



SIL news

Volume 51 - December 2007

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Material for the June 2008 issue should be sent to the Editor by:

1 APRIL 2008

Dr. Ramesh D. Gulati
NIOO/Centre of Limnology
Post Box 1299
3600 BG Maarssen
The Netherlands
Fax: +31.294.232224
E-mail: r.gulati@nioo.knaw.nl

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

Obituary: John R. Vallentyne

Dr. Jack Vallentyne died peacefully in his sleep at his home in Hamilton, Ontario, Canada, on Saturday, June 16th. After cremation, his ashes were scattered in Lake Superior, which he loved



J.R. Vallentyne as his alter-ego, Johnny Biosphere, preparing to lecture on global water problems"

and cared for immensely. He is survived by his wife Ann, children Peter, Stephen, Jane, Anne-Marie and Geoffrey, and five grandchildren.

John Reuben Way Vallentyne was born in Toronto Ontario on 31 July 1926. Following three years of military service in 1943-45, he finished his undergraduate degree at Queen's University, Kingston, Ontario, in 1949 and then went on to Yale University. Here he did his Ph.D. with G. Evelyn Hutchinson, finishing his thesis research on pigments in lake sediments in 1952.

The University Phase

Vallentyne's career as a limnologist and biogeochemist began in academia. He was a lecturer, and then an assistant professor at Queen's University from 1952 to 1958. He was a Fellow of the Carnegie Institution of Washington Geophysical Laboratory in Washington, D.C. (1956-57), where he started work on the thermal stability of amino acids and sugars and fossil proteins,

Continued on next page...

Editor's Foreword

SILnews 51 is a special one in some respects. First, we have to report with great sadness the death of two of the SIL's very highly distinguished scientists Dr. Jack Vallentyne and Dr. Heinz Löffler (see obituaries). Their death is a colossal loss to the limnology as a discipline. We also report with great sorrow the passing away of several other SIL members during the last SIL triennium 2004-2007 (see necrology following the two obituaries). After discussions with Dr. Brian Moss, the SIL President, and with Dr. Morten Sondergaard, the SIL General Secretary, we will report necrology of SIL members annually in the *SILnews* rather than triennially.

Second, this *SILnews* 51 is also special in that it is the first issue that appears after the SIL2007 in Montreal in last August, as well as the recently held elections to the SIL Secretariat. I use this opportunity, therefore, to welcome all the newly elected SIL Officers (last page of this Issue).

The *SILnews* readers will note that there are enthusiastic reports from laboratories in Austria (2),

Germany (1), on lakes from three different countries in Africa, and one on the Great Lakes from Canada. I hope we can continue reporting on limnological developments in the subsequent issues of *SILnews* from different geographical areas but especially from countries, e.g. Russia, East European countries, China, Japan and India from where relatively less has been reported on limnology so far.

Our readers will note that instead of including a list of contact persons of the different Working Groups of SIL in every Issue, I have preferred to use the space for SIL WG activities and announcements only. I hope that the *contact persons* of all working groups will make it a tradition to report more regularly on their research activities.

Last, *SILnews* readers, including the new SIL Officers are welcome to provide me with feedbacks and suggestions to help improve the contents and readability of *SILnews* further, and to make it more interesting for our readership at large.

Ramesh D. Gulati, Editor, *SILnews*
Nieuwersluis, October 1, 2007

with Philip Abelson. He then moved to Cornell University as Associate, then full professor of zoology, and remained there until 1966. According to some of his former students (S. D. Ludlam, R. H. Green, A. Sheldon, G. J. Brunskill), during his tenure at Cornell, Valleryntyne had catholic interests, including cosmochemistry, molecular evolution, pheromones, chemical ecology, paleolimnology and the history of science. His Advanced Biogeochemistry Seminar Course was held in the back room of a pub in downtown Ithaca, complete with a slide projector and pitchers of beer. During his time at Cornell University (and later in life), he was actively involved in dramatic productions, and he enjoyed the grease paint and spot lights of the thespian life. During this period, he also spent a year at the Tonolli Laboratory in Italy as a Guggenheim Fellow.

Dr. Valleryntyne enjoyed using foreign languages to express concepts that were difficult in the English language, and he had reading knowledge of French, Russian, Italian, Spanish and German.

The Freshwater Institute Phase

Following attendance at a Gordon Conference in 1966 where using whole lakes as test tubes was a topic of discussion, Valleryntyne left Cornell to join W.E. Johnson in forming a new, as yet unformed, institute in Winnipeg, Manitoba, where whole lake experiments with eutrophication were to be a major part of the Fisheries Research Board of Canada's freshwater program. Johnson was the Freshwater Institute's first director, and Valleryntyne headed the new eutrophication section.

It was at this point, in January of 1967, that I (DWS) first met Jack. He invited me, then a young assistant professor at Trent University, to visit the new Institute, that was housed in a small building rented from the University of Manitoba. As we toured the empty building, Jack told me how he planned to fill it with the world's best limnological minds. I was cynical: To say this about Winnipeg, noted for its ferocious winters, and at a small university. You must be insane! I returned to Trent. A year later, Valleryntyne phoned to persuade me to visit again. I was flabbergasted to find that he had fulfilled his boast, recruiting Richard Vollenweider, Kazimierz Patalas, Arnold Nauwerck, F.A.J. Armstrong and Domenico Povoledo from Europe and Mitsuru Sakamoto from Japan, to name the experienced scientists. There were also a large group of us in our mid 20s to early 30s, including Gregg Brunskill, Andy Hamilton, Ole Saether, Bob Hamilton, Stefan Holmgren, John Stockner and myself. Soon to follow were Ev Fee, Bob Hecky, Bob Newbury and H. W. (Buster) Welch. It was a

group of tremendous intellect and energy, and the Freshwater Institute was a very exciting place to be.

The Experimental Lakes Area was to be one of the new Institute's foci, and I was rather speechless when Jack asked me, one of the youngest recruits, to lead it. But the novel way in which Jack ran his section made it possible. In the early years, we had frequent meetings and numerous hot debates on new programs and new experiments. We were encouraged to be merciless and open in our critiques of the science of other members of the section. The philosophy as Jack once put it was "If you think your friends' critiques of your science are harsh, wait until your enemies get hold of it." Decisions were made by consensus.

In addition to the ELA, Jack established a Fisheries Research Board detachment at the Canada Center for Inland Waters in Burlington, Ontario, to complement the physical and chemical programs of that institute. Vollenweider was appointed to head that unit. Others were assigned to the Regional Limnology group, to develop a broad knowledge of Canadian lakes.

Valleryntyne was also the primary organizer of the first meeting of the American Society of Limnology and Oceanography in Canada (Winnipeg, 1971) and the first meeting of SIL in Canada (Winnipeg 1974). He served as vice-president of ASLO in 1964-5 and president of SIL from 1974-1980.

Valleryntyne became well known for his leadership in the debate over control of the eutrophication problem in the St. Lawrence Great Lakes. He used data from a large unpublished report by Richard Vollenweider and from early experiments at the Experimental Lakes Area to clearly and successfully rebut a Madison Avenue-style campaign by detergent manufacturers and convince the International Joint Commission (IJC) to recommend regulation of phosphorus inputs to the Great Lakes.

The Canada Center for Inland Waters Phase

Unfortunately, in the early 1970s the Fisheries Research Board (a Crown Corporation, not a government department) was disbanded, and its activities were moved first to Environment Canada, later to the Department of Fisheries and Oceans. Jack announced that he would be stepping down as section leader, because there would be little room for scientific leadership within the civil service. He remained a Senior Scientist in the department until his retirement, but moved his offices to the CCIW

in Burlington in 1977, a more convenient location for his next activity, to co-chair the Great Lakes Science Advisory Board of the IJC. He influenced the IJC to change from a water quality focus to an "ecosystem approach" that would include the watershed and airshed of the Great Lakes. During this period, he planned the public outreach for which he would become renowned in later life.

The Johnny Biosphere Phase

On the 20th of July, 1980, Valleryntyne launched the Johnny Biosphere project. From personal conversations, I knew that he was becoming discouraged with the rate at which adults were solving Earth's environmental problems. He moved his hope to new generations, whom he hoped might be influenced by the introduction of environmental sensibilities early in their lives. Jack often appeared in public wearing a safari suit and carrying a globe on his back, shocking some of his more staid scientific colleagues. But Johnny Biosphere delighted children world wide, visiting up to 100 schools and 20,000 children a year where his basic message was "be kind to the Earth and it will be kind to you." Johnny's website has gotten many thousands of visits, and it remains active for now.

Valleryntyne also received many awards. He was especially proud of two. In 1992, Valleryntyne was awarded the Rachel Carson Award for raising public awareness of science from the Society for Environmental Toxicology and Chemistry. In 2001, he received the American Society of Limnology and Oceanography's Lifetime Achievement Award for his tireless work in limnology and public awareness.

Active until his final days, in 2006 Valleryntyne authored "Tragedy in Mouse Utopia: An Ecological Commentary on Human Utopia," Trafford Publishers (www.trafford.com/05-0531). Four days before his death, I was able to tell him that our revised edition of "The Algal Bowl" had been accepted by the University of Alberta Press. It is scheduled for publication in late 2007 or early 2008.

Those of us who knew Jack are grateful for the opportunities he provided us. But Jack is still out there in Lake Superior, with his quiet inscrutable smile, waiting to help another young scientist to discover a new paradigm in limnology and biogeochemistry. He is also probably watching to see who will take responsibility to continue the Johnny Biosphere task.

By D. W. Schindler

(with contributions from G.J. Brunskill and Mohi Munawar)

Obituary: Heinz Löffler (1927-2006)

Heinz Löffler passed away peacefully on 13 October 2006 in Vienna, Austria. Until his last moments he was still very active in the University of Vienna, several other institutions and the Austrian Academy of Sciences, of which he was a member since 1972.

Heinz Löffler was born on 17 March 1927 in Vienna, Austria. He developed his many talents within the liberal and humanistic spirit of his intellectual family. Returning from World War II, he studied zoology, botany, palaeontology and chemistry at the University of Vienna. As a young student, he planned and conducted a scientific expedition to investigate the salt lakes in Iran, especially Lake Niriz and Lake Urmia during 1948-1949. During the expedition he gathered material for his doctoral thesis, which he completed in 1952. Between 1951 and 1953 he conducted graduate and post-graduate studies in Sweden. A fellowship at Yale University (1955-1957) in Hutchinson's laboratory culminated in a now classical paper on thermal classification of lakes. Heinz then developed an interest in tropical high mountain lakes, which he studied on several expeditions to Africa, South and Central America and Asia. He maintained, however, a life-long

interest in saline and steppe lakes. In Austria he investigated the salt pans in the steppe-like landscape east of the shallow alkaline Neusiedlersee.

The International Biological Program (IBP, 1964-1974), dedicated to ecosystem research, opened a way to investigate this unique lake in Central Europe. Heinz, meanwhile Director of the Biological Station Lunz/See (1967) and associate professor of The University of Vienna (1968), gathered a team of dedicated students and post-graduates. This study resulted in several scientific publications and two books, which contributed to a better and more detailed understanding of lake ecosystems. Moreover, the Austrian IBP team also formed the basis for founding the Institute for Limnology of the Austrian Academy of Sciences (1971) in Vienna. As increasing nutrient inputs to lakes became a problem in the late 1960's, Heinz and his team participated in the OECD lake eutrophication program (1971-1976) on Neusiedlersee, as well as in initiated long-term investigations on lakes of the Salzkammergut region in Austria. As a follow-up, Heinz launched a local Austrian program on eutrophication (ÖEP) to continue research efforts in alpine and pre-alpine lakes that lasted until 1984. Increased importance of research studies on freshwater research and more public awareness forced the UNESCO to launch the socio-economic programme *Man and the Biosphere* (MAB).

Within this framework, Heinz initiated catchment orientated studies on various lakes, on the River Danube and associated floodplains. Many threads of limnological research as well as leading freshwater scientists in Austria have their roots in these studies.

Although Heinz Löffler initiated, participated and guided ecosystem orientated projects and programs, he always found and maintained his personal research niche in large-scale biogeography and physical limnology. He studied the regional limnology during a number of expeditions, made faunistic assessments and tried to understand the ecology of tropical high mountain lakes from landscape viewpoint and climatic settings. In a wider, biogeographic sense he focused on speciation processes

(microevolution) of several crustacean groups in those lakes representing distant and isolated islands. Palaeolimnology is another field that attracted Heinz and which he developed in Austria. He used certain ostracod species to reveal the stratigraphy, history and development of lakes, particularly in meromictic lakes.

