

No.35 March 2000 **NEWSLETTER** INTERNATIONAL LAKE ENVIRONMENT COMMITTEE FOUNDATION

- For Better Lake Management -

This Newsletter is also available in Japanese.

Special Bureau Meeting Scientific Committee looks to the future



Ver three days last November and December, the ILEC Scientific Committee convened a special Bureau Meeting to make plans for future projects, designate duties for these projects and also issue a Statement on Freshwater Issues as its contribution for the preparation of the G8 Environmental Ministers' Meeting to be held in Otsu, Shiga in April.

Some of the projects discussed included ways of getting more Lake 99 participants to submit papers for the ILEC Journal and increased funding for this publication. The next World Lake Conference – Biwako 2001 – also came under discussion. There are plans to hold a 3-week reunion ILEC/JICA training course immediately before the conference and also a Global Water Partnership meeting at about the same time.

The next two issues in the Guideline series will be about Eutrophication and Climate Change. It is hoped to get a publication company to take over the publishing and marketing of the next series. In addition it was agreed that a Lake Watch publication, consisting of 25 representative lakes of the world, would be produced and members of the full Scientific Committee would be asked to submit names of lakes that they wished to be considered for entry.

Perhaps the most important subject discussed, however, was the Statement on Freshwater Issues. The world is facing a freshwater crisis and it is unfortunate that policy makers hav not purthe issue high on the international agenda. This is in large part due to the fact that public opinion in the developed countries has not fully acknowledged the crisis and appears to be unaware of the fact that developed countries also suffer from polluted supplies and constrained development opportunities – see our article Lakes of the World.

The ILEC Scientific Committee hopes that the with the G8 Environmental Ministers' Meeting being held on its home ground - Shiga - its statement will wield some influence. We have highlighted some points from the statement in an article on page seven, and hope to report some good news from the Meeting in our next issue.

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Second World Water Forum

The Second World Water Forum, held in The Hague (17-22 March 2000) looked at actions needed for the sustainable use of water resources to become a reality. Representatives from each region of the world presented papers accounting for their regional vision. Additional presentations focussed on water-use, major group forums and special subjects such as water and urban design and water-use management. The following abstract is from a paper given by ILEC Scientific Committee member Prof. W.D. Williams. at the conference. We hope to have a more in-depth report from the Forum in our next newsletter.

ry regions of the world i.e. regions that are hyper-arid to subhumid and mostly warm to hot, so-called 'drylands', cover almost 50% of the total land area. Within them, human populations approach one billion. Despite the relative paucity of water in them, dry regions have some of the world's largest lakes and reservoirs They also have the widest variety of types of standing water: permanent freshwater lakes and reservoirs, temporary freshwater lakes, and permanent and permanent saline lakes. The limnological characteristics of these waters are often quite different from waters in temperate, better-watered areas about which most is known. Notwithstanding their economic importance, scientific interest, and ecological significance, lakes in drylands are subject to extensive and intensive anthropogenic impacts. These include all of those affecting lakes in temperate and tropical and subtropical regions. Additionally: there are other impacts confined to dryland lakes, especially salinisation. These anthropogenic impacts and their importance have not been fully recognised at national and international levels.

Biwako 2001

The 9th International Conference on Conservation and Management of Lakes will be held in Shiga, Japan, November 11-16, 2001. The subtitle of the conference is 'Partnerships for Sustainable Life in Lake Environments: Making Global Freshwater Mandates Work', Subject areas will be circulated by way of a formal announcement in a few months.

For more information, contact: Shiga Prefectural Government, Environmental Policy Division, 4-1-1 Kyomachi, Shiga, 520-8577, Japan Phone: +81-77-528-3466 Fax: +81-77-528-4849; E-mail Jake2001@ns1.pref.shiga.p>;

Or go to the ILEC website: http://www.ilec.or.jp/e_index.html

Lake Water Quality Management – Sonia Paulino Mattos

We know that human civilization has always been associated with the presence of water bodies because this renewable resource is vital for human life and activities. Unfortunately, this affinity becomes the main cause of the degradation of water resources. Thus, aquatic pollution exceeds geographical limits, like international frontiers and must be treated as a world problem.

