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NEWSLETTER

INTERNATIONAL LAKE ENVIRONMENT COMMITTEE FOUNDATION

— For Better Lake Management —

This Newsletter is also available in Japanese.

Details of 9th World Lakes Conference released

—Call for papers and registration—

BIWAKO HALL

The organizing committee of the 9th World Lakes Conference has published the Second Announcement. Detailed information on the registration and submission of papers is provided in the announcement. With the publication of the circular, the organizing committee calls for papers and registration.

The program outline consists of the following core components: Keynote lectures on globally deteriorating freshwater conditions, plenary, Biwako session and five thematic oral sessions. Besides such main attractions, self-organized workshops that aim to discuss specific topics in depth will be planned. Outside of the conference venue, a variety of related meetings called "Free Meetings" , hosted by groups of prefectural assembly members, citizens, NGOs, university students and businesses will be planned. Moreover, attractive technical tours and a visit to Lake Biwa will be organized. Participants will gain a first-hand experience of Lake Biwa and an understanding of the harmonious relationship between the lake and humans.

The venue of the opening and closing ceremonies, plenary and Biwako session is Biwako Hall, an authentic opera house. The oral and poster sessions will be held in Otsu Prince Hotel. Both venues are located by the shore of Lake Biwa, and are within walking distance of one another. The convenient location will help towards assuring a successful conference.

As for the registration fee, there will be both a one-day registration as well as full-day registration, with a discount rate for students. There is also a special registration price for early registrations for which one must register by April 30, 2001.

The conference accepts not only academic research papers, but also videos, skits and poems for presentation. Researchers, NGOs, citizens, men and women, and people from all corners of the world are welcome to express their views. All successes and failures should be shared among all participants through the conference. We hope that sharing knowledge and experiences will build a partnership and reinforce activities for lake conservation in the new century.

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Second Announcement Outline

◆ Schedule

November 2001			Plenary Sessions, Oral Sessions	Self-Organized Workshops Free Meetings, etc.*	Side Programs
Pre-conference Programs	Thu.,Nov.8				UNEP-ILEC/Shiga Pref./ILEC Joint Symposium UNEP-IETC
	Fri.,Nov.9				
	Sat., Nov.10	AM	Lake Biwa Visit / Technical Tours		The Global Water Environment Forum
		PM	Lake Biwa Visit / Technical Tours		
9th International Conference on the Conservation and Management of Lakes	Sun., Nov.11	AM	Lake Biwa Visit / Technical Tours		
		PM	Lake Biwa Visit / Technical Tours		
		EV	Receptions		
	Mon., Nov.12	AM	Opening Ceremony,Plenary Session I		
		PM	Biwako Session		
		EV	Welcome Party		
	Tue., Nov.13	AM	Biwako Session		
		LU	Poster Session		
		PM	Oral Sessions		
		EV	Workshops	Self-organized Workshops	
	Wed., Nov.14	AM	Oral Sessions		ENVIRO-SHIGA 2001 - International Environmental Business Exhibition 2001-
		LU	Poster Session		
		PM	Oral Sessions		
		EV	Workshops	Self-organized Workshops	
	Thu., Nov.15	AM	Oral Sessions		
		LU	Poster Session		
		PM	Oral Sessions		
		EV	Workshops	Self-organized Workshops	
	Fri., Nov.16	AM	Plenary Session II		
		PM	Plenary Session II, Closing Ceremony		
		EV	Farewell Party		
Post-conference Programs	Sat., Nov.17				
	Sun.,Nov.18				Training Course on Numerical Modeling of Lake and Reservoir

※During, before, and after the conference, there will be free meetings which council members, residents, NGO members, university students, and companies can organize. These meetings will be posted on the Internet homepage and in the Third Announcement.

◆ Registration

All participants are requested to register by completing the Registration Form in the announcement, along with the registration fee and to send it to the Secretariat. Participants may also register through the Internet homepage. All presenting authors must be registered.

The application form can be downloaded from the homepage.

Registration Fees

	Full-day Registration		One-day Registration
Classification	By April 30, 2001(Early Registration)	May 1, 2001 to October 20, 2001	By October 20,2001
Standard Registration	JPY18,000	JPY20,000*	JPY 3,000 *
Student Rate	JPY14,000	JPY15,000 *	JPY1,500 *

*The On-site registration fee is the same.

There are two types of registrations, Full-day Registration and One-day Registration. Students are available for student rate.

