



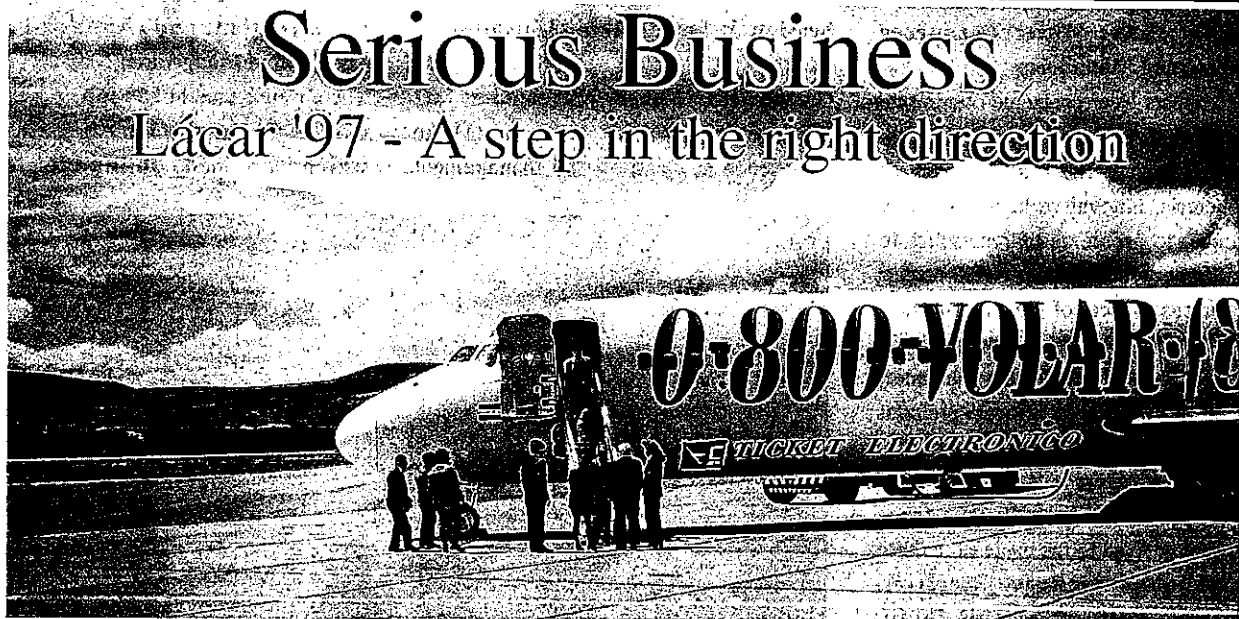
No.31 February 1998

NEWSLETTER

INTERNATIONAL LAKE ENVIRONMENT COMMITTEE FOUNDATION

— For Better Lake Management —

This Newsletter is also available in Japanese.



Serious Business

Lácar '97 - A step in the right direction

Delegates arrive for the Conference

Anyone who has attended an international conference will tell you that they are serious business. Papers number in the hundreds, meetings and workshops in high double digits, the convention hall teems with people and then there is the tension of actually trying to accomplish something worthwhile. Well all the above certainly applied to the 7th International Conference on the Conservation and Management of Lakes held successfully in San Martín de los Andes, Argentina at the end of last year. "But what happened there - was anything really accomplished?" you must be asking. In this issue of our newsletter we hope to answer that question to a fashion.

couldn't possibly hope to reproduce all the excellent work done at the Conference by the 500 or so participants. Roughly half of our pages are dedicated to the Conference proper and surrounding events and issues.

If there was something that all the Sessions and speeches had in common it was the sheer variety of topics discussed by the participants. From education, mathematical modelling, shared water management to monitoring and reservoir design. Of course it didn't end there - participants discussed about the health of the world's lakes and management of lakes and lake basins and a whole host of other subjects.

compared at least to the massive COP3 event in Kyoto (see page 6) - cannot hope to change the world, but it can raise the collective consciousness by highlighting positive aspects such as the importance of educating the young about the environment, and the plight of the world's freshwater bodies.

