



# SIL news

## Volume 59 - December 2011

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Contributions on a PC formatted disk, in any standard word processor or DOS (ASCII) text, or as e-mail attachments, will assist the Editor.

## Editorial

Some delay has again occurred in preparing the SIL newsletter and putting it on internet. The reasons are not quite the same as for the delay in bringing out the summer 2011 newsletter. This time, more than anything else, our WG chairmen have rather disappointed by not providing me adequate and timely feedback about their respective group activities. I had requested them and given sufficient time as well for them to respond. I even sent the WG chairmen reminders through our secretariat (Ms. Denise Johnson sent them all emails). As newsletter Editor, I always feel that it is essential to provide timely and apposite information to our readers about the SIL activities in the period between the plenary, triennial meetings. I must say that it has generally worked out very well in the past 5 years since I have been the editor. Therefore, I am not a pessimistic and hope we will catch up and will be able to present the next and future newsletters on schedule again.

Now something about the contents of the present newsletter. We start with the invited comments from the SIL President Dr. Brian Moss: he tells us how words are important to limnologist as they are to everyone. He cites examples of meetings and of papers about how we express about what we have observed/discovered. He cites some examples of what he calls buzzwords (= fashionable catch words) and he cites a poem that he wrote some 5 years ago for a World Wetland day (you would certainly like to read).

I include two obituaries in this issue. These concern Dr. Le Cren from the UK, who passed away last year; and the legendary limnologist Dr. Baruch Kimo from Israel who expired in 2009. I am sorry for publishing the last obituary somewhat late. Our only consolation is that they both died at ripe age and peacefully. I extend our sympathies to the bereaved families and thank their colleagues for providing me their reports.

There is encouraging news from some of the SIL working groups. Plankton Ecology Group (PEG) lately rejuvenated its activities by arranging a meeting in Amsterdam in April 2010, after years of slumber and stillness. The Proceedings Special of the Amsterdam meeting should appear by early spring as a Special Issue of Freshwater Biology. Furthermore, the PEG has announced in this newsletter its next meeting in Mexico City (12-18 February 2012: see the Announcement). In the present Issue, there is also a progress report from the SIL WG Ecohydrology. Moreover, the youngest of the SIL working groups, Winter Limnology, has announced its third meeting in as many years of its existence. The group will meet in the coming spring (12-16 April, 2012) at Finse Alpine Research Station in S. Norway. Similar to the WG Winter Limnology, but a non-SIL working group, IAHR, is also organizing its 21st International Symposium on Ice in Dalian, China, from 11 to 15 June 2012, and inviting young emerging scientists in physics, chemistry and biology to participate. There seems to be some interaction between the two groups, as both deal with limnology of lakes in winter, mainly because of researchers who participate in both the groups. There is certainly a logic that favours coordinating, and even merging the activities of such groups under the SIL as their common patronage. I must thank Dr. Brij Gopal, chairman of SIL WG Wetlands for accepting my invitation to write on present status of limnology in Asia (mainly India). It is encouraging to note that he is spending most of his energy and time to motivate younger people. He is about to launch a new limnology lab, built virtually with his personal hard work, including funding, in central India. Brij plans to organise courses in limnology but is certainly in need of funds to support such an altruistic endeavour.

There are other announcements in the newsletter, including one from the elite group Rotifera which has since mid-1970s suc-

cessfully and without fail organised triennial workshops for a select group of rotifer specialists. The next Rotifera meeting will be held in November 2012 in Shillong, Meghalaya (Eastern India). Please read more about the Rotifera workshop in this newsletter. Karelian Research Centre (Russian Academy of Science), Petrozavodsk, Karelia, Russia is organising its 5th all Russian symposium dealing with Organic Matter and Nutrients in Inland and Marine Waters.

I have provided in nutshell the salient features of this Newsletter. I look forward to your feed back based on all articles. Please feel free

to let me know if you like to contribute to the newsletter, or have any suggestions to improve the contents and format.

Last, but not least, I request the SIL WG chairmen, especially those who have not contributed in the last 3-4 years, to contribute to the summer SILnews letter by sending their material to me by early April.

**Ramesh D. Gulati**  
(Editor, SILnewsletter)

## Reports

### The Importance of Words

A few years ago, during the evenings when I was teaching a course in Kenya, I was often severely trounced at Scrabble, a word game, by East African students who had used the game in learning English. Their use of words was excellent. I learned a lot from them, including an improvement in my range of short words and it made me think about how we use words. Words are as important to limnologists as everyone else. We no longer move around in small bands using gesture, touch and eyes to convey subtleties of meaning, so words, spoken at meetings or more frequently written on paper or computer screens, are how we tell one another what we have discovered. We also tell much about ourselves by our choice of words. I came across a recent paper that talked about 'spatio-temporal patterns of resource flow across aquatic-terrestrial boundaries', 'unquantified aquatic-terrestrial resource vectors', 'significantly clustered at multiple scales' and 'modulating heterogeneity in soil nutrients'. The paper was actually about moose feeding on aquatic plants in lakes, then moving to favourite browsing areas on land, excreting and sometimes being killed there by wolves, so that some areas became richer in nitrogen, derived from the lake, than others. I was able to rewrite the abstract to say exactly that in far fewer words and checked the other publications of the lead author. All were similarly obscure, except one, which was an opinion column, and was admirably clear. There is something rotten in the way we write science!

We seem to have got into a rut in the writing of scientific papers, where we see it important to use the fashionable buzzwords that might mean something to a small coterie of disciples, but little to the rest of the world. We have become lazy in communication, for clear and simple writing takes more time than automatically using the words and phrases that we think might make our work sound newer or more important. They include: temporal dynamics, perturbations, multiple scales, conceptual framework, enhanced, elevated, subsidy, synergisms, foodweb topology, trophic transfer, facilities, degradation efficacy, recalcitrant, among many others. I once edited 'the zooplankton commenced their predatory activity' to 'the zooplankton began to feed'

and 'monospecific array' to 'one species'. Our writing has become no better than the management-speak we deride in politicians, businesses and bureaucracies.

The author of the paper on moose and nitrogen is not, however just to be castigated. He deserves sympathy, because he is in the prison that we have created for ourselves; he is doing what is expected of him, by what he is convinced is peer approval. But prisons are inward-looking when we should all be reaching out if we wish our work and knowledge on waters (and everything else in the environment; it is a general issue) to be recognised and respected by the rest of society and its politicians. We have a new journal that is establishing its niche of reaching out as much as possible beyond the borders of Europe and North America, as SIL has always tried to do. It would be liberating indeed if we could establish that Inland Waters professed also an excellence in language that the longer established journals have failed to maintain in the last few decades, if we could become the gold standard for the rest. It is something that the editors cannot entirely do; they do not have time to re-write everyone's papers; it has to begin with the authors. But we could start a revolution.

Revolutions are perhaps what we also need in coping with our en-

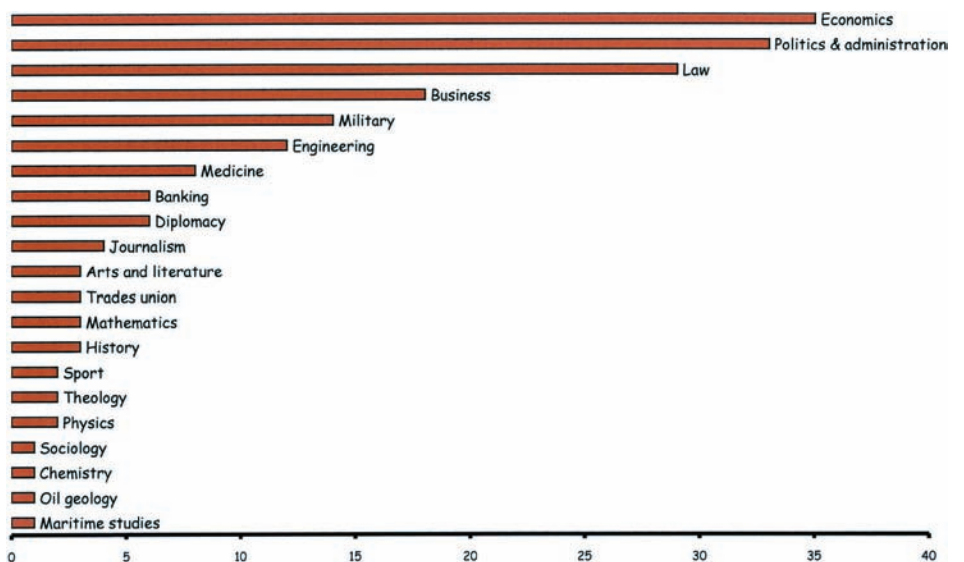


Fig. 1 Backgrounds of 197 world leaders in 2009 (prime ministers, presidents, monarchs, or dictators, dependent on which has the main executive authority in a particular country). Taken from B. Moss (in press, 2012) *Liberation ecology, the reconciliation of natural and human cultures. Excellence in Ecology Series 24, International Ecology Institute, Oldendorf/Lube, Germany.*

environmental issues. The current European and North American economic difficulties have exposed the real priorities of our governments and the failings of our leaders. Talks on reducing carbon emissions have faded into the background, and environmental legislation has been derided, as the world struggles to return to a growth economy that ultimately we know to be destructive unless it becomes based on services that can be renewed, rather than on waste of resources and environmental damage. Few of our leaders have the background to cope (Fig. 1). Three quarters of them come from economics, political and administrative, law, business, military and engineering backgrounds that ill fit them to cope with how the planet works. Only one of nearly two hundred world heads-of-state has any formal environmental training (for the record, the President of the Maldives, who has an MSc in Maritime Studies). So our writing and communication on environmental issues have to be forceful, clear and simple if we are to have any influence at all.

Perhaps we never can have much influence at such a level. Our track record is one of a few local battles won, in a losing war. The world is progressively being converted from biomes to anthromes and I know of no one, knowledgeable in ecology, who is untroubled about the future. Yet there must eventually be an acceptable future and my most optimistic view is that it will come from a mounting protest by the enormous numbers of people who will increasingly suffer from climate change and the loss of goods and services that natural systems provide. I think we have to help galvanise these people by making sure they are well informed. The more interested may read papers (if they are readable and free) in the learned journals; others will read articles in newspapers and magazines, and blogs on the web, if we write them. But ultimately we have to write for them, not for the scientific laagers of ourselves.

There are other ways too. I wrote a poem, typed below, for a talk I gave on World Wetlands Day, a few years ago. Nobody remembers the talk, but a few, at least, remember the poem.

**Brian Moss**  
President of SIL

### World Wetlands Day 2006

Sir, so what's a wetland,  
it's a word that's new to me.  
Is it just the dampish patch  
that's down slope on the lea?

Well yes and no. They call it such  
who've known no better things,  
and hope that it will do as much  
as fens and carrs and ings.

Child, I'll take you back some years  
or take you north or high,  
and conjure up what it was like  
before they sucked it dry.

It stretched for miles, it was not just  
a puddle like as now,  
but stitched the land together  
from the seastrand to the brow.