The ILEC/JICA 'Lake Water Quality Management' course promotes this integration between Japan and developing countries spread in the American, African and Asian continents. In spite of the differences in the cultural, social and economic aspects between Japan and our countries, the origin of the pollutants and the results from those inputs, like eutrophication, is almost the same. This course has the great advantage of being content based on a real model – Lake Biwa.

During the two months of the course we learned about the main aspects of the relationship between aquatic pollution and the techniques used in Japan for controlling orminimizing this process in the lacustrine ecosystem. However, this course is much more than a simple technique/scientific explanation, it really confronts the problems and the solutions that have been sought. Nevertheless, when Japan was a developing country, like ours now, it faced big environmental problems, and some of them were not all adequately solved. From their environmental mistakes, which are part of its history, we can learn a lot. In addition, we have been surprised by the number of participants from the community of Shiga Prefecture involved in the recuperation process. All of them are very aware that Lake Biwa is their major social, economic and environmental treasure.

uring this course we met interesting people, who we will remember for ever, like: Prof. Kira for his pioneering work and deep experience; Ms. Fujii for the technique and practical knowledge of the 'Gappei Johkaso' system; Mr. Yamamoto, from RK Excel, for his courage in assuming the environmental disaster and the battle that he had been taken for almost 25 years to recover the ecosystem and Mr. Takeda who gave us a 'show class' of management of aquatic macrophytes. Finally, we would like to say a big thank you to everyone involved for showing concern related to 'our lakes', and of course our quality of life.



Students on a field-trip

New ILEC Secretary General and New UNEP-IETC Director

LEC welcomes Mr. Hiroya Kotani as its new Secretary General. He has worked for Shiga Prefectural government for 34 years and actively involved with the enactment of a number of Shiga Prefectural Environmental Ordinances. He has also been supporting the activities of ILEC as Executive Director.

Now he is determined to focus all of his efforts at ILEC toward the success of the 9th International World Lake Conference 'Biwa 2001', scheduled to be held in November 2001 (see notice on page 2).

Mr.Kotani succeeds Mr. Kiyoshi Imai, Secretary General since 1996. Mr. Imai is currently the Vice President of Public Cooperation of Sewerage Works.

Third Living Lakes Conference

The third Living Lakes Conference with the theme 'Restoring Streams and Lakes – Revitalising Communities' took place in Mono Lake. Lee Vinng, California, USA on October 1-4, 1999. Workshops, internal meetings and field trips were held. Topies of workshop included: 1 Strength in Partnerships, 2. Sustainable Communities, 3. Economic Development and Restoration and 4. The Living Lakes Network

To internal meetings, the Norfolk Broads (England), Lake Tengiz (Kazakhstan), the Dead Sea (Jordan, Israel and Palestine), Militsch Ponds (Poland) and Mar Chiquita (Argentine) were confirmed as new partners of the Living Lakes Network

Members, including ILEC, engaged in discussion of subjects such as the World Lakes Charter, the Living Lakes Resolution, the Structure and Future activities of the network. The next Living Lakes Conference will be held along with the World Exposition EXPO 2000 in Hanover, Germany followed by another to be held in Shiga, Japan, November 2000



Dr. Halls and Mr. Kotani

r. Steve Halls, a British Biologist (Ph. D in Zoology), is the new Director of the UNEP-IETC.

Dr. Halls has been an environmental scientist and researcher for the last 20 years and has carried out research and consultancy projects during this time. Many of these have been for Supra-national bodies (e.g. the European Commission, World Bank, WHO), NGO's, government departments, agencies and organizations in a wide range of industries, but particularly in the petroleum and chemical sectors.

He was actively involved with the European Commission in developing the 'Eco-Management and Audit Scheme' Regulation. Until recently he was the Chairperson of the Bedfordshire Local Agenda 21 Steering Group and also of the Luton Environmental Assistance Programme in the UK.

In addition, he is a member of the European Commission Steering Group on Waste Management Policy and Strategy for Europe. He is also the Secretary General of the European Society for Environment and Development. This is a pan-Europe organization whose aims include the promotion of sustainable development, environmental standards and professional development.