The development of Limnology in Austria is intimately linked to the stimulation of research activities and achievements of Heinz Löffler. His impact on limnology was manifold both in teaching and in research. On becoming a full professor in 1979 he established a limnological unit at the University of Vienna. He initiated the Institute for Limnology of the Austrian Academy of Sciences which he managed as director until 1986. Initially situated in Vienna he moved the Institute in late 1981 to Mondsee. His enthusiastic teaching activities at the University of Vienna, at excursions and summer courses broadened the scientific knowledge and ecological understanding of several generations of students.

Heinz initiated a Postgraduate course in Limnology for students from developing countries (IPG) in Austria in 1974. Education, training and graduation of this course are still ongoing for over 30 years. Vital positions in water management, research and training facilities in many developing countries are now held by alumni from the IPG course.

The exposé of Heinz Löffler as a humanist would not be complete without mentioning his dedication to nature conservation for which he was uncompromising and confrontational. He used his vast knowledge for his many national and international conservation efforts and worked as an expert in various commissions dealing with environmental problems (e.g. Aral Sea).

Heinz Löffler has always been active in the International Association for Theoretical and Applied Limnology (SIL) trying to expand the Association's membership with young scientists, particularly from developing countries. In 1983 he became president of the SIL for five years. His editorial activities are numerous. His participation in the editorial board of 'Hydrobiologia' needs special mention.

Heinz Löffler always surprised colleagues, friends and students with his enormous knowledge in many fields, his rapid comprehension and his critical approach to break dogmas and taboos. We are honoured to have had him in our presence and collaborate with him for the time given.

M.T. Dokulil
Senior Scientist
Institute for Limnology
Austrian Academy of Sciences



Prof. Heinz Löffler in his element – teaching students on Mondsee 1993, demonstrating the Secchi-disk and the Forel-Ule color scale. Photo taken on board of the research vessel 'Kühnelt'.

SIL Necrology (2004-2007)

According to SIL records, the following members died during the past triennium (2004-2007). We acknowledge their contributions to SIL and mourn their passing away.

Gene E. Likens

SIL President (2004-2007)

| Name | Country | Affiliation (<i>and SIL Honors</i>) | Years in SIL | Deceased |
|---------------------------|----------------|--|--------------|------------|
| Ambühl, Heinz | Switzerland | Swiss Federal Institute of Aquatic Science and Tech. (EAWAG) | 50 | June 2007 |
| Bailey-Watts, A. | United Kingdom | Centre for Ecology and Hydrology-Edinburgh Lab | 42 | July 2007 |
| Benson-Evans, K. | United Kingdom | Trefriw | 31 | Dec. 2005 |
| Bracken, John J. | Ireland | St. Josephs | 33 | June 2006 |
| Buhse, G. | Germany | University of Kassel | 57 | Feb. 2006 |
| Campbell, R. N. | United Kingdom | Scottish River Purification Board | 42 | May 2006 |
| Canter, H. M. | United Kingdom | Freshwater Biological Association | 60 | June 2007 |
| Erpelding, G. | Germany | University of Mainz | 30 | March 2007 |
| Fogg, G. E. | United Kingdom | University of Wales, Bangor | 53 | May 2005 |
| Forsberg, Curt | Sweden | Uppsala University | 24 | June 2006 |
| Grim, J. | Germany | Sipplingen, Germany | 56 | 2004 |
| Grohs, Hans | Austria | Linz, Austria | 45 | 2006 |
| Hamilton, Jim D. | United Kingdom | University of Strathclyde | 49 | April 2006 |
| Kawai, Teizi | Japan | Nara Women's University | 37 | March 2005 |
| Lengyel-Pönninger, A. | Austria | Wein, Austria | 22 | Oct. 2004 |
| Löffler, Heinz | Austria | Wein, Austria (<i>SIL President 1980-1986</i>) | 45 | Oct. 2006 |
| Marker, Arthur | United Kingdom | Centre for Ecology and Hydrology Dorset Laboratory | 39 | July 2007 |
| Mazareanu, Constantin | Romania | Universitatea Bacau | 26 | Jan. 2007 |
| Nakao, Kinshiro | Japan | Hokkaido University | 28 | Oct. 2004 |
| Pennington-Tutin Winifred | United Kingdom | Windermere Freshwater Biological Association Lab | 60 | May 2007 |
| Reynoldson, T. B. | United Kingdom | University of Wales, Bangor | 49 | 2006 |
| Rujinschi, Rodica | Romania | Laboratoral de Ecologie Acvatice, si Acuacultura | 17 | Jan. 2007 |
| Ruggi, Dello | Italy | Istituto Italiano di Idrobiologia | 30 | 2004 |
| Schmitz, Wolfgang | Germany | Baden-Württemberg, Department of Environment | 50 | Feb. 2005 |
| Sioli, Harald | Germany | Max-Planck-Institute for Limnology | 48 | Oct. 2004 |
| Sládeček, Vladimír | Czech Republic | Institute of Chemical Tech., Prague (<i>Naumann-Thienemann Medal 1992; Editor, Verhandlungen</i>) | 23 | July 2005 |
| Slanina, K. | Austria | Federal Institution for Water Quality | 52 | Nov. 2004 |
| Stenson, Jan | Sweden | Zoologiska Institutionen | 35 | Sept. 2006 |
| Vallentyne, John R. | Canada | Canada Centre of Inland Waters (<i>SIL President 1971-1977</i>) | 56 | June 2007 |
| Vollenweider, Richard A. | Canada | Canada Centre of Inland Waters (<i>Naumann-Thienemann Medal 1986</i>) | 59 | Jan. 2007 |
| Watanabe, Mariyo | Japan | Rissho University | 25 | June 2003 |
| Weber, Edmund | Austria | Federal Institution for Water Quality | 50 | June 2007 |
| Wetzel, Robert G. | USA | University of North Carolina (<i>SIL General Secretary-Treasurer 1968-2005; Naumann-Thienemann Medal 1992; Baldi Memorial Lecturer 1989</i>) | 37 | April 2005 |
| Wickstrom, Conrad | USA | University of Oregon | 32 | Jan. 2006 |

From the SIL President: Thoughts For a Future

On the edge of the River Mersey, near where I live, is a sculpture by Anthony Gormley, called 'Another Place' (Fig. 1). It comprises one hundred identical, full-size, cast-iron figures of a naked man, set in the intertidal sand and silt over two kilometres of the estuary, from the high to the low tide marks, and each facing the open sea. The Mersey, still a highly polluted river, but much improved from the days when you were taken immediately to hospital if you fell in, flows continually by. The Borough that installed the sculpture includes one of the most depressed towns in the UK, a victim of changed technology that brought about huge unemployment, but also contains the largest sand-dune area in the western UK. Close by, in Liverpool, a major port and meeting point for many cultures, is my University that for many decades epitomised freshwater ecology in the UK, but where biomedical sciences are rapidly taking over. A jumble of disconnected information, you might think, and of little relevance to SIL, but I would disagree. One of the pleasures, indeed the requirements, of being an academic is the freedom to seek and see connections among disparate things.

The picture I have drawn has strong elements of change: the fortunes of a town, the quality of a river, the emphases of University departments, the rise and fall of the tide. It has elements of variety: cities, cultures and man-made objects on the one hand, plants, animals and

the intricacy of habitats on the other. And the sculpture, which has unexpectedly attracted thousands of people has a contemplativeness about it: a hundred silent, watching figures, outward-looking, their backs to the problems of a hinterland sullied by the human mess, to the greater significance of the water.

Like the land and waterscape, SIL has a long history, an enduringness about it. Like everyone's own living place, it commands great affection among its denizens. Its strengths are its multitude of cultures, its variety of interests, its bridging of the natural, the 'theoretical', and the man-made, 'the applied'. Yet it too suffers the vicissitudes of change. It is threatened by changes in the fashions of science and economics that are diverting its potential seed corn of new young members to other disciplines; it has clung to publication practices that, once at the forefront, have now been overtaken by league tables and demands for citation status; and perhaps it has been too modest in broadcasting its collective wisdom to a world that in its enormous, its all-embracing, its incredibly serious environmental problems, will always try to choose not to listen, for fear that its current privileges might be threatened. As Aldo Leopold memorably wrote '*an ecologist... must be the doctor who sees the marks of death in a community that believes itself well and does not wish to be told otherwise*'.

SIL has to change to survive, and rapidly, and with the whole-hearted agreement of all of its members. Like the sculpted watchers on the shore, it must contemplate the big issues, and

make its influence felt, but like the mass of humanity that depends on the land behind the shore for its livelihood, it must also secure its own structure to be able to do this. One of our problems is that we meet collectively only once in three years at Congresses but we do then resolve to do things. At the Montreal Congress we decided to encourage more frequent meetings and I hope we may be able to work with other freshwater organisations to do this. We also agreed to move to a Journal format for publication, which should widen our influence and encourage people to see the SIL as somewhere to place their radical new ideas and best data.

And between these issues is our need to recruit young members to replace an ageing population. It would make an enormous difference if every member were able to persuade just one new member to join. It would completely transform us were we each able to recruit two. To help we ought to be able to offer new members something more than we do at present and the tactics for that will engage the executive committee very largely in the immediate months. We must also, whenever we can, emerge from the ivory towers and say our piece in the arenas where human affairs are settled. Self-assessment and contemplation are good, but not if all they do is to collapse into their own black hole.

And in the business of reinforcing our own structure, we have to preserve the enormous strength of our scientific community. Science is not a subject. It is an approach to understanding that is far superior to any other approach. Its strength is its self-criticality that takes whatever evidence is available, be it perceptual, intuitive, historical, observational, statistical, experimental or theoretical, and tests its internal consistency so as to come to a conclusion, a world-view sometimes, that stands the least risk of being wrong. Then states that conclusion plainly and honestly. We will not be popular with governments and power blocks if we hold to our honesty. But we will make a much greater contribution to our future, a future in which the fortunes of all the countries that make up SIL are equally important. That perhaps is what I read most deeply into the one hundred quiet men who scan the horizon from the shores of the Mersey.

Brian Moss,
University of Liverpool, UK,
President of SIL



Fig. 1. Anthony Gormley's sculpture, 'Another Place' comprises one hundred cast iron figures that look out over the Mersey estuary to the Irish Sea and Eryri, the mountains of Snowdonia.

After the Montreal Congress the SIL stands for “The International Society of Limnology” - Societas Internationalis Limnologiae

The SIL 30 Congress in Montreal will be remembered for at least two different reasons; (1) the high scientific quality of the presentations and (2) the important changes of the SIL statute decided by the International Committee and the General Assembly.

About 1250 persons registered for the Congress, 1100 presentations were given, and approximately 400 manuscripts submitted. In the mornings, a large audience enjoyed the high academic standards of the Baldi Memorial lecture, the Kilham Memorial lecture and the invited plenary lecture. The Baldi Memorial was given by Michio Kumagai, Lake Biwa Environmental Research Institute, Japan and the Kilham Memorial by Kevin Rogers, Centre for Water in the Environment, University of the Witwatersrand, South Africa. The five plenary speakers were:

- **Lauren Chapman**, Department of Biology, McGill University, Canada;
- **Luc DeMeester**, Laboratory of Aquatic Ecology, University of Leuven, Belgium;
- **John Downing**, EEOB, Iowa State University, USA;
- **Diane McKnight**, University of Colorado, USA; and
- **Miguel Pascual**, Centro Nacional Patagónico (CONICET), Chubut, argentina.

The Palais des Congrès proved to be a good venue for the SIL Congress. All sessions were under one roof and it was quite easy to switch from one session to another. To my knowledge, no major technical failures happened. Although I did not have the time to attend as many sessions as I had wanted to, it is my firm impression that the scientific quality of the presentations was high and has improved substantially over the 30 years I have attended SIL Congresses. This was confirmed by many people I talked to during and after the Congress.

The Organising Committee headed by Yves Prairie and the Scientific Committee headed by Michael L. Pace deserve a lot of credit for a flawless organisation, which set the stage for a memorable Congress. There were many highlights and new developments like the photo contest, student activities, student poster awards, music played by and for the limnologist, and to have a green Congress. Furthermore, Yves and Michael very successfully promoted the importance of limnology to the media, both with respect to the algal blooms happening at that time in Quebec and more generally how climate change will affect inland waters now and in the future. The latter theme was probably the most important among the presentations at this Congress and shall remain so in a foreseeable future.