Nor was it bounded by a fence,  
to save one orchid rare  
but linked the land, with peat and sand  
and bittern, wolf and bear.

Its waters clear, that fed the mere,  
could nourish all like blood  
and when the storms had shed their fill  
that marshland held the flood.

But sir, so why then is it now  
like this, a nettled dribble  
with concrete banks and razored edge  
and nought for voles to nibble?

I'll tell you lad, this is a time  
when foolishness runs wild.  
When water's drunk from bottles  
and garden soils are tiled.

When things are run from panelled suites  
by greased and greedy men,  
when problems pile  
and every mile of river's lost its fen.

When weather warms, and all the norms  
of sense and taste are lost  
to gadgets, speed and oiled fast feed  
and all the lines are crossed.

So, sir, what will now befall  
we children of this dawn?  
Will life be good or will the blood  
be sacrificed to corn?

Young man, I do not know at all  
what fate you have to face.  
They say that things will come all right,  
that they'll assure the future's bright.

But see their actions not their words  
or soon you'll have few worms or birds.  
Ask those with little in the bank  
or every lake's a concrete tank.

Sir, I'll think on what you say  
But time is tight for me.  
I have to train in enterprise  
And lengthen my cv.

## Limnology in South Asia, Especially India: A New Initiative



The Indian Subcontinent which constitutes most of South Asia is endowed with a rich diversity of aquatic habitats.

These include many glacial and tectonic lakes, fluvial and Aeolian (created by wind) lakes, coastal lagoons and backwaters, and a large network of small to large rivers flowing in all direction, in addition to thousands of medium and large reservoirs and hundreds of thousands of small village ponds and tanks many of which were constructed over a thousand years ago. Not surprisingly, the limnological (or hydrobiological) studies in Asia had their beginning in India at the turn of the 20th century, long before Ruttner and Thienemann's Sunda Expedition to Java, Sumatra and Bali (Indonesia) in 1928-29, when Annandale explored the fauna of all kinds of aquatic habitats across Asia - from Israel to Japan (see Gopal and Zutshi 1998). After the British colonial rule ended during the late 1940s, limnological studies progressed differently in the region (see Gopal and Wetzel 1995, for reviews from Sri Lanka, Pakistan and Bangladesh, and Gopal and Zutshi 1998 for India). Until around 1970s, limnological studies of rivers, lakes, reservoirs and temporary waters received good attention though they remained largely descriptive unlike those in Europe and North America. The launching in 1985 of the Ganga Action Plan aimed at controlling water pollution, especially in river Ganga, provided a boost to the studies of water bodies throughout the country but unfortunately these were restricted to the assessment and monitoring of water quality in which aquatic organisms were sampled to examine their relationship with physico-chemical characteristics used as tools for ecotoxicological investigations. Limnological studies in this region have rarely focused on ecosystem processes and functions (e.g., Ganapathi 1972, Haniffa 1978). The emergence of environmental science as a discipline accelerated the decline of limnology and that of terrestrial ecology. This is exemplified by the recent conversion of India's only Department of Limnology established in early 1980s in Bhopal into the Department of Environmental Science and Limnology in 2005. Also, the Department of Limnology & Fisheries established at about the same time under the Agriculture Faculty at Udaipur (Rajasthan) was converted into the College of Fisheries in 2003. Two other Departments of Aquatic Biology at the University of Kerala and South Gujarat University focus largely on marine coastal biology rather than on freshwaters. Limnology as a science in India is often seen to be confined to the study of lakes and has not found firm footing in the universities and



research institutes. The policy makers and science managers as well as the general public do not recognise the term limnology though aquatic ecology is appreciated better in relation to water pollution. The situation does not greatly differ from that in countries like Canada (see Northcote 2007). Freshwater fisheries have a direct stake in the understanding of lakes and rivers at an ecosystem level. Fishery scientists have indeed contributed most to the growth of limnology but in recent decades the emphasis has shifted to aquaculture for rapidly increasing the fish yields. These efforts have paid rich dividends but all at the expense of declining biodiversity and growing problems of pollution and disease. The need for a sound understanding of basic limnology as a prerequisite to sound management of inland aquatic ecosystems (see Jumars 1990) has been ignored.

During the past decade, India's national programmes on the conservation and management of rivers, lakes and wetlands under the Ministry of Environment and Forests have called for their studies with focus on applied aspects. For example, development of protocols for biomonitoring of river pollution requires knowledge of aquatic biodiversity; management of wetlands requires the understanding of response of biota to hydrological changes; rehabilitation of lakes requires studies on causes of eutrophication and various lake ecosystem processes. The Ministry has also recognised that the conservation of rivers, though focused on pollution abatement, requires an understanding of the catchment-river interactions and floodplain processes, and an assessment of environmental flows. In 2007, the Ministry of Environment and Forests, Government of India, recommended to the Planning Commission the setting up of an Institute of Inland Aquatic Ecosystem Studies. Later, the Ministry organised the ILEC's 11th World Lake Conference at Jaipur, which in its Jaipur Declaration (2007) called for the establishment of an Asian Centre of Excellence to promote research, training and education for sustainable management and restoration of lakes and wetlands.

Institutes of limnology, aquatic ecology or freshwater ecology/biology have existed in many developed countries for nearly a century now. The need for national or regional institutes, devoted exclusively to the inland aquatic ecosystems, has been felt strongly both within the developing countries and by SIL and other international organisations. While the UNESCO's IHE in Delft has extended its reach to African countries, limnology has developed vigorously in Brazil (Tundisi 2007).



*A view of the newly constructed building of the Centre at Khajurao (MP, India)*

In Asia, China has an Academy of Limnology and Oceanography and Russia has several centres/institutes of limnology or hydrobiology.

Despite its intentions, the Indian Government's response to the need for a Centre devoted to inland aquatic ecosystems has so far remained lukewarm. In this context, the National Institute of Ecology ([www.nieindia.org](http://www.nieindia.org)) has taken the initiative to start a Centre for Inland Waters in South Asia, jointly with the newly created Pragya Education and Environment Trust, which has provided a newly constructed small building to house the Centre (with a library, laboratory and a meeting room) at Khajuraho in central India where the existence of many streams, reservoirs and seasonal water bodies, in a rural setting with very little anthropogenic impact, will provide ample opportunities for research and training. A couple of guest rooms are planned to be added on the first floor for the visiting researchers, depending upon the resources. The major objectives of the Centre are to: conduct research on all kinds of inland aquatic ecosystems, on biodiversity and its function; establish a comprehensive ICT-enabled database; develop methods and appropriate technologies for the restoration and management, and conduct training courses and to undertake restoration projects. The Centre intends on focus, in the beginning, on field-based studies and short-term training programmes until adequate laboratory facilities are developed. The Centre is planned to meet also the needs of the neighbouring regions of Asia, in cooperation with a network of institutions, individuals and organisations interested in the ecology, conservation and management of inland aquatic ecosystems.

The Centre is forming an advisory committee comprising of specialists from different fields and different countries. A dedicated website for the Centre ([www.aquaticecosystems.org](http://www.aquaticecosystems.org)) is now being prepared and is planned for its launch on the World Wetland Day 2012. At present, the Centre has no funds for implementing its programmes and activities. It needs strong support from individuals and organisations interested in promoting the conservation and management of rivers, lakes and wetlands. The support is solicited in the form of donations and grants in cash or kind (laboratory equipment, computer hardware, literature, etc.), as well as funds for its research and training activities. Networking partnerships will be particularly useful. Both individuals and institutions interested in collaborative research, training and/or management activities in inland aquatic ecosystems of the Indian subcontinent in general and India in particular, are cordially invited to join the network. You may corresponded with Prof. Brij Gopal ([ciwsa.nie@gmail.com](mailto:ciwsa.nie@gmail.com)) from whom a preliminary brochure with further details can also be obtained.

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**Reduction of diffuse pollution - the key challenges for river basin and coastal zone ecological status (LIFE+EKOROB Project)**

The diffuse (non-point) pollution coming from agricultural landscape is one of the most important causal factors for eutrophication, which reduces ecosystem services available to the community due to stimulation of growth of toxic algal blooms in reservoirs, lakes and coastal waters. Reduction of the nutrient loads coming from the landscape to the water due to a high complexity of water-soil-plant-society interactions has been much more complicated than control of the loads at the point sources.

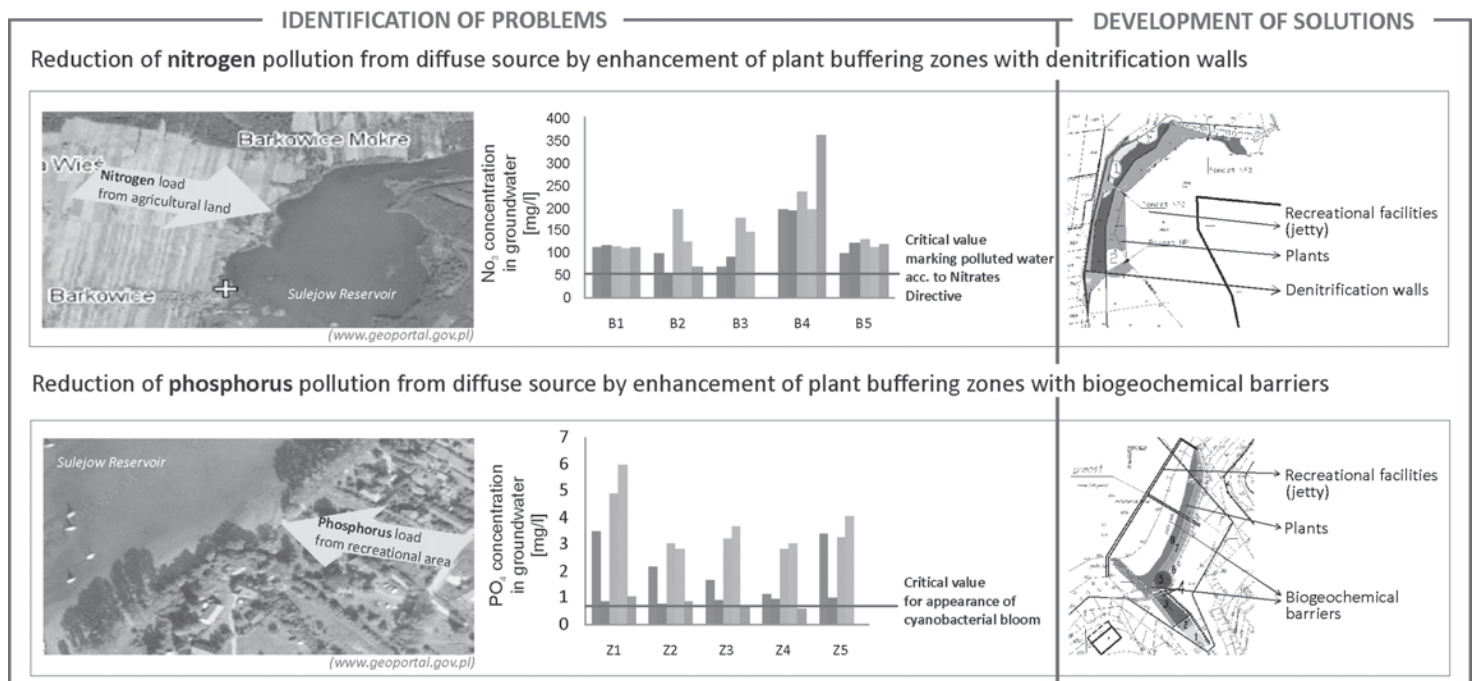
The strategy for reducing diffused loads should be based on the systemic approach, which addresses the Ecohydrology (EH) principles (Zalewski et al. 1997; Zalewski 2000; 2011), especially the “dual regulation” assuming that biocenotic processes can be regulated by hydrology and vice versa, i.e. biocenotic structure and interactions shape hydrological processes. One of the key measures, which EH postulates for a systemic basin scale methodology, is use of the buffer zones (i.e. ecotones, permanent vegetation adjacent to an aquatic ecosystem) as a tool for lowering the pressure on freshwater

