

NEWSLETTER

International Lake Environment Committee

=Promoting Sustainable Lake Management=

This Newsletter is also available in Japanese.

ILEC Scientific Committee Chair Sven Erik Jørgensen wins the 2004 Stockholm Water Prize



Award Ceremony. Second from left is Dr. Jørgensen



Dr. Jørgensen and his wife

resource management."

Dr. Sven Erik Jørgensen, the chair of ILEC's Scientific Committee and Professor of Environmental Chemistry at the Royal School of Pharmacology in Denmark, was awarded the 2004 Stockholm Water Prize in a ceremony held in Stockholm, Sweden in August 2004. Professor Jørgensen shares the 2004 Prize—often referred to as the Nobel Prize for water—with Professor William J. Mitsch of the United States.

The Stockholm Water Prize was established in 1991 by the Stockholm International Water Institute (www.siwi.org) and is awarded annually to an individual or organization for outstanding water-related activities. For the 2004 Prize to Professors Jørgensen and Mitsch, the Award Committee cited “their pioneering development and global dissemination of ecological models of lakes and wetlands, widely applied as effective tools in sustainable water

resource management.” It was especially pleasing to ILEC was the Award Committee’s recognition of the “inestimable value” of lakes and wetlands as well as the value of Professor Jørgensen’s unique ecosystem models which are powerful tools for decision makers.

In the same ceremony, the Stockholm Junior Water Prize was awarded to Tsutomu Kawahira, Daisuke Sunakawa and Kaori Yamaguchi of Okinawa, Japan for “the development and application of an environmentally friendly organic fertiliser for the Miyako Island.”

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Stockholm Junior Water Prize awarded to Japanese High-school Students

Stockholm Junior Water Prize is a prize to award young boys and girls who have done outstanding environment activities. It is given at the Stockholm Water Symposium along with the Stockholm Water Prize. This year a group of three students of Miyako Forestry and Agriculture High-school in Okinawa Prefecture, Japan, Tsutomu Kawahira, Daisuke Sunagawa and Kaori Yamaguchi, got the prize for their research project on groundwater protection.

The objective of their award-winning project is to cut down on the use of chemical fertilizer and thereby to reduce chemical pollution of groundwater. They took notice of insoluble compounds formed and accumulated by phosphorous of the fertilizer and calcium of the soil. They found a way to deoxidize these compounds using microorganisms and leave phosphorous component in the soil, achieving the reduction of use of chemical fertilizers causing groundwater pollution.

Here three awardees and their adviser, Mr. Kazuhiro Maezato

express their joy in receiving the prize.

Mr. Tsutomu Kawahira:

I am very happy to receive this memorial prize, Stockholm Junior Water Prize. It is encouraging to learn that boys and girls of my age in the world are also making extensive studies on water. I am going to work harder on groundwater protection than I have ever.

Mr. Daisuke Sunagawa:

It is my greatest pleasure to be given this wonderful prize. As an awardee of the prize I will pay more attention to the world environment problems. I believe this prize will open up new opportunities in my future. I am going to do my research with my junior fellows to protect groundwater like my seniors did.

Ms. Kaori Yamaguchi:

I am extremely happy to be here as representative of Japan to receive the grand prize, what is called "Nobel Prize of Water" for the first time in Asia. It was a great experience to me to meet with worldwide water experts here in Stockholm. I am going to make more effort in my study on groundwater

protection with the hope of helping people of the world suffering from groundwater pollution.

Mr. Kazuhiro Maezato:

I think we have received this memorial award as an appreciation of the daily efforts of people in Miyako Island trying to protect groundwater as a precious resource of their existence. I am going to continue my research with my students to promote the sustainable agriculture for the benefit of farmers and for the protection of groundwater.

The first receipt of the Stockholm Junior Water Prize in Asia by Miyako Forestry and Agriculture High-school research group came through the efforts of many individuals and organizations in Japan, including Professor Takahashi of Japan Water Prize Committee, Professor Saburo Mastui, Professor Yoshihisa Shimizu, and Mr. Hiromi Shinakai of Japan Water Association. Here we would like to express our thanks to their support and contribution.



The awardees from left Mr. Masato (school teacher), Ms. Yamaguchi, Mr. Kawahira, Mr. Sunagawa.