Entitlements		Full-day	One-day
Paper submission		○	—
Participation	Lake Biwa Visit / Technical tours	—	—
	Opening Ceremony	○	○
	Plenary Session I	○	○
	Biwako Session	○	○
	Oral Sessions	○	○
	Poster Session	○	○
	Workshops	○	○
	Self-organized Workshops	○	○
	Plenary Session II	○	○
	Closing Ceremony	○	○
Conference Materials	Program	○	○
	Conference Proceedings	○	—
	Abstract Excerpts	○	—

※One-day participants may attend programs only on the day for which they are registered.
Lake Biwa Visit and technical tours are not included.

◆ Call for Papers

9th International Conference on the Conservation and Management of Lakes is accepting applications for session presentations.

General Information

-An original text and three photocopies (four copies altogether) must be submitted.

-Language: English or Japanese

-Number of pages: Maximum of four pages, including any charts and photos.

-Contributors, in their preparations, are kindly requested to be in plain English and understandable to participants from various fields.

-Papers submitted must be original and not being considered for presentation or publication elsewhere.

-A list of references should be included.

-Papers submitted will not be returned.

-Please prepare your text carefully. The original papers will be reproduced directly from the typescript by a photographic procedure for publication. Stay within the borders of the designed space.

-Paper Submission Deadline: Postmarked by Saturday, March 31, 2001.

Type of Presentations

Oral Presentations

-Presenters may use a computer (Powerpoint), an overhead projector and a slide projector (35mm).

-The allotted time for a presentation varies according to the session; the average will be fifteen minutes for a presentation plus five minutes for discussion.

Poster Presentations

A panel board to be provided for the poster presentation will be 900mm wide by 2100mm high.

-The allotted time for a presentation varies according to the session; the average will be fifteen minutes for a presentation plus five minutes for discussion.

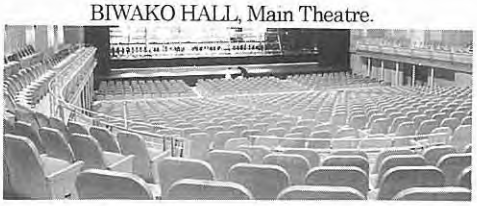
◆ Plenary Session I

Venue: Biwako Hall

Keynote addresses:

The keynote addresses by foreign and domestic scientists and journalists are scheduled in order to have participants understand and share the objectives of the conference.

BIWAKO HALL, Main Theatre.



◆ Biwako Session

Venue: Biwako Hall

The Biwako Session, or Lake Biwa Session, starts immediately following the opening ceremony and keynote addresses. A broad overview of issues pertaining to Lake Biwa and its management will be introduced to the audience with a set of visual and oral presentations followed by an interactive panel debate based on a questionnaire survey conducted earlier for the Lake Biwa- Yodo River residents.

◆ Session 1-5

Information on Session 1-5 is available on last issue, Newsletter 36.

◆ Closing Ceremony

Date&Time: Friday, November 16, 2001 15:00-16:00

Venue: Biwako Hall

◆ Self-organized Workshops

Self-organized Workshops are open to participants to discuss specific topics that have not been touched enough in oral sessions. Conference rooms accommodating up to 40 or 50 participants will be provided at no charge for this purpose.

When the Program Committee approves the workshops, all applicants will be notified of the results, venue, and time.

The workshops accepted will be posted on the Internet homepage and in the Third Announcement.

Date: Tuesday, November 13 – Thursday, November 15, 2001 19:00-22:00

Application Deadline: Thursday, May 31,2000

◆ Side Programs

Training Course on Numerical Modeling of Lake and Reservoir will provide training in numerical analysis using the 2-layer model (PAMOLARE2L) and 3-dimensional model(PAMPOLAR E3D) for analyzing eutrophication with a view to increasing knowledge of Lakes and Reservoir Management.

Dates: Saturday, November17&Sunday,November 18,2001

Organizers: International Lake Environment Committee Foundation(ILEC), United Nations Environment Programme-International Environment Technology Center(UNEP-IETC), Lake Biwa Works Office-Kinki Regional Constriction Bureau-Ministry of Constriction.

Co-organizers: RCEQC-Kyoto University, Danish Royal School of Pharmacy, Nikken Sekkei Ltd.