The SIL membership expresses a big thank you to the organisers and we all look forward to reconvene in Cape Town, August 2010.

Guided by the report from the Futures Committee, the Executive Committee presented ten important proposals to the members, the International Committee and the General Assembly. These proposals have been e-mailed to all members (hopefully) and were discussed at length at the Congress. All decisions and also more details concerning SIL over the last triennium and the election of new officers can be found in the General Secretary's Report posted on the home page www.limnology.org.

Here I shall keep focus on three major decisions with statutory consequences and one without such requirements.

- (1) The official name is now International Society of Limnology - Societas Internationalis Limnologiae, SIL. Thus, our brand and acronym SIL is retained.
- (2) SIL will cease the publication of the Proceedings as of the next Congress and the Executive Committee will create a new and peer-reviewed official journal for SIL to be received by all members in good standing. A Publication Committee

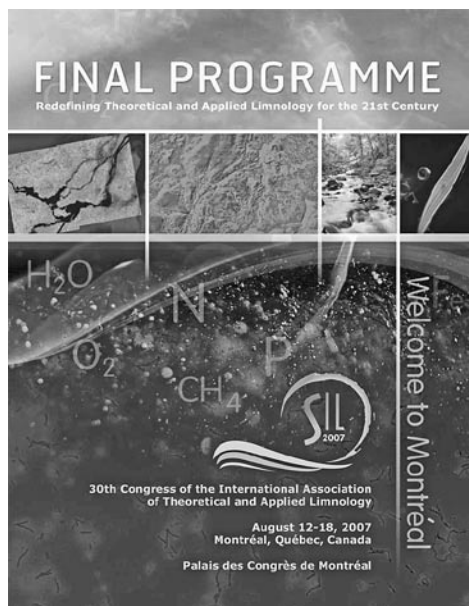
headed by former President Gene Likens has started to work and the journal will be launched within three years. The journal will be open for submissions by all scientists and will also publish presentations from SIL Congresses on the basis of reviews and editorial judgement. The Executive Committee has discussed how SIL can improve mentoring, so good science from our membership can continue to be published and now in a journal striving to obtain an impact factor and listed in Web-of-Science. The access to publication remains a core service to the membership. The Proceedings from the Montreal Congress will be published as usual; however, in a format that will be journal-like. Editor-in-Chief Jack Jones is now negotiating the exact format with Schweizerbart'sche Verlagsbuchhandlung.

- (3) Previously, most members paid their dues via their national representatives while some paid these directly to the SIL office. This way of payment is probably reminiscent of times when transfer of money across the country borders was difficult. In the future, it will be possible that the dues can be paid directly, electronically and with credit cards to the Administrative Assistant. Probably in same the way as most people are handling payments to international societies, participation in Congresses, air tickets etc. However, those who want to continue using a national representative can do so.

Without statutory consequences, it was decided to encourage and support SIL meetings between Congresses, to keep the visibility of SIL high. At the moment we hope to be involved in a meeting in Southeast Asia, Japan or China. Perhaps more visibility between Congresses could also encourage more students (and others) to become members of SIL. We are short in young members and this is not a healthy sign for our Society.

SIL has entered an era with many changes and the newly elected Executive Committee headed by President Brian Moss is facing a series of challenges to bring SIL into the future in good health. The successful Congress in Montreal was one sign that the members are in good scientific health, but we need the support from everyone also to keep the Society healthy. The decisions taken at the Congress was one important step.

Morten Søndergaard,
University of Copenhagen,
General Secretary-Treasurer



Reports From Laboratories

Limnology in Austria and at Mondsee - Going Against the Trend?

Austrian limnology has a long tradition (reviewed by Löffler 2001) and has produced eminent limnologists such as Franz Ruttner, Ingo Findenegg, and Heinz Löffler, to name but a few. Current limnological research in Austria is structured along a east-west axis. The university research groups in Vienna and Lunz, Lower Austria, focus on rivers and river-flood-plain systems, the Institute for Limnology of the Austrian Academy of Sciences (ÖAW) in the central part conducts research on prealpine and alpine lakes, and the two limnological research groups at the University of Innsbruck focus on high alpine lakes in Tyrol. All these research institutions primarily carry out fundamental limnological research. One of the departments of the University of Natural Resources and Applied Life Sciences in Vienna, the Biological Station at Illmitz, the Carinthian Institute for Lake Research (Kärntner Institut für Seenforschung) and several other Federal and Provincial laboratories are engaged in river and lake management and monitoring.

The Institute of Limnology at Vienna was founded by the Austrian Academy of Sciences in 1972, thanks to the untiring efforts of Heinz Löffler (see his obituary by Martin Dokulil in this issue). The Biological Station at Lunz, established in 1905, was integrated as a department of the Institute of Limnology. The station at Lunz was closed at the end of 2002, soon

after the passing away of Gernot Bretschko (see his obituary by B. Statzner in SILnews 37), the long-term head of the Biological Station and the initiator of the "Ritrodät" project. The fate of the Biological Station Lunz is reminiscent of the recent closing of the Max-Planck-Institute for Limnology at Plön, Germany, and its River Station at Schlitz (cf. W. Lampert in SILnews 50) and the decline of the British Freshwater Biological Association, as well as the shutting down recently of its River Laboratory (A. Hildrew in SILnews 49). The streamlining and downsizing of established limnological research institutions, coupled with political pressure to make rapid economic use of their basic research, is an ongoing Europe-wide trend. It is therefore encouraging that, in vicinity of the old Biological Station, the WasserCluster Lunz, an inter-university centre for freshwater ecosystem research, was inaugurated earlier this year (see article by M. Kainz in this issue).

In 1981, the Institute for Limnology moved from Vienna to Mondsee and opened its new department at the shore of Lake Mondsee. This building is today the only location of the Institute for Limnology of the ÖAW and the largest limnological research institution in Austria. The primary task of the Institute is to carry out process oriented, basic research. The research studies at the Institute are focussed on investigating the origin and maintenance of diversity at different organisational levels, ranging from molecules to populations and to ecosystems. Such an ecosystem level approach has been addressed in several EU projects on the effects of past and present climate change on lakes. The limnological studies

at the Mondsee laboratory mainly relate to microbial ecology in a broad sense, fisheries ecology, palaeolimnology, and groundwater research. The latter studies taxonomy and evolutionary ecology of micro-crustaceans. The Mondsee laboratory has done well during the last quarter century, thanks to the continued support from the ÖAW and successful acquirement by its scientific staff of externally

funded research projects. The research in progress at Mondsee is mainly supported by the Austrian Science Fund (FWF, 9 projects) and two multinational projects from the EU. Similarly, the *International Post-Graduate Course in Limnology* (IPGL), run by the Institute at Mondsee since 1974 has strengthened its international relations and attracted further extramural funds during the past five years. This course provides training, technology transfer and networking in limnology to graduate students from developing countries (see article by G. Winkler in SILnews 31; see also <http://www.ipgl.at/training>). Scientists from nearly all Austrian limnological research institutions participate in the IPGL activities, together with colleagues from the UNESCO-IHE Institute for Water Education located at Delft, The Netherlands. Others participating in the course are the Czech Academy of Sciences Institute of Botany and Institute of Landscape Ecology, Trebon, and Egerton University, Njoro, Kenya. Other partners in Kenya, Uganda and Tanzania are involved within the Eastern Africa Water Association initiated by IPGL in 2003.

Because of increased research and teaching activities, the personnel at Mondsee has almost doubled since the turn of the century; likewise, the Institute's infrastructure has reached its carrying capacity. The renovation and expansion of the 26 years old building at Mondsee has been in principal approved by the ÖAW, but postponed several times due to the financially tight situation. While the number of applicants far exceeds the number that the IPGL course allows, it is for the Institute of Limnology rather difficult to attract highly motivated graduate students from Austria who aspire to pursue a research career in limnology. This may reflect to an extent the limited job prospects in theoretical limnology. It is, however, not only the political trend that probably favours applied research but also that the implementation of the EU Water Framework Directive (WFD) created the illusion that more jobs would become available in the water-monitoring sector. In Austria, this has not been the case, and competition for freelance work in water management and consulting is severe. Undoubtedly, the implementation of the WFD would not have been possible without the basic limnological research conducted by scientists in many countries during the OECD eutrophication study some 30 years ago. Even though the most important players in biogeochemical cycling of matter on Earth, i.e. heterotrophic bacteria, have been overlooked by the WFD, we have the molecular tools at hand to detect and identify uncultured microorganisms *in situ*. Our current



The Institute for Limnology of the Austrian Academy of Sciences on the shore of Lake Mondsee, 30 km east of the City of Salzburg

basic research will eventually lead to an improved, sustainable use and management of our freshwater resources. Similarly, the knowledge that we have gained from palaeolimnology on pre-anthropogenic climate changes in the ultra-sensitive high alpine lakes and elsewhere should be used in the ongoing climate change scenarios. In addition to these foreseeable benefits, limnologists may provide solutions for ecological and socio-economic problems of our developed and developing societies. I am optimistic in that limnology has still some real surprises in store and may hold out breakthroughs. Who would have thought two years ago that the spectral niches of phototrophic microorganisms are shaped by vibrations of the water molecule (Stomp et al. 2007)?

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T. Weisse,

Executive Director, Institute for Limnology,
The Austrian Academy of Sciences

The WasserCluster Lunz: Reinvigorating Limnological Research in Lunz, Austria

The 'Biological Station Lunz' is mostly known to limnologists who have read Franz Ruttner's book *Fundamentals of Limnology* (1953), which is among the best earlier pioneering work on the principles of limnology' (Frey and Fry 1953). Stating that 'a complete understanding

of the biological phenomena in a body of water cannot be attained without a comprehensive knowledge of the environment', Ruttner had already stressed the interdisciplinary nature of limnology at this time. Subsequent research in Lunz included conceptual work on diel vertical migration and 'Uferflucht' (avoidance of the shore) of planktonic crustaceans, mating strategies of rotifers, high population densities in gravel streambeds, and on interconnected groundwater-riparian systems maintaining high levels of habitat heterogeneity. Sadly, the Biological Station Lunz was unable to continue its limnological research and was closed in 2003.

In a joint effort to reinvigorate limnological research in Lunz, scientists at the University of Vienna, the University for Natural Resources and Applied Life Sciences, and the Danube University at Krems as well as local and provincial politicians conceived the idea of an interuniversity concept for continuing limnological research at Lunz. The scientific collaboration of three universities encouraged the province of Lower Austria and the city of Vienna to provide base funding for the recently established interuniversity centre for aquatic ecosystem research, 'WasserCluster Lunz – Biologische Station', which was officially opened in May 2007. Research funding is generally acquired through successful grant applications at national and international science foundations.

The newly formed research centre pursues basic as well as applied aquatic ecosystem research, which is being carried out in *cluster* formed by three laboratories:

- 1) Biogeochemical functions: research and management at multiple scales (BIOFRAMES; Thomas Hein lab);
- 2) Biofilm and ecosystem research group (BERG; Tom Battin lab); and
- 3) Aquatic lipid and ecotoxicology research (LIPTOX; Martin Kainz lab).

The 'WasserCluster Lunz' is located in a former guest house, owned by the province of Lower Austria. We gratefully acknowledge the substantial financial contributions from the province of Lower Austria and the city of Vienna for the renovation of this former guest house in order to convert it into for a state-of-the-art laboratory in limnology. Situated at the pre-alpine Lake Lunz, the scientists working at the WasserCluster collaborate with national and international aquatic-research groups.

We can be contacted at www.wasserkluster-lunz.ac.at.

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Martin Kainz, Tom Battin and Thomas Hein,
WasserCluster Lunz

Interdisciplinary Research at the Leibniz - Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin

The Leibniz - Institute of Freshwater Ecology and Inland Fisheries (IGB) is the largest limnological research centre in Germany. The centre is a regionally based and internationally linked research institute. The staff includes about 45 scientists, 40 PhD candidates, and 45 members of technical and administrative staff.

The missions of the IGB are:

- to advance our basic understanding of the structure, function, and development of freshwater ecosystems
- to develop management strategies for the sustainable use of aquatic ecosystems
- to train new generations of freshwater ecologists, and provide feedback for policy makers, and create a general awareness among the public

Brief research overview

The IGB program is unique in that it combines basic and applied research for the benefit of both. The research is organized according to increasing scales of ecological complexity, from molecules to communities to up to the level of ecosystems. For more information on our Institute the reader is advised to visit our website (www.igb-berlin.de) or contact the scientists individually. A selection of the research highlights are briefly described below.