11th World Lake Conference: Kenya 2005

The first International Conference on the Conservation and Management of Lakes was held in Otsu City, Shiga Prefecture with about 2,400 participants from 29 countries in 1984. The basic idea of the conference was the recognition that unless scientists, government officials and residents work together, lakes and reservoirs would be extremely difficult to manage properly.

The World Lake Conference is a biennial conference co-organized by ILEC and the local host country. Previous conferences have been held in Japan, USA, Hungary, China, Italy, Argentina and Denmark.

The Kenyan Ministry and ILEC will hold the 11th World Lake Conference in Nairobi, Kenya from 31st October 2005 to 4th November 2005.

The proposed Theme of the 11th World Lake Conference is "**Management of Lake Basins for their Sustainable Use: Global Experiences and African Issues**".

Proposed Session Topics

SESSION 1 : GOVERNANCE AND WATER RESOURCES MANAGEMENT

SESSION 2 : SCIENTIFIC RESEARCH AND MONITORING

SESSION 3 : POVERTY REDUCTION AND CROSS-CUTTING ISSUES

SESSION 4 : EFFECTS OF EMERGING ISSUES ON LAKE MANAGEMENT

SESSION 5 : PUBLIC PARTICIPATION IN LAKE MANAGEMENT

SESSION 6 : LAKE BASIN INITIATIVES

SESSION 7 : THE LAKES ECOSYSTEM HEALTH

SESSION 8 : THREATS TO LAKES: WITH SPECIAL EMPHASIS ON

THE AFRICAN REALITIES

SESSION 9 : CULTURAL ISSUES

SPECIAL SESSIONS

The Kenyan Ministry established the official website of the 11th World Lake Conference and made the first Announcement in October, 2004. The second Announcement (Call of abstract Scientific Papers) was given in February, 2005, and the third Announcement (Registration of participants, Submission of papers and Announcement of the detailed programme) will be given in May, 2005.

For more details on the 11th World Lake Conference, please contact the official Website at www.ileckenya.go.ke

Summary of Progress on ILEC-executed GEF/World Bank Project

Since March 2003, ILEC has been executing a GEF-financed, World Bank-implemented project called "Towards a Lake Basin Management Initiative: Sharing Experiences and Lessons from GEF and non-GEF Lake Basin Management Projects." The project will conclude on 30 June 2005. Progress to date is summarized below.

Major Achievements

Regional Workshops Completed:

Three regional workshops were held during 2003 in Manila, Nairobi and Vermont, USA. The workshops brought together over 200 lake-basin management practitioners to review the 28 Experience and Lessons Learned Briefs commissioned for this project (and described below). The output of the workshops was used to edit and improve the content of the Briefs.

Experience and Lessons Learned

Briefs Completed: 28 Lake Briefs were

commissioned and were completed by October 2004. The Briefs have been professionally edited and will be included on a CD-ROM at the end of the project's main report (described below). Select Briefs will be published in a special issue of ILEC's journal Lakes and Reservoirs: Research and Management.

Thematic Papers Completed: 17 thematic papers were commissioned on various topics of relevance to lake basin management. These papers, like the



Regional Workshop in Manila, The Philippines

briefs, have been completed and professionally edited and included on the CD-ROM. Selected papers will also appear in the journal.

Lake Basin Maps Completed: Special lake basin maps have been made for all of the 28 study lakes. The maps will be included in each Brief as well as the Main Report.

Main Report Review Completed/Being Re-drafted:

A draft Main Report (140pp.) was circulated in August for public and peer review. Overall, comments were highly positive, but areas in need of re-drafting were identified. A final draft will be circulated to the Steering Committee in early May 2005. The final project Steering Committee will be held in June 2005 to approve the main report.

Publication: The Main Report will be

professionally formatted and published in June 2005, following approval of the Steering Committee. The first production run will be around 3000 copies for the 200-page report, with a CD-ROM of all materials provided at the end. Copies will be sent free of charge to any interested

readers, with distribution mainly taking place through ILEC's international Scientific Committee as well as at relevant events like the 11th World Lake Conference in Nairobi, Kenya in late 2005 and the 4th World Water Forum in Mexico in March 2006.