Venue: ILEC/UNEP-IETC Shiga Office : Computer Room

Fee: $150 for participants from advanced countries (includes materials)

Lecturer: S.E. Jørgensen (Chairperson of ILEC Scientific committee) *et al.*

No. of participants: 30(incurring those invited)

Inquires: ILEC Secritaiant /UEP-IETC Shiga Office (Attn. Y.YAMASHIKI)

TEL: +81-77+-568-4571 FAX:+81-77-568-4587

E-Mail: workshop @mail.ilec.or.jp

http://www.biwako2001.com

e-mail : workshop@mail.ilec.or.jp

◆ Financial Assistance Program

The Organizing Committee can provide financial assistance for potential participants from developing countries. Those who wish to apply for financial assistance to attend the 9th International Conference on the Conservation and management of lakes should submit a paper and need to make an oral/poster presentation.

*Support will be provided for :

Airfare, Accommodation, Registration fee, Technical tour (Support varies full or partial according to the application contents, paper and the budget of this program.)

*Qualification.

-Applications should live in developing countries and he/she is in need of financial support to participate.

Please see our web site (www.biwako2001.com) and check the list of developing countries and countries with economies in transition.

-applicants should make an oral/poster presentation.

*selection

Program committee will select the applicants.

*Application procedure

Applicants should submit the application documents with your

paper to the secretariat.
1) Financial Assistance application form
2) Applicant's CV

Application Deadline : Postmarked by March 31,2001.
*The secretariat will make hotel arrangements and provide details (hotelname,address,etc.) to those who are recipients of financial assistance for accommodation.
*Those who need to obtain a visa for entering Japan are requested to submit the attached "Information sheet for Visa"

◆ Visa Application

Those who need to obtain a visa for entering Japan should submit their application as early as possible. The Secretariat will prepare the necessary documents for your visa application in accordance with information provided by you with the "Information sheet for Visa".

◆ Conference Information

Secretariat, 9th International Conference on the Conservation and Management of Lakes,
c/o Shiga Prefectural Government
4-1-1 Kyomachi, Otsu Shiga 520-8577 Japan.
Tel: 077-528-3466 FAX: 077-528-4849
E-mail: info@biwako2001.com

◆ Hotel Accommodation Information

Japan Travel Bureau(JTB), the official travel agent, will handle all necessary travel arrangements including hotel reservations. Sufficient number of hotel rooms have been reserved for conference participants in Shiga Prefecture.
JAPAN TRAVEL BUREAU, Kyoto Office
Convention Department
Kikuoka Bldg. 5F, Higashi-shiokouji-cho, Shimogyo-ku, Kyoto 600-8216 JAPAN
Tel: +81-75-361-7241 FAX: +81-75-341-1028
E-mail adress:kyoto-ei3b@kns.jtb.co.jp

The 5th Living Lakes Conference

The 5th Living Lakes Conference, which focused on 'Bio-diversity and Environmental Education', was held in Omihachiman city on 10th of November to 14th. During the conference, four additional candidate lakes, Mahakam Lakes - Indonesia, Laguna Fuquene - Columbia, Uluabat Lake - Turkey, and Columbia River Wetlands; British Columbia Canada, were approved to become 'Living Lakes Partners'. With the addition of Laguna de Bay in Philippines and Lake Larache in Morocco there are now 16 lakes in the partnership.

An 'International exchange program for NGOs' was held in Kusatsu City on Sunday 12 November. This workshop has organized by a local NGO called 'Lakenet 2001' with the support of ILEC. Lakenet 2001 is a network of private citizens, companies and NGO groups that are interested in participating in the next World Lake Conference as 'Citizens'. In the program, 55 NGO members from overseas, participating in the 5th Living Lakes Conference held in Omihachiman City, joined in 'Eco-cooking' conducted by volunteer members of Japanese NGOs. During the poster session, very active discussions were held in many small groups formed by Japanese and foreign NGO members in front of the posters which were about various lakes in different countries. There was even a workshop for small children which focused on enlightening children on the subject of the environment. A group called "Mother earth education" planned and organized this interesting workshop and about 20 school children and adults joined in. For those with Internet access, you can see more information at the following website:
http://www.ses.usp.ac.jp/2001biwa./
The opening address, which was given by Mr. Yoshitugu Kunimatsu, Governor of Shiga prefecture, and remarks of Mr. Brian Williams in the panel, in 5th Living Lakes Conference are partly printed here .

Governor Kunimatsu's opening address

Thank you very much for the kind introduction. Ladies and Gentlemen, as Governor of Shiga Prefecture, let me extend my warm welcome to you and to the 5th Meeting of Living Lakes, The meeting is being held in Shiga Prefecture which has the largest lake in Japan. I highly respect and admire the commitment of NGO members from all over the world, who address lake conservation issues.