The new IETC Director sees the Centre playing a key role in achieving sustainable development in bringing information on ESTs to those who need it and in equipping them to use it to best effect.

Biwako Prize for Ecology 2000

Nominations are now being accepted for the 10th Biwako Prize for Ecology and will be accepted until 22 May 2000. The prize, which will be conferred on two researchers by the Governor of Shiga Prefecture, and will consist of a certificate of merit and \$5million (approximately US\$45,000 at current exchange rates). The names of the winners will be announced in August 2000 and the awards ceremony will be held in October 2000. For further details, please contact: Secretariat of Biwako Prize for Ecology c/o Planning Division Department of Planning and Public Life Shiga Prefectural Government 4-1-1 Kyomachi, Otsu, Shiga, 520-8577, Japan Tel : 81-77-528-3312 Fax : 81-77-528-4830 E-mail: prize@mail.ilec.or.jp

Or go to the following Internet site: http://www.ilec.or.jp/prize/e-index.html

Lake Nishinoko and Reeds - Masahiro Takeda

Nishinoko is one of inner lakes of Lake Biwa. I make a living from Yoshi-reed, therefore, Nishinoko is a part of my life. Through reeds, from generation to generation and for a long time now, my family has been observing natural and environmental changes of the lake.

riginally, there were three inner lakes, those of Dainakanoko, Konakanoko and Nishinoko, with a beautiful and sound a aquatic environment. In the central vicinity of these lakes, reeds had grown in colonies, and formed reed islands. The scenery was truly beautiful and furthermore the reed was of excellent quality.

During the closing years of the Pacific War, Konakanoko was reclaimed to create land for growing food to counteract the food shortage that the country was experiencing at the time. Vast areas of reed fields were transformed into vegetable fields so as to increase food production. Our family cooperated with such national policy on food supply. Land reclamation works on Dainanakako was also undertaken twice, although the food shortage crisis had become less severe by then.

When the Government was planning to build Dainaka bank, my grandfather, who was a reed trader in the Azuchi region, and several other persons concerned, discussed how to protect and conserve reed fields. They negotiated with the Government, and asked not to build the bank within the site of the reed fields. As a result of the negotiations, the bank was built at its current location, 50m offshore from the reed islands, and thus my family cooperated with the land reclamation work. For the reed traders, the objective of the negotiation was to conserve the reed island.

However, in the midst of the reclamation work of Dainakanoko, Dainakanoko Reclamation Work Office planned another reclamation project for Nishinoko. They asked a leading reed trader who owns broad reed fields in Nishinoko to support the new reclamation project. The reed traders strictly protested against the reclamation project on Nishinoko since they predicted Oumi (Shiga) reeds would be ruined if the project were to go ahead. They protested against the project and worked towards protecting the source of their livelihood.

Reeds are currently harvested in a privately owned area of about 2.5 hectares and another area of about 12 hectares. However, the quality of the harvested reeds has been deteriorating. Recently, the reeds have been losing their healthy luster and color, and we can harvest only darkish color reeds.

In years gone by, it used to be easy to pick out the bad reeds from the good, but in the past 10 to 30 years, the situation has changed and now it is the bad reed that outnumbers the good reed. Currently no more good-quality reeds exist, so we peel off every single reed, and use only 10 % of them for handicrafts.

In a situation where the quality of reeds is deteriorating, I thought both bad-andgood-quality reeds could be used for roofing, and have been running a business as a roofer. Historically reed-thatched roofs have a good reputation. Thatched roofs are said to be the best kind of roof and their golden luster are considered to represent the finest of Japanese architecture. However, nowadays, the number of reedthatched roofs is decreasing annually, and the number of roofers is also decreasing. It was about five years ago that I desperately started to tackle the development of reed products. At that time, in 1991 Shiga Prefectural Government took up Yoshireeds as one of the countermeasures of

environmental problems in Lake Biwa. In order to stop any activities regarding destruction of reed colonies around the lake, the prefectural government enacted 'Ordinance Concerning the the Conservation of Reed Colonies Around Lake Biwa' on July 1st 1992. The objectives are the conservation of the landscape of reeds and natural environment, prevention of shoreline erosion, and water-purification. The prefectural government designated areas as sanctuaries, conservation districts and non-protected areas, and is now addressing the works to expand reed colonies and managing works for reed colonies, such as harvesting them in winter, burning them to encourage future healthy growth, and maintaining their condition. However, the costs of these works are paid from taxes. I am trying to develop reed products that have additional value. I expect if reed products become more attractive, the right to harvest reeds will be bought through a public tender as they used to be and as a result the expense of harvesting would no longer be borne by the tax paying public.