There is much to do and far to go in the work of ameliorating the damage done to the world's lakes and reservoirs. The first step is to try and get recognition of that problem. Lácar '97 was a very important step in the right direction. The information disseminated at the Conference, we hope, will fly back with the delegates to their corner of the world and be used productively to preserve our water.

Why 'to a fashion'? Simple really - we

A relatively small conference like this -

IN THIS ISSUE

- Lácar '97 - The Sessions
- Ecological Indicators
- General Meeting
- Argentine Workshop
- Monitoring Activities

- Profile on Dr. Riccardo de Bernardi
- Lake 99 in Copenhagen/ILEC Home Page
- COP3/Letter to the Editor/Biwako Prize
- Lakes of the World - Lake Hańcza, Poland
- New Publications and Forthcoming Events

Lácar '97 - The Sessions

Here is a very brief summary of the seven main Sessions held during Lácar '97. These Sessions were very much the core of the World Lake Conference and will give the reader a flavour of the topics which were at the forefront of discussions held at the Conference.

Session 1: Lakes Water Resources Assessment and Monitoring

Some 25 papers were presented over a two day period on widely varying topics from lake hydrology to the toxic impact of cyanobacteria, innovative bacterial assay techniques, to problems of reservoirs in India. Many excellent papers were presented on various aspects of the glacial lakes on the eastern slopes of the Andes in Argentina. These covered water balances, the effects of El Niño on regional precipitation and the possible impact of global warming. Two papers were presented on phosphorous loading. A further three papers were devoted to the bacteria in these lakes and to the San Roque Reservoir. Other reports dealt with cases in Brazil, New Zealand, USA, Hungary (Lake Balaton) and Russia (Lake Baikal). Some of the general conclusions drawn from the Session were that monitoring must be regarded as a long term measure to ensure the determination of change and response to management intervention and that there was a need to simplify measurement protocols to reduce cost and improve data comparison.

Session 2: Lake Resources Management

A total of 12 lectures were presented on different ecotechnologies to manage water quality in lakes and reservoirs and some related problems. The focus of this Session was mainly on eutrophication and the possibilities of control to preserve uncontaminated lakes or recover eutrophied water. Papers presented provided evidence that preventative methodologies, having lower costs and more stable results, are preferred over other solutions. However, when diffuse sources of nutrient input or in-lake recirculation prevail in the eutrophic metabolism of lakes, then the application of in-lake ecotechnologies can offer signifi-

cant support for the recovery of lake quality. Conclusions drawn from the Session suggested that eutrophication is still the most common cause of lake water quality alteration. A very pleasing aspect of this Session was the enthusiastic attendance of students from the local school.

Session 3: Sustainable Utilisation of Lakes

Categories of papers presented at this Session included case studies on (1) the experience in planning and management

wetlands in urban settings. The lakes used as examples in Category (3) included Kariba, Biwa, Mono and Laguna. Conclusions drawn suggested a great deal could be learnt from past mistakes with regard to prospective future development.

Session 4: Reservoir Design and Construction and Artificial Lake Ecosystem Management

There were a total of 16 papers presented at this Session, mostly from Argentina. Points which were made during this Session



Session 6 - Mrs. Nakamura talks of her experiences as a teacher

and (2) the application of planning tools and techniques of environmental resources, and (3) the evolving experience in management of large-scale environmental resource systems for sustainable utilization. Category (1) included examples of experiences at Lake Lácar and other Patagonian natural and environmental resources in Argentina. Experience in developing plans for freshwater systems like rivers and lakes were presented by participants from South Africa, the Philippines, Italy, Japan and Pakistan. Category (2) saw several presentations on advanced planning tools and techniques such as remote sensing and GIS with an emphasis on the need to develop a proper framework for dealing with emerging environmental resource management issues such as development of constructed

included: sediment filling of reservoirs being 3 to 60 times higher than predicted due to soil disturbance by improper land practices; environmental impact assessment being a useful approach for improving dam construction; economic assessment is increasingly becoming a tool for evaluating the costs of remedial measures and human pressure on reservoirs and their watersheds is very high particularly in the Southern Hemisphere.