Presently, many of the lakes in the world are facing diverse problems such as deterioration of water quality, lowered water level, and destruction of ecological systems. As for the conservation of lakes, it is said that we should part from the unsustainable life-style of the 20th century. However, I think citizens and NGOs who contemplate how to tackle the environmental issues of lakes will play a key role so that we will be able to realize the society where both people and lakes will coexist.

On the basis of the World Water Vision, which was proposed at the conference in The Hague, the international approach for the solution of the problems of freshwater resources has been launched, and I think the conservation issues of lake environment will also become an important agenda in the programme. The words, "Making Water Everybody's Business" became a slogan in the second World Water Forum. The words clearly represent the importance of every person's attitude to contemplate water issues, and I think they are words that NGOs and citizens should follow. As these new movements progress at the beginning of the 21st century, the NGOs around the world concerned with lake conservation are forming networks, holding hands together, exchanging local experiences and knowledge. The Living Lakes conference is trying to achieve these goals and I am convinced that the efforts will be highly evaluated on the global stage.

There are 1,340,000 residents in the vicinity of Lake Biwa, and the water from Lake Biwa supplies 14 million people with water for household use, including the people who live in the lower reaches such as Kyoto, Osaka and Kobe. The deterioration of the environment of Lake Biwa directly affects the peoples' life in the lower reaches; therefore, the environmental conservation is the most critical issue among administrative issues of Shiga Prefecture. In addition to the administration efforts by the government, every citizen's cooperation is indispensable. I am greatly counting on the role of NGOs because I think it is important to build close partnerships between the citizens and the

government.

In November 2001, the 9th World Lakes Conference will be held in Shiga Prefecture. We are now at the preparation stage. In the conference, NGOs and citizens, along with scientists and people concerned with industries and governments will convene and bring their successful and unsuccessful experiences to discuss. Through such exchanges, we expect to find out the direction of the suitable conservation for the 21st century. We will be grateful if all of the participants of the conference for Living Lakes will participate in the conference in the year 2001 as well, and will present their precious opinions there. Specific information about the conference is available in the 2nd announcement of the 9th World Lakes Conference.

Lastly, I would like to conclude my welcome speech, wishing for the successful results of the meeting of Living Lakes.

LAKE BIWA IN TROUBLE (Mr. Brian Williams, Artist)

I was asked to speak on urbanization and water regulation, but alas, I am no expert in that field. The only thing I am really an expert at is landscape painting in watercolor, and some days I am not even good at that! However, I have looked at Lake Biwa in a loving but generally unscientific way for almost 30 years now, and the dismay I have felt at witnessing the changes, we have made to this lake has led me to try to find out why these changes are being made and what is being lost. I want to share some of what I've found out, in the belief that it is relevant to the purposes of this conference.

Although only about 200th in size worldwide, Lake Biwa is unique in being one of the oldest lakes in the world, having been around in some form for up to 5 million years by some estimates. It also has one of the smallest drainage areas of any major lake, only about five times its surface area. This means, among other things, that the impact of all human activity in the basin is felt immediately and directly in the lake itself. It is also the main source of fresh water for almost 14 million people who produce an estimated 5% of GWP, and as such its health is crucial to the economy of Japan and even the world. Of course, it is also rich in terms of biodiversity, with many endemic species, and it has been designated as a site under the Ramsar Convention for the protection of migratory waterfowl.

In any discussion of human impact on river and lakeshore environments in Japan, several facts must be kept in mind. First, the average rainfall in Japan is large, about 1800 mm yearly, and second, over 80% of the land surface is mountainous. Japan's rivers can have a maximum flow of approximately 100 times average, a figure much higher than that of most other countries. This tells us that the history of human settlement in Japan is one of gradual but relentless encroachment onto the few alluvial floodplains and a continual struggle to deal with the often-devastating floods on them.

Broadly speaking, though, up until roughly the end of World War II, the impact of settlement, flood control measures, wastewater nutrients, etc. on the 'water-margin ecosystems', i.e. shores of streams, rivers, ponds, lakes, and the seashore, though noticeable, was hardly devastating. Several factors converged at that time, though, leading to the lamentable situation we can see today everywhere in Japan. An understanding of these factors is helpful in trying to understand the radical changes Lake Biwa has undergone at human hands in the last half-century or so. In no particular order, I list these factors below.