ecosystem caused by nutrients coming from the landscape (Neiman and Decamps 1990, Zalewski et al. 2001, Mander et al. 2005). This multifunctional element of the catchment efficiently reduces nitrogen and phosphorus concentrations from diffuse pollution through biochemical and physical processing of nutrients (Lowrance et al., 1984; Pinay and Decamps 1988; Dosskey 2001). However, the effectiveness of vegetated buffer zone depends on many factors, which need to be considered while establishing of new ecotone zones, or reshaping the existing ones. These include: geomorphological characteristics of the site (slope, exposure, insolation, soil structure), dynamics of hydrological conditions (changes in the water level, frequency and extent of extreme phenomena) and the type of land management (such as recreation and agriculture) (Jorgensen et al. 2002, Krauze 2004). Nutrient removal efficiency depends also on the width of buffer zone, which is particularly important in the case of high phosphorus and nitrogen initial load.

The goal of the LIFE+ EKOROB project (Ecotones for reduction of diffuse pollutions: LIFE08 ENV/PL/000519, www.ekorob.pl) is to enhance ecotones zone to reduce nitrogen and phosphorus fluxes to water under limited area conditions. It plans to implement these measures in two demo-sites located in the direct catchment of the Sulejow Reservoir (Central Poland). The conceptual design of enhanced ecotones is based on identification and quantification of threats.

The first demo-site is surrounded by agricultural land. Based on nitrate concentration (~ 100 mgNO<sub>3</sub>/l) in groundwater it can be classified as polluted area according to the Nitrates Directive (>50 mg NO<sub>3</sub>/l). The basic solution tested in the area is denitrification wall. Although it is an artificial structure, such a wall is invisible in the landscape and intensifies naturally occurring process of denitrification (Bednarek et al. 2010).

The second demo-site is located in recreational area, where shoreline is surrounded by cottages. The seepages of groundwater heavily contaminated with phosphorus were observed below the water level in the reservoir shoreline. Average phosphate concentration in groundwater reached 3.1 mgPO<sub>4</sub>/l, which exceeds the



threshold value that triggers formation of cyanobacteria bloom. In this case, geochemical barrier was proposed as an additional element of a vegetation buffer zone, which will enhance the phosphorus adsorption capacity.

Harmonising nature conservation with the local community needs constitutes a challenge. In both these cases, the shoreline is intensively used for recreational purposes. The lack of tourist infrastructure in the sites contributes to devastation of the vegetation buffer zones. That is why, along the actions focused on restoring mosaic ecotone zones, it was proposed to construct recreational infrastructures, such as jetties for bathing and boating.

The experience gained from the studies of new constructed ecotones, enhanced by biogeochemical barriers, will be used in development of the Action Programme to reduce diffuse pollution in the Pilica River basin. The solution seems to be a proper way for achieving a good ecological status of ecosystems and water quality improvement due to the low construction cost, small labour input, high operating efficiency and the lack of interference with the landscape.

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II PAS European Regional Centre for Ecohydrology under the auspices of UNESCO

## “Clearing Lakes Revisited” A Symposium held at Lelystad on the occasion of retirement of Harry Hosper

On 1 December, 2011, the Dutch Platform on Lake Restoration organized a symposium to mark the retirement of Harry Hosper from the Centre for Water Management (RIZA). The title of the symposium ‘Clearing Lakes Revisited’ refers to the title of Harry Hosper’s Ph.D. thesis: *Clearing Lakes, An Ecosystem Approach To The Restoration and Management Of Shallow Lakes In The Netherlands* (1997). Harry’s work focused on the relationships in the Dutch lakes between light conditions, nutrients concentrations and cyanobacteria, algae and other ecosystem elements such as fish, zooplankton and macrophytes.

Throughout his studies spanning 35 years, Harry strived for eutrophication control and water quality improvement in the shallow, and



Fig. 1. Erik Jeppesen shows how Biomanipulation came into Harry’s life.



eutrophic Dutch lakes. His studies formed the basis for formulating the Dutch waterquality standards for water transparency, chlorophyll and nutrients in freshwater ecosystems. During the 1980's Harry was among the pioneers who introduced biomanipulation as a tool for water management in The Netherlands. He also played an instrumental role in organising the First International Conference on Lake Biomanipulation in the Netherlands in 1989 (Gulati et al. 1990). The proceedings of this conference contained the first published information on several studies that were then in progress in the Netherlands and elsewhere in the world: in the Netherlands many of these were being carried out in cooperation with RIZA, Lelystad, where Harry was in charge of water-quality studies. These studies and Harry's guidance provided a strong incentive to virtually a complete generation of aquatic ecologists in their pursuit for controlling the effects of eutrophication using different control and rehabilitation methods. Harry and co-workers work resulted in a remarkable improvement of the water quality of several relatively large and shallow lakes in The Netherlands (e.g. Lake Veluwe and Lake Wolderwijd). Gradually the biomanipulation tool to restore lakes evolved into lake ecosystem approach, comprising both reduction of the external and internal nutrient loads, changes in composition of the foodweb, especially through drastic reductions of benthivorous fish, waterlevel control and flushing of eutrophic lakes in winter with good quality water as a part of lake management.

The Platform on Lake Restoration was established in 1990 and Harry was one of the founder members. The platform consists of 230 members, many among these are watermanagers, researchers and consultants, all engaged in lake restoration work. The scope of the platform is to develop and promote knowledge on lake restoration and exchange experience. By performing these tasks, the platform can influence the water quality research in The Netherlands, which is carried out by water management organizations in cooperation with research institutes and consultancy companies. The platform organises biannual meetings, which address several subjects concerning lake restoration. Every second year the platform organises a field excursion abroad, in addition to 'local' field trips to lakes under restoration.

More information on the platform and its activities is available at [www.helpdeskwater.nl/platform-meren](http://www.helpdeskwater.nl/platform-meren) (in Dutch). In the SIL community, Harry has been the Netherlands' national representative since 1998.

The speakers at Harry's farewell symposium emphasized the still persisting effects of eutrophication on lake ecosystems. During the morning session, four Dutch ecologists presented case studies on the prevailing situation in lake restora-

tion and how Harry had an impact on such studies. Theo Claassen (Provincial Waterboard, Friesland) explained about the waterquality developments in the Friesian lake district. Despite major declines in nutrient and chlorophyll contents, the lakes do not yet exhibit a discernible recovery in their ecological values. The large standing crop of bream (*Abramis brama*), a universal phenomenon in many Dutch lakes, inhibits achieving clear-water conditions. Gerard ter Heerdt (Waterboard Waternet) traced the developments in water quality in the Loosdrecht Lakes based on the observations during the past 80 years. After the World War II, the water-quality of the Loosdrecht Lakes deteriorated due mainly to man-made eutrophication that caused heavy and recurring cyanobacteria blooms. Consequently, the lakes lost their function as source of the drinking water for the city of Amsterdam. Over the years several attempts were made to improve the situation but in vain. Harry Hosper had also been involved in preparing recent measures for improving the water quality in these lakes. Eddy Lammens (Centre for Water Management) in his talk explained how water quality in Lake Veluwe, bordering the largest Dutch Lake IJssel, could be improved further. He highlighted certain uncertainties encountered during the studies, and mentioned how these were dealt with, recalling Harry's guiding influence in solving many of such tricky issues. Ruurd Noordhuis from the Research Institute Deltares, Delft, the last speaker during the morning session,



Fig. 2. Brian Moss draws parallels between lake-ecology and the human society.



Fig. 3. Marten Scheffer presents 'Clarity'.



Fig. 4. Hosper explains his plans for the future

started his presentation by mentioning the influence of the Romans two millennia ago on the water management of the Lake IJssel, and other lakes in the region. Ruurd tracked the works of Mr. Lely, a Dutch minister in the central government around the beginning of the twentieth century, who was responsible for the closure of the estuary Zuiderzee and its transformation into freshwater Lake IJssel in early 1930s, and explained the recent shifts in the quality of water and ecosystem of Lake IJssel (decrease in water-bird numbers and the lake's biodiversity, and increase in macrophytes coverage and its importance).

The afternoon session had an international character. Erik Jeppesen (Aarhus University, Denmark) gave an overview of the effects of climate change on water quality and the general ecology of lakes. He demonstrated that climate change reinforces the eutrophication process-- as is already noticeable in several lakes. To be effective, the measures aiming at the eutrophication control have to be more robust and sustainable. Brian Moss (University of Liverpool, the UK) attempted to draw a parallel between the ecological processes in lakes and certain social/historical events in the human society. Knowledge of the ecological principles is of interest for finding solutions to the problems in our present-day society. Marten Scheffer (Wageningen University, the Netherlands), the last speaker of the day, recalled his earlier days when he was starting his scientific career at RIZA under the guidance of Harry Hoser and explained how Harry influenced his earlier work and development as a scientist. Marten concluded his lighthearted and entertaining talk with a musical note to draw an analogy between the steps involving biomanipulation measures in lakes and certain musical transcripts using his favourite guitar.

Harry Hoser concluded the symposium deliberations portraying his scientific career, as well as his profession as a lake manager, and reminiscing some interesting moments with his close associates, tracing back to the period of the mid 1970s when eutrophication control and lake restoration gradually became the foremost issues in water management in The Netherlands.