Hydroecology: The key focus of research is on the hydrodynamics of rivers and lakes employing field studies and modeling internal wave motion, turbulence and mixing, boundary interactions, and biogeochemical processes. For example, the lake model Flake (<http://www.flake.igb-berlin.de>) allows universally the calculation of temperature and mixing patterns in any shallow freshwater body.

River ecology: Research in progress has shown that lowland rivers can efficiently retain nutrients and organic matter (e.g. Gücker & Pusch 2006).



WasserCluster Lunz - Biologische Station, located at Lake Lunz, Austria. Photo courtesy: Josefa Sommer.

In sand-bed channels, carbon metabolism is ~90% restricted to the bed sediments, and habitat heterogeneity plays a key role in controlling the transformation processes (Figure 1).

Fish ecology and speciation: Studies on fish populations and communities are carried out to scientifically underpin the management of natural freshwater fish resources (e.g. re-introduction of sturgeons, recreational fishery as a main driver of fish populations, e.g. Arlinghaus & Cooke 2005). The contribution of ecological diversification to post-glacial speciation is demonstrated by eco-physiological, genetic and behavioral studies, mainly on small *Coregonus* species (e.g. Mehner *et al.* 2007).

Endocrine disruptors: The animal models at IGB are fish and amphibians, and they contribute to the joint development of OECD test guidelines to determine the effects of endocrine disrupting substances on the thyroid system. Ecotoxicological, histological, biochemical and molecular techniques are combined to disentangle the complexity of endocrine systems (e.g. Kloas and Lutz 2006).

Microbial Ecology: The simultaneous application of molecular and traditional microbiological methods allows us to study microbial community composition in relation to their ecological functioning (e.g. Allgaier *et al.* 2006). The main goal is to obtain pure cultures of abundant and important bacterial groups, such as *Actinobacteria* and β -*Proteobacteria* of the *Polynucleobacter* cluster, in freshwaters. In combination with lab experiments, this enables us to study their phylogeny and contribution to aquatic matter cycling in detail.

Cyanobacteria: Production of a wide range of toxic secondary metabolites by cyanobacteria have shown to have adverse effects on many organisms in aquatic and terrestrial ecosystem (e.g. Fastner *et al.* 2006)). Metabolic pathway, signal transduction and the detection of

different toxin variants as well as the presence of exotic cyanobacterial species are being investigated using high-end methods such as proteomics, gene expression, and protein analysis (e.g. Pflugmacher *et al.* 2006).

Climate change biology: Our key interest is to quantify the interplay between climate-driven external forces and the complex nature of internal feedbacks in structuring freshwater ecosystems (e.g. Wilhelm & Adrian 2007). Based on time-series analysis of decadal records and modeling approaches, the major driving forces of system level changes in the context of recent and future warming trends can be observed (see Fig. 2). Cross-lake comparisons allow identifying general and site-specific responses.

Opportunities for visiting scientists and graduate students

The IGB invites scientists and graduate students for research and collaboration. It offers state-of-the-art research facilities in the laboratory and the field, an aquarium hall, field-work facilities, long-term data sets, and skilled technical staff for help. The city of Berlin provides a stimulating scientific environment. The Senate of Berlin has recently launched a major funding program to develop the capital as a leading Science City. The IGB has close links with universities in Berlin through joint professorships and research programs.

Attractive funding opportunities exist for visiting scientists and graduate students. For questions regarding exchange programs, or plans to visit the IGB, please contact us. Funding opportunities exist through the the following foundations and services: German Research Foundation (<http://www.dfg.de/en/>), Humboldt Foundation (<http://www.humboldt-foundation.de/en/>), German Academic Exchange Service (<http://www.daad.de/>), or Marie-Curie fellowship (<http://cordis.europa.eu/improving/fellowships/home.htm>)

We now invite applications for a *Full Professorship* in Applied Freshwater Sciences (together with the TU Berlin).

Location and contact

The IGB is located at two sites (see below): A lab at the shore of Müggelsee, one of the largest lake in Berlin; and a field lab in Neuglobsow, Northern Brandenburg, is located at the shore of Stechlinsee, in a beautiful Nature Reserve area.

GB-Berlin

Müggelseedamm 310
D-12587 Berlin
Phone: +49 (0)30 64 181 5
<http://www.igb-berlin.de/>
Contact: co@igb-berlin.de

IGB-Neuglobsow

Alte Fischerhütte 2
D-16775 Stechlin-Neuglobsow
Phone: +49 (0)30 64 181 5

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The lowland river Spree has recently experienced a regime shift and turned into a macrophyte-dominated system (Photo: M. Pusch).



Long-term field monitoring station at Lake Müggelsee (Photo: IGB).

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Klement Tockner and Gunnar Nützmann
Contact: tockner@igb-berlin.de

Climate Change Prolongs Phytoplankton Growing Season in Shallow Frisian Lakes, The Netherlands

Wetterskip Fryslân, the Waterboard of the province of Friesland, has since 1970 been monitoring the quality of its surface waters. The board has been collecting hydrobiological data of the waters since 1983. In 2006, general trend analysis was performed on the data collected between 1981 and 2005 (<http://library.wur.nl/ebooks/1836493.pdf>; in Dutch). In this period, two major factors affected the water quality and biocenoses: first, measures to reduce eutrophication became effective; and secondly, effects of climate change became apparent through a higher frequency of warm summers and increased rainfall in winter, causing nutrient influxes. Here we present data from 25 shallow lakes, to examine relationships of chlorophyll-*a* concentration and growing season of phytoplankton with trends in nutrient loads and climatic conditions. Part of the analysis was performed on an annual basis, but also years were grouped into four research periods: 1981-1990; 1991-1995; 1996-2000; and 2001-2005.

Effects of the measures to reduce eutrophication became detectable from 1991 onwards. Summer average concentrations of total phosphorus and total nitrogen gradually decrease from 0.31 and 3.93 mg l⁻¹ during 1981-1990 to 0.08 and 2.04 mg l⁻¹ respectively, during 2001-2005. These changes in nutrient concentrations do not reflect the increased nutrient influx from winter rains. However, the increased rainfall in winter appears to have caused a decline in the concentration of chloride ions. Annual, average concentrations of chloride ions decreased from 108 mg l⁻¹ in 1981-1990 to 84 mg l⁻¹ in 2001-2005. The decrease

in P and N concentrations coincided with that of chlorophyll *a* from 116 µg l⁻¹ during 1981-1990 to 61 µg l⁻¹ during 2001-2005 (Figure 1). Concurrently, the contribution of cyanobacteria to the phytoplankton mass decreased from about 58 to 35 %, a trend reflected in the abundance of the most common cyanobacteria *Planktothrix agardhii*, a negative indicator for water quality.

In addition to a general decline in chlorophyll-*a* concentrations as noted above, shifts in the both timing and the relative heights of spring and summer peaks were also observed (Figure 1). The pooled and averaged data of all 25 lakes suggest an earlier spring maximum and a delayed summer maximum, the latter reaching higher levels than earlier, and covering a longer time span in more recent years (Figure 1). For the six lakes with the longest data series, the shifts in the timing of the two seasonal maxima were calculated on a daily basis. The aggregated data show that the average changes in the timing of the spring and summer maxima between 1985 and 2005 amounted to 45 and 28 days, respectively, indicating an extension of the phytoplankton growing season by more than two months.

The preponement of spring maxima may be attributed to increased rainfalls in winter, causing nutrient influx from increased run-off and earlier diatom blooms, though this latter is not confirmed by the available data. The delay in summer maxima has been attributed to the increased frequency of warm summers, causing an extended growing season for phytoplankton, especially of cyanobacteria. This view supported by the available data on the blooming of *P. agardhii* (Figure 1), which show a delay in peak levels of 24 days between 1984 and 2005.

Jan H. Wanink¹, Herman van Dam² and Theo H.L. Claassen³

¹Koeman en Bijkerk BV, Ecological Research and Consultancy, P.O. Box 14, 9750 AA Haren, The Netherlands; ²Herman van Dam, Grontmij | AquaSense, P.O. Box 95125, 1090 HC Amsterdam, The Netherlands (present address: Consultant Water and Nature, P.O. Box 37777, 1030 BJ Amsterdam, The Netherlands); ³Wetterskip Fryslân, P.O. Box 36, 8900 AA Leeuwarden, The Netherlands

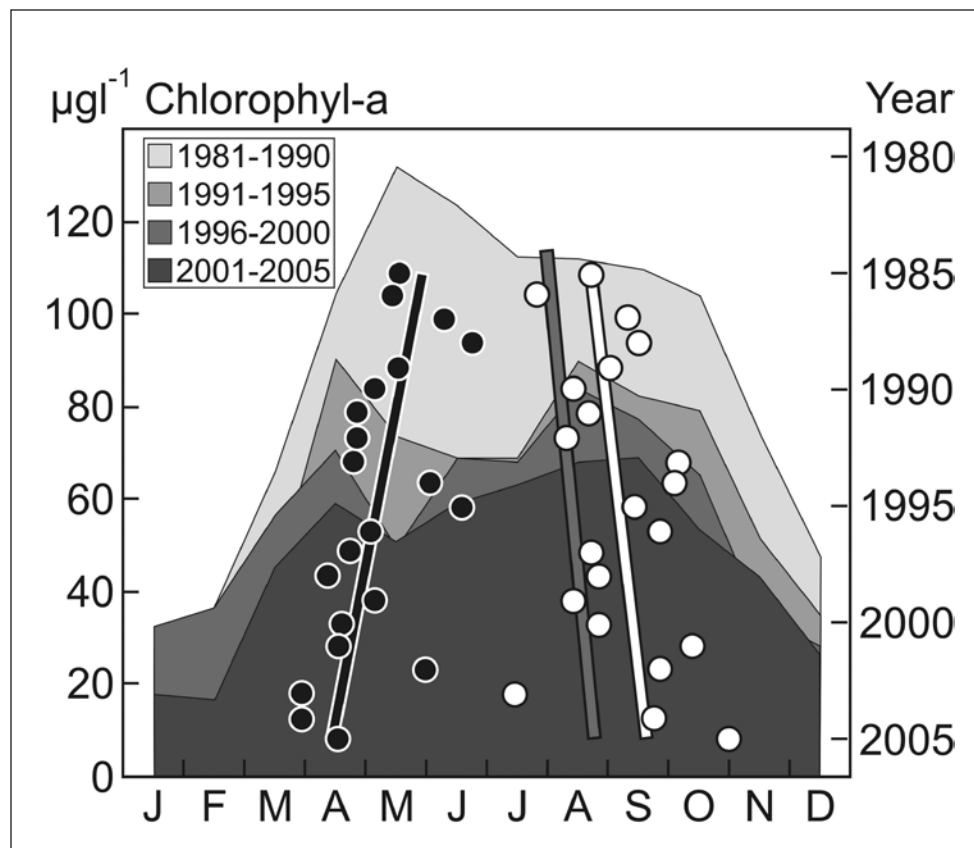


Figure 1. Monthly chlorophyll-*a* concentrations averaged over 25 lakes in the province of Friesland, The Netherlands during four research periods (1981-1990, 1991-1995, 1996-2000, 2001-2005). Dots represent the timing of annual spring (black) and summer (white) maximum of chlorophyll *a* averaged for the six lakes with the longest data series. The black and white bars represent statistically significant correlations of spring maximum and summer maximum with year respectively. The grey bar shows a statistically significant trend, calculated over all 25 lakes, during the peaks periods (blooms) of the dominant cyanobacteria *Planktothrix agardhii*.

Lakes: Regional Limnology

Lake Sibaya – South Africa's biggest, deepest and least impacted natural lake.

Lapping against high coastal sand dunes swathed in natural forest, Lake Sibaya is a lonely jewel in South Africa's inventory of standing inland waters. Lying in the coastal peneplain of Maputaland – an almost magical region of the northern KwaZulu-Natal where time stands almost still – this almost subtropical paradise has been spared the ravages of development, and retains several of its pristine attributes. Formed by valley deepening associated with late Pleistocene sea-level regression, subsequent migration of its formative Phongola River to discharge into Delagoa Bay in Mozambique has allowed it to retain a depth – up to 45m – unrivalled among its sister coastal lakes (like the well-known St Lucia estuarine lagoon system) which have experienced massive fluvial infilling. With a contemporary surface area of some 60 km² that lies roughly 20m amsl (depending upon hydrographic stage), much of the lake lies below sea-level. But with no direct marine connection, its waters remain remarkably and palatably fresh, raising a biological paradox.