DEFORESTATION

Deforestation, for lumber to rebuild Japan's devastated cities, increased the incidence of flooding, especially during typhoon season. And the Forestry Agency's reforestation policies, favoring monoculture stands of evergreens over the more normal for Japan varied and mostly deciduous forest cover, meant the water retention capability of the hills did not recover as fully as it might have otherwise. Together with Finland, Japan is the most extensively forested of all the industrialized nations, and since a great deal of Finland's forest is actually taiga, it could be said that Japan is number one in this regard. But these 'green dams' which regulate water resources in times of drought as well as flood, remain impaired, a significant factor when the relatively small size of Lake Biwa's drainage basin is considered.

RECLAMATION

Reclamation of wetlands for agricultural use really took off after the war. A shattered nation faced with food shortages moved to increase agricultural land wherever possible. Lake Biwa, for example, used to be surrounded by many semi-marshy ponds and small lakes, known as naiko. These provided not only habitat for migrating birds but also had a crucial biofilter function for the health of the lake as a whole. From 1944 until 1971, at least 15 of the major naiko have been drained and reclaimed for agricultural use, well in excess of 2,500 hectares, and only scraps of this naiko ecosystem remain. It is ironic that because of the current rice surplus, the government now pays farmers NOT to grow rice on roughly one third of the nation's paddy land in any given year. But projects born during that era, based on policies now outdated, remain to haunt us, often coming back in other disguises.

URBANIZATION

Urbanization, basically unregulated, has taken over not only a great deal of farmland, but lower elevations of hillside watershed areas too, and of course it has also 'swamped' sensitive littoral areas and wetlands whose water purification function and biological diversity were almost totally disregarded in the process. Houses and businesses, and even more so, factories and roads, all get built closer and closer to the water and on land that was once water. Of course, this urban growth has been accompanied by growth in sewage, and, at least until recently, most of this has been discharged untreated. As late as 1978, only 26% of the country, and a mere 3% of Shiga, was connected to sewage lines and treatment plants. Foul-smelling water was first noted in 1969, and the first freshwater 'red tide' appeared in Lake Biwa in 1972, due in part to the growth in untreated domestic wastewater flowing into the lake. In 1975, 48% of the phosphates and 33% of the nitrogen flowing into the lake were from domestic wastewater. Although treatment of domestic wastewater is now well over 50%, in this area Japan still brings up the rear among the industrialized nations.

CONSTRUCTION

Time prevents me from discussing the various factors mentioned above, but I would like to cover this one in some depth because, to my mind, it has had the greatest impact on Lake Biwa. Let me start by saying that Japan is perhaps the only industrialized country with a cabinet level position solely for construction. Not only that, but it is the most powerful ministry of them all, and politicians connected to it (known as kensetsu zoku or 'the construction tribe') are usually the most powerful politicians. Local and national governments in Japan will spend at least $350 BILLION on public works projects just this year-- by one estimate, more than all other developed countries combined (The Guardian Weekly, September

21-27).

What does this have to do with water and with Lake Biwa? Simply put, a great many of those public works projects deal with either 'water resources development' or with 'disaster prevention projects'. Calls for flood control measures such as dams, check dams and embankments, (known in Japanese as Chissui Koji or water safety construction) were one major factor in the growth of an extraordinarily powerful construction industry in post-war Japan. Then there was the Japanese 'economic Miracle', with its resulting growth in water demand, and, more relevantly for this discussion, projected growth in water demand for domestic and industrial use. That projected demand for water turned out to be greatly overestimated nationwide but projects designed to meet that demand (known in Japanese as Rissui Koji or water utilization construction) are another major factor in creating Japan's Construction Monster. There was at one time and perhaps still is some genuine need for these types of projects, but in most cases, such concerns have been little more than excuses for unneeded and environmentally destructive pork barrel projects.

In passing it is worth mentioning that they have been economically destructive as well. After 10 years and nearly $1trillion spent on public works *viagra*, Japan's economic vigor is still not restored, but the public debt, $6 trillion and counting, is enormous, and thus runaway public works turn out to be a major impediment to economic recovery instead of a stimulus for it.