Session 5: Modelling

Some 18 modelling papers were presented at this Session - 15 focusing on hydrodynamic problems and 3 on ecological modelling. The papers were all of a very high standard, with most focusing on Argentinean lakes and reservoirs. The rapid

development in computer technology has brought about a notable increase in 3D models. The keynote lecture in ecological modelling covered a review of lake modelling and a presentation of a recently developed approach, structural dynamic modelling, where the properties of the biological components are gradually changed in accordance with adaptation processes or shifts in species composition.

Session 6: Formation and Information - Environmental Education and Participation

To begin with the end, a general conclusion drawn from this Session was that the adoption of the lake and its basin as a starting point for environmental education proved stimulating and useful for the teaching-learning process. Some 14 papers were presented at the Session including the keynote paper entitled "ILEC and Education for Sustainable Development". All the papers on environmental education dealt with proposals or experiences based on aquatic ecosystems. Two papers addressed public participation in terms of non-governmental organisations. The presentations were followed by active discussions resulting in the following proposals: that all water, lake or basin projects or their financial assistance programmes should include a component on environmental education on the involved ecosystem; and that an interactive site or global net be generated to group environmental education experiences on lakes.

Session 7: Management of Shared Lacustrine and International Waters

The keynote lecture examined the state of management of shared water resources in Africa using Lakes Chad, Victoria, Tanganyika, Malawi and Kariba as examples. The paper noted a number of management issues which included water scarcity, water quality deterioration, eutrophication, threats to biodiversity and fisheries management. Lake Kariba was also used as an illustrative example of the possible legal framework for cooperation among riparian states. Two papers were presented on the management of the Zambezi river by the two riparian states, Zambia and Zimbabwe giving further details on the management of this river system.

Ecological Indicators

A Workshop on the Application of Ecological Indicators was held in Lacar on October 28 by Professor Jørgensen and Professor Matsui. Professor Jørgensen gave a brief presentation on the concept of ecosystem health and ecological indicators and he distinguished between first order indicators and higher order indicators. A very lively discussion ensued with many proposed indicators, although the discussion focused mainly on the first order indicators.

It was clear from the discussion that the choice of indicators is very dependent on the focal lake problem. If the problem, for instance, is eutrophication, it is obvious that the total concentration of nutrients, the phytoplankton concentration for instance determined as chlorophyll a and the primary productivity are important indicators. Oxygen in hypolimnion was mentioned as a general indicator of utmost interest in lake management.

The economy of the lake study was mentioned as another important factor in selection of ecological indicators. In India, for example, three levels of indicators are applied and the level is determined by the underlying economy and the importance of the lake/reservoir. Participants also discussed higher order indicators such as biodiversity, the Carson index, exergy and specific exergy.

General Meeting

The 8th ILEC General Meeting was held over several days beginning on October 26, 1997. Professor Jørgensen, Chairperson of the Scientific Committee, opened the meeting at which the committee endorsed the convening of the 8th World Lake Conference in Copenhagen, and decided to organize a workshop on Ecological Indicators (see left) during the LACAR Conference. Mr. Yamada, Vice Governor of Shiga Prefecture, Japan expressed the Prefecture's wish to host the 9th Conference in 2001.

The Meeting was re-opened in the afternoon of October 31 and carried on until mid-day November 2. Committee members gave recommendations to the Secretariat such as the priority of the revision of the World Lake Data Book, participation in the activities of the other organizations and nomination of new members. Members discussed ILEC's mid- and long-term priorities for action.

The Committee then split into two groups to discuss strategic matters and then re-grouped to give further recommendations for the next ten years. These included the effect of climate change on lakes, GIS and remote sensing, the Lake Watch Report, Mid term- Organizational Plan, strengthening the secretariat and public relations and holding the World Lake Conference in developing countries.



The Generals Meet

Argentine Workshop

With participants from Argentine research Institutes, universities, government agencies, a bilateral commission for an international reservoir and the ILEC Scientific Committee, ILEC organized a small Workshop on Sustainable Management of Lakes of Argentina in San Martín de los Andes on 24-25 October 1997, on the occasion of the seventh World Lake Conference.