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## Fishery Management in Lake Kinneret, Israel, under Nitrogen Limitation

### The Changes in Lake Limnology

Since mid 1990s the Kinneret ecosystem has undergone changes in limnology (Gophen et al. 1999; Gophen 2004a,b; 2008). These included increase in P, decline in N and the ensuing decrease of the TN/TP mass ratio that showed N limitation in the epilimnion. The enhancement of phytoplankton by P recycled by zooplankton under conditions of N limitation is one of the main changes (Gophen et al. 1999). The practical implication of that is a threat to water quality, when Cyanobacteria blooms increase. Significant decline of N was documented in the epilimnion of Lake Kinneret since mid 1980s ( Fig.1). Sufficient N supply, and consequent P limitation during 1969 – mid 1980s was followed by P increase and N decrease creating N limitation for *Peridinium* growth and optimal for Cyanobacteria (Gophen et al 1999; 2004a). Such a condition of N limitation is optimal for the growth of not only Cyanobacteria but also for diatoms and chlorophytes. This explains the change of phytoplankton composition, especially decline in *Peridinium* but increase of the other phytoplankton. The decrease epilimnetic depth has been attributed to the higher frequency of droughts, which reduced input of both water and N. In addition, diversion of sewage effluents entering the lake and decline in frequency of dust storms in the Hula Valley and restriction of fishponds area led to reduction of external N flux. Due to the N limitation, and the *Peridinium* decline, (Gophen 1995; Gophen 2004b; Gophen et al. 1999 (Fig. 2) the nano-phytoplankton, dominated by Cyanobacteria, especially *Microcystis* spp. occupied the free niche. Moreover, these changes initiated change in the food resources and consequently in feeding habits of the lake fish. During its dominance, *Peridinium* spp. was the major food component of the most valued native fish (*Sarotherodon galilaeus*, Arabic name- Musht Abiad; common Hebrew name -Amnun HaGalil; and common English name- Galilee St. Peters' fish) in the lake. Under these conditions the impact of P recycled by zooplankton may not be negligible. Zooplankton was the major food constituent of the endemic cyprinids *Acanthobrama terraesanctae terraesanctae* and *Acanthobrama lissneri* Bleak. To ensure reasonable water quality it is important to maintain high grazing pressure of zooplankton on nano-phytoplankton. Moreover, removal of the unwanted bleaks by biomanipulation and fishery management (Gophen 2004a,b) and introduction of the exotic Silver Carp (*Hypophthalmichthys molitrix*), an efficient consumer of *Microcystis*, will be beneficial.

The nutritional value of phytoplankton will be low if photosynthesis takes place under N limitation, which will therefore limit zooplankton growth (Hessen 2005). Such N limitation for these primary consumers (Sterner and Elser 2002) probably does exist in Lake Kinneret. Moreover, zooplankton are important in lakes because their excretion contributes inorganic N and P for phytoplankton production as well as bacterial production. Urabe et al. (1995) demonstrated regeneration of N and P by zooplankton and their subsequent utilization by phytoplankton. Zooplankton biomass in Lake Kinneret declined from 1970 to the early 1990s but increased thereafter. Thus, both biomass and size frequency of cladocerans were affected by fish predation (Gophen 2004). Concluding, elevation of zooplankton biomass very likely contributes to suppression of nano-



phytoplankton biomass whilst P regenerated by zooplankton will improve algal growth. Two contradictory processes can play a role here: zooplanktivory by fish (mostly by bleak), will reduce zooplankton grazing pressure on nano-phytoplankton but also lead to a decrease in P regeneration by zooplankton. Under such circumstances, zooplankton will normally control and decrease the algal growth, thereby contributing to an improvement in light penetration in the lake as well as water quality. On the other hand, removal of bleak population in the lake will create a lower predation pressure on zooplankton and an increased grazing on phytoplankton by zooplankton, improving water quality. In this latter case bleaks fishery will have a significant contribution to the fishermen income.

## Fishery Changes

In the N limited Kinneret ecosystem, from 1995 onwards considerable changes in the fishery were recorded (Fishery Department unpublished data) The population of *S. galilaeus* abruptly declined, resulting in reductions in fish annual yields from 350 tons during the 1990s to 8 tons in 2008 (Fig. 4). Delta 13C analyses of *S. galilaeus* indicated a slight change of the trophic status of this fish during 2008-2009 -24.1 ‰ and -21.7 ‰ earlier (Y. Krotman et al. unpublished data) probably due to the partial shift in the feeding habit of fish (*S. galilaeus*) from *Peridinium* to zooplankton. *S. galilaeus* fishery is not limited by marketing but only by its availability in the lake. Their stocking was reduced after 1995 due to financial difficulties. On the contrary, beak fishery was totally stopped after 2000 because of market difficulties (low commercial value), lead to a dramatic increase in their numbers in the lake. Acoustic surveys (1987-2006) (Annual Reports of Kinneret Limnological Laboratory) indicate a significant increase in fish population due to the upsurge of bleak population (Fig.6). On the contrary, the *S. galilaeus* population sharply declined. Suppression of *S. galilaeus* was caused by Cormorants (*Phalacrocorax* spp.), which were, however, successfully removed from fish ponds in Israel by the Fishery Department of the Agriculture Ministry and found a refuge in Lake Kinneret. During recent years more than 5000 cormorants were observed during October-March in the lake's vicinity, preying on fish during the day time. The birds diet that was analyzed, revealed fingerlings of *S. galilaeus* (35-50 g/ind.) comprising the main bird food from December through February. The total bird consumption was estimated at 100-200 tons. Low level of piscivory by the Catfish, *Clarias gariepinus*, was also noted as well as use of illegal mesh size for gill net fishery recorded. At present there seems to be competition for zooplankton as food source between bleak and Galilee St. Peters' Fish. Possibly, if hydrological conditions are improved and supply of N is restored, *Peridinium* blooms will re-appear as has already occurred during the winter floods in 1992 and 2003. If *Peridinium* returns and flourishes, the presence of *S. galilaeus* will be important in suppressing the *Peridinium* biomass because this fish feeds more efficiently on this dinoflagellate than any other fish in the lake. Consequently, the question arises about the optimal fishery management for the benefit of both water quality protection and fishermen's income? In this regard, a proposal was submitted to the Ministry of Agriculture and water authority to apply a total end to fishing for about three years. The Israeli government approved this proposal but a group of scientists and fishermen opposed this vehemently so that after intensive professional discussions the government withdrew their decision. The rationale of the change was

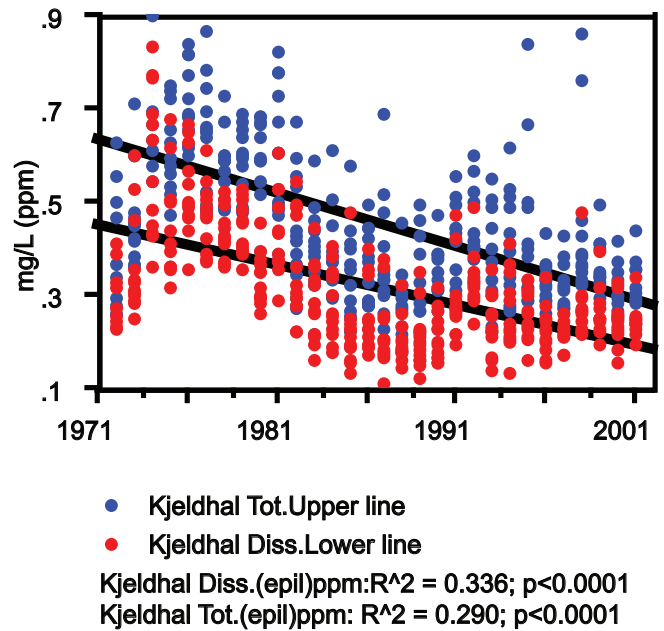


Fig.1: Monthly averages and regression plots of Total and Dissolved Kjeldhals in epilimnion of Lake Kinneret, Israel, during 1972-2001/

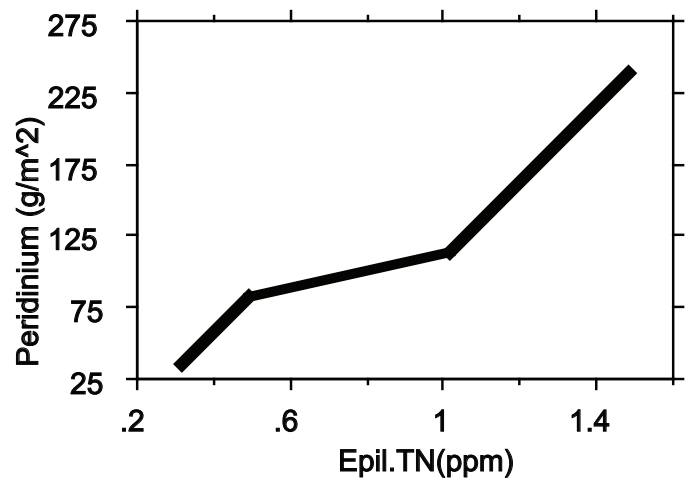


Fig.2: Trend of changes (LOWESS 0.9) of *Peridinium* biomass ( $g/m^2$ ) related to the concentration (ppm) of Total Nitrogen in the epilimnion of Lake Kinneret, Israel, during 1969-2002.

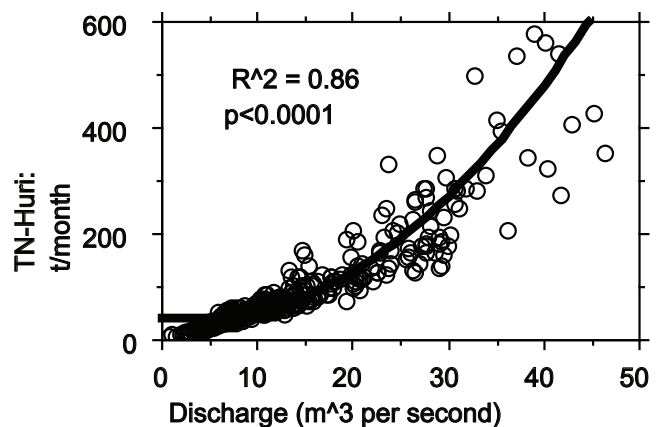


Fig.3: Polynomial regression ( $p$  and  $r^2$  are given) between Jordan River discharge ( $m^3/s$ ) and Total Nitrogen input into Lake Kinneret.

based on the assumption that if fishery were totally eliminated, the lake will be mainly occupied by bleak (Fig. 6) leading to reduction in zooplankton biomass, increase in nano-phytoplankton. However, *S. galilaeus* population would not recover because bleak is a more efficient predator of zooplankton (Gophen 1995, 2004). These changes would culminate in deterioration of water quality. A radical removal of cormorants was also included in the proposed plan as was the use of legal mesh size for gill nets. Additionally, a program which replaced the governmental resolution was accepted: this included restoring intensive stocking of *S. galilaeus*, raising fingerlings up to 10 g each before planting and introduction of mugilids (*Mugil cephalus*, Mugil

capito) and Silver carp (*Hypophthalmichthys molitrix*). The mugilids and the carp cannot reproduce in Lake Kinneret but their introduction has several advantageous: Silver carp is well known consumer of the toxic Cyanophytes, *Microcystis* (Miura 1989; Cyndi et al. 2005) and can partially compensate for the fishermen's income during low seasons for the *S. galilaeus* fishery. The mugilids do not damage water quality and also do not compete with local fishes for natural food sources because in the littoral zone they collect food particles, which are re-suspended by wave action (Shapiro 1995) and the market value