Despite a salinity of around 0.6 ‰ (barely 2% seawater), Sibaya is home to a wide array of typically estuarine/marine organisms that co-occur alongside typical freshwater biota. Several of these marine 'relicts' are dominant species. The calanoid copepod *Pseudodiaptomus* dominates its zooplankton. An estuarine tanaid (*Apseudes*), amphipods (*Grandidierella*, *Corophium*) and crab (*Hymenosoma*) are important benthic invertebrates, along with freshwater molluscs, insects and shrimp (*Caridina*). Relict marine fish (*Glossogobius* and *Gilchristella*) co-exist with typical freshwater taxa (*Oreochromis*, *Pseudocrenilabrus*, *Tilapia* and *Clarius*) and an endemic goby – *Croilia mossambica*. Crocodiles and hippos occur in significant numbers.

Sibaya is notable for its absence of any thermal stratification. Strong winds blowing almost year-round across long fetches seasonally warm and cool the lake as a whole (some 0.8 km³) from around 18°C to 28°C. The decidedly oligotrophic nature of the system is consistent with its location and climate. Perched atop unfertile Quaternary marine sands with minor feeder streams, fluvial inputs are negligible; the local catchment is leached by relatively high rainfall, and extensive annual burning further precludes nutrient accumulation. The low productivity

of the lake, tangibly evident in its negligible fisheries, was incentive for the establishment of a lake-shore field station in 1967/68 during the terminal phases of IBP (PF), fueled by visions of improving its fisheries. Lake Sibaya accordingly served as the primary training ground for a significant cohort of South African limnologists, ultimately generating the only scientific volume (Allanson 1979) dedicated exclusively to a coastal lake. An array of studies was undertaken on its basic physico-chemistry and functional elements of its trophic web – from phytoplankton and macrophytes, zooplankton and zoobenthos, through to fish. Dietary protein deficiency was identified as a major constraint on the productivity and of post-juvenile *Oreochromis mossambicus*, and cause of stunting of this dominant fish, despite reasonable productivity of YOY individuals that utilize nutritious epispammic algae and detritus on shallow inshore terraces. Irretrievably flooded during a prolonged wet hydrological phase, this field station encountered an untimely end in 1977, and with it, a shift to reservoir-based limnology in which expertise subsequently grew and strengthened until lake research fell victim to a myopic national shift exclusively to river ecology in the later 1980's.

Several issues exposed by research on Sibaya remain still enigmatic and/or incompletely answered. For example: what physiological mechanisms allow the persistence of marine biota in such fresh waters? What evolutionary divergence has occurred in such biota since their isolation in a land-locked lake? Is there any significance to the predominant occupancy of deep offshore waters by the majority of marine relicts? What are the drivers of the profound diel vertical migration undertaken by *P. hessei* in the absence of apparently insignificant populations of zooplanktivores? With the seemingly global demise of non-applied limnological research (as reported in *SIL News* 49 and 50), the pursuit of such fundamental investigations seems to depend on prospects of philanthropy, not national parastatal funding. Are there any takers out there, perhaps ahead of SIL 2010 in Durban?

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Rob Hart,

School of Biological & Conservation Sciences
University of KwaZulu-Natal
South Africa



Main picture (by AG Bruton): Lake Sibaya—the relatively sheltered South Basin, abutting coastal dunes, with a pod of hippo on exposed sand bar. The clean white sandy beaches that extend as underwater terraces, and clear waters are typical of the lake. Inset (by RC Hart): 'Rogue' hippos that plunder subsistence crops are occasionally culled by the regional Conservation Authority, providing a joyously bountiful protein harvest. "Tilapia" - the small research boat that functioned as the field station's vehicle, can be seen on the shoreline in the background.

Lake Tana, Ethiopia: The Source of the Blue Nile

Current research on Lake Tana that started ca. 20 year ago has focussed mainly on the lake's endemic fish species and fisheries (de Graaf et al., 2006; Dejen et al., 2006). The studies have also focussed on primary production (Wondie et al., 2007) and zooplankton and paleogeology (Lamb et al., 2007). Most studies were carried out by the Department of Animal Sciences of Wageningen University (The Netherlands) in cooperation with the the Amhara Region Agricultural Research Institute in Bahir Dar (Ethiopia).

Lake Tana is the largest lake (ca. 3,050 km²) in Ethiopia, comprising the country's half of the freshwater resources. It is situated at 1830 m above sea level on the basaltic plateau in the north-western highlands of Ethiopia. Seven large, permanent rivers and ca. 40 small seasonal rivers feed the lake. The Blue Nile River is the only river that originates from the lake. The lake is characterized by low nutrient concentrations, relatively high silt concentrations and a low primary production. Lake Tana and its adjacent wetlands provide directly and indirectly a livelihood for more than 500,000 people.

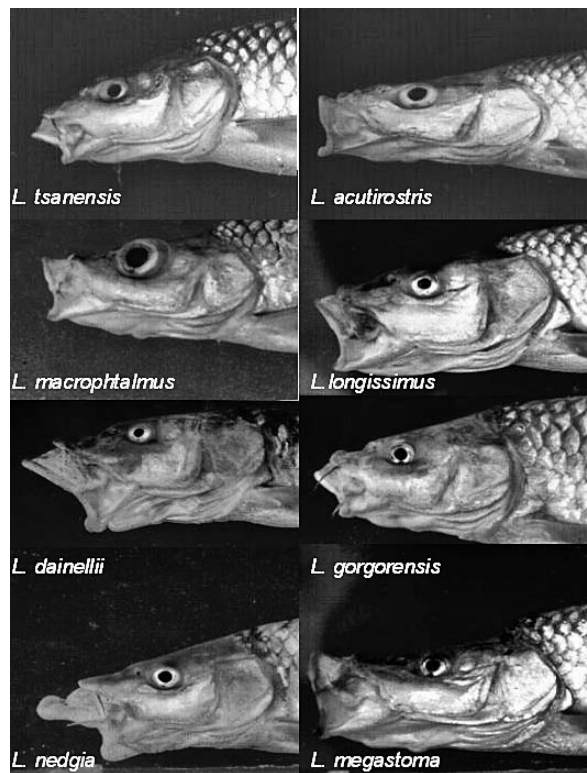


Fig. 1. Eight of the fifteen endemic labeobarbus of Lake Tana. They have adapted to utilize different food types, which is obvious from the differences in their head morphology. All the piscivores have a mouth gape that is relatively large and forwardly directed (e.g. *L. longissimus*, *L. dainellii*, *L. megastoma*); and the feeders on benthic invertebrates have a mouth gape that is smaller and directed downwardly (*L. tsanensis*, *L. gorgorensis*, *L. nedgia*)

Lake Tana was formed by volcanic activity that blocked the course of rivers in the early Pleistocene period ca. 5 million years ago. These events also separated the lake headwaters from the lower Blue Nile basin. Recently collected geophysical information and core data show peat layers, indicating that the lake apparently desiccated at regular intervals during the later stages of the last Ice Age, 10,000-25,000 years ago.

Twenty of the lake's twenty seven fish species are endemic to the lake and its catchment area. This speciation was driven during the early stages of lake's formation by new habitats for adaptive radiation and its isolation from the lower Blue Nile basin by the falls at Tissisat. The fifteen *Labeobarbus* species belong to a unique species flock of endemic cyprinids developed from an originally benthic riverine species which resembles the present day *Labeobarbus intermedius*. Since the lake dried up between 18,700 and 16,700 BP, they evolved only for 15,000 years or less. Surprisingly, eight of these are piscivores although experimental evidence reveals that they are inefficient predators, preying only on small fish species. Roughly half of the labeobarbus species seasonally migrate into inflowing rivers for spawning; the others developed a strategy to spawn in lakes. In the former group, recruitment-overfishing takes place during spawning and seven species among this unique species assemblage are in danger of becoming extinct.

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Jacobus Vijverberg,
Netherlands Institute of Ecology
(NIOO-KNAW), Centre for Limnology,
Nieuwersluis, The Netherlands

Ferdinand A. Sibbing,
Experimental Zoology Group,
Wageningen University, The Netherlands

Eshete Dejen,
Amhara Region Agricultural Research Institute
Bahir Dar, Ethiopia.

Thirty Years Research on Lake Victoria Cichlids; An Ecological Drama Provides New Scientific Opportunities

In July of this year it was thirty years ago that biologists from Leiden University, the Netherlands, started an ecological study on the haplochromine cichlid fishes in southern Lake Victoria. The Haplochromis Ecology Survey Team (HEST) together with researchers from the Tanzania Fisheries Research Institute

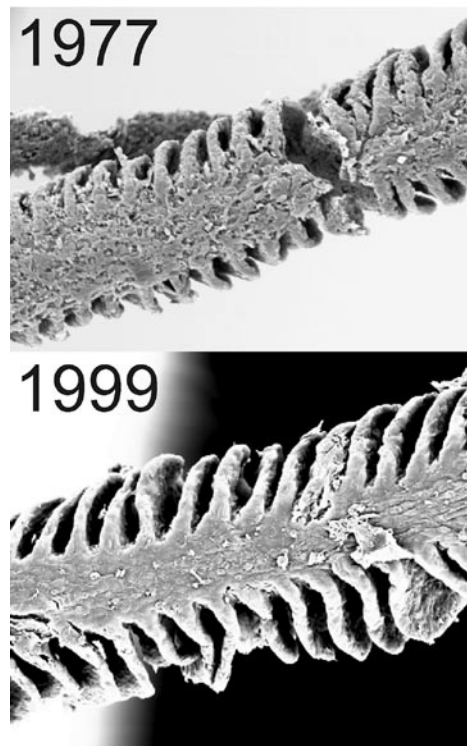


Figure 1. Scanning electron microscope photographs (250x) show a strong increase in the surface area of secondary lamellae on the gill filaments of the zooplanktivorous *Haplochromis pyrrhocephalus* between 1977 and 1999 (photo by Monique Welten, Leiden University).

(TAFIRI) and other institutes, discovered more than 300 new cichlid species. The number of endemic species known from Lake Victoria rose from about 150 to over 500, comprising 15 trophic groups. Over the past 30 years, samples of the majority of cichlid species have been deposited in the National Museum of Natural History, Naturalis, in Leiden, and taxonomic descriptions of a number of them have been published or are in preparation for publication. The new fish species included a large group of zooplanktivores, a trophic specialization until then thought to be restricted to the endemic cyprinid *Rastrineobola argentea*.

In the 1980s, Nile perch, an introduced predator, suddenly increased in Lake Victoria and, concomitantly, the cichlids in the sub-littoral and offshore areas vanished almost completely. At about the same time the eutrophication in the lake increased strongly, causing algae blooms, decrease in levels of dissolved oxygen as well as water transparency. About 200 cichlid species were estimated to have vanished; the inventory had been made just in time to comprehend the extent of the disaster. Nevertheless, apparently many species inhabiting areas that were not studied intensively disappeared unnoticed. In the 1990s, after a decline in Nile perch due to heavy fishing, a slow resurgence of some haplochromine species was observed, though many species did not recover. Balirwa et al. (2003, *Bioscience* 53, 703-715) suggested that conservation of biodiversity and fishery sustainability does not have to be exact opposite in the management of Lake Victoria. Nile perch seem to prefer and grow fastest on a cichlid prey base. Consequently, management strategies that allow enough fishing on Nile perch to ensure an abundance of their cichlid prey, but not so much pressure as to threaten the Nile perch stock itself, may be beneficial to both fish stocks. It is also possible that more species will recover if the eutrophication can be reduced and water quality improved.

The recovering cichlid species provide interesting data on ecological and morphological responses to the dramatic environmental changes in the lake. In the 1970s, the species feeding on detritus and phytoplankton made up 50% of the haplochromine ichthyomass in sub-littoral waters, and zooplanktivores 25%. However, currently the relative proportions of detritivores and zooplanktivores have reversed. Further, of these two trophic

groups, only a few species recovered, some of which are now even more abundant than in the past. The dominant species seem to have expanded the range of their diet types and of habitats considerably. These changes possibly resulted in a loss of specialisation and ecological segregation. Moreover, morphological adaptations to the changed environment have been observed, e.g. a strong increase in gill surface, a change in retina structure and changes in the feeding apparatus, which seem to be in response to the decreased oxygen concentrations, the changed light conditions and the changed diet. The changes that occurred in a time span of twenty years, or about as many generations, are probably the combined results of phenotypic plasticity and natural selection. Though the dramatic ecological changes in Lake Victoria are a distressing example of the impacts of human induced perturbations, the data and material collected over the past thirty years provide excellent opportunities to study both the resilience of complex tropical ecosystems, as well as contemporary evolution in vertebrates.

