

# **International Seminar on Restoration of Damaged Lagoon Environments**

## **January 10-11, 2004 in Matsue, Japan**

### **Organizer**

Organizing Committee of International Seminar on Restoration of Damaged Lagoon Environments / Research Center for Coastal Lagoon Environments (ReCCLE), Shimane University

### **Co-organizer**

World Water and Climate Network – JAPAN (WWCN-JAPAN)  
Chugoku and Shikoku Branch, Water Environment Society of Japan  
Shimane Industrial Promotion Foundation

### **Constituency**

Izumo Work Office, Ministry of Land, Infrastructure, and Transport  
San'in District Office, Ministry of the Environment  
Shimane Prefecture

### **Background**

The environment of Nakaumi Lagoon, Shimane Prefecture, Japan, has been damaged heavily by the reclamation and desalination projects during the past 40 years, although those have recently halted.

### **Objective of the Seminar**

To find ways to repair the damaged environment of Nakaumi Lagoon and to find ways to conserve and utilize the resources in the lagoon environment. The problems we are facing are so great that the central and local governments are unable to come up with any good workable ideas to overcome the problems.

### **Organizing Committee**

Katsumi Takayasu (Director, ReCCLE, Shimane University)  
Hidenobu Kunii (ReCCLE, Shimane University)  
Isamu Mizoyama (Izumo Work Office, Min. of Land, Infrastructure and Transport)  
Hirofumi Itakura (Dept. of Natural Environment, Shimane Prefecture)  
Minoru Matoba (Inland Water Fisheries Experiment Station, Shimane Prefecture)  
Kenichiro Yodoe (Shimane Prefectural Aquarium "Gobius")  
Takayuki Nishikohri (Shimane Industrial Promotion Foundation)

# Program

## --- Morning session ---

10:00-10:05 **Opening Address**

10:05-10:35 **Keynote Speech : Setsuo OKUDA**; Water movement and physical environments in brackish lakes -Shinjiko and Nakaumi.

10:35-10:40 Coffee break

10:40-11:00 **Yasushi SEIKE, Kunio KONDO, Minoru OKUMUR, Kaoru FUJINAGA and Katsumi TAKAYASU**; Characteristics of nutrient variation in the brackish Lake Nakaumi, Japan.

11:00-11:20 **Ritsuo NOMURA**; Sediment characteristics and environmental change in Lakes Nakaumi and Shinjiko in the 20th century: What should we learn from the work of nature?

11:20-11:40 **Hidenobu KUNII**; What is the grand design for Lakes Nakaumi and Shinji? -Towards the designation of the lakes as new Ramsar sites-.

11:40-12:00 **Morihiro AIZAKI**; Simulation experiments for the remediation of hypolimnetic anoxia in Lake Nakaumi - For the recovery of a sound ecosystem-.

## --- Afternoon session ---

14:00-14:20 **Katsumi TAKAYASU**; A brief history of the reclamation and desalination projects in Lake Nakaumi and the upcoming tasks needed for the wise use of the Honjo Area.

14:20-14:50 **Hugo COOPS**; Recovery of clear-water, macrophyte dominated lakes: concepts and case studies

14:50-15:20 **Janet K. THOMPSON and Francis PARCHASO**; The immigration of an Asian bivalve *Potamocorbula* into San Francisco Bay and the subsequent environmental change.

15:20-15:50 **Karl W. FLESSA**; Ecosystem services and the value of water in the Colorado River Delta and Estuary, USA and Mexico: Guidelines for mitigation and restoration.

15:50-16:20 **Douglas F. WILLIAMS**; U.S. National Environmental Networks: possible model for lagoon environments of Japan.

16:20-16:30 Coffee break

16:30-17:30 **Panel discussion**; Toward fertile future environments in coastal lagoons

## --- Poster Session ---

12:00-14:00 3F, International Conference Hall

### Public offering

### Session A; Technology for Environmental Restoration

- PA-1** How can we promote a bivalve fishery in Lake Nakaumi?; **Yamaguchi, K.**, Yokoyama, K., Uchida, A.
- PA-2** The influence of restored coast on benthic organisms in Lake Nakaumi; **Yokoyama, K.**, Tanimoto, N., Yamaguchi, K., Aizaki, M.
- PA-3** A lakeshore restoration project on the western shore of Lake Shinji; **Imaoka, T.**
- PA-4** Diverse shore environments of Lake Shinji; **Kurata, K.**