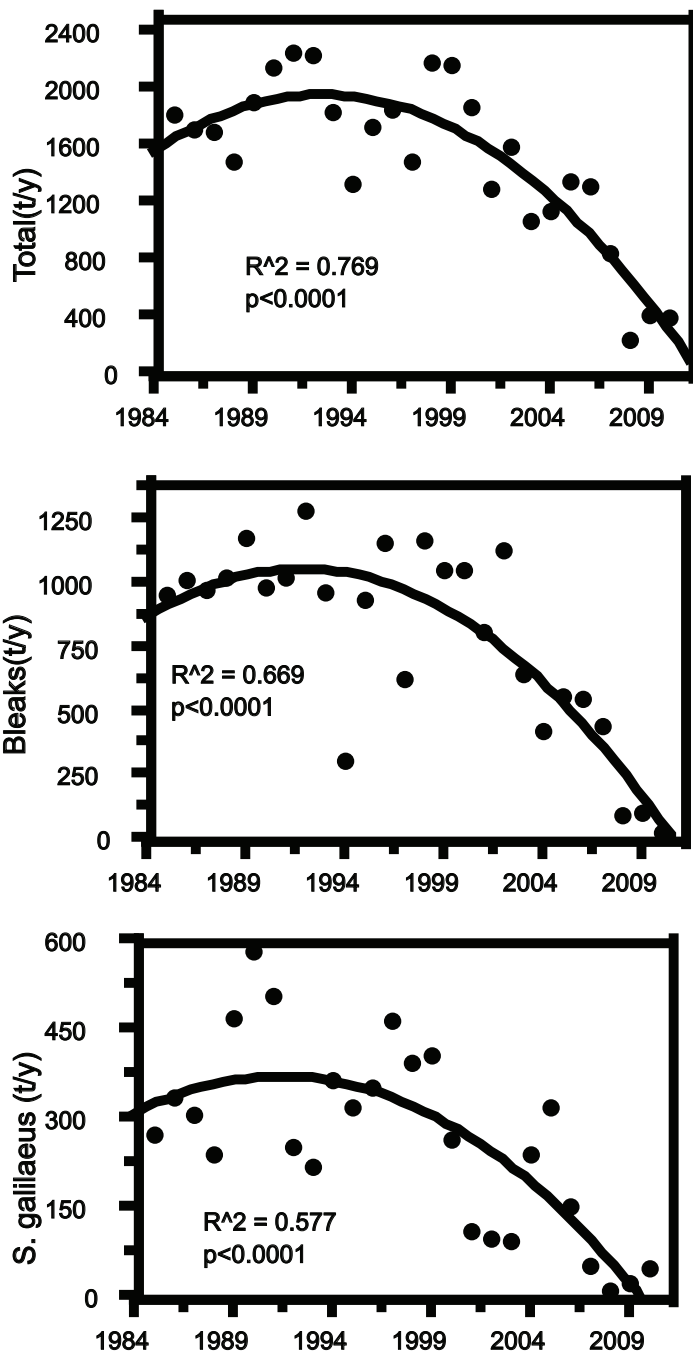


Fig.4: Fishery in Lake Kinneret (t/y) during 1984-2010; Polynomial regressions ( $p$  and  $r^2$  are given) between Years and Total landings (upper panel), Bleaks (mid panel) and *Sarotherodon galilaeus* (Galilee St. Peter's Fish)

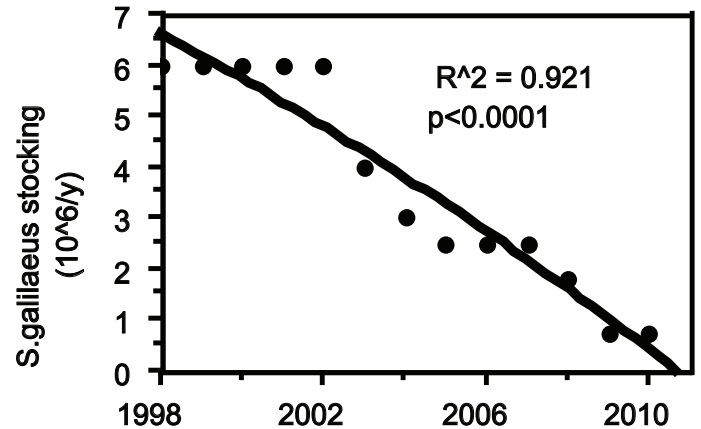


Fig. 5: Polynomial regression ( $p$  and  $r^2$  are given) between stocking of *Sarotherodon galilaeus* fingerlings ( $10^6/y$ ) into Lake Kinneret, and years (1998-2010).

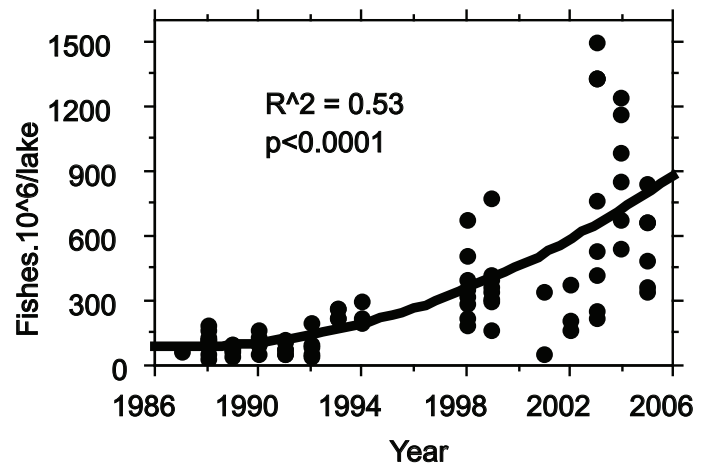


Fig.6: Acoustic surveys in Lake Kinneret, Israel, during 1987-2005: Polynomial regression ( $p$  and  $r^2$  are given) between total fish number recorded and years.

	Silver Carp	Mugil
Total Introduction	0.29	0.89
Survived Individuals	0.006	0.28
Population size	0.01	0.85
Fish Density	1.7	50.2
% survivorship	2	32

Table 1: Silver carp and Mugil introduction ( $10^6/year$ ); Survival ( $10^6/year$ ); Population size ( $10^6/lake$ ) and density (app. 0.05 Kg/ha) totally calculated for 2000-2009 based on landing and stocking (these fishes do not reproduce in lake Kinneret see text)

of mugilids is high. The number of stocked mugilids was decided to be around 1 million per year (60ind/ha) to ensure negligible re-suspension. Long-term data about introduction of mugilids and Silver carp are given in Table 1.

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## Obituaries

### E. David LeCren 1922 – 2011

David LeCren was an integral part of the Freshwater Biological Association (FBA, the UK) throughout his working life. He joined the FBA staff at Wray Castle, on Windermere, in 1943, at the same time as Ro, to work on the ecology of perch, just after graduating from Cambridge. This work on perch, and other fish, continued after the war when he spent a year in the USA at Wisconsin University and then returned to a permanent position at FBA. His studies of the ecology of perch and other fish continued over many years. He was highly influential in choosing the site and designing the facilities for the FBA's new River Laboratory at Dorset and he moved from Ferry House to become Officer in Charge there. In 1973 he was appointed Director of the FBA and returned to Windermere. He retired in 1983 when the FBA, an independent charity whose research since its foundation had been based solely on the ideas of its Council and staff, was, in effect, taken over by the Government.

Throughout his career David was also involved with many other scientific organisations. He was one of the founders of the Fisheries Society of the British Isles and was elected as its first acting President. He was on the Council of the British Ecological Society for 22 years and was deeply involved in the Freshwater Section of the International Biological Programme (IBP-PF). He helped to prepare the booklet on the Quantities,

Units and Symbols for IBP Synthesis and, with Ro Lowe-McConnell, edited *The Functioning of Freshwater Ecosystems* IBP22 which brought together the results of the numerous projects that were part of the IBP-PF's world-wide programme. He was a member of the SIL



*David LeCren (left, with the Irish River God presented to him by SIL on the wall behind) with Jack Talling and Ro Lowe-McConnell in at his home in 2008 before he returned to New Zealand.*



since the first post-war congress was held in Switzerland in 1948 and was actively involved in the 1987 Congress in New Zealand. Forty years on, at the 1998 Congress in Dublin, Ireland, he was presented with a pottery head of an Irish River god to celebrate his long attendance at SIL congresses.

Mary first met David LeCren when allocated to work for him as a vacation student in 1961. He was very generous and kind in dealing with an ignorant student and some years later he advised in great detail on how the data should be analysed when she submitted her first paper to *J. Anim. Ecol.*. It is a privilege to be able to say that we both (the undersigned) knew David personally for many years. After his wife died in 2008 he returned to New Zealand, where he was born and grew up, and died there peacefully in September 2011.

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## Baruch Kimor 1918-2009

Prof. Baruch Kimor (formerly Komarovsky) passed away on 9 October 2009 at the age of 91 in his home town Haifa, Israel. He was blessed by dying at home with no pain or agony-- just waiting for his morning cup of coffee. Till his very last day he was independent, alert, and professionally active, despite various health problems. Baruch Kimor pioneered the microplankton taxonomy and ecology



research work in Israel and was a world leader in his field, greatly appreciated by all those who knew him. His expertise was exceptionally multidisciplinary, spanning from marine to freshwater plankton and from phytoplankton to zooplankton. In him, we have lost a great taxonomist, an enthusiastic teacher, and a very dear friend.

Baruch Kimor was born in Yassi, Romania in 1918. He began his higher education in England. After reaching the intermediate level in law and economics at the King's College, University of London, he followed his natural inclination by opting for Agriculture and Biology at the Reading University, Reading. With the onset of World War II he immigrated in 1940 to what was then Palestine. He completed his studies at the Hebrew University of Jerusalem, receiving his Ph.D. in aquatic sciences in 1952.

The research leading to his Ph.D. focused on the factors causing massive fish kills. This study revealed the responsible planktonic taxa: he proposed ways to successfully treat the fishponds to suppress those harmful species. This discovery solved a major problem in fish aqua-culture. The meagre field laboratory that he had set up back in 1946 - as the centre for his investigations and assistance to the local fish growers in the Beisan Valley - has in the course of the years become the well-established Laboratory for Fish Health of the Israeli Ministry of Agriculture.

During his three years' stay in the Beisan Valley, he was induced in the Haganah to join the Jewish defense movement. After the establishment of the State of Israel, he served in the Israel Defence Forces during the War of Independence in 1948-49.

Professor Kimor later joined the research staff of the Sea Fisheries Research Station of the Ministry of Agriculture, which later became part of the Israel Oceanographic and Limnological Research (IOLR). He served in this organization as Principal Research Biologist. Concurrently, he was one of the founding members (since 1953) of the Lowdermilk Faculty of Agricultural Engineering at the Technion - Israel Institute of Technology. He also taught as guest Professor at the Oceanography Unit of the Hebrew University of Jerusalem and offered a yearly course on Marine Plankton at the Inter-University Institute in Eilat. He continued teaching courses in Agrobiology and Hydrobiology at the Technion for many years after his official retirement.