Received dealers like us have been protecting the aquatic environment. Through the development of reed products and volunteer activities, I advocate reeds play an important role in the aquatic environment.

I am earnestly hoping that Lake Biwa will return to its former beauty. I hope Nishinoko will be the first model lake that demonstrates the recovery of the aquatic environment for both water and reeds.



Mr. Takeda and a reed harvester

ILEC Events and Activities 1997-1999

20 Jan. - 19 Mar. 1997

14 May 1997 21-28 June 1997

28-30 July 1997

24-25 October 1997

26, 31 Oct., 2 Nov. 1997 27-30 Oct. 1997

28 Oct. 1997

1-10 Dec. 1997

19 Jan. - 20 Mar. 1998

5 June 1998

20-22, 27-29 July 1998

8 Aug. 1998

21-23 Oct. 1998

18 Jan. - 19 Mar. 1999

6-8 May 1999

16, 24-25 May 1999 17-21 May 1999

13 June 1999

October 1-4, 1999

JICA/ILEC Training Course on Lake Water Quality Management (Japan) The Bureau meeting of Scientific Committee (Japan) International Conference on Ancient Lakes 'ICAL'97' (Japan) The 2nd training Course on Environment Education in Thailand Workshop on Sustainable Management of Lakes of Argentina (Argentina) The 8th ILEC General Meeting (Argentina) The 7th International Conference on the Conservation and Management of Lakes 'Lacar'97' (Argentina) Workshop on the Application of Ecological Indicators (Argentina) the Conference of the Parties to the United Nations Framework Convention on Climate Change 'UNFCCC-COP3' (Japan)

JICA/ILEC Training Course on Lake Water Quality Management (Japan) Mini-Symposium 'Thinking of Global environment problems through the protection of water for life' (Japan) The 3rd training Course on Environment Education in Thailand The Bureau meeting of ILEC Scientific Committee (Sweden)

Shiga Environment Business Messe '98

JICA/ILEC Training Course on Lake Water Quality Management (Japan) Living Lakes Conference 'Recreation and Restoration' (Lake Conference, Germany) The 9th ILEC General Meeting (Denmark) The 8th International Conference on the Conservation and Management of Lakes 'Lake '99' Mini-Symposium 'Let's get together to recover our beautiful lake' <u>Conference Officient Content of the</u> Third Living Lakes Conference 'Restoring Streams and Lakes - Revitalization Communities' (USA)



Lacar '97

UNEP Head visits Shiga and Osaka

Dr. Klaus Töpfer, Executive Director of UNEP, paid a visit to Shiga and Osaka to express his appreciation and thanks for the strong support IETC has received from the prefectures of Shiga and Osaka and the city of Osaka.



Dr. Klaus Töpfer

During his visit Dr. Töpfer met with a number of top officials from the local governments including Governor Kunimatsu of Shiga Prefecture. The officials gave Dr. Töpfer explanations of the environmental activities being carried out by their governments, and pledged their continued support for the two supporting foundations of the UNEP-IETC, the International Lake Environment Committee in Shiga and GEC in Osaka.

The Executive Director was accompanied on his visits by a UNEP delegation consisting of Ms. Jacqueline Aloisi de Larderel, Director of the Division of Technology, Industry and Economics in Paris, Mr. Yoshihiro Natori, Deputy Regional Representative of the Regional Office of Asia and the Pacific in Bangkok, and Ms. Lilia Casanova, OIC/Deputy Director of IETC.

r. Töpfer's visit coincided with UNEP's annual World Environment Day last year, the theme of which was "Our Earth - Our Future - Just Save it!". The city chosen for host the main event last year was Tokyo.