In the early sixties, the demand for domestic and industrial water was increasing rapidly, reaching a remarkable rate of increase of 5.99% per year between '66 and '70. Water resources development policy was previously divided among the Ministry of Agriculture, Forestry and Fishery (for agricultural water), the Ministry of International Trade and Industry (for industrial water) and the Ministry of Health and Welfare (for domestic water). In order to respond to this demand, not only in the Biwa basin but nationwide, the government passed a new law in 1961 establishing, under the Construction Ministry, the Water Resources Development Public Corp. (in Japanese Mizu Shigen Kaihatsu Kohdan), and it has operated for 39 years now, basically without any significant control or supervision other than the benevolent eye of the Construction Ministry itself. As soon as it was created, the new Water Resources Development Public Corp., working on the assumption that the growth in water demand would continue unabated for the foreseeable future, immediately began working on the first two of what became six regional master plans for water resources development. The master plan for the entire Lake Biwa and Yodo River Basin, known as the 'full plan' for short, projected a 5.21% yearly increase in demand for industrial water, and to cope with the increase in total water demand, including this industrial water, it was determined that, in addition to water already being drawn from the lake, 40 tons/sec more of water from Lake Biwa would be required. To put that in perspective, it would be enough to meet the domestic water demands of approximately 8 million people. To assure such a supply, under the 'full plan', the Lake Biwa Comprehensive Development Project (in Japanese Biwako Sogo Kaihatsu Kohso or, informally, BIWASO) was created, and it included projects for dams, lakeshore levee and road construction, centralized large-scale sewage treatment facilities, agricultural land restructuring, river reconstruction' and more.

The total cost over the 25-year life of the project (originally planned for ten, it was extended for ten more and then an addition 5) came to 2,500 billion yen at present yen values (over $22 billion). The construction industry couldn't have been happier. But it is this BIWASO project that has had the most drastic effect of all on the Lake Biwa ecosystem. To assure and increase the supply of water from the lake, the centerpiece of the whole project, the BIWASO plan called for the damming of the lakeshore with concrete levees wherever necessary, so the water level could be regulated within a range of 1.4 m above and 2 m below the Biwako Basic Surface Water Level (B.S.L.) (In a political compromise, although the plan still states 2 m below B.S.L., in actual practice this is limited to 1.5 m.) However, if this occurs or is allowed to occur with any frequency, it would be devastating for what little is left of the natural lakeshore ecosystem.

The various parts of the BIWASO have all had their environmental impacts. The agricultural land restructuring had its straightened and concreted rivers, as discussed above. The lakeshore levees, with their road and parks and floodgates at every straightened out and concreted river mouth, by some estimates destroyed up to 90% of the biofilter reed beds surrounding the lake. The 'advanced' centralized sewage treatment plants (four in all) have robbed many streams of significant flow, and the nutrient values of their effluent is still almost 30 times (for nitrogen) and 7 times (for Phosphates) the national ideal standard to prevent eutrophication. Many of the river margins within the prefecture are now lined with concrete.

NGO Workshop – Pre-World Lake Conference

On 9th and 10th of December 2000, An 'NGO Workshop – Pre-World Lake Conference" was held at the Biwako Museum. This workshop was conducted by ILEC and a local NGO 'LakeNet 2001' with the support of UNEP-IETC. After the opening address given by Deputy Director of UNEP-IETC Ms. Lilia Casanova, a panel discussion took place moderated by Dr. Shinji Ide from University of Shiga Prefecture. Four members from NGO groups such as "Kasumigaura-Shimin Kyokai" in Tuchiura City, Ibaraki Prefecture, Japan and a governmental secretariat formed the panel with discussions focussing on partnerships among different sectors. In the second panel discussion, moderated by Mr. Koichi Tsutumi from LakeNet 2001, the subject under discussion was 'How should citizens become involved in nature conservation' by a total of six panelists. On the second day of the Workshop participants exchanged ideas on the next world lake conference and how it could be used to enhance citizen involvement in nature conservation.

Towards a World Lake Vision (Mr. Victor S. Muhandiki)

A preparatory meeting for the development of a document tentatively titled "Visions of the World Lakes and Basins" (referred to here as the World Lake Vision – WLV) was held at ILEC between 12–13 January, 2001. The meeting drew participants from ILEC, LakeNet, NALMS, Living Lakes, UNU South Africa Water Resources Project, World Bank, and Shiga Prefectural Government.

WLV Meeting

It was emphasized that although efforts have been made in the past to compile basic scientific and policy information on the state of

the world's lakes, a clear vision on the future of the World Lakes in general and the future of individual lakes in particular has not been developed. Well-conceived management plans, let alone conservation plans, do not exist for most lakes and reservoirs. This is despite the fact that, lakes and reservoirs are probably among the most vulnerable of the numerous ecosystems of the earth subject to severe anthropogenic influences. It is therefore extremely important and urgent to develop a WLV because of the immense value of lakes to humankind.