Having studied the plankton of Lake Kinneret and fish ponds early in his career, Prof. Kimor published the first guides for the identification of Israeli freshwater plankton - guides that are still in use. Later, he continued to study the plankton in the marine environments of Israel - the Eastern Mediterranean Sea and the Red Sea, in which field he received a lot of international recognition. In 1991 he received the prestigious Tregouboff Award from the French Academy of Sciences for his life-time contribution to the knowledge of the plankton of the Mediterranean Sea.

During his sabbaticals, he served as Research Biologist and Professor at Scripps Institution of Oceanography of the University of California, San Diego; and at the Institute for Marine Research of the University of Kiel, Germany. He attended many international conferences as an invited speaker, more recently on his preferred topic - the Impact of Man-induced Perturbations on Marine Ecosystems (e.g. the Aswan Dam on the Eastern Mediterranean).

Prof. Kimor published more than 70 scientific papers in the fields of microplankton taxonomy, biology and ecology. His last publication (Kimor 2008) was a book chapter summarizing his accumulated knowledge over the past fifty years on the microplankton of the Gulf of Aqaba (Eilat), Red Sea. He was active internationally, within

UNESCO and SCOR (Special Committee for Oceanic Research), serving as first chairman for the UNESCO-sponsored Advisory Council for all oceanographic sorting centers in the world. He has also served as a member of the Group of Experts on the Preservation of Materials in the Marine Environment, sponsored by the OECD (Organization for Economic Cooperation and Development), on problems of fouling and corrosion of ships' hulls.

He contributed items of his professional knowledge to the Hebrew Encyclopedia; plankton samples taken from Lake Hula before it was drained are exhibited in a museum in the northern Galilee; his collection of plankton samples housed over the years at the IOLR have been moved to the exhibit shelves of the Hebrew University Collections, sorted and recorded.

Over the years, Prof. Kimor introduced two generations of Israeli scientists to the magnificent world of microscopic plants and animals in aquatic systems. Till his last days he was active in research and education, with his on-going contribution to the studies of the Israeli coastal and marine environments in collaboration with scientists from the Israel Oceanographic & Limnological Research. At the 15th meeting of the International Association of Phytoplankton Taxonomy and Ecology held

in Israel in November 2008, a special session was dedicated to honor the senior Israeli plankton taxonomists. On that occasion, the 90-year old Prof. Kimor stood up to congratulate the young generation of plankton experts, supporting their fields of research.

Working with Prof. Kimor was always an enriching experience, he was curious and professional in his research, and his enthusiasm was easily transferred to those surrounding him. We will miss him very much!

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# Announcements

## PEG 2012 Mexico

**February 12-18, 2012, Mexico City, Mexico (Under the Auspices of the International Society of Limnology (SIL) and the National Autonomous University of Mexico, UNAM, Mexico)**

The SIL Working Group on Plankton Ecology (PEG) has held so far more than 20 thematic meetings. The most recent one was organized in the Netherlands in 2010. At the latest triennial SIL conference in Cape Town (2010), the working group discussed the importance of having such 'in between congress' meetings and concluded they should not be restricted to Europe. Therefore, it is with great pleasure to announce that the next working group meeting will be held in Mexico City from 12th-18th February 2012 (<http://www.iztacala.unam.mx/peg2012/>).

The organizing committee of the upcoming PEG meeting warmly invites all those who are interested in ecology of plankton to participate in the PEG 2012 at Mexico City. The meeting will mainly focus on Global Warming and Plankton Ecology. For providing a wider opportunity to plankton ecologists, the following sub-themes will also be considered:

1. Field Ecology based on lakes, ponds, reservoirs, rivers etc., and ecological models.
2. Morphology, Taxonomy, Zoogeography & Invasive Planktonic species
3. Feeding, Trophic Interactions, Behaviour, Autecology & Population Ecology
4. Molecular Ecology, Evolutionary Ecology, Genetics and Biochemistry of Plankton
5. Ecotoxicology & Indicator Organisms
6. Aquaculture & Mass Production

The freshly launched the SIL journal *Inland Waters* has offered to publishing the proposed special issue on "Plankton and Global Change" related to the symposium.

For more information go to the meeting website: <http://www.iztacala.unam.mx/peg2012/>

### Venue:

Mexico City has many satellite/suburban towns. The present conference will be held in the suburban city of Tlalneantla (about 18 km from the International Airport of Mexico City). The conference sessions will be held at the installations of the National Autonomous University of Mexico Campus Iztacala (FESI). For site map, please visit: [http://www.iztacala.unam.mx/fesi\\_localizacion.php](http://www.iztacala.unam.mx/fesi_localizacion.php)

### Climate:

Mexico City, including the suburban regions, is located at an altitude of about 2200 – 2400 meters above sea level. Therefore, the climate is generally pleasant (temperature 20-25°C during February). Coastal regions of the country have typical tropical weather.

### Currency:

Mexican Peso (about 13.5 pesos = 1 US Dollar) is the official currency. Dollars and Euros are generally accepted in certain authorized hotels and commercial complexes, besides banks and money exchangers. All Banks in Mexico are operated electronically with ATM (in local currency) availability using Visa / Master cards etc.

### Electricity:

Domestic supply is 120 volts. Those who would like to use laptop computers are advised to bring appropriate adaptors. The electrical contact points are similar to those used in USA. Electrical adaptors are also available locally in the commercial centres.

## Reaching Mexico City:

Mexico City is well connected by air and by land route. Most airlines from USA, Canada, Europe and Central and South American countries have regular flights to Mexico City. Bus service is also available from boarding nations. Those who would like to drive to Mexico City from USA or from the borders of south of Mexico are advised to use toll highways (available in most routes) to avoid traffic congestion.

## Visa requirements:

Most nations such as USA, Canada, Japan and European Union Member States do not need a Mexican entry visa. However, we advise you to be in contact with the nearest Mexican Embassy in your country for visa requirements. For those who need a Mexican visa, a special invitation letter will be mailed upon registration.

For any specific questions you may contact Prof. S.S.S. Sarma, the organizing secretary: [sarma@servidor.unam.mx](mailto:sarma@servidor.unam.mx) ; [sarma@campus.iztacala.unam.mx](mailto:sarma@campus.iztacala.unam.mx)

Looking forward meeting you in Mexico-City,

### Miquel Lüring

WG PEG Chairman  
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## 21st International Symposium on Ice

Dalian, China, 11 - 15 June 2012

In frames of the biennial IAHR Symposium (<http://slcoe.dlut.edu.cn/ice/iahr2012.html>) devoted to all problems related to ice in our environment, we are pleased to invite you for participation in the special session on Ice-covered lakes: environmental and ecological aspects.

The session is co-chaired by Jia Wang, NOAA Great Lakes Environmental Research Lab (GLERL), and Georgiy Kirillin, Institute of Freshwater Ecology and Inland Fisheries (IGB).

Lakes are specific objects with regard to the ice cover, not only because the vast majority of them are located in the boreal and arctic areas and freeze seasonally or even perennially. In contrast to seas or rivers, the ice cover on lakes turns them into practically motionless enclosed water bodies without any major drivers for mixing, transport and primary biological production. By this, specific physical and biological mechanisms are triggered on, determining the hydrodynamics and the ecological processes in lakes.

The proposed session is dedicated to the specific features of ice-covered lakes and includes (but is not confined to) the following topics:

- Hydrodynamics under ice: Density instabilities due to the temperature variations in the vicinity of the freshwater maximum density point; lakewide circulation patterns; effects of dissolved salts released from the sediments and from the ice; shear-free convective mixing driven by solar radiation; dynamics of the ice-water boundary layer: Shear and convective mixing, transport of salts and nutrients between the ice and the water column.
- Transport of oxygen and other gases: Oxygen regime with a special regard to winter anoxia, factors producing it and its ecological consequences; production and transport of greenhouse gases (particularly, methane) in ice-covered lakes.

- Plankton and fish biology: Primary production and survival strategies under the ice; phytoplankton blooms in ice-covered lakes in spring and their relation to the radiation, mixing, ice and snow thickness.
- Climate change effects on lake ice phenology: The global warming influence on the seasonal ice regime and the consequences for the aquatic ecosystem functioning.

The section is not strictly confined to the lakes or to the topics outlined above.

Presentations on the relevant aspects of the ice cover impact on (semi-)enclosed water bodies from oceanography and river science are particularly welcome.

Submit your short abstract online at <http://slcoe.dlut.edu.cn/ice/iahr2012.html> by December 31 2011.

## Symposium information:

IAHR Symposium On Ice takes place every 2 years since 1970, organized by The International Association for Hydro-Environment Engineering and Research (IAHR). The scientific program traditionally covers a broad range of ice-related topics, like:

- Fundamental processes in fresh water and saline floating ice;
- Instrumentation in ice research;
- Ice engineering and management;
- Environmental and ecological concerns in ice- infested water;
- Ice industry and society problems under climate change.

Proceedings of the previous Symposia can be accessed via the Canadian River Ice Processes and Environment (CRIPE) website: <http://www.riverice.ualberta.ca/IAHR%20Proc/>

Last Symposium was held in 2010 in Lahti, Finland and demonstrated the growing interest on the interaction between ice and water bodies. Therefore, the Scientific Committee announced an interdisciplinary dialogue between ice researches and cold region oceanographers/limnologists as one of the future Symposium directions.

## Venue:

Dalian University of Technology is the oldest high-school of the city rapidly grown in recent years into a large educational and research center. The University collaborates with many international partners. Dalian was built in 1898 as an eastern tip of the Great Trans-Siberian Railroad (Russian "Dalny" means "The Farthest") ending in Saint-



Dalian University of Technology



Petersburg on its west side. During its history, Dalian went through a number of influences - British, Russian and Japanese - before becoming eventually a major seaport of the Northeastern China (province Liaoning) since 1950. Today's Dalian uniquely combines cultural mixture with modern architecture and hi-tec. In 2006 Dalian was distinguished as one of three best cities for tourism in China. See the Symposium Website (<http://slcoe.dlut.edu.cn/ice/iahr2012.html>) for the social program.

Looking forward to see you in Dalian.

If you have any questions/suggestions regarding the special session, please contact Georgiy Kirillin ([kirillin@igb-berlin.de](mailto:kirillin@igb-berlin.de)) or Jia Wang ([Jia.Wang@noaa.gov](mailto:Jia.Wang@noaa.gov)), the Symposium Co-chairmen

## Working Group on Winter Limnology

The SIL WG Winter Limnology (<http://www.jyu.fi/bio/hyb/WGL/>) brings together experts in various fields of limnology including physics, chemistry, biology, etc. to stimulate multidisciplinary discussion on timely topics..... and the development of ideas from a broad perspective. The main activity of the group is organizing biennial winter limnology symposia. The first such symposium was held at Kilpisjärvi, Finland in 2008 and its proceedings were published in *Aquatic Ecology* (2009, volume 43, issue 3). The second symposium was organised from May 29 to June in 2010 in Liebenberg, Germany. The meeting combined traditional presentation format with intense free-form discussions within newly formed thematic working groups. Participants emphasized the necessity of stronger interdisciplinary linkage between different branches of winter limnology. As a basis for this linkage, series of review papers on the current state-of-the-art in physics and biology of seasonally freezing lakes were put together by the participants and recently submitted to *Aquatic Sciences* (<http://www.springer.com/birkhauser/biosciences/journal/27>).

