

EMECS

NEWSLETTER

No. 23

EMECS2003

6th International Conference on the Environmental Management of Enclosed Coastal Seas

November 18 - 21, 2003 Bangkok, Kingdom of Thailand

The 6th International Conference on the Environmental Management of Enclosed Coastal Seas (EMECS2003) was held for four days from November 18 through November 21, 2003 in Bangkok, Thailand. More than 600 delegates from 23 countries came to participate in the conference, whose theme this time was "Comprehensive and Responsible Coastal Zone Management for Sustainable and Friendly Coexistence between Nature and People." On the last day of the conference, the Bangkok Declaration was adopted, and it was announced that the next EMECS Conference would be held in 2006 in Caen, France.



Mr. Toshizo Ido
Chair, Board of Directors, International EMECS Center

Following this, Mr. Toshizo Ido, Governor of Hyogo Prefecture, Japan and Chair of the Board of Directors of the International EMECS Center, expressed his gratitude to the Kingdom of Thailand both for holding EMECS2003, and for the assistance provided by Thailand at the time of the Great Hanshin-Awaji Earthquake of 1995. He then presented an

overview of the five previous EMECS Conferences. With regard to the theme of the sixth conference, he said that coastal zones are places where people and nature coexist, and that it was important that people use responsible methods to manage coastal zones. He also outlined his experience with efforts to resolve environmental problems in the city of Kobe and the Rokko Mountains that form a backdrop to the city.



Opening Ceremony

The opening ceremony for the conference began in an atmosphere of solemn dignity, with the Thai national anthem playing and with Dr. Vichit Srisa-an, representative of Her Royal Highness Princess Chulaporn Walailuk, in attendance.



Dr. Plodprasop Suraswadi
Chair, EMECS2003 International Organizing Committee

In his address, Dr. Plodprasop Suraswadi, Permanent Secretary of the Ministry of Natural Resources and Environment of Thailand and Chair of the EMECS2003 International Organizing Committee, said that he welcomed the fact that the sixth EMECS Conference was being held in Thailand, a country

located next to two enclosed coastal seas (the Gulf of Thailand and the Andaman Sea). He said that the oceans and coastal resources are of crucial importance in Thailand as well, and that environmental issues are pressing concerns. He said that resolution of these problems would require communication in local regions in addition to exchanges of views among scientists, governments and private sector entities. Dr. Suraswadi said he hoped the delegates to the conference would exchange views regarding their knowledge and experience for the common objective of preserving coastal zone environments, and that the conference would promote the effective use of coastal resources.



Dr. Vichit Srisa-an
Her Royal Highness Princess Chulaporn Walailuk's representative

Then Dr. Vichit Srisa-an, representing Her Royal Highness Princess Chulaporn Walailuk, gave an address in which he said that development in Thailand is continuing and there are concerns that natural resources will be depleted. He said that the number of mangrove forests in particular had decreased dramatically, with mangrove forests being converted into

shrimp ponds. He said the destruction of the mangrove forests would affect not only coastal zones but the interior and offshore areas as well. Dr. Srisa-an said the Thai Royal Family viewed the situation regarding the mangroves with alarm, and was working to change public opinion through participation by the Thai Royal Family in recovery and restoration programs. In order to succeed in protecting and managing coastal environments, he said, local communities, researchers, governments, educators and so forth must join together and cooperate in the effort. By bringing researchers together, Dr. Srisa-an said, he hoped that EMECS2003 would be a conference of great significance. With these words,

Contents

| | | | |
|---|-------|--|------|
| - EMECS2003 - 6 th International Conference on the Environmental Management of Enclosed Coastal Seas | 1 ~ 4 | EMECS Schools and Students Partnership | 7, 8 |
| BANGKOK DECLARATION | 5, 6 | | |

the EMECS2003 conference was declared officially open.



Keynote Lectures

Following the opening ceremony, keynote lectures were given by three scholars. The following is a summary of each lectures.

"Challenges to Sustainable Coastal Development in East Asia"



Dr. Chua Thia-Eng
Regional Programme Director,
CEF/UNDP/IMO Regional Programme on
Partnerships in Environmental Management
for the Seas of East Asia (PEMSEA)

In interactions between the environment and human activities, the concept of "sustainable development" is widely held to be profitable in socioeconomic terms. However, there are various obstacles to the actual implementation this concept. Environmental management policy for oceans and coastal zones has lagged behind that for land regions. To realize sustainable development, economic activities must be controlled, and human intervention must be restricted so that natural systems do not become unable to function. In developing countries, the destruction of habitats, the pollution of rivers and seacoasts and other environmental degradation is proceeding at a rapid pace. The causes are thought to include poverty, economic globalization, the development of regional economic spheres and so on. Finding solutions will require a collaborative approach spanning multiple sectors including socioeconomics, culture, politics, ecology and so on.