For the effective development of the WLV, it was emphasized that all stakeholders who benefit directly and indirectly from the lakes should be involved. Lessons learned and experiences gained from lake management programs in various parts of the world will provide valuable input in the development of the WLV.

Environmental Education Course, Focused on Aquatic Environment 2000: A New Perspective

Ms. B.D. Jimenez (Philippine)

The current Environmental Education (EE) focused on Aquatic Environment was the first in a series of training programs to be conducted by the Japan International Cooperation Agency (JICA) and International Lake Environment Committee Foundation (ILEC) for the next 10 years. The training was supported by ODA (Overseas Development Assistance) through the auspices of JICA and held from 25 September to 7 November 2000. The training was very comprehensive covering aquatic environment issues, basic concepts and methodology on EE, preparation of EE materials for different target groups and theoretical and actual observations of the lakes, wetlands, museums and industrial plants which give us an overview on how resources are managed and conserved. We were also exposed to state of the art networking with IGES, EILNet and Globe.

On arrival, we knew practically nothing on environmental education. We confused environmental education with environmental science. As EE concepts and methods slowly unfolded everyday, it became a new challenge and a new experience for us. We learned to identify problems from issues and how to deal with them, make our own action plans and develop new approaches in implementing them.

As a pioneering course it is both interesting and a challenge for the trainees and trainers. Interesting, because of its novelty and challenging because of the many ideas exchanged and the expectations of both parties. Both parties were actually setting the course for the next training program. The success of future courses greatly depend on the activity of this group and this was, at times, very energy draining.

This training was really very fruitful and provided us with an excellent opportunity to develop our commitment to the environment and to look forward to implementing them upon our return to our respective country. On top of this commitment, we left 18kg overweight with precious training materials, experiences and memories, excellent tools for the promotion of EE in our respective country. With the help of our mentors and the different participating training agencies we believe we can make the difference.

Training Workshop Program 2000, for Monitoring Water Quality

The Training Workshop Program was held 4-13 November 2000 at ILEC. This program was specifically arranged by Shiga Prefectural Government and the International Lake Environment Committee Foundation (ILEC) for NGO members and others who are working on conservation and management of freshwater resources, such as lakes, reservoirs and rivers in east and southeast Asian countries.

This program was also part of the Disseminating Environmentally Sound Technology (ESTs) program through the support of UNEP-IETC.

Seven participants were given a thorough grounding on the environmental condition of Lake Biwa, as well as practical methods for checking water quality and field research in collaboration with local NGO groups. During the course, participants attended the "Living Lakes Conference" and an "International NGO workshop".

Tunle Sap- Cambodia (Mr. Auv Sophiak)

Debate on oil exploitation in Tunle Sap - Cambodia

Since late last year, the related government ministries (Environment, Agriculture, Water Resources, Public Works and Transportation and Fisheries) have debated among their officials regarding development and other activities in the Tunle Sap (Great Lake). Yet, the debate has not lead to any agreement on the subject at hand. The Ministry of Environment and Agriculture seemed to be most active in the debate.

Currently, the United Nations Educational, Social and Cultural Organization (UNESCO), is working on Tunle Sap. UNESCO, formally designated Tunle Sap as a biosphere reserve in June 1998. The designation included three core areas: Prek Toal on the north end of the Lake, Moat Khla on the north-central side and Stung Sen on the south end. Tunle Sap, should be identified as an unique biodiversity habitat. It is rich in natural resources, particularly fresh water fish and waterfowl. It is the largest supplier of protein for millions of Cambodians, with an estimated 2 million people (from 5 provinces: Kompong Thom, Siem Reap, Battambang, Posat and Kompong Chhnang) living around Tunle Sap and fishing is very important for their livelihood. About 40 percent of fish catch from the Tunle Sap and other 60 percent from the Mekong and Bassak rivers and from the ponds and rice fields.

A core area, which is believed to be the only habitat of Southeast Asia's spot-billed pelicans and numerous other rare waterfowl, is designated to be managed for conservation only. Some government officials are not in agreement of making Tunle Sap into a World Conservation Area. The regulation would restrict the development activities within the basin of the lake. They claimed that the government would lose $ 500,000 annually only from the fishing lots and the area will be colonized by UNESCO. However, environmentalists from UNESCO viewed that the conservation of the lake is to protect the lake from destruction, and this will not disturb the fishing activities or development activities in the lake. The lake is at present undergoing serious deterioration of its natural resources affected by overfishing, water contamination, erosion

and destruction of flooded forests which are a very important habitat for fish and water birds. The buffer zone allows the accessibility of economic activities such as fishing as long as they do not affect the core area. A third zone, the so-called transition zone, is supposed to be managed for sustainable development.