As part of a study on the conservation of the lake environment in Argentina funded by the Environment Agency of the Government of Japan, the Workshop reviewed the general state of the lakes in Argentina and their management and discussed sustainable use and management of Argentine lakes. Topics discussed included Sustainable Lake Management and Development, Eutrophication of Reservoirs Development and Classification and State of the Environment of Argentine Lakes. In this process, case studies were made on the San Roque Reservoir which is a critical water resource for the city of Cordoba in a semi-arid area, Lake Nahuel Hapi which has suffered from pollution in the tourism development in the Andean region, and Salto Grande Reservoir which requires close bilateral cooperation because it is situated on the border of Argentina and Uruguay.

The Workshop not only gave an occasion to identify critical issues for sustainable management of the lakes and reservoirs of Argentina but also gave an opportunity to strengthen collaboration between the Environment Agency, the Argentine National Institute of Water and the Environment, which co-organized the Workshop, ILEC, the Argentine Ministry of Economy and Public Works which is responsible for water resources, other government agencies, universities and power companies.

The results of the Workshop will be incorporated in the report of the conservation of the lake environment in Argentina, which is expected to be finalized in March 1998. This series of study is expected to be continued in Zimbabwe in fiscal 1998.

Monitoring Activities

As precurred in our last newsletter, a field mission including cooperating companies of the Japan Environmental Technology Association (JETA) - Horiba and Central Science - was undertaken in Argentina just before the 7th World Lake Conference. The lakes and reservoirs monitored were Setubal Lake near the Paraná River located in Santa Fe City, San Roque Reservoir located near Cordoba City - the oldest artificial reservoir in South America - and Lake Lácar, the host lake for the Conference.

Setubal Lake receives direct influence from its mother river (the Paraná) in terms of water level and quality. Since October is the beginning of the rainy season of the Paraná Basin, the water was very turbid and well mixed. No typical plankton growth was observed because of high turbidity which prohibits photosynthesis. The water is, however, highly contaminated by domestic sewage from Santa Fe City with coliform reaching as high as 100,000 MPN/ml. Highly concentrated nutrient was also observed at some points where the total phosphorus concentration reached almost 0.1 mg/L (JETA, TOA). The lake is heavily used for leisure pursuits with several crowded beaches even though the water is very turbid. Water from the lake is also utilized for drinking water for the city.

San Roque Reservoir is notorious for its blue green algae bloom. We obtained verti-

cal profile of dissolved oxygen, temperature and turbidity, which shows typical characteristics of an algal eutrophic lake with oxygen deficiency near the bottom and clear formation of stratification. The density of *Microcystis aeruginosa* is extremely high in summer. Its toxins concentration exceeded 100 ppb near the spillway (*Microcystin LR+RR+YR*, measured at RCEQC Kyoto Univ.), occasionally reaching more than 2 ppm near the river mouth (Joint Research, Kyoto U.&INA), which can be extremely harmful as use for drinking water without adequate treatment. Since this lake provides drinking water for Cordoba City, the second largest city in Argentina with a population of 1.5 million, the potential risk of drinking water does not need pointing out.

Lake Lácar is an extremely clear lake which is obviously well managed. We could not detect any turbidity down to a depth of 50 m using profiler. According to field measurements, the water is almost saturated by oxygen down to 50 m. However, shoreline contamination by domestic sewage from the City of San Martín de Los Andes has been reported. This problem has been alleviated considerably by the construction of a new sewage treatment plant with removal of phosphorus and nitrate, as well as disinfection by ultraviolet ray. The lake now can be classified as one of the best examples of co-existence between humans and nature by proof of recovery and good quality of lake water.



Calibration of devices



Monitoring vessel (L.Setubal)



Sampling at San Roque



Lake Lácar

Profile on Dr. Riccardo de Bernardi ILEC Scientific Committee Member

Although Dr. Riccardo de Bernardi has been a member of the ILEC Scientific Committee since 1992, he has actively collaborated with ILEC ever since being invited as a lecturer at the LECS '84 Conference in Otsu, Japan.