Frans Witte¹, Martien van Oijen²,
Mary Kishe-Machumu^{1,3} and Jan Wanink¹
¹Leiden University, ²Naturalis, Leiden,
the Netherlands and ³TAFIRI, Tanzania

Are Pollutant Levels in Great Lakes Fish Stable, Declining, or on the Rise?

The Laurentian Great Lakes (North America) and their interconnecting rivers have been polluted, mostly over the past 100 years, with heavy metals, synthetic organic compounds

(e.g., polychlorinated biphenyls [PCB], polybrominated diphenyl ethers [PBDE]/biphenyls [PBB], several pesticides), and industrial by-products such as dioxins/furans, chlorophenols, and a variety of hydrocarbons. Many organic contaminants, including organometals like CH₃Hg⁺, bioaccumulate and biomagnify in terrestrial^{1,2} and aquatic^{3,4} ecosystems and some have been linked to adverse health effects such as endocrine and neurological impairment, developmental abnormalities, deformities, and cancers in fish, wildlife, and humans.

Recreational, commercial, and subsistence fishers often ask whether the Great Lakes are “cleaner” now than in the past with respect to pollutants in fish: i.e., have pollutant concentrations in fish remained stable over time, or have they declined or increased? The answer depends on the compound in question, the period under study, and the locale.

Although PCBs have been banned in N. America since the mid-1970s, their concentrations (Σ PCB) in fish remain unacceptably high in many cases. They declined exponentially in top-level predators (e.g., lake trout, *Salvelinus namaycush*, and walleye, *Sander vitreus*) from lakes Huron and Ontario since the ban (Fig. 1_{a,2,4}). In Lake Superior, they declined rapidly in walleye and lake trout between the mid-1970s and 1990 but have been generally stable ever since⁶(Fig. 1_{a,1}). Paradoxically, Σ PCB in Lake Erie walleye decreased exponentially from 1977–1992 but increased from 1992–2004 (Fig. 1_{a,3})—see Bhavsar et al.⁶. Restrictions on the organochlorines DDT and mirex similarly resulted in exponential declines of residue concentrations in Lake Ontario salmon from 1976–2003⁷. However, [PBB-153] have

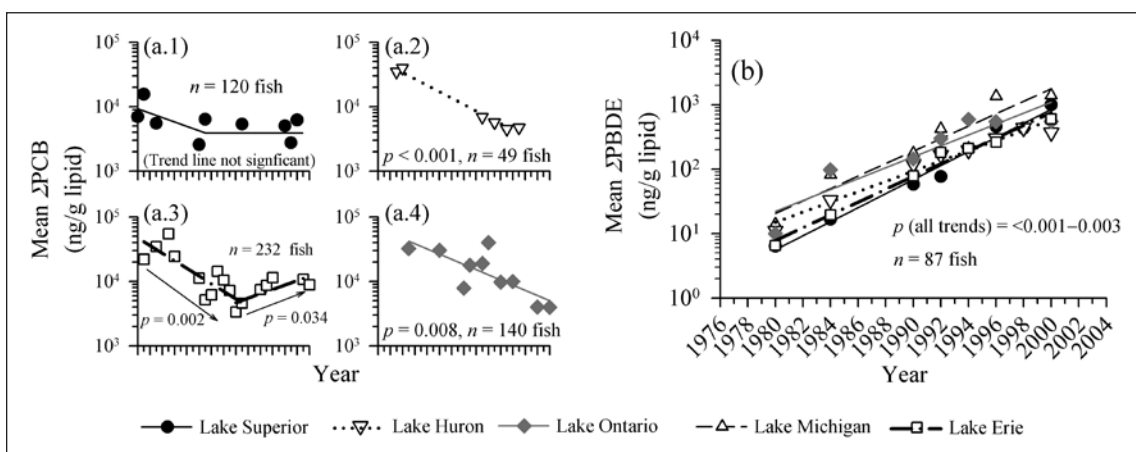


Figure 1. Average (a.1–a.4) Σ PCB and (b) Σ PBDE] in lake trout (lakes Superior, Michigan, Huron, and Ontario) and walleye (*L. Erie**) over a ± 25 -yr period. Data for Σ PCB are for (a.1) Block 7 in *L. Superior* (45–65 cm fish), (a.2) Block 3 in *L. Huron* (50–75 cm), (a.3) Block 1 in *L. Erie* (40–65 cm), and (a.4) Block 11 in *L. Ontario* (45–75 cm); see Scheider et al.⁵ for sampling block locations. Size ranges represent the majority of sampled fish per lake (i.e., smallest and largest fish were excluded from analysis). Data for (b) Σ PBDE] are from Table 2 in Zhu & Hites⁸. X-axes extend from 1976–2004 for all panels at the interval shown on (b). *Trends shown for walleye to permit general comparison with data in Zhu & Hites⁸ who caught very few lake trout in *L. Erie*.

remained stable in walleye and lake trout, even though its use in fire retardants was banned in the USA in 1976⁸.

In contrast, PBDE (a flame retardant) loading to the Great Lakes has been unchecked, such that total concentrations (Σ PBDE) in walleye and lake trout doubled every 3–4 years between 1980 and 2000 (Fig. 1)⁸. There is growing evidence that synthetic estrogens, such as those in birth-control pills, are resulting in high intersex prevalence in natural fish populations^{9,10}; however, data on their temporal variations in Great Lakes fish are not available.

Trends for total mercury concentration ([THg]) in Great Lakes fish are not clear. Concentrations in Lake Ontario salmon have changed negligibly since the mid-1970s⁷. However, concentrations in Lake St. Clair (the basin between lakes Huron and Erie) walleye, smallmouth bass (*Micropterus dolomieu*), and white sucker (*Catostomus commersoni*) followed U-shaped trends from 1971 to

1997, with concentrations declining from 1971 to the mid-1980s and increasing subsequently¹¹. French *et al.*⁷ also note that [THg] in Lake Ontario salmon may have recently increased.

In short, the question: *Are pollutant levels in Great Lakes fish stable, declining, or on the rise?* is difficult to answer. Management efforts to control some organochlorines appear to be working; however, more studies are needed to identify all pollutants in Great Lakes food webs and to quantify the influences of established exotic species and climatic variability.

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- ² Kearney *et al.* 1999. *Environ. Res.* 80: 138–149.
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- ¹¹ Weis 2004. *Environ. Res.* 95: 341–350.

Acknowledgements—I thank D. A. Jackson, S. P. Bhavsar, J. P. Smol, B. F. Cumming, and W. A. Scheider for their helpful comments on initial drafts. The Ontario Ministry of Environment, Environmental Monitoring and Reporting Branch (Toronto) provided the long-term PCB data.

Todd D. French,

Queen's University, Department of Biology, Kingston, Ontario, Canada (4tdf@queensu.ca)

SIL Working Group on the Conservation and Management of Running Waters: Meeting in Montreal, August 13th, 2007 – A Report

The group convened a meeting in Montreal on August 13th 2007 in conjunction with the SIL Congress. The meeting was attended by 15 members of the Working Group representing USA, Australia, Japan, Sweden, Germany, Portugal, Slovenia, UK, Iceland, Denmark. Gísli M. Gíslason chaired the meeting in the absence of the Working Group chairman, Phil Boon.

The business session discussed how the Working Group could function in between the triennial SIL congresses but no new suggestions were made. This was followed by a technical discussion on the theme of stream restoration, and Bent Lauge Madsen talked on 'Stream restoration: a science, an art, or just skill?'. In the discussion that followed the group agreed that:

- a knowledge of geomorphology is an essential scientific prerequisite for practical restoration work. If the project is to succeed, however, this must be coupled with a thorough knowledge of the habitat requirements of the organisms likely to benefit from stream restoration.
- stream restoration projects are unlikely to succeed without the support of a broad cross-section of society. The presentation

of such projects to a wide audience, and a partnership approach to their implementation, are critical factors in the success of stream restoration work.

- defining a target, or objective, at the beginning of the project is fundamental for a rigorous evaluation of the results.

The group agreed that, ideally, restoration should reinstate 'natural' conditions reflecting an absence of human impact. In practice, this is a utopian aspiration as many changes are irreversible. For example, in Denmark draining meadows alongside regulated lowland streams has changed the soil conditions from anaerobic to aerobic and in only a few decades has lowered the meadow surface by more than 1 m. Re-establishing the original meanders in the regulated stream can change the stream-meadow system to a swamp or even to a long lake. This has occurred in some of the Danish 'wet meadow' projects, where the aim has been to reduce nitrate loss from agricultural land by denitrification in the re-established anaerobic soil.

Yet, is this activity 'restoration' in the true sense of the word? A better term is 'rehabilitation' where the objective is to re-establish natural ecological and geomorphological functioning, and thereby create an 'acceptable' stream environment rather than

an unattainable pristine system that has long since disappeared.

The Working Group agreed to submit a paper on this topic for publication in the SIL Proceedings, focusing on the following aspects:

- Restoration from a long-term catchment perspective
- Political aspects of stream restoration
- Determining the habitat requirements of target organisms
- Stream restoration – the big picture

Gísli Már Gíslason,

University of Iceland, Reykjavik

and Phil Boon,

Scottish Natural Heritage, Edinburgh, UK



A typical Danish stream restoration project (a) before restoration, and (b) after restoration, funded and supervised by the Danish municipalities and undertaken by volunteers. Photographs: K Ebert (by permission).

Working Group Ecohydrology: UNESCO's Ecohydrology Programme, an update for *SILnews*

Since the last update in *SILnews* on the Ecohydrology Working Group in early 2006 (Volume 47), numerous developments have taken place under the framework of UNESCO's Ecohydrology Programme, jointly implemented by the International Hydrological Programme (IHP) and the Man and the Biosphere (MAB) Programme. Members of the Ecohydrology Working Group of SIL have been key players in these activities.

Since early 2006, UNESCO's Ecohydrology Programme has gained new momentum, progressing towards the goal of moving ecohydrology forward as a transdisciplinary approach for the sustainable management of water resources. In order to pursue this agenda, and upon the recommendation of Professor Maciej Zalewski, the then chairperson of the Scientific Advisory Committee (SAC) on ecohydrology, the SAC was reconstituted and Task Forces (TFs) on ecohydrology were launched. The five TFs on: (i) Coastal Zones, (ii) Assessing Impacts of Global Change on Aquatic Systems, (iii) Social Sciences, (iv) Education & Capacity-building, and (v) Demonstration Projects, together, contribute to the three pillars of the Ecohydrology Programme: research, education and implementation. SIL members involved with these task forces include Dr Richard Robarts as co-chair of the TF on Assessing Impacts of Global Change on Aquatic Systems, and Prof. David Harper who leads the demonstration project on the Lake Naivasha. Prof. Zalewski continues as a member of the SAC.

In March 2007, the newly reconstituted SAC on Ecohydrology developed a new mission and strategy:

UNESCO's Ecohydrology Programme is a scientific programme to understand and elucidate the dynamic relationships between hydrological, social and ecological systems; to consider how these act upon each other, and to seek new ways to balance human and environmental needs for water resources. The aims of the programme are to:

1. advance the integration of social, ecological and hydrological research; and
2. generate outcomes that enable the development of effective policies and practices.

The most significant progress made was recognition of three factors—hydrological,

social and ecological systems—in order to move forward ecohydrology as a truly transdisciplinary approach to the solving of issues immediately concerning water, environment and people.

In another development, in May 2006, the European Regional Ecohydrology Centre under the auspices of UNESCO (ERCE) officially opened its doors in Lodz, Poland, with Professor Zalewski as the director. The objective of the centre is to further develop ecohydrological science and its implementation for restoring freshwater resources, focusing on delivering tools for implementing the European Water Framework Directive as part of Poland's national cooperation.

In terms of information dissemination, a new website was launched on UNESCO's water portal, with a new logo: The site is still incomplete due to technological problems, but much information awaits uploading: <http://typo38.unesco.org/en/about-ihp/associated-programmes/ecohydrology0.html>.

A brochure on the Ecohydrology Programme was published, which can be accessed through this site. Copies were made available to participants attending the special session on ecohydrology at SIL2007 in Montréal. In addition to SIL2007, the Ecohydrology Programme was presented at the 4th World Water Forum in Mexico City, Mexico (March 2006); at the ESSP Open Science Conference in November 2006 in Beijing, China; at Stockholm Water Week in Sweden (August 2007); and at the Riversymposium and International Conference on E-flows (in Brisbane, Australia, in September 2007). Two ecohydrology demonstration projects will be presented at the International HELP Symposium on "Local Solutions to Global Water Problems- Lessons from the South" (in Johannesburg, South Africa, in November 2007).