"Threats to the Marine Environment and EMECS"



Dr. Yoichi Kaya
Professor Emeritus, The University of Tokyo
and President, International EMECS Center

The degradation of marine environments, particularly those in enclosed coastal seas, is a serious problem for both developed and developing countries. Based on a common recognition that the situation is serious worldwide, EMECS conferences were started in 1990 in order to promote the environmental preservation of enclosed coastal seas. The land regions surrounding enclosed coastal seas are those with the highest population density, and as they are affected by a variety of human activities, greater efforts at environmental preservation are needed. It is also important not to overlook the fact that global warming is also affecting marine environments in various ways.

It is also important not to overlook the fact that global warming is also affecting marine environments in various ways.

"Coral Reef Management and Research in Thailand"



Dr. Hansa Chansang
Marine Biologist

Coral reef management is a serious problem due to the degradation of coral reef resources and the increasing diversity of the use made of these resources. To restore coral reefs, we must conduct restoration studies as well as investigate coral reef activity, diversity and long-term changes,

and the effect of climate change on coral reefs. As an understanding of the political and cultural background of the community is needed in order to manage coral reefs, the local community must participate in management planning.



Special Forums

Four special forums were held at EMECS2003.

Gulf of Thailand



Following the Keynote Lectures, a special forum on the Gulf of Thailand was held. The opening messages were given by Dr. Chua Thia-Eng, Regional Programme Director of the CEF/UNDP/IMO Regional Programme on Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), and Dr. Twesukdi Piyakarnchana, Professor, Chulalongkorn University. Subsequently, case study reports on environmental management in the Gulf of Thailand were presented, followed by reports introducing case studies for Chesapeake Bay, the Seto Inland Sea, Manila Bay and the Bo Hai.

Asia-Pacific Forum



The Asia-Pacific Forum was held to expand on the achievements of the Asia Forum held at the previous conference, EMECS2001. The opening addresses were given by Mr. Sombo Yamamura, Director of the Asia-Pacific Network for Global Change Research (APN) Secretariat and Dr. Piamsak Menasveta, Dean, Professor, Faculty of Science, Chulalongkorn University. These were followed by presentations on scientific efforts to resolve coastal problems in the Asia-Pacific region, the need for and requirements of coastal zone management, correct and incorrect management of coastlines in the islands of the Pacific, and new directions for APN coastal research and integrated coastal management in the Asia-Pacific region.

Dr. Nobuo Mimura, Professor, The Center for Water Environment Studies, Ibaraki University, served as Chair of the forum. There was a spirited debate between the panelists and the audience, which consisted of a wide variety of delegates including stakeholders and other interested parties, regarding the direction of future research.

EMECS Schools and Students Partnership



Dr. Jean-Paul Ducrotoy, Professor Emeritus, The University of Hull, and Dr. Wayne H. Bell, Director of the Center for the Environment and Society and Professor of Biology and Environmental Studies, Washington College, served as Chairpersons for this two-day forum, which featured reports on environmental management and environmental education efforts on the part of environmental educators and the youth who will play a leading role in the next generation, as well as question and answer sessions and an exchange of views. The objective of the forum was to nurture an awareness of water-centered environmental management issues from a global perspective through these activities. The first day featured reports on activities by high school and junior high school students and environmental educators, as well as question and answer sessions and the exchange of views. The second day featured a visit to UNESCO Bangkok and a local school.

This was the first time that an environmental education session with the

participation of young people was held at the EMECS Conference. The session won high praise and promises to be a continuing event.

NGO Forum



Dr. Thavivongse Sriburi, Associate Professor, Chulalongkorn University, served as Chair of this forum, which featured reports by four groups on three countries: India, Russia and Japan. In the discussion following the reports, there was an exchange of information

regarding the case studies of their respective activities, experiences etc. relating to the role of governments and NGOs, NGO assistance and fundraising methods and so on, as well as an exchange of views on the importance of environmental education by NGOs in local regions.