Dr. de Bernardi obtained a degree in Biological Sciences at the University of Milan (1972). His degree thesis was developed at the Joint Research Centre of the European Community in Ispra on the effects of ionizing radiation on the biology and population dynamics of molluscs vectors of Bilharziosis with the aim of producing a methodology to control the vector of this parasitosis.

In 1973 he became a member of the staff of the National Research Council - Italian Institute of Hydrobiology (I.I.I.) and took over as Director of the Institute in 1983. The I.I.I. is one of the two major Institutes on limnology in Italy and its pre-eminent activity is directed to the study of lakes functioning in natural, perturbed and recovering situations, and to environmental management. The Institute also provides support and training for graduate and post-graduate students at several Italian Universities and for foreign Institutes. Most of the teaching and training activities have, in fact, been devoted to scientific guests from developing countries, especially South America and Africa.

The studies performed by Dr. de Bernardi have centered on the analysis of the dynamics and prey-predators and competitive interactions in natural populations, both



Dr. Riccardo de Bernardi

from a biological and modelling point of view, and the functional meaning of the role of differently structured biological communities in lakes. In this last field he was among the pioneers who analysed the possibilities to consider biomanipulation of aquatic food chains as a tool for managing eutrophication process and its effects on water quality. He is also researching the possibilities and limits of application of ecotechnologies in the management of lake pollution both concerning eutrophication and acidification processes.

Dr. de Bernardi's present activities are mainly directed to the analysis of long-term series of data on lake ecosystems and identifying processes responsible for the efficiency of energy transfer in food chains considering exoecological approaches as a tool for a better understanding of ecosystem evolution.

The scientific activity of Dr. de Bernardi has been the object of about 250 scientific papers in national and international Journals and of some monographies concerning lake functioning and management. He is responsible for the publication of two international Journals, the "Memorie" and the "Documenta" of the Italian Institute of Hydrobiology, and is on the Scientific Committee of other international scientific Journals (Lakes and Reservoirs, Acqua, Revue des Sciences de l'eau). He is also a member of several scientific academic Societies.

He has acted as a consultant for the European Union on "Quality objectives of aquatic life in European freshwaters" and "Quality objectives for fish life", and has held membership in a great number of national and international committees. To name a few, he was a member of the Working Group Environmental Impact of the Italian National Committee "Large Dams"; and is currently a member of the Scientific-Technical Subcommittee of the International Commission of the Protection of Swiss-Italian Waters; the European Academy of Sciences and Arts; and of the Scientific Executive Committee for the Artics Italian research.

Lake 99 in Copenhagen

The next biennial World Lakes Conference will take place in Copenhagen, 17-21 May 1999, under the patronage of His Royal Highness Prince Henrik of Denmark.

The topics at the conference will be all aspects related to "Sustainable Lake Management".

Despite many efforts and increasing public awareness, lakes in general are under threat in modern society and, examples of serious changes in life conditions or even devastation are numerous and still increasing. Considering the importance of lakes and reservoirs for local climate, tourism, recreation, fishery, wildlife, humans and other species, exchange of experience and discussion on the latest findings are as vital as ever.

Efforts on a broad scale are needed. Hence the conference will seek to bring together researchers, officials, NGOs and policy makers for presentation and discussion on the latest findings within managerial issues of lakes.

Details and up-to-date information about the conference will be distributed through the Internet at www.lake99.dk and of course here in future editions of the ILEC Newsletter.

ILEC Home Page Moves

A generous subsidy from the Japanese Ministry of Post and Telecommunication has enabled us to upgrade our computer systems in time for the JICA/ILEC training course which started on 19 January. We have also moved our web site to a new location. Our email address has also changed.

Please make a note of the new URL:

<http://www.ilec.or.jp>

and our new email address:

info@mail.ilec.or.jp

UNFCCC-COP3

ILEC participated in the third session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC-COP3) in Kyoto, Japan on 1-10 December 1997. In accordance with the provisions of the Convention, those organizations that are engaged in activities related to any aspects of the issue of Global Warming, including water, which is likely to be affected by climate change, were allowed to register themselves to participate in the sessions of the Conference.