The participants of Regional Workshop (Manila)

JICA - Environmental Education Course

The 5th JICA – Environmental Education Course focused on aquatic environment was implemented under the cooperation of Faculty of Education, Shiga University.

The period of the course this year was from September 5 to October 21, and there was participation of 8 trainees from 7 countries, one each from Bolivia, Morocco, Pakistan, Panama, Thailand, Tunisia, and two from Viet Nam. This course provides participants with know-how on Environmental Education focusing focused on aquatic environment through lectures, field visits, and training. At the end of the course, the trainees produce an action plan to implement in their own countries from the experience from this course. In this article, we introduce a visit to Lake Biwa Museum, from which the trainees were able to acquire many ideas of Environmental Education.

Visit to Lake Biwa Museum

Lake Biwa Museum has approximately five hundred thousand visitors a year. The trainees were surprised at the large number and wondered what of Lake Biwa Museum makes so many people visit there. With the question on their mind, they had a guided tour of the Museum by Dr. Kusuoka, curator of the Lake Biwa Museum. They were even more

surprised to see the exhibition and asked, "May I touch this? Can we try it? Is this a real one?" After the guided tour, they gave us comments as follows: "In our country it is not interesting to visit museums and art galleries since we can only see and watch the exhibits. On the other hand, all the exhibitions at Lake Biwa Museum are very close to visitors so that they can touch, experience and have a taste of the exhibits. There are a number of "tricks" as well. It was fun and exciting enough for us adults to try them."

After that, the trainees received an explanation on the project of 'Obagawa Tankentai (Oba River Exploration Team)', which is one of the collaborative programs of the Museum. This program adopts a perspective of not 'waiting for visitors to come' but 'going to work with the community from the Museum'. In particular, the trainees became aware of the cooperation among the Museum, the school, and the community center (kominkan) in the area as extremely important. On the following day, the trainees actually joined the activity of 'Obagawa Tankentai'. They caught fishes and insects with children in the river and had a fulfilled time by introducing their own countries using a world map. This became an indispensable experience that they

cannot gain from lectures. They rediscovered wonderfulness of environmental education through the course.



TOPIC

United Nations Decade of Education for Sustainable Development (UNDESD) was declared in the 57th General Assembly of the United Nations in December 2002. UNESCO (the United Nations Educational, Scientific and Cultural Organization) was chosen as the lead agency. UNDESD reflects the recognition of the role of education for 'sustainable development' clarified in the Rio Summit in 1992. It also can be said that UNDESD is the outcome of discussions on the role of education in the context of sustainable development in the Commission on Sustainable Development (CSD). The vision of UNDESD is "a world where everyone has the opportunity to benefit from quality education and learn the values, behaviour and lifestyles required for a sustainable future and for positive societal transformation" (www.unesco.org).



JICA trainees and "Oba River Exploration Team" children.

Daecheong Lake, The Jewel of the Geum River

Lakes of the
World

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●Daecheong Lake

The climate of Korea is affected by Monsoon effect that brings two third of annual rainfall in the summer season only. Surface runoff in mountainous terrain of Korea can be transported rapidly and this often causes flood in the downstream area. However, this phenomena also can be the cause of drought in the spring when a large amount of water is required for initiation of agricultural activities. According to history, Korea had built reservoirs since

the Shilla Dynasty. Currently, there are 18,000 reservoirs around the country including 1,214 large dams that are greater than 15m in dam height and 3 million tons of storage volumes.

Daecheong Lake is located in the middle of the Geum River that is third largest river in Korea as shown in Figure 1. Daecheong Lake was formed when the multipurpose Daecheong dam was completed in 1980. Daecheong Lake can hold 1.5 billion tons of water and this make in the 7th Century it the third

largest in Korea by storage volume after Soyang Lake and Choongju Lake. The dam was built for multipurposes that can control flood, drought, water supply and hydropower generation. The total length of the river is approximately 400 km and watershed area is about 10,000 km². The lake supplies 1.3 billion tons of utility water and 0.35 billion tons of irrigation water annually.



Figure 1. Location of the Geum River Watershed and Daecheong Lake in Korea.

