROPH. This database is freely available at www.obs-vlfr.fr/eurotroph/ and is analyzed and discussed in the paper: Gazeau F., Smith S. V., Gentili B., Frankignoulle M. & Gattuso J.-P.,

in press. **The European coastal zone: characterization and first assessment of ecosystem metabolism. Estuarine, Coastal and Shelf Science.** Contact: Jean-Pierre Gattuso (gattuso@obs-vlfr.fr)

European Joint Masters in Water and Coastal Management: www.ualg.pt/EUMScWCM/

GTOS Biennial Report 2002-2003 available on line at: www.fao.org/gtos/Pubs.html Free hard copies are available from the GTOS Secretariat (gtos@fao.org or visit www.fao.org/gtos)

LOICZ/IGBP/IHDP CALENDER

For a complete list of future meetings and regular updates visit our web-site at www.loicz.org and click on 'Calendar'

4 & 5 June 2004, Singapore: LOICZ 15th Scientific Steering Committee Meeting, followed by a one day LOICZ Regional Nodes meeting on 6 June 2004. (by invitation only)

18-20 October 2004, Dunedin, New Zealand: Making Connections: Cross-boundary Coastal Management. The 2004 Annual Conference of the New Zealand Coastal Society. Incorporating a LOICZ workshop in association with the New Zealand IGBP Committee, 'The Impact of Major Dams, Diversions and Water Abstraction on Coastal Sedimentation in New Zealand'. Conference Web-site: www.coastalsociety.org.nz/conference2004.htm

22-25 November 2004, Portoroz, Slovenia: European Conference on Coastal Zone Research: an ELOISE Approach. For more information please visit: www.nilu.no/projects/eloise/

9-12 November 2005, Oaxaca, Mexico: DIVERSITAS International conference on biodiversity-Integrating Biodiversity Science for human well-being. Deadline for proposals: **30 April 2004**. For more information e-mail: secretariat@diversitas-international.org or visit: www.diversitas-international.org

OTHER MEETINGS

25-30 April 2004, Nice, France: 1st General Assembly of the European Geosciences Union (EGU). Special sessions with high relevance for and partly co-sponsorship by LOICZ are in the Ocean

Sciences, Hydrological Sciences and in particularly the Biogeochemistry section, e.g.,: **OS19, HS16, BG5 and 7**. For more information on these and other sessions please visit: www.copernicus.org/EGU/ga/egu04

26-28 April-2004, Rostock-Warnemuende, Germany: BaltCoast 2004 - Managing the Baltic Sea. For more information please visit: www.eucc-d.de/baltcoast2004

26-28 April 2004, Venice, Italy: Coast-wetchange Conference-International Conference on Coastal wetlands in the global change context. Please visit: www.corila.it/coastwetchange/

10-13 May 2004, Galway, Ireland: Conference EUROCEAN 2004. Jointly organized by the European Commission and the Irish Presidency of the European Union. For more information please visit: www.eurocean2004.com

13-15 May 2004, Seville, Spain: "GI and GIS for Integrated Coastal Management", of the ECO-IMAGINE initiative of the International Centre for Coastal and Ocean Policy Studies (ACCOPS). For more information and grants availability please e-mail info@accops.it

23-26 May 2004, Newport, Rhode Island: The Coastal Society (TCS) 19th International Conference. The TCS19 will focus on how coastal managers, resource users, law & policy makers, educators and students, and other coastal community members measure and assess coastal resources, functions and human impacts. For more information visit: www.thecoastalsociety.org/conference/tcs19/

20-25 June 2004, Ballina, Australia: 2nd Announcement-ECSA 37-ERF 2004 Conference-Estuarines and Change. For more information please visit: www.scu.edu.au/ecsa37erf2004conference

5-9 July 2004, Suntec Singapore: Joint Asia Oceania Geosciences Society (AOGS) 1st Annual Meeting and the Asia Pacific association of Hydrology and Water resources (APHW) 2nd Conference and Exhibition. Special session relevant for IGBO ocean and coastal activities, e.g., **BG3**, Ocean Biogeochemistry and Ecosystems Analysis, response of oceanic biogeochemical cycles, and ecosystems, to global, compare also **OA4** for biogeochemistry in coastal area. Please visit: www.asiaoceania.org

19-20 July 2004, Nairobi, Kenya: PAGES-Past Global Changes: Pan Africa PAGES Workshop on **African Palaeo-perspectives: Linking the Past to the Present and the Future**.

For more information please contact Dr Daniel O. Olago at dolago@uonbi.ac.ke or Prof. Eric O. Odada at pass@uonbi.ac.ke

5-9 September 2004, Brisbane, Australia: Coastal Zone Asia Pacific Conference-Improving the quality of life in coastal areas. For more information please visit: www.coastal.crc.org.au/czap04

20-22 September 2004, Aberdeen, Scotland, UK: Littoral 2004: 7th International Conference & Exhibition-Delivering Sustainable Coasts: Connecting Science and Policy. www.littoral2004.org

13-15 April 2005, Algarve, Portugal: Coastal Engineering 2005-7th International Conference on Modelling, Measurements, Engineering and Management of Seas and Coastal Regions. Please visit: www.wessex.ac.uk/conferences/2005/coastal2005/cfp.html

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