The tough negotiations to reach agreement on a Kyoto Protocol, which was to provide for specific regulations on the emission of greenhouse effect gases (GHGs), went on in meetings which were held mostly in informal groups closed to observers. Many of these meetings ran late into the night.

Because the primary objective of the Kyoto session was the adoption of the Protocol, requiring extreme concentration of energy on politics, no specific aspects of the effects of the Global Warming on the environment were discussed. In addition, because of the very character of the Conference as an inter-governmental body, only three representatives of the NGO community were allowed to speak.

However, ILEC prepared and distributed a leaflet calling for action for prediction of more specific impacts of the Climate Change on the water regime, identification of required response action to the impacts, and formulation of strategies and programs to implement the action. Also, ILEC, in collaboration with the UNEP International Environmental Technology Centre in Shiga and Osaka, and Industry and Environment Office in Paris and the Global Environment Center (GEC), set up an information stand in the venue for the 10,000 plus Conference participants. The stand was visited by many of those participants.

The next session will be held in Argentina, on 2-13 November 1998. ILEC expects more discussions on specific environmental impacts of the Climate Change at that session. In such a session, ILEC's participation will be even more critical.

Letter from Cambodian Ambassador

The following letter arrived at the ILEC Offices last month. Space limitations usually prohibit us from printing letters from readers, but we thought this letter from the Ambassador of Cambodia to Japan would be of interest to other readers.

Tokyo, 28 December 1997

Dear Editors of the ILEC Newsletter,

I was very gratified to receive your very well-presented Newsletter containing beneficial and informative articles (No. 30-October '97, in English) kindly and occasionally sent to our Embassy for last two years, 1996 and 1997.

Your ILEC's Newsletter has greatly inspired me in my writing and talking to my friends whose responsibility is to serve our people by deploying their efforts to take good care of our environment that our beloved King Norodom Sihanouk is the first to raise the alarm about the environmental degradation caused mostly by human-anarchic behaviour.

Cambodians are like Japanese, have rice and fish as their main foodstuff and our fish mainly come from our fresh-water great lake called Tonle Sap (approximately 100 km. by 40 km.) which at present suffers sedimentation and other man-made causes.

As Ambassador of Cambodia to Japan, I would like to express my high appreciation and heartfelt thanks to you all for your future multiform support and assistance extended to our Ministry for Environment which does so much for our people with its so limited resource.

I would be very grateful if you could keep our Embassy address in your mailing list for regular sending of your Newsletter in English to us.

Please accept, Dear Editors of the ILEC's Newsletter, the assurance of my highest consideration.

*Truong Mealy
Ambassador,
Royal Embassy of Cambodia to Japan*

Biwako Prize for Ecology

In order to play a more active role in environmental conservation, and to promote public awareness of its local citizens, Shiga Prefectural Government established the "Biwako Prize for Ecology" in 1991, which contributes to development of ecological studies on water environments and related fields.

Residents of East and Southeast Asia and countries in the Western Pacific region who have made significant achievements in the study of ecol-

ogy or related sciences dealing with aquatic and/or watershed environments are eligible for the Prize.

The Prize consists of a certificate of merit and five million yen, and will be conferred on two researchers. The closing date for nominations for the 1998 prize is 1 June 1998.

For more information please contact the ILEC Secretariat or visit our web site: <http://www.ilec.or.jp/prize/e-index.html>