Furthermore, several activities related to ecohydrology are being implemented in different regions around the world, most notably in Europe and in Latin America and the Caribbean. An expert meeting titled "Ecohydrological Approach as a Component of Sustainable Water Resources Management", organized by EcoCenter "Zapovedniks" and supported by UNESCO Moscow Office and UNESCO Venice Office, was held in Astrakhan, 19-21 April, 2006. In March 2007, the third Master of Science "Environmental Evaluation of Hydrologic Systems – Ecohydrology" was launched at the National University of La Plata, Argentina, with the support of UNESCO Uruguay Office.

For more information on the Working Ecohydrology, please contact:

Lisa Hiwasaki

Ecohydrology Programme Officer, United Nations Educational, Scientific and Cultural Organisation (UNESCO)
lhiwasaki@unesco.org

Richard Robarts

SIL Working group co-chair
richard.robarts@gemswater.org

Maciej Zalewski

SIL Working group co-chair
mzal@biol.uni.lodz.pl

Group for Aquatic Primary Productivity (GAP)

The Group for Aquatic Primary Productivity (GAP) is pleased to announce its 8th International Workshop. This will be held in Eilat, Israel from March 30th to April 8th 2008 with the theme: *Gross and Net Primary Production: Closing the Gap between Concepts and Measurements*.

The local organizing committee is chaired by Ilana Berman-Frank and Zvy Dubinsky. Accurate determination of the rates of Gross Primary Production and Respiration and of other loss processes in aquatic environments is fundamental for understanding the functioning of these ecosystems. The need for progress in this field has become increasingly evident with the realization of the complex impact of global warming on these ecosystems.

The laboratories in Eilat provide an excellent site to test novel theories, using experimental approaches such as stable-isotope labeling, photoacoustics, fast rate repetition rate and pulse amplitude modulated fluorometry, and satellite imaging. The waters of the Gulf of Eilat are oceanic and oligotrophic, with dense populations of corals, seagrasses and macroalgae. The workshop is being organized through the Inter University Institute for Marine Sciences at Eilat (IUI). The Israeli National Center for Mariculture that is close by maintains dense, macroalgal cultures; also biotechnological companies that supply microalgae for the pigment and nutraceutical industries are located at Eilat. The desert environment provides an additional attraction for those looking for photosynthetic life in extreme environments.

These exciting GAP workshops involve between 40 and 60 scientists who get together for plenary lectures and intensive experimental studies, covering a range of laboratory and field approaches.

The workshops provide an excellent opportunity for scientists of disparate backgrounds and experience to work together in interesting aquatic environments and share innovative ideas and expertise. Results of the experimental studies are presented briefly at the end of the workshop, and are later analyzed in detail and published in international peer-reviewed journals.

The workshop to be held in Eilat presents a wonderful opportunity for collaborative research in a range of aquatic systems from the open ocean, through coral reefs, to microalgal bioreactors. We hope to see you there!

Full details of the workshop may be found at <http://www.gap-aquatic.org/>

John Beardall,

john.beardall@sci.monash.edu.au

Vivian Montecino,

vivianmontecino@uchile.cl

Joint Chairpersons of the GAP
International Organising Committee

Conference Announcement of Saline Inland Waters Working Group

**International Conference on
Salt Lake Research & Management
Salt Lake City, Utah, USA
May 11-16, 2008**

The *International Society of Salt Lake Research* (ISSLR) will hold its 10th International

Conference on Salt Lake Research in Salt Lake City, Utah, USA, May 11-16, 2008 at the University of Utah which overlooks the Great Salt Lake, one of the largest and most ecologically important salt lakes in the world.

The conference will present recent microbial research in saline environments, bird use of salt lakes, and an array of other topics. The biennial Great Salt Lake Issues Forum sponsored by the *FRIENDS of Great Salt Lake* will be held jointly with the ISSLR conference, providing a stimulating mix of scientists, environmental groups and managers with a common interest in the conservation and scientific management of saline lake ecosystems.

The conference will include interesting mid-conference field trips in the local area and an optional post-conference exploration of saline lakes and national parks in the southwestern U.S. Co-sponsors of the meeting include Utah State University, The University of Utah, and U.S. Geological Survey.

Proposals for Special Sessions will be considered until *October 15, 2007* and can be sent to Wayne Wurtsbaugh (wurts@cc.usu.edu).

For more information see <http://www.isslr.org>

Wayne A. Wurtsbaugh,

Watershed Sciences
Department/Ecology Center,
Utah State University
wurts@cc.usu.edu
<http://cc.usu.edu/~wurts/index.html>

Report on Working Group on Macrophytes (2006-2007)

SIL WG on Macrophytes was formed during the 29th SIL Congress in 2004 in Lahti, Finland. Our main aim is to create a network of scientists working on the macrophytes, considering that many of us work in isolation, and to get sessions devoted to macrophytes in SIL Meetings.

A website with a forum has been built (Dr Kris Szozskiewicz : kszoszk@au.poznan.pl): <http://www.au.poznan.pl/keios/forum/> (15th September : our users have posted a total of **118** articles dealing with 108 topics. We have **246** registered users.

The WG presented its work and activities in Brussels at the “International Symposium on Aquatic Vascular Plants: 25 Years After, ISAVP - 2006 Brussels, Belgium 11-14 January 2006” where many SIL WG members contributed.

A scientific session “Ecology of Benthic Vegetation” was successfully organized during 30th SIL Congress in Montreal August 12-18 2007, chaired by Jacques Haury, Antonella Cattanea, Patricia Chambers and Chantal Vis. Session included 20 oral and 4 poster presentations related to ecology of aquatic macrophytes and benthic algae. Session was highly popular: more than hundred scientists participated in the lively discussions that took place. A meeting organized by Seppo Hellsten and Jacques Haury was attended by

22 scientists to strengthen our network. We plan to work together within small workshops and to develop comparative approaches on topics as river monitoring and indices, reference communities, adaptation of methods in use in NW Europe to Mediterranean areas. We also decided to send a questionnaire to members to collect information on their expertise, and as far as possible to exchange our lists of papers.

For more information, please contact Prof. Dr Jacques Haury at Jacques.Haury@agrocampus-rennes.fr



Antelope Island, Great Salt Lake, USA. Photo by Charles Uibel, 2007

Announcements

William H. Schlesinger, the new President of the Institute of Ecosystem Studies, Millbrook, Nork, USA, introduces him self to SILnews readers

(I thank Dr. William H. Schlesinger for agreeing to introduce himself to SILnews readers. Dr. Schlesinger replaced Dr. Gene Likens on his retirement as President of the Institute of Ecosystem Studies at Millbrook, NY, USA. Ramesh D. Gulati, Editor, SILnews)



On 1 June 2007, William H. Schlesinger was named President of the Institute of Ecosystem Studies, a private ecological research institute on the grounds of the Cary Arboretum

in Millbrook, NY. He assumed this position after 27 years on the faculty of Duke University. Completing his A.B. at Dartmouth (1972), and Ph.D. at Cornell (1976), he moved to Duke in 1980, where he retired in spring 2007 as Dean of the Nicholas School of the Environment and Earth Sciences and as James B. Duke Professor of Biogeochemistry.

He is the author or coauthor of over 180 scientific papers on subjects of environmental chemistry and global change and the widely-adopted textbook *Biogeochemistry: An analysis of global change* (Academic Press, 2nd ed. 1997). He was among the first to quantify the amount of carbon held in soil organic matter globally, providing subsequent estimates of the role of soils and human impacts on forests and soils in global climate change. With interests in limnology, he provided one of the first estimates of the transport of organic carbon in the world's rivers, and field studies of the overland transport of nitrogen from desert ecosystems undergoing desertification.

He was elected a member of The National Academy of Sciences in 2003, and was President of the Ecological Society of America for 2003-2004. He is also a fellow in the American Geophysical Union and the Soil Science Society of America.

His past work has taken him to diverse habitats, ranging from Okefenokee Swamp in southern Georgia to the Mojave Desert of California, and three times as a Duke alumni tour guide to Antarctica. His research has been featured on NOVA, CNN, NPR, and on the pages of Discover, National Geographic, The New York Times, and Scientific American. Schlesinger has testified before U.S. House and Senate Committees on a variety of environmental issues, including preservation of desert habitats, global climate change and carbon sequestration.

Schlesinger currently serves on the Board of Trustees for the Doris Duke Charitable Foundation (New York) and the Southern Environmental Law Center (Charlottesville) and on the Board of Scientific Advisors for Terrapass LLC (San Francisco). He is also a member of the selection advisory committee for the St. Andrews Prize for Environment, sponsored by Conoco-Phillips.

He and his wife, Lisa, live in Millbrook, where they enjoy birdwatching, gourmet cooking, and collecting southwestern art.

New SIL Web Site

This year is the tenth anniversary of the SIL web site (www.limnology.org). In 1997, the World Wide Web was in its infancy and having a "home page" was a novelty. The SIL web site was designed in view of the fact that many people at that time had slow connections to the Internet, with modest computers running not-so-current software. To ensure that no one would be precluded from visiting our site, we used few "bells and whistles." The result was a site that provided the essentials – and not much more.

Ten years later, our web site is hardly changed from that original incarnation, while Internet access has become faster and more reliable for most users. I believe the site now warrants a major upgrade. In addition to new information and capabilities, the site should be more visually attractive with better navigational and search tools. During the Montreal Congress, I met with members of the SIL executive committee and staff to discuss some options. The outcome was that I was asked to lead the development of a new web site.

Here is a sampling of features suggested for the new site: a facility for paying membership

dues online; a comprehensive information archive, including biographical profiles of noted limnologists (past and present), videos and photographs from SIL Congresses, tables of contents from Congress Proceedings, and more; an FAQ (answers to frequently asked questions, about SIL specifically, and lakes in general); a collection of photographs and data on lakes and limnological phenomena around the world; an expanded list of links to limnological conferences, courses, facilities, and organizations; an expanded job and studentship directory, as well as other materials especially pertinent to students; and a forum for SIL members to exchange information and views.

Anyone who would be willing to help with development of the new site are asked to contact me at webmaster@limnology.org. Suggestions and other ideas for the site are also welcome.

Gordon Goldsborough,
SIL Webmaster

First International Symposium of Winter Limnology

Kilpisjärvi, Finland, 24-28 May 2008

<http://www.jyu.fi/bio/hyb/Winter/>

In freshwater lakes and other inland freshwater bodies in temperate and polar regions, winter has traditionally been considered as a biologically unimportant period because most of these waters are frozen or inaccessible. This view, together with the logistics that involve harsh and even dangerous conditions prevailing in winter in the cold regions, has led the winter limnology to lag behind the research developments in the non-winter period. The situation is, however, now changing. Recent technical developments relating to sampling methods, traveling and communication have overcome many of the practical problems. Moreover, the challenge of climate warming is now driving winter limnology to the forefront of limnological research, e.g. in the Arctic and Antarctic regions and also in Nordic countries, and Siberian region of Russia, etc.

The aim of the *Symposium of the Winter Limnology* is to draw together the experts working in various aquatic fields and on different scales to stimulate thinking and discussion over a wide perspective, and to facilitate collaboration among those already engaged in limnological research in the cold temperate and polar climates.

For more information, please contact Kalevi Salonen by e-mail at kalevi.salonen@byt.jyu.fi.

Announcement of the Sixth Shallow Lakes Conference in Uruguay

We are very pleased to invite you to the sixth *Shallow Lakes Conference* from 23rd to 28th of November 2008 in Uruguay. This conference will be held first time outside Europe. It offers an excellent opportunity to meet those working on the limnology of shallow lakes worldwide. Shallow lakes are the most abundant freshwater aquatic ecosystems in the world. They are also very conspicuous, being particularly sensitive to external impacts. During the last decades, the environmental quality of most shallow lakes has deteriorated strikingly, mainly due to anthropogenic eutrophication, inappropriate management

of the water level and the increase of invasive species. Global climate change is likely to impact these vulnerable ecosystems even further.

The theme of the Conference "Structure and Function of World Shallow Lakes" will provide a unique opportunity to share knowledge and experience with scientists from different regions, also relating to the future climatic scenarios.