●Water quality

BOD concentration in the lake has been decreasing while COD concentration has kept increasing in Daecheong Lake. These trends indicate that introduction of non-biodegradable pollutants to the lake may become significant. Daecheong Lake has relatively less industrialized upper stream area and this is known as an advantage to keep better water quality among Korean lakes. However, currently algal bloom has occurred repeatedly in the summer and this may

interfere with desirable use of water resources. The Daecheong Dam and Daecheong Lake is managed by the Korea Water Resources Corporation. Lake and watershed areas are not separable in the cycle of water and pollutants. However, this agency does not have any authority to control pollutant input from the watershed areas of the lake. This makes them very difficult in managing water quality of the lake. For effective water quality management, it would be necessary to

develop a comprehensive plan to protect water quality of lake by various stakeholders including residents, users, government, local government, volunteer groups and water management agency.

●Total Waste Load Management Plan

Korean government has launched as comprehensive water quality management plan to reduce pollutant input to the water bodies. In the summer of 2004, this mandatory plan was approved for the Geum River Basin by

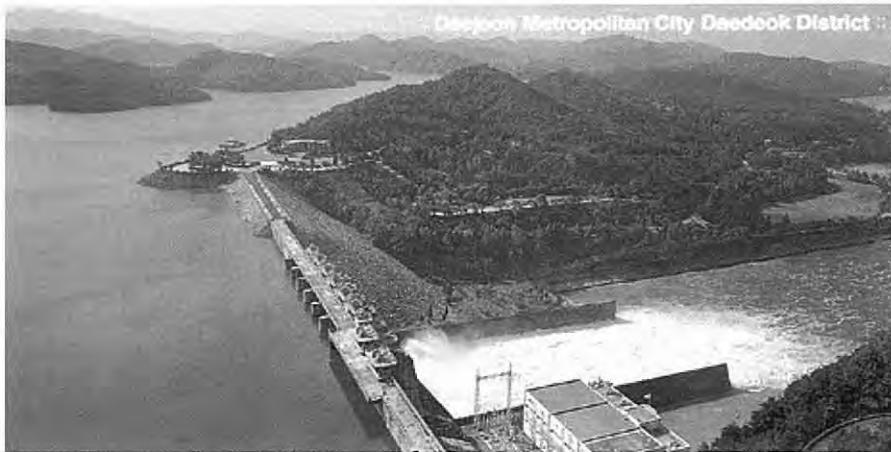


Figure 2. Photo of Daecheong Lake (Source Daejeon Metropolitan City District Homepage; www.daedeok-gu.daejeon.kr)

the Korean government. Local governments in each sub-watershed areas are responsible to develop pollutant reduction plan to keep their pollutants generation under the limits. The limits were estimated for each watershed by 2008 for metro areas or 2010 for smaller local governments.

● Daecheong Lake Water Quality Management Plan

It would be best to minimize the pollution input from sources to protect water quality of lakes. Korean government and local government need to work together to control point sources and non-point sources of pollutants in the watershed areas. However, in-lake treatment would also be necessary since to it would not be possible to remove pollutants completely. These efforts may include installation of floating debris collection fences, application of yellow soil or chemicals, algae removal using filtration or floatation, operation of artificial circulation system and others. Due to limited study periods and verification processes, there is not enough evidence for which is the most effective method for lake water.

● Daecheong Lake Saving Movement(DLSM)

DLSM is non political environmental organization for Daecheong Lake and was founded in April of 2002. Its objective is to strengthen information of residents and empowerment of activities for protection of water quality and

ecosystem of Daecheong lake and its vicinity through research, monitoring, information and education by collaborative efforts of residents, NGO, Local government and government agencies. Major activities are: 1. Survey, research and development of method for Daecheong Lake water quality and ecosystem improvement; 2. Research on lake environmental laws, regulations and policies; 3. Training instructors of environmental issues; 4. Promote participation of local resident and collaboration; 5. Assist collaboration and support environment preservation activities. Four different environmental groups in the vicinity of Daecheong Lake are working together as a network group. DLSM has organized various workshops and special events to promote awareness of environmental problems of Daecheong Lake.