Previous Winners of the Biwako Prize for Ecology

LAKES OF THE WORLD

LAKE HAŃCZA (POLAND) - BAZYLI CZECZUGA

Post-glacial Lake Hańcza is the deepest lake (108.5 m) not only in Poland, but also in the European lowland. It is situated in northeastern Poland in the uppermost part of the Suwalki District at an altitude of 227.2 m. Its coastal part, composed of large boulders and thick gravel, is free of bulrushes. Only little clumps of reed - *Phragmites communis* Trin., can be seen in the Czarna Hańcza river estuary and in some of the bays, although only on a small fragment of the bank. However, the submerged vegetation occurs in larger amounts, reaching relatively great depths - even 20 m in some places. These are mainly *Elodea canadensis* Rich. and representatives of Charales, less so *Potamogeton pectinatus* L. In summer, epilimnion is warmed up to 20°C, and thermocline occurs at a depth of 8-15 m. Hypolimnion is cold and level, its water being warmed up during the summer from 4°C in spring to 4.5°C in summer. Transparency of the Secchi disc reaches 9.1 m, beams of light in summer period reach depths of 25 m. In summer, hypolimnion is permanently oxidized and oxygen amount does not fall below 9 mg/l. Oxygenic stratification, typical of oligotrophic lakes, can

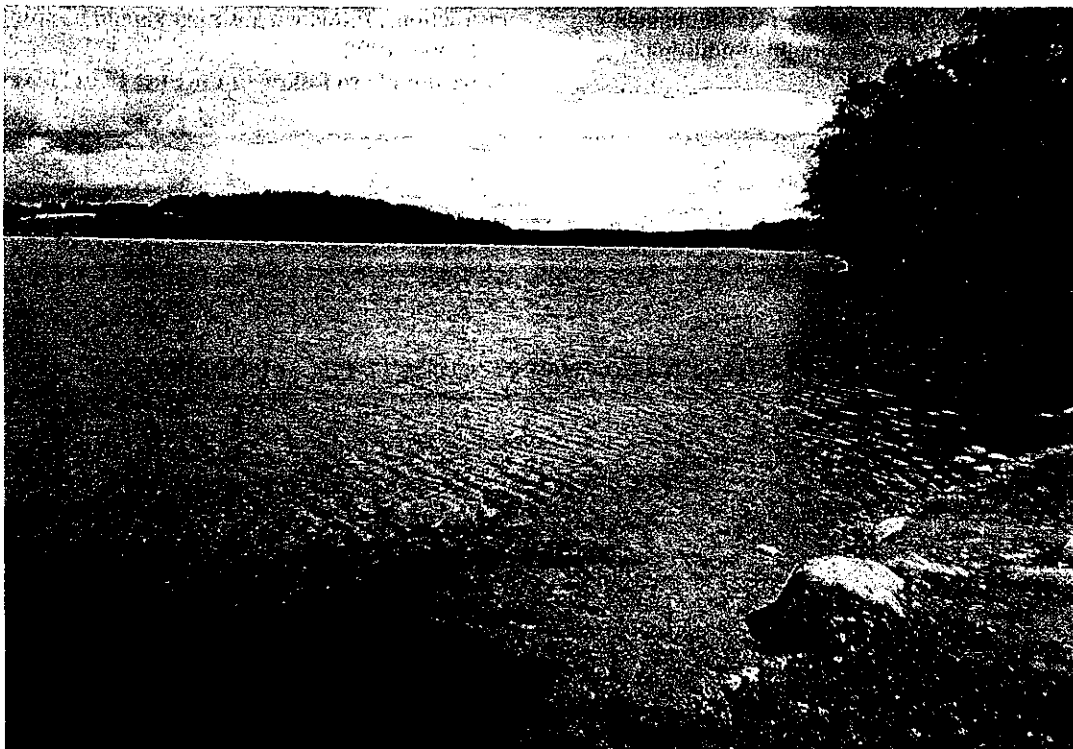
be observed, its maximum found in thermocline. In phytoplankton, diatoms are predominant, and chlorophyll content ranges between 0.75-30.0 µg/l, while the primary production of the phytoplankton organic matter amounts to 85.7 mg m³.

The number of cells of heterotrophic bacteria in the water of this lake is smaller than 200,000/ml water. Besides, this water is a habitat of two rare species of lower fungi - *Anguillospora gigantea* Ranzoni and *Tricladium giganteum* Iqbal. Zooplankton is poor in respect of quantity and quality. It includes 7 species of Rotatoria and 10 species of Crustacea. *Daphnia cucullata* Sars constitutes approximately 80% of the Crustacea biomass, while *Cocopea* representatives occur in about 5%. Worth noting is the occurrence of such crustaceans as *Bosmina obtusirostris* Sars and two "cold-stenotherm" species - *Eurytemora lacustris* (Poppe) and *Heterocope appendiculata* Sars. A very rare species of the Ostracoda, *Cytherissa lacustris* Sars, is found in Lake Hańcza.