The 3rd symposium will take place at Finse Alpine Research Center in South Norway from April 12th to April 16th 2012. The Finse Center is located between the large high mountain plateau of Hardangervidda (National Park, area 3422 km<sup>2</sup>) and the



*Lake Flakavatn at 1453 m.a.s.l., north of Finse, Norway. A 3-m drill may be needed to pierce a hole through the ice to access water - the hardest part of the sampling job (Photo: Trine Holm).*

Hallingskarvet mountain ridge (Skarvheimen National Park) in South Norway. The Center belongs to the Universities of Oslo and Bergen and is used for student courses and small conferences from early spring to autumn. The course and conference facilities are quite new and have a good standard, with a kitchen and 14 bedrooms.

Young and emerging scientists from the disciplines such as physics, chemistry, biology, etc. will be invited – to promote recruitment of scientists and cooperation. The scientific program will include plenary lectures by recognized authors and oral or poster presentations will be given by the participants; There will be discussions on present and future aspects of winter limnology. If the weather is good, excursions will be organized to nearby lakes and their outflowing rivers for demonstrations of natural and anthropogenic influences. At the Center, an expert from The Norwegian School of Sport Sciences ([www.nih.no](http://www.nih.no)) will demonstrate basic techniques for survival under harsh snowy conditions, like building a shelter and staying overnight in a snow cave. Snow is guaranteed, but weather is not always as shown in pictures. Instructions for clothing as well as for skiing, outdoor transport, or other activities, will be found on the Symposium pages (<http://www.finse.uio.no/events/international-workshops/3wl-2012/>).

The access to Finse is by train only. The Oslo-Bergen railway station is located at 1222 m above the sea level, and transportation (1.4 km) from here to Finse Alpine Research Center will be offered by snow-scooter taxis or by guided skiing (if you bring your own cross country/mountain type skis).

For updated information on the Symposium the website ([www.finse.uio.no](http://www.finse.uio.no)) of Finse Alpine Research Center.

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**Kalevi Salonen**, [kalevi.salonen@jyu.fi](mailto:kalevi.salonen@jyu.fi)

## Block Course on Physical Limnology

**Heidelberg, Germany (19th - 23rd March 2012)**

Within the teaching programme of Environmental Physics, the University of Heidelberg, Germany is offering a course on physical limnology during the spring break 2012. The lectures will be held as a one-week block course to also allow students and scientists from outside to attend the course.

Please find the announcement on the internet at <http://www.ufz.de/index.php?de=18470>.

We had the impression that a course in physical limnology was missing. Most physical limnologists work in small groups in separate scientific institutions. Hence we decided to consolidate our expertise and run a block course and open to external participants. The course will be held on a level to provide interested students, Ph.D. students and scientists, intending to enter the field of physical limnology, with a competent and broad introduction into this field of research. In 2012, the course will focus on dissolved substances.

An updated programme is intended for early January 2012. If you would like to receive the more detailed information on the course by email, please let us know by replying by E-mail to [Bertram.boehrer@ufz.de](mailto:Bertram.boehrer@ufz.de)

Attendees are asked to enrol by email not later than 31st Jan 2012. Thanks to our Sponsors: German Society of Limnology and Sea and Sun Technology and Hydrobios, we can offer the course free of charge also to external attendees.

## The Lecturers

Andreas Lorke, Werner-Aeschbach-Hertig, Moritz Holtappel, and Bertram Boehrer

### Dr. Bertram Boehrer

Priv.-Doz. Helmholtz-Zentrum für Umweltforschung University of Heidelberg, Germany. <http://www.ufz.de/limnophysik>

## 5th All-Russian Symposium with International Participation, "Organic Matter and Nutrients in Inland and Marine Waters"

Petrozavodsk, Karelia, September 10-14, 2012

RAS Earth Sciences Division, Northern Water Problems Institute of Karelian Research Centre of RAS

### Symposium Themes

- Sources, stores and distribution of organic matter and nutrients in the hydrosphere.
- Organic matter and nutrient transformations and cycle in water objects.
- Production and destruction processes in natural waters.
- Mathematical modeling and methods for analysis of organic matter and nutrients in natural and polluted waters.

### Symposium Languages

The working languages of the Symposium are Russian and English. Paper in Russian will be interpreted simultaneously into English for foreign participants. Papers in English will be interpreted consecutively into Russian for all participants.

### Organizing Committee:

Symposium Chairmen:

- Nikanorov A.M., RAS Corr. Fellow, Director, Roskomgidromet Hydrochemical Institute
- Filatov N.N., RAS Corr. Fellow, Director, Northern Water Problems Institute, Karelian Research Centre (NWPI, KarRC) of RAS

Vice-chairmen:

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- Lozovik P.A., DSc, Head of Laboratory, NWPI, KarRC of RAS;
- Vapirov V.V., DSc, Prof., Dept. Chair, Petrozavodsk State University

### Organizing Committee Address:

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### Registration Fee:

The symposium fee is RUR 1000. The degree and Ph.D. student fee is RUR 400,00 the fee for foreign participants is EUR 50,00. Foreign participants shall pay the fee at the time of registration.

Full-text proceedings will be published before the Symposium begins.

The Organizing Committee shall notify the authors by e-mail when their application and abstract are received. If you do not get the receipt notification please resend the application and abstract. A participant can be the author of only one paper, and co-author several other papers.

### Hotels:

Participants will be housed in hotels:

- Onego Palace <http://www.onegopalace.com/>
- Severnaya <http://severnaya.org/>
- Karelia <http://karelia-hotel.ru/>

## Young Algaeeners Symposium

June 14 to 16, 2012, Wageningen, the Netherlands



From June 14 to 16, 2012, the first edition of the Young Algaeeners Symposium will be organised in Wageningen, the

Netherlands, to gather young scientists (PhD students and postdocs in their first 4 years), working in the field of algae biotechnology. Participants of the symposium, who are all in the frontlines of algae biotechnology research, will either give an oral presentation or present a poster on topics ranging from genetic engineering and metabolic flux analysis, to photosynthesis, life cycle analysis, cultivation and photo bioreactor design. In addition, participants will visit AlgaePARC (Algae Production And Research Centre), which is the first research centre that compares different outdoor photobioreactor designs at an industrial scale worldwide ([www.algaePARC.nl](http://www.algaePARC.nl)).

The exclusivity for young researchers combined with the interactivity and broad scope of the topics makes the Young Algaeeners Symposium a unique initiative, which is supported by the board of recommendation consisting of Prof. R. Wijffels (NL), Dr. L. Brentner (NL), Prof. C. Vilchez (ES), Prof. S. Mayfield (USA), Prof. L. Nedbal (CZ), Prof. W. Vermaas (USA), Prof. O. Kruse (DE), Prof. J. Steyer (FR) and Prof. M. Tredici (IT).

Participants can apply until the 1st of February 2012. Further information, regarding the application, location and costs, can be found on the Young Algaeeners Symposium website (<http://www.vlaggraduateschoolnl/courses/young-algae.htm>).

Contact: [young.algaeeners@wur.nl](mailto:young.algaeeners@wur.nl)

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## IS.Rivers 2012

June 26-28, 2012. Lyon, France

The 1st edition of the IS.Rivers conference is coming soon!

IS.Rivers 2012 will be held in the University Lumière Lyon 2, prestigious and listed site located at the edges of the Rhone River in Lyon, France, from June 26-28, 2012. This international conference will focus on the sustainable management of the world's rivers, especially European ones. It will concentrate on state of the art management strategies and lessons learned from individual case studies.

### Call For Papers:

We kindly invite you to submit a paper for IS.Rivers 2012, whether it is:

- a scientific approach
- a case study
- a prospective approach

Full details about the conference and the call for papers can also be found at the following website: [www.isrivers.org](http://www.isrivers.org)

### IS.Rivers is:

- A high quality scientific conference
- A technical conference for operational actors
- An international radiance
- The ideal meeting place for to promote exchanges between scientists, rivers managers and stakeholders

### Conference Themes:

- New advances in river science theory for the development of management strategies (process, socio-economic functions and uses, management strategies...)
- From knowledge to actions: feedbacks on management intervention at different spatio-temporal scales (corridors, large cities, within channel exchanges, mouths...)

### Calendar:

Author's declaration of intent: October 30, 2011

Full papers submission: December 1st, 2011

Notification of acceptance for oral or poster presentation: February 2012

Programme and Registration: March 2012

A declaration of intent must be sent to the secretariat before October 30, 2011, using the electronic form. Please be sure to specify the title, key words, authors, appropriate theme and approach to guarantee that your paper is well suited to the themes of IS.Rivers. Then, the final paper (1 or 2 A4 sides) will be sent by December 1st, 2011.

We remain at your entire disposal for any further information.

Please feel free to forward this call for papers and announce the conference to whom it may interest.

Looking forward to welcoming you in Lyon next June!

**Elodie Brelot & Anne Clemens**, General Secretaries

**Lucie Dupouy**, Executive Assistant

## Rotifera XIII-International Rotifer Symposium

November 18-24, 2012, University with Potential for Excellence,  
Shillong, India

Organized by the Department Of Zoology, North-Eastern Hill University, Permanent Campus, Umshing,

Please visit u at <http://www.nehu.ac.in> or contact us at [rotifera2012@gmail.com](mailto:rotifera2012@gmail.com)

### International Organizing Committee

Patron: Prof. A. N. Rai  
Vice - Chancellor  
North-Eastern Hill University  
Shillong-793022, India

Convener: Prof.B. K. Sharma, India

Members: Prof. H. J. Dumont, Belgium / China  
Dr. R. D. Gulati, The Netherlands  
Prof. Alios Herzig, Austria  
Prof. J. J. Gilbert USA  
Dr. L. May, Scotland  
Dr. (Mrs) S. Sharma, India  
Prof. S. K. Chakraborty, India

We are pleased to announce that the 13th International Rotifer Symposium (Rotifera XIII) will be organized by the Department of Zoology, North-Eastern Hill University, Shillong from November 18 to 24, 2012. This symposium will provide an ideal platform for the rotifer specialists from all over the world to interact, to exchange views with the fellow researchers and experts and to discuss future research issues relevant to international priorities. We also intend to foster national and international research collaborations and training programmes at this global meeting.

The scientific committee wishes to extend a cordial invitation to all Rotiferologists to actively participate in this First international symposium on Rotifera to be held in India. We look forward to welcoming you at Shillong.

Major Themes of the 13th Rotifer Symposium

1. Taxonomy, Biodiversity, Zoogeography & Bar coding2
2. Autecology & Population Ecology
3. Feeding, Trophic Interactions & Behaviour
4. Molecular Biology, Phylogeny, Genetics & Biochemistry
5. Aquaculture & Mass Production
6. Biotechnology & Bioinformatics
7. Ecotoxicology & Indicator Organisms
8. Sessile & Bdelloid Rotifera (Special Session)
9. Asian Rotifera-Biodiversity and Ecology (Special Session)

Workshops on selected topics can also be organised if the participants wish. Please send proposals to the Convener well in advance.