LAKES OF THE WORLD - MONO LAKE - M. NAKAMURA

In October 1999, a Lake Biwa team consisting of Mr. M. Shirai of ILEC, Mr. A. Sakaguchi of UNEP-IETC, Ms. Y. Nishio of the University of Shiga Prefecture, and I attended the third Living Lakes Conference held in Lee Vining, California, a small town located just west of the fascinating Mono Lake. The meeting was organized with the support of the Global Nature Fund (GNF), an organization based in Germany founded in April 1988. GNF's principal objective is to promote of sustainable development objectives at the international level by providing support for international conservation projects and facilitating networking among them. Living Lakes is the first and one of the most successful GNF projects.

ccording to an information sheet prepared by the Mono Lake Committee, a non-profit citizens' group dedicated to protection of the lake, Mono Lake's fascinating existence and history of development and conservation is as follows.

Mono Lake has a surface area of about 70 miles² (about 180 km^2 kilometers) and reaches a maximum depth of about 145 feet

(about 44m). It is situated in a 24 mile (39 km) wide desert basin, about 6,500 feet (2000m) high on the Eastern side of the Sierra Nevada. The lake is more the 760,000 years old and is one of the oldest in North America. As Mono Lake is a terminal lake, its water is twice as salty as seawater and contains large amounts of minerals and is 80 times harder than seawater. As such it can support only two species of fauna, namely brine shrimp and alkali flies, but in tremendous abundance, making the lake one of the most life- productive ecosystems in the world.

The process of aging of this lake, however, was dramatically accelerated by the demand for water by Los Angeles situated 300 miles (about 480 km) south of Mono Lake. In 1941, four of the five rivers flowing into the Lake were diverted to Los Angeles with disastrous consequences for the lake: its salinity doubled and its surface was reduced to less than a third of its original size.

This threatened the habitat for more than 50,000 California gulls and flocks of other migratory shore birds. Among the threatened birds were some 80,000 Wilson's



Mono Lake

phalaropes (10% of world population). Every year some 1.5 million grebes (30% of the North American population) migrate south from breeding areas in Canada and Alaska and rest at Mono Lake. In addition, 79 other documented species of water birds migrate annually through the Mono Basin. Twenty years ago, conservationists predicted the continued decline of Mono Lake. In 1978, conservationists founded the Mono Lake Committee with the aim of saving the lake by reducing excessive water consumption in Los Angeles.

Twenty years of negotiations, court challenges, and water conservation projects in Los Angeles supported by the Mono Lake Committee and other conservation groups led to a compromise. The State of California decided in 1994 that water users should divert only a part of the water flowing in the rivers. Since 1994, the lake level has risen nine feet. Now, more than 100 different species of migratory birds use the lake as a 'stepping stone' on their long flights. The Mono Lake Committee, funded by a membership of 18,000 concerned individuals, now undertakes activities ranging from education of the public about Mono Lake and the impacts of excessive water use, to promotion of cooperative solutions that protect Mono Lake and meet real water needs without transferring environmental problems to other areas.

he four-day Conference provided us with an opportunity to lear(first-hand how the conflicts started and evolved between the City of Los Angeles and the conservationist groups headed by the Committee and how it was eventually resolved. Aside from representatives from the Committee and their affiliates, there were representatives from the City of Los Angeles, the State Water Resource Control Board, and the Air Pollution Control Board, and even a former member of the US Congress, attending this Conference to provide us with stories of their experiences, i.e., confrontation between the City and the conservation groups, strenuous legal processes and the role of scientists, and after the court decision, trying hard together to work out mutually beneficial solution, water conservation and reuse by the Los Angeles City

and its residents. It is reported that the City would still have been wasting hundreds of thousands of tons of water and tens of millions of dollars every day if it were not for the conservation and water reuse programs instituted thanks to the movement to save Mono Lake.

Mr. Credo Mutwa who happened to be present at this Conference, remarked at the beginning of the meeting, "Each lake you restore, the whole world saved". This was exactly the feeling of all of the participants after learning about this fascinating story.