#### **Session B; Research on Brackish-water Environments**

- PB-1** Brackish environments of Lake Nakaumi and Lake Shinji; **Maenaka, T.**
- PB-2** Acoustic signals of the aquatic environment of Lake Nakaumi; **Nomura, R.**, Seto, K., Kuwamura, T., Yamasaki, K.
- PB-3** Photo documentation of the bottom environment of Lake Nakaumi; **Nomura, R.**, Seto, K., Mizoyama, I.
- PB-4** The relationship between internal waves and the movement of anoxic water in two connected brackish water bodies -Lake Nakaumi and the Ohashi River; **Fujii, T.**, Okuda, S.
- PB-5** Water quality in the Hii River and nonpoint sources; **Takeda, I.**
- PB-6** Wind speed mapping and slick area detection with spaceborne SAR measurement; **Kozu, T.**, Shimomai, T., Sakuno, Y., Takayasu, K., Matsunaga, T.
- PB-7** High-resolution airborne SAR for coastal lagoon environment monitoring; **Kurita, K.**, Kozu, T., Shimomai, T., Sakuno, Y., Nakayama, D., Takayasu, K.
- PB-8** Estimation of the chlorophyll-a distribution from 1985-2001 in Lakes Shinji and Nakaumi using Landsat data; **Sakuno, Y.**, Matsunaga, T., Takayasu, K., Kozu, T., Shimomai, T.
- PB-9** Monitoring water temperature and turbidity using ASTER data in coastal lagoon environments; **Sakuno, Y.**, Matsunaga, T., Takayasu, K., Kozu, T., Shimomai, T.
- PB-10** A low-cost, compact acoustic survey equipment system for use in the coastal lagoons and estuaries; **Nishimura, K.**, Joshima, M., Tokuoka, T., Ueno, H., Fukita, A.
- PB-11** Establishing a current observation system using Doppler current profilers; **Murakami, T.**
- PB-12** Environmental changes in bottom sediments during the past 100 years in Kitanada Bay, Ehime Prefecture, Japan; **Amano, A.**, Inoue, T., Iwamoto, N., Shioya, F., Inouchi, Y.
- PB-13** Paleoenvironmental change in Lake Nakaumi during the past 3000 years as recorded in sediment cores; **Seto, K.**, Kishiba, S., Sato, T., Tanaka, H.
- PB-14** Paleoenvironmental Change in a low saline brackish water lake during the past 5000 years as recorded in the sediment of Lake Shinji, southwest Japan; **Nakatake, M.**, Seto, K., Sato, T.
- PB-15** The Holocene paleogeography of Nakaumi Lagoon, Yumigahama Sand Bar, and Miho Bay; **Inoue, T.**, Tokuoka, T., Fukita, A., Nakamura, T.
- PB-16** Paleoenvironmental change based on magnetic characteristics in sediments from Lake Nakaumi and Lake Shinji; **Sato, T.**, Ohkawa, M., Endo, M., Hamamoto, Y., Seto, K., Funaki, M.
- PB-17** Multi proxy paleoenvironmental reconstruction procedure of the lacustrine sediments - the cases of Lake Erhai and Lake Togo-ike -; **Yamada, K.**, Takayasu, K., Kato, M., Fukuzawa, H.

- PB-18** The impact of environmental change on mollusk assemblages in brackish Lake Nakaumi, Japan; **Tanaka, H.**, Seto, K., Sato, T.
- PB-19** Organic matter in Lake Shinji and Nakaumi sediments: Sources inferred from nitrogen and carbon geochemistry; **Dettman, D. L.**, Seto, K.
- PB-20** Aquatic environments and the origin of sediments in meromictic Lake Kaiike, Japan; **Sakai, S.**, Oguri, S., Hirano, S., Kitazato, H.
- PB-21** Features of the mangrove environment and the runoff of its produced material in the Funaura Bay, Iriomote Island, Okinawa Prefecture; **Nakamura, K.**, Seto, K.
- PB-22** Diatom assemblages from brackish lakes - Usage in long-term monitoring of lake environment -; **Kashima, K.**
- PB-23** Red tides and cyanobacterial blooms in the brackish lakes Shinji and Nakaumi; **Otani, S.**
- PB-24** The distribution of primary producer and biomass in the brackish-water lake; **Uchiyama, T.** and Seto, K.
- PB-25** The seasonal change of brackish environment and biomass of primary producer in the estuary of Hii River water system; **Yasui, D.**, Uchiyama, T., Seto, K.
- PB-26** Spatial variation of the algal assemblage in response to variation of transparency: A case study in Lake Nakaumi during summer; **Miyamoto, Y.**
- PB-27** The historical role of seagrass harvesting for fertilizer in nutrient removal from an estuarine lagoon, Lake Nakaumi, Japan; **Hiratsuka, J.**, Yamamuro, M., Ishitobi, Y.
- PB-28** A longitudinal view of Lake Shinji and Lake Nakaumi; **Ishitobi, Y.**, Mishima, K., Kano, Y., Kamiya, H., Goto, M.
- PB-29** Reproductive ecology of salt-marsh sedge (*Carex rugulosa*), an important component of estuary meadows; **Araki, S.**, Kunii, H.
- PB-30** Specific ecology of *Virgulinema flagilis* Grindell and Collen (benthic foraminifer) under year-round oxygen deficiency in Aso-kai Lagoon, central Japan; **Takata, H.**, Seto, K., Sakai, S., Tanaka, S., Takayasu, K.
- PB-31** A comparison of fish assemblage structures associated with a reedgrass bed, a natural sand beach, an upright concrete wall and a restored sand beach with replanted reedgrasses; **Horinouchi, M.**, Kume, G., Yamaguchi, A.

### Special session

### Session C; Industry-Academic-Government Collaborative Project on the Adjacent Urban Areas of Lakes Nakaumi and Shinji

- PC-1** Development of advanced water treatment technique; **Masunaga, T.**, Wakatsuki, T., Sawa, Y., Tanaka, T., Noda, S., Shiomura, T., Inata, G., Baba, H., Katsube, M.
- PC-2** Development of High Performance Material for Water Purification; **Nonaka, T.**, Sato, T., Yamamoto, H., Kitamura, T., Takada, R., Nagano, K., Hukuda, Y., Ishitobi, Y.
- PC-3** Development of the techniques for the establishment of recycling system of organic wastes;

**Wakatsuki, T.**, Shibata, H., Sawa, Y., Nakano, N., Masunaga, T., Oonishi, M., Matsumoto, S.,  
Noda, S., Shiomura, T., Inata, G., Mishima, K., Omura, Y., Fujita, N.

**PC-4** Development of Monitoring System of Water Quality in Lake Shinji; **Minoda, A.**, Kaneko, D.,  
Inawaka, K., Tanabe, T., Yoneda, K., Oobitsu, S., Ishitobi, Y, Kamiya, H.

**---Farewell Party---**

18:00- 20:30 at **Restaurant Pomodor (same building as the seminar)**