● Future of Daecheong Lake

The most important step in protecting Daecheong Lake is to understand the lake itself. For this purpose, lots of information would be necessary. Though each of stake holders of Daecheong Lake has the same objective, to improve Daecheong Lake, but every group has a different level of information for Daecheong Lake. Sometimes, specific interest of a group may interfere with objective judgment. Therefore, it would be necessary to have a central unit to support such information needs. DLSM can take part in as a hub to integrate educational institutions, research institutions, environmental groups, volunteers groups and to exchange necessary information. For this purpose, data collection strategies need to be developed first. Then it would be necessary to develop a comprehensive water model for Daecheong Lake that includes its watershed hydrology, channel and lake hydraulics and water quality dynamics. Also, it would be necessary to develop alternative water quality improvement methods that can be applied to the field scale. The above tasks will not be completed soon. A Korean proverb says that no one can sew without passing a thread through the eye of the needle though in haste. With correct data and sound scientific principles, we need to constantly fill the gap between our efforts and environmental problems. As we understand Daecheong Lake better, and we can protect and improve water quality of the lake better.

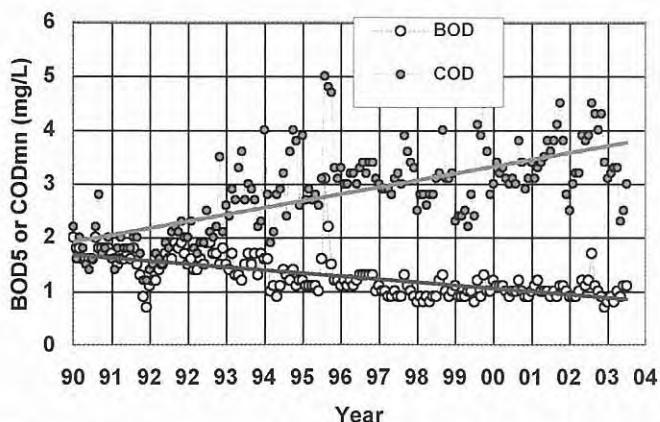


Figure 3. BOD and COD Variations of Daecheong Lake (Source: Water Environment Information System, Ministry of Environment, Korea, 2004; water.nier.go.kr/weis)

Environmental Education Class for Children

Environmental Education Class for Children was held for 3 days, from July 28 to 30, 2004, with the fund by Heiwado Zaidan, Hikone, Shiga. There was participation of 20 elementary school pupils of 4th grade to 6th grade from Kusatsu, Omihachiman, and Ritto.

On the first day morning, they became familiar with each other through card game themed environmental problems. In the afternoon, they tried making traditional reed-paper, Kamisuki, instructed by Mr. Hirayama Ichizo (paper craft professional) and Mr. Torikai (Environmental Conservation, Otsu-shi). On the second day, with Dr. Kusuoka, Chief Museum Attendance of Lake Biwa Museum, they had a tour in the Lake Biwa Museum and collected plankton and observed them. On the final day of the class, they made an experiment for



Children participants. Upper, center, Dr. Kawashima (Shiga University)

screening and detection of phosphorus with daily commodities in order to learn about environmental problems.

There were exhibitions about these activities at four branches of Heiwado

from October to November. Children's messages written on the reed-paper they made, photographs of children in the activities, and references introducing ILEC's activities were displayed.

"Hello Tile" Campaign



In A-SQUARE, a shopping mall run by Ayaha corporation, a fund-raising campaign called "Hello Tile" is held twice a year in spring and in autumn. The autumn event for this year took place for 2 days on October 16th –17, 2004, which brought together a lot of parents and children who took part in hand-print making. Hand-printed tiles, after baked in Shigaraki pottery house, will be put on a sidewalk in the plaza so that people can see them as memorial stuff for a long time. So far 1,136 tiles have been made and as much as JPY 560,000 has been raised. The money collected in this campaign is donated to ILEC for the use of conservation activities of Lake Biwa and lakes in the world. Why don't you join the event next time?

ILEC Celebrates 20th Anniversary

This is a very big year to ILEC. From October 31th –November 4th ILEC will hold the 11th World Lake Conference in Nairobi, Kenya for the first time in Africa, which has been a long dream of ILEC. In February 2006 ILEC will celebrate its 20th anniversary since the birth of International Environment Committee, a former body of the current foundation. Now ILEC is working on the preparation of a blue-book of the scientific committee members from the past to present.



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