Technical Sessions

16 technical sessions were held at EMECS2003. The themes and Chairpersons for the sessions were as follows:

1. Monitoring System and Modeling
 - Tetsuo Yanagi
Kyushu University, Japan
 - Absornsuda Siripong
Chulalongkorn University, Thailand
2. Marine Habitat Assessment
 - Bengt-Owe Jansson
Stockholm University, Sweden
 - Suchana Chavanich
Chulalongkorn University, Thailand
3. Water Quality Assessment
 - Nobuo Mimura
Ibaraki University, Japan
 - Pornsook Chongprasith
Pollution Control Department, Thailand
4. Coastal Engineering
 - Erdal Özhan
Middle East Technical University, Turkey
5. Impact of Land-Based Activities on Coastal Marine Environment
 - Jane T. Nishida
Planning and Development Collaborative International, USA
 - Supichai Tangjaitrong
Chulalongkorn University, Thailand
6. Persistent and Emerging Environmental Problems
 - Hiroshi Kawai
Kobe University, Japan
 - Sangchan Limjirakarn
Chulalongkorn University, Thailand
7. Monitoring and Prediction of Redtides
 - Nobuo Mimura
Ibaraki University, Japan
 - Thaitaworn Lerewithayaprasith
Chulalongkorn University, Thailand
8. New Technologies
 - Takashi Kusui
Toyama Prefectural University, Japan
 - Somkiat Piyatiratitivorakul
Chulalongkorn University, Thailand
9. Management of Coastal Ecosystems and Environmental Protection
 - Osamu Matsuda
Hiroshima University, Japan
- Charoen Nitithamyong
Chulalongkorn University, Thailand
10. Environmental Conservation and Restoration
 - Ivica Trumbic
UNEP/MAP, Priority Actions Programme Regional Activity Centre, Croatia
 - Cherssak Virapat
International Ocean Institute, Thailand
11. Coastal Policies and Socio-Economic Considerations
 - David A. C. Carroll
Department of Environmental Protection and Resource Management, Baltimore County, USA
 - Paktrawimol Piamlumlert
Chulalongkorn University, Thailand
12. Community-Based Management
 - Osamu Matsuda
Hiroshima University, Japan
 - Walai Panich
Chulalongkorn University, Thailand
13. Legal Requirements and Implications
 - Orawan Siriratpiriya
Chulalongkorn University, Thailand
14. Tourism Pressure and Ecotourism
 - Masataka Watanabe
National Institute of Environmental Studies, Japan
 - Thavivongse Sriburi
Chulalongkorn University, Thailand
15. Growth, Development, and Utilization of Coastal Resources
 - Susumu Takayama
Mie University, Japan
 - Sorawit Powtongsook
National Science and Technology Development Agency (NSTDA), Thailand
16. Educational Aspects of Coastal Zone
 - Bengt-Owe Jansson
Stockholm University, Sweden
 - Kungwan Juntarashote
Kasetsart University, Thailand



Poster Session



48 posters were exhibited in the Poster Session.

The EMECS2003 Award Selecting Committee for the Poster Session was made up of five members:

- Osamu Matsuda, Professor Emeritus, Hiroshima University (Chair)
- Bengt-Owe Jansson, Professor Emeritus, Department of Systems Ecology, Stockholm University
- Somkiat Piyatiratitivorakul, Professor, Chulalongkorn University
- David A. C. Carroll, Director, Department of Environmental

Protection and Resource Management, Baltimore County

- Ivica Trumbic, Director, Mediterranean Action Plan, United Nations Environment Programme (UNEP/MAP), Priority Actions Programme Regional Activity Centre (PAP/RAC)

The committee selected the following two posters to receive certificates and monetary awards.

First place

Akira Ono, Kuninao Tada and Kazuhiko Ichimi
Department of Life Sciences, Kagawa University

"The influence of a large diatom (*Coscinodiscus wailesii*) variability on the water quality in a coastal water, the Seto Inland Sea, Japan"

Second place

Thanomsak Boonphakdee and Tateki Fujiwara

Fisheries and Environmental Oceanography Laboratory, Graduate School of Agriculture, Kyoto University

"Temporal Variability of Nutrient Budgets in the Bangpakong River Estuary, Thailand"



Dr. Jean-Paul Ducrotoy
Professor Emeritus, The University of Hull

sustainable use and protection of the environment for the sake of future generations, and that environmental awareness and interdisciplinary, integrated management using the most effective methods, achieved through community involvement, will be crucial elements. He also said that interchange by means of student participation should be expanded.