At a June 1998 ceremony, the top UNESCO official in Cambodia

Tunle Sap

stressed that such an honor brought a responsibility, and urged Cambodia to prepare the legal and institutional framework for managing the area. UNESCO itself is not a legally binding entity in Cambodia. Ministers from the Ministry of Water Resource, Public Works and Transportation, and Agriculture did not agree with the decree proposed by the UNESCO. An UNESCO environmentalist, Etienne Baijot, said the ministers seem to misunderstand the role of the core zones. He stated that if the Tunle Sap is well protected it will have more fish and economic potential from eco-tourism and Cambodia will generate more income for development. However, the Minister of Environment reported that a royal decree will help protect the environment and turn the Tunle Sap into an eco-tourism attraction unique in the world by attracting more aid money.

According to the UN development program survey in 1997, eco-tourism in the core zone alone could generate $ 1million a year, said Noeu Bonheur, chief of the technical unit of Tunle Sap.

Three companies submitted proposal for gas/oil project

A study conducted in May 1999 by the Japan National Oil Cooperation indicated that the Tunle Sap could be a rich source of oil and gas. The survey was done by a Japanese company and one British and two Singaporean companies have submitted proposals to the National Petroleum Authority for access to the potential reserves. The government in early 2000 has negotiated with the British company. However, decisions have yet to be made regarding the proposal.

Mohammed Al-Fayed, a businessman based in the UK has talked with government about the participation of his company "Harrod's Energy", in future development. He was accompanied by the wife of the former Thai prime minister Chavalit Yongchaiyudh to meet the Cambodian prime minister Hun Sen, to discuss the purchase of oil concessions.

Te Doung Dara, Cambodian National Petroleum Authority, said the areas that are being looking for drilling program are to the west of the Tunle Sap, including Battambang, Posat, Kommpong Chhnang, but they will not be drilling on the lakebed itself. However, further investigation is needed to be done before they could comment on the commercial quantities of petrochemicals that may be obtained from the area. Seismic evaluations involve drilling a series of shallow whole, loading them with explosive, detonating them, then measuring the echoes. The Harrod's company has activities in Thailand, where it has taken over a number of concession from the Thai oil company PTT. However, not everyone in the government has been happy about Mr. Al-Fayed's involvement. One government official said that at the meeting with Hun Sen, Al-Fayed had bragged about what he was going to do for Cambodia oil's industry, but he did not have a technical knowledge of the subject.

UNESCO seemed to disagree about oil drilling in the Tunle Sap. The investment could be dangerous if Cambodia allows one of the world's unique ecological habitat to be exploited for oil, said former UNESCO environmental consultant Etienne Baijot. He asked whether the government would even consider drilling the famous temple Angkor Wat. The financial benefit from the project would mostly go to the pocket of the powerful people. There are also concerns about the wisdom of the drilling for oil next to the Tunle Sap lake - a key breeding ground for fish in Cambodia. Many environmental NGOs are worried about the enormous risk of destroying the most important ecological area in Cambodia if there was an oil spill in the lake's catchment area.

News

◆ The second part of the Ministerial Declaration was not printed in this issue.

New Publications

◆ Lakes & Reservoirs, Research and Management
Volume 5 Issue3, Sept 2000
This issues of ILEC's Journal feature articles on a variety of subject including "Study of the chemical composition of suspended particles in Lake Bikal ", "Modelling the reciprocal water exchange between a river (Havel) and a lake (Tegeler See) ", "Water use (and abuse) and its effects on the crater-lakes of Valle de Santiago, Mexico", "Lake restoration in Denmark ", "Identification of processes regulating the colour and colour change in an oligotrophic, hardwater, groundwater-fed lake , Blue Lake,Mount Gambier, South Australia ", "Four general principles for the management and conservation of wetlands in large lakes ", "Top-down biological controls on tropical lake productivity ", "Dominance of *Cylindrospermopsis racivorskii* (Nostocales, Cyanoprokaryota) in Queensland tropical and subtropical reservoirs ", "Dryland lakes ".

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