Location of Mono Lake

G8 Environmental Ministers' Meeting

The next G8 Environmental Ministers' Meeting will be held in Otsu, Shiga in April 2000. The Scientific Committee of the International Lake Environment Committee, met from 29 November to I December 1999 in Shiga to discuss the world's freshwater crisis. A statement was drafted and forwarded to the Minster of the Japanese Environment Agency, through the Governor of Shiga Prefecture, to contribute to the preparation for the meeting. The following are highlights from the statement.

The world faces a global crisis in the quantity and quality of fresh water.

The freshwater crisis affects both the economic and physical health of all nations.

• Freshwater scarcity impairs development in all countries.

• Water-borne diseases are an increasing health hazard and the cost of health care in addition to economic loss in the workplace due to sick or deceased workers is significant.

• Endocrine disruptors (hormone mimics) are globally dispersed in both the terrestrial and aquatic environment, and are a signifi-

cant hazard to human and wildlife health.

• Freshwater scarcity has important implications for the global trade of agricultural products.

Scientists are well aware of the freshwater crisis, but public opinion and policy responses have lagged.

• Freshwater scarcity ranked above all other environmental problems except climate change in a recent survey on emerging environmental issues of 200 experts in 50 countries carried out by UNEP.

Response must be proactive.

• Experience shows that for environmental problems, prevention is less expensive than remediation.

• Without immediate action, the problem will become worse and harder to manage.

Identification is the first step in solving the problem.

• Without adequate information, proper infrastructure for water supply and sanitation cannot be introduced.

• The cost of measuring water quality has been significantly decreased by technological innovation.

• Present international monitoring efforts can be greatly improved.

We recommend that G8 Environmental Ministers resolve to:

Support the implementation of national and international innovative monitoring programs that:

• provide more intensive and comprehensive assessment of freshwater resources. Urgent attention should be paid to global contamination resulting from eutrophication and discharge of toxic chemicals; and

• enable assessment of fundamental changes in global freshwater resources due to climate change, for example, through deep water warming of lakes.

 seek new ways to improve education and dissemination of information on water issues.

We will carry a report from the meeting in our next Newsletter.

New Publications

Australian Freshwater Ecology - Processes and Management, Andrew J. Boulton, Margaret A. Brock (Gleneagles Publishing) ISBN: 1-875553-05-3

This book describes physical, chemical and biological features of inland fresh and saline waters, using Australian examples to illustrate key ecological processes. A central theme of the book is the need to understand ecological processes to address the causes rather than treat the symptoms of environmental threats facing Australian wetlands and their catchments.

Limnology - Textbook for the 9th IHP Training Course in 1999. Edited by Hisayoshi Terai (Institute for Hydrospheric-Atmospheric Sciences, Nagoya University and UNESCO) ISBN: 4-9980619-1-7

Prepared for the 9th IHP Training Course on Limnology held in Nagoya, Japan in July and August 1999, the textbook is composed of selected contents from which students can obtain introductory and up-to-date knowledge of Limnology in a short period of time.

Wetlands for the Future - Contributions from INTECOL'S 5th International Wetlands Conference, Edited by A.J. McComb and J.A. Davis (Gleneagles Publishing). ISBN: 1-87553-04-5

This book includes invited plenary addresses, and papers selected from a number of symposia and 'special sessions' which addressed selected, discrete areas of research and management during the Conference. It will be of wide interest to wetland ecologists and managers, limnologists, water resource scientists and all those interested in and concerned with the future of our planet's wetlands.

Forthcoming Events

G8 Environmental Ministers' Meeting

7-9 April 2000 Otsu, Shiga, Japan

Contact: Mr. Takada Shiga Prefectural Government, Environmental Policy Division, 4-1-1 Kyomachi, Shiga, 520-8577, Japan. Tel: +81-77-528-3466 Fax: +81-77-528-4849

IAHR International Symposium on Groundwater Hydraulics 2000

8-10 May, Saitama, Japan

Contact: Fax: +81-48-855-1378 Email: satok@hello.hgl.civil.saitama-u.ac.jp

Water Supply and Water Quality

12-13 September 2000 Contact: Professor J. Oleszkiewicz Tel: 48-12-423 0855 (61) • Fax: 48-12-421 8199 Email: oleszkie@cc.umanitoba.ca office@lemprojekt.com.pl URL: http://www.lemprojekt.com.pl/water2000/



Japan