After this, Dr. Piamsak Menasveta, Chair of the EMECS2003 Executive Sub-committee, gave the closing address on behalf of Dr. Plodprasop Suraswadi, Chair, EMECS2003 International Organizing Committee.



Caen, France

Dr. Menasveta expressed thanks to the individuals and organizations that had cooperated in holding the conference and the companies and other entities that had provided support.

Dr. Menasveta expressed thanks to the individuals and organizations that had cooperated in holding the conference and the companies and other entities that had provided support.

Lastly, Dr. Nobuo Kumamoto, President, Hokkaigakuen University and Chair of the Scientific & Policy Committee of the International EMECS Center, also expressed thanks to all those who worked to make EMECS 2003 a reality and to those who had participated in the conference. Looking back on the six EMECS Conferences, Dr. Kumamoto



Dr. Nobuo Kumamoto
Chair, Scientific & Policy Committee,
International EMECS Center

said that numerous important issues had been raised, including environmental education spanning future generations, the integration of environmental issues through mutual cooperation on the part of various relevant organizations, the use of state-of-the-art science and technology, the participation of NGOs, legal means and so on, and that spirited discussion and informational exchanges had been conducted. Dr. Kumamoto went on to say that these efforts must be passed on to future generations. With that, the four-day conference came to a close.

 Closing Ceremony



Dr. Piamsak Menasveta
Chair, EMECS2003 Executive Sub-Committee

Director of the Center for the Environment and Society and Professor of Biology and Environmental Studies at Washington College, and Chair of the EMECS 2003 Declaration Drafting Committee. Several persons in the audience expressed their views and, following revision, the declaration was adopted unanimously.

Following a report by Dr. Piamsak Menasveta, Dean, Professor of the Faculty of Science, Chulalongkorn University, and Chair of the EMECS2003 Executive Sub-committee, regarding the number of delegates to EMECS2003 and other matters, the proposed Bangkok Declaration was presented by Dr. Wayne H. Bell,



Best Poster Awards Presentation

Next, Dr. Osamu Matsuda, Chair of the EMECS2003 Award Selecting Committee for the Poster Session, presented the certificates and monetary awards to the two winning posters from the Poster Session.

Following the awards presentation, there was an address by Dr. Jean-Paul

Ducrotoy, Professor Emeritus, The University of Hull. In his address, Dr. Ducrotoy said that the 7th EMECS Conference would be held in Caen, France in 2006, and that the conference would be sponsored jointly by the International EMECS Center and The Estuarine and Coastal Sciences Association. Caen is near two enclosed coastal seas, the North Sea and the English Channel. The theme of the conference will be "Enclosed Coastal Seas: Our Joint Responsibility." Dr. Ducrotoy said that we share a common responsibility to ensure the

PROGRAM

| | Nov. 18 Tue. | Nov. 19 Wed. | Nov. 20 Thu. | Nov. 21 Fri. | |
|-----------|---|---|--|---|--|
| Morning | Registration Opening Ceremony • Welcome Address • Commemorative Address • Opening Address Keynote Lectures | Special Forum • EMECS Schools and Students Partnership | Special Forum • Asia-Pacific Forum | Special Forum • EMECS Schools and Students Partnership Study Tour | Technical Sessions • New Technologies • Coastal Policies and Socio-Economic Considerations • Growth, Development and Utilization of Coastal Resources • Monitoring and Prediction of Redtides • Legal Requirements and Implications |
| Afternoon | Special Forum • Gulf of Thailand | Technical Session • Environmental Conservation and Restoration | Technical Sessions • Monitoring System and Modeling | Technical Sessions • Impact of Land-Based Activities on Coastal Marine Environment | Closing Ceremony • Best Poster Awards • Welcome Address to Next Conference • Closing Address • Appreciative Address |
| Evening | Welcome Reception | | | Farewell Party | |



BANGKOK DECLARATION

Environmental Management of Enclosed Coastal Seas EMECS2003 *November 21, 2003*

During November 18 through November 21, 2003, more than 600 delegates from 23 countries convened in Bangkok, Thailand, to participate in the 6th International Conference on the Environmental Management of Enclosed Coastal Seas, EMECS2003. Previous EMECS conferences witnessed an expansion of thinking from a focus on enclosed coastal seas themselves to consideration of whole coastal systems, moving from tidal waters to tributaries to entire watersheds. In Bangkok we have further expanded our focus to include communities and people as natural and significant components of coastal ecosystems under the conference theme, "Comprehensive and Responsible Coastal Zone Management for Sustainable and Friendly Coexistence between Nature and People."