## Venue:

Shillong, the capital of Meghalaya state, is located at an altitude of 1496 m ASL. Tucked away in the Eastern-Himalayas, Meghalaya (the abode of clouds) is one of the most beautiful states of India. The state receives abundant rainfall, and has virgin forests, groves, ancient caves, high plateaus, waterfalls, hill-streams and meandering rivers. The symposium will be held at the auditorium of the University's Guest House in the Permanent Campus, Umshing, Shillong-793022.

## How to reach Shillong?

Shillong is well connected to Guwahati city by rail, air and by road (National Highway 40), and it takes 3-4 hours to cover the 103 km distance by taxi, which is readily available. Guwahati, a metropolis city, serves as the gateway to northeast India: it is well connected by rail, road and air. Gopinath Bordoloi airport at Borjhar (Guwahati) has several daily flights from and to the Indira Gandhi International Airport (New Delhi) and Netaji Subhash Chandra Airport (Kolkata). Shillong also has a small airport at Umroi (Barapani) at about 25 km away, where it receives some flights from Kolkata.

## Weather:

Shillong is cold during November with temperatures ranging between 10 and 0°C. Woollens are recommended.

## Currency:

Rupee (INR) is the official currency in India. It will be possible to exchange all major international currencies at the various government authorised banks in the city.

## Visa requirements:

Delegates from various nations may require a visa to visit India. You are advised to contact the Indian Embassy/Consulate in your country for (multiple) visa and other requirements.

## Accommodation:

Limited accommodation (twin-sharing basis) will be available in two Guest Houses and international hostels at the Permanent Campus of the University on first-come-first-served basis. Other participants can be lodged in hotels in Shillong city. The approximate cost of accommodation (per person/ per day) is as follows: 25 US \$ (Guest house standard); 50 US \$ (Guest house suite/ international hostels); 50-75 US \$ (City hotels); 100-130 US \$ (City hotels-deluxe); 150-200 US \$ (City hotels-luxury)

## Food:

30-35 US \$ (breakfast, lunch, lunch and dinner). Traditional Indian food will be served. Please let us know if you have any special dietary requirements.

## Publication of the Symposium Proceedings:

The proceedings of Rotifera XIII will be published as a special issue of an international journal. All manuscripts will be peer-reviewed according to the procedure set out by the Journal:

Special Guest Editors: Prof. B.K Sharma, Prof. H. J. Dumont and Dr. R. D. Gulati

## Registration Fees

	Before June 30, 2012	After June 30, 2012
Foreign delegates	300 US \$	350 US \$
Accompanying persons	100 US \$	150 US \$
Indian delegates	6500 INR	7000 INR
Local delegates	3500 INR	4000 INR

## Presentations

Invited lectures, oral lectures and poster presentations will be organised in different technical sessions. In addition, there will be arrangements for poster presentations. The participants are requested to kindly indicate their preference for oral /poster presentations.

## Awards

We plan to felicitate selected senior rotiferologists with 'recognition awards' for their significant contributions to our understanding of the global Rotifera. Nominations for the same, along with the brief bio-data and research contributions of the candidate to Prof. B K Sharma, Convenor, Rotifera XIII. Young scientists (below 35 years of age) will be presented, one each for the best oral lecture and poster presentation

## Deadlines

Registration, Remittance of Registration Fee, and Submission of Abstracts .....	June 30, 2012
Acceptance of Abstracts.....	July 31, 2012
Final Circular.....	August 30, 2012
Intimation of travel details and Confirmation of accommodation .....	October 15, 2012
Arrival of participants.....	November 18, 2012
Departure of participants .....	November 24, 2012
Submission of manuscripts (for peer-review): .....	January 30, 2013

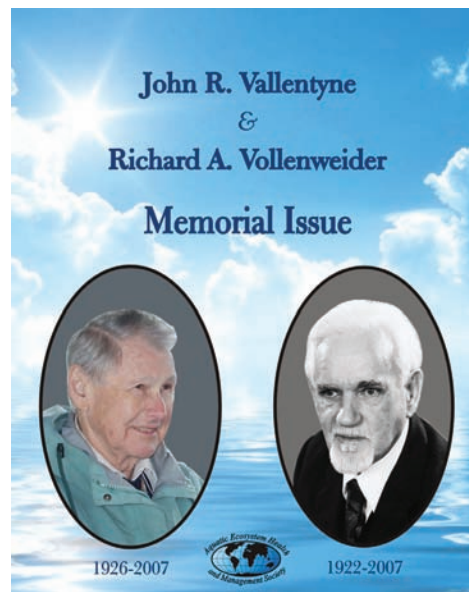
Important Note: The foreign delegates are requested to give a formal consent of their participation along with their name, address and other contact details by November 15, 2011. This information is required to seek a formal authorisation from the different agencies / ministries of the Governmental India.

## Address for Correspondance:

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## J.R. Vallentyne & R.A. Vollenweider Memorial Issue of Aquatic Ecosystem Health and Management (Volume 14, issue 2. 2011)

Excerpts from Preface by C.K. Minns, modified by M. Munawar



In 2007, aquatic ecosystem scientists everywhere were saddened by the passing of two titans of limnology: Dr. Richard A. Vollenweider (January 20, Burlington) and Dr. John (Jack) R. Vallentyne (June 16, Hamilton). It is fitting that the Aquatic Ecosystem Health and Management Society (AEHMS) publish this joint memorial issue.

Both scientists made vanguard contribu-

tions to resolving the challenge of eutrophication in freshwaters and to establishing the ecosystem approach to management of aquatic environments. Jack published *The Algal Bowl: Lakes and Man* (1974) effectively promoting the rationale and campaign for phosphorus abatement and neutralizing vested opposition. Richard developed his famous phosphorus loading models with their links to primary production and algal biomass (chlorophyll), allowing P- reduction targets to be established. Both worked at the Canada Centre for Inland Waters (CCIW) in Burlington, Ontario. Both were awarded high accolades: Vollenweider the Tyler Environmental Prize (shared with Werner Stumm) and the Naumann-Thienemann Medal (SIL); Vallentyne the A.C. Redfield Lifetime Achievement Award (ASLO) and the Rachel Carson Award (SETC). Both were strong supporters of the AEHMS from its inception.

While there are many scientific parallels there are also social and cultural contrasts between these two scientists. Vollenweider came from the traditions of European limnology with a Ph.D. from Zurich, Switzerland, while Vallentyne was nurtured by North American limnology, beginning with his Ph.D. supervisor, G.E. Hutchinson. Vollenweider was a quietly-spoken, private person who cultivated a global network of collaborators while Vallentyne was outgoing and gregarious as evidenced by his many public awareness activities, notably his “Johnny Biosphere” and “Professor Trout” personas beloved by a generation of children worldwide.

Vollenweider was an intellectual scientist with an intense commitment to honesty and self-criticism. His standing as a leading limnologist was firmly established by three connected works of science: 1. the 1968 report for the Organization for Economic Cooperation and Development (OECD) on the scientific basis of eutrophication in freshwaters; 2. his probabilistic approach to the classification of trophic state in lakes; and 3. the phosphorus models linking input loads and flushing to the steady state concentrations in lakes.

Vallentyne was a people’s scientist increasingly focused on institutions and education as his career developed. His standing was strongly founded in his participation in the creation of the influential Experimental Lakes Area (ELA); his contribution to the revision of the Great Lakes Water Quality Agreement that made the ‘ecosystem approach’ central; and his books *The Algal Bowl* and *Tragedy in Mouse Utopia: an ecological commentary on Human Utopia* (2007).

This was the first time that a large amount of anecdotal material was solicited by the AEHM scientific journal. Coordination was a major undertaking, carried out ably by the AEHM editorial office, who processed 25 anecdotal and 5 scientific articles involving 39 contributors from across Canada, the US and Europe. Contributors include family, friends and colleagues such as G. Brunskill, J. & P. Vallentyne, S. Ludlam, A. Hamilton, J. Bruce, J. Hartig, J. Leach, C. Goldman, C. Fetterolf, L. McCarthy, T. Jackson, S. Hurlbert, R. Shröder, R. Mosello, R. Gächter, P. Stadelmann, A. Nauwerck, G. Harris, A. El-Shaarawi, L. Janus, A. Rinaldi, E. Lowe, J. Steward, M. Sakamoto, H. Kling, and H. Regier. This memorial issue includes an impressive set of personal remembrance essays by a number of the collaborators, colleagues, and friends of Richard and Jack along with several papers on subjects linked to their lives’ work as limnologists. We feel the end result is an exceptional memorial to these two colleagues.

# Attention: Manufacturers of Limnological Equipment and Publishers

*SILnews* accepts advertisements for equipment and publications that will be of interest to SIL members.

*SILnews* is distributed twice a year to more than 3,000 SIL members and libraries world-wide. If your company is interested in acquiring advertising space in *SILnews*, please contact Ramesh D. Gulati (r.gulati@nioo.knaw.nl) or Ms. Denise Johnson (denisej@unc.edu) the Editorial Office for rates, or use the mailing address indicated on the front page.

A complimentary copy of *SILnews*, in which your advertisement appears, will be sent to you once it has been published. *SILnews* is posted on the SIL web site at <http://www.limnology.org> after it has been published.

## Limnology Jobs and Studentship Notices

Notices on the availability of limnologically-oriented jobs and graduate student opportunities are now accepted for publication in the *SILnews* and displayed on the SIL web site at <http://www.limnology.org>. There is no charge for the service at this time, which is available to both SIL members and non-members.

Persons submitting notices should note the four month lead-time for the print edition of *SILnews*; those advertisements with short deadlines should be directed to the web site only.

### Submissions should include:

- a short title describing the position (job or studentship);
- location and duration of the position;
- closing date for applications;
- a short paragraph describing the position, including any citizenship, educational or employment prerequisites; and,
- information on where potential applicants may obtain further information, including names of contact persons, telephone numbers, fax numbers, e-mail addresses, and web site addresses, where appropriate.

Submissions may be edited for length and clarity. Those deemed inappropriate to the SIL mandate will be rejected at the discretion of the *SILnews* Editor or the Webmaster. Submissions for the print edition of *SILnews* should be sent to the editor at the address on the cover of this issue.

Submissions for the SIL web site should be sent by e-mail to [webmaster@limnology.org](mailto:webmaster@limnology.org) or by fax to the attention of Gordon Goldsborough at: +1 (204) 474-7618.

## Are you moving?

Please send your change of address to:

### Dr. Morten Søndergaard

c/o Ms. Denise Johnson  
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**The International Society of Limnology (formerly International Association of Theoretical and Applied Limnology; Societas Internationalis Limnologiae, SIL) works worldwide to understand lakes, rivers, and wetlands and to use knowledge gained from research to manage and protect these diverse, inland aquatic ecosystems.**

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## For Your Information

*SILnews* is now on the SIL web site in PDF format. The newsletter is created in Adobe Acrobat, Version 5. To open, use Adobe Acrobat Reader.