The scientific committee comprises, in addition to members from Uruguay, researchers from Argentina, Brazil, Belgium, USA, Spain, France, Senegal and Turkey. We also have the academic support from the National Environmental Research Institute, University of Aarhus (Denmark), Wageningen University (the Netherlands) and University of Liverpool (UK).

The main organizer is the Faculty of Sciences-Universidad de la República, Montevideo. The Conference will take place on the outskirts of the seaside resort Punta del Este. We look forward to seeing you in Uruguay!

For further information, please visit the website: www.shallowlakes2008.org or contact us: e-mail: shallowlakes2008@gmail.com.

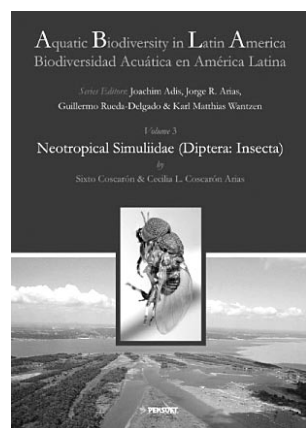
On behalf of the Organizing Committee:

Dr Néstor Mazzeo and Dr Mariana Meerhoff,
Departamento de Ecología,
Facultad de Ciencias,
Universidad de la República,
Montevideo, Uruguay

Book Reviews and Announcements

A New Encyclopedia on Freshwater Biota: Aquatic Biodiversity in Latin America

Series Editors: *Joachim Adis, Jorge R. Arias, Guillermo Rueda-Delgado and Karl Matthias Wantzen*



Biodiversity is a key word in science and global management schemes; however very few people are able to identify the species and their ecology that make up "biodiversity".

For many years, researchers and students from numerous countries complain about the lack of "tools" to identify aquatic invertebrates from Latin America. An international team of editors have combined their efforts with Pensoft Publishers to launch a new major series on the **Aquatic Biodiversity of Latin America (ABLA)**. Their goal was to find experts who combine the current state of knowledge in taxonomy *and* ecology, in order to produce a concise and affordable handbook for each group. About 15 monographs, written by reference scientists from various countries will offer a new, unrivalled view on the aquatic fauna of South America. Information on the ecology and status of the taxa (written in English) is combined with

illustrated identification keys to families and genera, in both English and Spanish. The series is aimed at zoologists, ecologists, hydrobiologists, biogeographers, conservationists and students interested in aquatic biodiversity, and will be an essential tool for biological libraries.

The first four volumes are already available.

- Volume 1: **Amazon Fish Parasites** (Second edition) by Vernon E. Thatcher. Pensoft Publishers, Sofia-Moscow, ISBN-10: 945-642-258-4, ISBN-13: 978-954-642-258-4, 508 pp., including 194 plates of figures (15 plates in color); publication date: March 2006; price Euro 105.00.
- Volume 2: **Ephemeroptera of South America** by Eduardo Domínguez, Carlos Molineri, Manuel L. Pescador, Michel D. Hubbard & Carolina Nieto. Pensoft Publishers, Sofia-Moscow, ISBN-10-954-642-259-2, ISBN-13: 978-954-642-259-2, 646 pp., including 234 plates of figures (16 plates in color); publication date: May 2006; price Euro 115.00.
- Volume 3: **Neotropical Simuliidae (Diptera: Insecta)** by Sixto Coscarón & Cecilia L. Coscarón Arias (See Photo). Pensoft Publishers, Sofia-Moscow, ISBN-13: 978-954-642-293-4, 685 pp., including 135 plates of figures and 19 maps of distribution; publication date: March 2007; price: Euro 125.00
- Volume 4: **Neotropical Ceratopogonidae (Diptera: Insecta)** by Art Borkent & Gustavo R. Spinelli. Pensoft Publishers, Sofia-Moscow, ISSN: 1312-7276, ISBN-13: 978-954-642-301-6, 198 pp., including 26 plates; publication date: June 2007; price Euro 70.00.

The upcoming volumes are on Plecoptera, Mecoptera and Neuroptera. Biodiversidad Acuática en América Latina

Dr. Karl Matthias Wantzen,
ATIG - Aquatic-Terrestrial Interaction Group
Institute of Limnology
University of Konstanz
78457 Konstanz, Germany
<http://www.uni-konstanz.de/limnologie/ags/wantzen>

Announcing: Encyclopedia of Inland Waters

Many members of SIL currently are contributing to a comprehensive effort to describe the essence, complexity, diversity and importance of the inland waters (lakes, ponds, rivers, streams and wetlands) of the Earth through the preparation of an Encyclopedia of Inland Waters. This major reference work is intended to summarize current knowledge and to capture the excitement about inland waters, from aesthetics to water-borne disease, from microbes to mammals, from metabolism to behavior, from pollution to conservation, and so forth.

More than 250 chapters are planned, organized into the following broad sections: Introductory Overviews, Properties of Water, Hydrology, Lakes of the World, Rivers and Streams of the World, Wetlands, Light and Heat, Hydrodynamics and Mixing, Inorganic Chemicals, Organic Compounds, Protists, Bacteria and Fungi, Algae, Zooplankton, Invertebrates, Vertebrates, Biological Integration Among Inland Aquatic Ecosystems, Air-Water and Land-Water Interactions, Pollution and

Remediation, and Applied Aspects. Section Editors include: Mark Benbow, Thomas M. Burton, John A. Downing, Ramesh Gulati, Dag Hessen, George M. Hornberger, Robert Howarth, Jack Jones, Tim Kratz, Winfried Lampert, William Lewis Jr., Gene E. Likens, Andreas Lorke, Sally MacIntyre, Richard Merritt, Michel Meybeck, Michael Pace, Judit Padisák, Morten Søndergaard, Kenton Stewart, Frieda Taub, Ellen Van Donk, Ian J. Winfield and Thomas C. Winter.

This Encyclopedia will be published by Academic Press and available in spring 2009 in hard copy and electronically through Science Direct. I serve as Editor-in-Chief and Andy Richford is (Senior Acquisition Editor, Life Sciences Books Academic Press - an Imprint of Elsevier).

Gene E. Likens

Books Received

Bridging Divides: Maritime Canals as Invasion Corridors. Series: Monographiae Biologicae, Vol. 83 Gollasch, Stephan; Galil, Bella S.; Cohen, Andrew N. (Eds.) 2006, XIII, 315 p., Hardcover; ISBN: 978-1-4020-5046-6

Trends in Antarctic Terrestrial and Limnetic Ecosystems, Antarctica as a Global Indicator. Bergstrom, D.M.; Convey, P.; Huiskes, A.H.L. (Eds.) 2006, XIV, 369 p., Hardcover; ISBN: 978-1-4020-5276-7

Diapause in Aquatic Invertebrates Theory and Human Use. Series: Monographiae Biologicae, Vol. 84 Alekseev, Victor R.; De Stasio, Bart; Gilbert, John J. (Eds.) 2007, XIX, 257 p., Hardcover; ISBN: 978-1-4020-5679-6

Encyclopedia of South American Aquatic Insects: Odonata - Anisoptera (Hardcover). by Charles W. Heckman, Illustrated keys to Known Families, Genera, and Species in South America. Springer, The Netherlands; 1 Edition 2006, 733 p., Hard Cover; ISBN-10: 1-4020-4801-7

Lochnagar: The Natural History of a Mountain Lake. Edited by Neil L Rose, Developments in Paleoenvironmental Research Series Vol. 12. 2007, 503 pages, figs, tabs, graphs, maps. Springer, The Netherlands Hardcover; ISBN: 978-1-4020-3900-3

Keys to the adult male Chironomidae of Britain and Ireland by P.H. Langton and L.C.V. Pinder illustrated by Angela M. Matthews and P.H. Langton. - Far Sawrey : Freshwater Biological Association, 2007. (Scientific publication / Freshwater Biological Association; no. 64). Vol. 1: Introductory texts, keys, references checklist and index. Vol. 2: Illustrations of the hypopygia (text-figures 114-260) and a supplement identifying sixteen species recently recorded from Britain and Ireland (text-figures 261-276)

Now Available

Aquatic Invertebrates of the Ganga River System (Mollusca, Annelida, Crustacea (in part)), Volume 1. Hasko Neseemann (Editor); Authors: Subodh Sharma, Gopal Sharma, Sanjay Nath Khanal, Bandana Pradhan, Deep Narayan Shah, Ram Devi Tachamo. Hardcover, 263 pp. A4-size, Published 10th July 2007, Kathmandu, Nepal. ISBN 978-99946-2-674-8. Price: EURO 60,-; USD 85. (with shipping cost extra). Mail orders and enquiry e-mail to H. Neseemann, hneemann2000@yahoo.co.in

Upcoming Events

27th International Symposium of the North American Lake Management Society

31 October - 2 November 2007
Orlando, Florida, USA
<http://www.nalms.org/Conferences/Orlando/Default.aspx>

Canadian Conference for Fisheries Research & Society of Canadian Limnologists

3-5 January 2008
Halifax, Nova Scotia, Canada
<http://www.phys.ocean.dal.ca/ccffr/>

International Conference on Rivers in the Hindu Kush Himalaya: Ecology and Environmental Assessment

3-7 March 2008
Godavari Village Resort (Kathmandu Valley), Nepal
<http://www.assess-hkh.at/mains/conference.php>

International Conference on Salt Lake Research & Management

May 11-16, 2008
Salt Lake City, Utah, USA
<http://www.isslr.org>

10th International Conference on Salt Lake Research & Management

12-16 May 2008
Salt Lake City, Utah, USA
<http://www.isslr.org/>

56th Annual Meeting of the North American Benthological Society

25-30 May 2008
Salt Lake City, Utah, USA
<http://www.benthos.org/Meeting/>

First International Symposium of Winter Limnology

24-28 May 2008
Kilpisjärvi, Finland,
<http://www.jyu.fi/bio/hyb/Winter/>

29th Annual Meeting of the Society of Wetland Scientists

26-30 May 2008
Washington, DC, USA
http://www.sws.org/2008_meeting/index.html

2008 Summer Meeting of the American Society of Limnology and Oceanography

8-13 June 2008
St. John's, Newfoundland, Canada
<http://aslo.org/stjohns2008/>

National Conference of the Canadian Water Resources Association

16-19 June 2008
Gimli, Manitoba, Canada
<http://www.conference.cwra.org/>

Sixth Shallow Lakes Conference

23 to 28 November 2008
Uruguay
<http://www.shallowlakes2008.org>

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 three times a year to more than 3,000 members and libraries world-wide. If your company is interested in acquiring advertising space in *SILnews*, please contact the Editorial office for rates at richard.robarts@ec.gc.ca 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 and your advertisement will appear there.

Limnology Jobs and Studentship Notices

Notices on the availability of limnologically-oriented jobs and graduate student opportunities are now accepted for publication in *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 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 or by fax to the attention of Gordon Goldsborough at: +1 (204) 474-7618.

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The University of North Carolina at Chapel Hill

School of Public Health

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Chapel Hill, NC 27599-7431 USA

denisej@email.unc.edu

Phone: 919 843-4580; Fax: 919 843-4072

The International Association of Theoretical and Applied Limnology works worldwide to understand lakes, rivers, and wetlands and to use knowledge gained from research to manage and protect these diverse, inland aquatic ecosystems.

SIL Officers

PRESIDENT

Prof. Dr. Brian Moss

School of Biological Sciences

Biosciences Building

The University of Liverpool

P.O. Box 147

Liverpool L69 3BX

Great Britain

Email: brmoss@liverpool.ac.uk

GENERAL
SECRETARY-TREASURER

Prof. Dr. Morten Søndergaard

Freshwater Biological Laboratory

University of Copenhagen

51 Helsingørsgade

DK 3400 Hillerød

E-mail: msondergaard@zi.ku.dk

EXECUTIVE
VICE-PRESIDENTS

Prof. Dr. Judit Padišák

Veszprém University

Limnological Research Group

P.O.B. 158, H-8200 Veszprém

Hungary

E-mail: padisak@tres.blki.hu

Prof. Dr. Ellen Van Donk

NIOO-Centrum voor Limnologie

P.O. Box 1299 3600 BG Maarssen

Netherlands

Email: e.vandonk@nioo.knaw.nl

Prof. Dr. Brij Gopal

School of Environmental Sciences

Jawaharlal Nehru University

New Delhi 110067

India

E-mail: gopalb00@rediffmail.com

EDITOR, *SIL NEWS*

Ramesh D. Gulati

NIOO/Centre of Limnology

Post Box 1299

3600 BG Maarssen

The Netherlands

Fax: +31.294.232224

E-mail: r.gulati@nioo.knaw.nl

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