Scientific research has provided us with significant advances in our understanding of the causes of the degradation of water quality and loss of habitat on the world's coastal ecosystems. Research is the cornerstone of the most effective environmental policy possible and the implementation of its findings remain critical to progress. Advances in technology have been especially helpful in the continued reduction and control of pollution from point sources. These advances include reduced nutrient loads as a result of wastewater treatment plants upgrades and reduction of emissions from industrial discharges. We also applaud resource management and conservation efforts that have enabled us to restore some of our coastal fisheries and to begin managing these in a sustainable manner.

Even so, there is growing perception and public concern that our coastal seas are responding only very slowly to these demonstrated successes. It is becoming very clear that continued progress will depend on making significant and heretofore unprecedented advances in solving the poorly-addressed problem of pollution from non-point sources. Unlike point sources that are being addressed through changes in technology, control of non-point sources will depend on changes in human behavior. Such changes include the following:

- development of coastal cities, towns, and villages in a manner that minimizes negative consequences for the environment, including poorly controlled storm water discharge, runoff from impervious surfaces, and coastal erosion of unprotected shorelines;
- preservation of "working landscapes"(productive landscapes of farms and forests, productive seascapes of fisheries, commerce, and recreation, all of which reflect a historical and continuing coexistence between nature and people) to ensure a diversity of coastal habitats sustained by vital, resource-based coastal economies;
- decrease in atmospheric deposition of pollutants produced by emissions from transportation and power plants that currently support an inefficient consumption of energy.

The continued degradation of the world's enclosed coastal seas and loss of their living resources poses a direct threat to the future of the world's coastal communities, their economics, and the heritage, culture, and natural beauty that contribute to their unique sense of place. We are concerned that a loss of place will contribute to a loss of identity, to a feeling of not being at home anywhere, and to an inability to recognize the value of cultural diversity in a world that desperately needs the cooperation between nations to solve global problems.

In previous EMECS declarations we have affirmed our belief in the importance of collaboration between citizens, NGO's, scientists, educators, policy makers, and governmental officials for more effective coastal seas' governance. We find that collaboration alone is no longer sufficient. What is needed is far more active participation. In particular, we believe that such participation must include coastal communities and their citizens more than ever before. We strongly believe that more effective environmental education will be critical to effecting that participation.

We, the participants of the 6th International Conference for Environmental Management of Enclosed Coastal Seas, endorse the following principles as policy guidelines for more "Comprehensive and Responsible Coastal Zone Management for Sustainable and Friendly Coexistence between Nature and People" :

1. *There is no contradiction between sustained environmental management, economically viable working landscapes, and a strong sense of place on the watersheds of the world's coastal seas. Quality of water and quality of life are intimately related. Local communities, through their local leaders, must play a more active role in promoting responsible behavior by their citizens that will sustain their future economically, culturally, and environmentally.*
2. *Truly integrated coastal zone management policy considers people as a natural component of coastal ecosystems. Such policies must include the sustainability and vitality of coastal communities and their "working landscapes" as a critical goal and promote the full participation of those communities in achieving this goal.*
3. *Environmental education, both formally through the schools and informally through special centers for young people and programs for adults, is of critical importance. In particular, we must counter a growing trend where children have fewer and fewer opportunities to experience the natural environment with all their senses and where their limited exposure comes from a perspective of fear about pollution or global environmental harm. We need more opportunities for hands-on learning based on local examples where children's involvement can make a difference. We need environmental education programs that view people as a part of nature rather than as intruders. We need to convey to our children a lost sense of wonder about sea and river, forest and field, heritage and home.*
4. *Science functions as more than a source of new information. The discovery of new knowledge and technologies is of little value if not applied to help mankind. Science must also include the interpretation of that knowledge for educators, community leaders, and policy makers alike so their respective activities are based on authentic data rather than points of view.*
5. *Government is both facilitator and regulator. Regulations alone have not resolved the world's coastal seas' problems. Policies need to be implemented in ways that support research, encourage data interpretation, and advance formal and informal environmental education. The ultimate goal is nothing less than to help communities help themselves sustain their economic base and sense of place through active participation as essential partners in coastal zone management. International agencies can play a more effective facilitation role through their unique ability to work beyond traditional jurisdictional boundaries, promoting cooperation between nations and also implementing programs based on complete watershed and other natural ecological systems.*
6. *The writer, the columnist, and the poet are the implements of sustainable development of our enclosed coastal seas. We believe no other group has proven as effective in making sense of place a credible and effective factor for sustainable environmental policy.*