Chironomidae in the bottom deposit are represented predominantly by species of

the genus *Tanytarsus*. From the fishing point of view Lake Hańcza is a European whitefish-like type of lake (*Coregonus albula*/L.). A freshwater salmon - *Salmo trutta morpha lacustris* L. has been reintroduced into this lake lately.

Until the 70s, oxygen conditions had been changing for the worse. Increased conductivity and pH of the water and a rise in phosphate concentration had been observed. After that period, the above mentioned indicators have remained constant. In the bottom deposit dated with radionuclide 137Cs, a structural change has been noted. Sand fraction has increased, while the amount of organic matter has decreased. Since 1963 Lake Hańcza has been a nature reserve and it is included in the Suwalki Landscape Park founded in 1976. This situation has resulted in the inhibition of eutrophication of this unique water body in the European Lowland. Within the Park territory, which includes a considerable part of the reception basin of Lake Hańcza, extensive agriculture rules are operative. In the past, biogenes flowing from fields caused vastly accelerated eutrophication.



Lake Hańcza

New Publications

Conservation and Management of Lakes, Reservoirs and Wetlands in Turkey

This ILEC publication will be available soon, and consists of manuscripts which were presented at the "Workshop on Management of Turkish Lakes, Reservoirs and Wetlands", held in Turkey, and is part of a report submitted to the Environmental Agency, Government of Japan.

This report is intended to serve as background material for promoting international cooperation by introducing the case of conservation and management of lakes, reservoirs and wetlands in Turkey.

A Guide to the Restoration of Nutrient-enriched Shallow Lakes

Brian Moss, Jane Madgwick and Geoffrey Phillips, 1996.
ISBN 0 9488119 29 2

Available from:
The Broads Authority
18 Colegate
Norwich, Norfolk
NR3 1BQ
England

Wetlands and Integrated River Basin Management: Examples from Asia and the Pacific

Published by UNEP and Wetlands International, 1997.

Available from Wetlands International, this publication provides river basin and water resources managers at the decision-making level with technical guidance on how to integrate the benefits of wetlands into river basin management under the natural and socio-economic conditions prevalent in Asia.

Forthcoming Events

Asian Conference on Water and Wastewater Management

Tehran, I.R. Iran
2-4 March 1998
P.O. Box 14185-448
Tehran, I.R. Iran

Global Water Partnership (GWP) Annual Meeting, August 13-14, 1998

The Third Annual Meeting of the GWP Consultative Group

The meeting is open to representatives of all types of organisations interested in sustainable water resources management in developing countries.

Questions regarding the meeting may be addressed to the GWP Secretariat,
Sida, SE-105 25 Stockholm
Sweden
Fax: +46-8-698-5627
Email: gwp@sida.se

8th International Conference on the Conservation and Management of Lakes - Sustainable Lake Management Lake 99

Copenhagen, 17 - 21 May 1999

First Call for Papers

Authors must submit an extended abstract with a minimum of 2 pages and not exceeding 4 pages including figures, tables and references according to available specified instructions. Extended abstracts should be submitted before 1 October 1998.

More details to follow in the next ILEC Newsletter

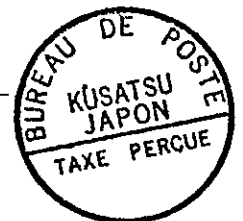


INTERNATIONAL LAKE ENVIRONMENT COMMITTEE FOUNDATION

Secretariat

1091, Oroshimo-cho, Kusatsu-city, Shiga 525-0001, Japan

Tel : +81-77-568-4567, Fax : +81-77-568-4568, e-mail : info@mail.ilec.or.jp



PRINTED MATTER

AIR MAIL