This conference established the EMECS Schools and Students Partnership as a new forum to allow young people and their teachers to participate directly in environmental management of enclosed coastal seas. This Conference Declaration incorporates wisdom as seen through their eyes. We mistakenly assume that our policies are an attempt to guarantee a high quality of life for the next generation. A better perspective is to realize that we have in fact borrowed the future from our children. We wish to return it a condition that will sustain a high quality of life forever. They are counting on us. They are eager to help. Hand in hand, we will succeed.

EMECS Schools and Students Partnership

An Initiative to Involve Young People and Their Teachers to Improve Coastal Seas Around the World

Wayne H. Bell, Ph.D.
Center for the Environment and Society
Washington College, U.S.A.



The EMECS2003 conference in Bangkok, Thailand, provided the first opportunity for students and their teachers from school programs around the world to come together as special participants under an exciting new initiative, the EMECS Schools and Students Partnership (EMECS-SSP). EMECS is a permanent international forum that has regularly brought together governmental officials, environmental managers, academic scientists, and citizens from non-governmental organizations to exchange information for improved environmental management of the world's enclosed coastal seas. Environmental education has been the subject of many oral presentations and posters at each of the preceding five EMECS conferences, beginning with EMECS '90 in Kobe, Japan. Elementary, middle, and high school (K-12) teachers who have co-authored several of these papers have demonstrated that data from research and monitoring programs can be used as authentic examples to teach important principles in science and technology. EMECS-SSP now provides a way for K-12 educators and students to participate directly in the EMECS international forum. The results have already proven insightful for the advancement of environmental policy.

EMECS-SSP is an initiative whose time has come. The Kobe-Awaji Declaration from the EMECS '99 Conference identified environmental education as a key component of effective coastal seas' policy. This commitment led Dr. Jane T. Nishida, former Secretary of the Environment for the state of Maryland, USA, and her colleagues on the Scientific and Program Committee of the International EMECS Center, to propose a concept that led to the EMECS-SSP initiative. The concept was to develop a special forum at the next EMECS Conference expressly for contributions by K-12 students and educators from schools around the world. It was hoped to use the occasion of the EMECS Conference to organize one or more site visits to schools in the host country. In short, EMECS2003 would become a catalyst for bringing schools and students together to advance both student learning and the implementation of environmental policy on the world's coastal seas.

At the 6th EMECS Conference in Bangkok, the EMECS-SSP environmental education forum took place over a full day, chaired by Dr. John-Paul Ducrotay, Professor Emeritus, The University of Hull, UK. It began with a panel of educators and college students from Maryland, USA, who identified important challenges facing environmental education today. This panel was organized by Professor Wayne Bell of Washington College. Two special panels followed:

Japanese Educators (Professor Hiroshi Kawai, Kobe University Research Center for Inland Seas, and Ms. Takako Kawamura, Hyogo Prefecture); and Thailand Educators (Dr. Supichai Tangjaitrong, Chulalongkorn University, and Mr. Boonmee, a science teacher at the Wat Don Wai School). In addition to describing their respective program initiatives, all panelists noted the importance of having scientists serve as mentors to help teachers better understand and use authentic environmental data. Students from Wat Don Wai School also made brief presentations about the importance of environmental education at the school and their water quality monitoring activities on the Tha Chin River.



Yasuhide Kawano (L) and Toshiyuki Yokoyama (R), Himeji Institute of Technology High School students who presented a paper on 'State of sex changes in *Thais clavigera* becoming male around the sea of Himeji'

After lunch two excellent papers were presented by Japanese students from the Hyogo Prefecture: "State of sex changes in *Thais clavigera* becoming male around the Sea of Himeji" (Mr. Yasuhide Kawano and Mr. Toshiyuki Yokoyama, Himeji Institute of Technology High School); and, "Tameike ponds - our irrigation ponds in Harima District" (Ms. Asako Shimizu and Ms. Natsumi Murogaki, Akashi-Nishi Senior High School).



Asako Shimizu (L) and Natsumi Murogaki (R), high school students from Akashi-Nishi who presented a paper on Tameike irrigation ponds at the EMECS-SSP special forum, enjoy singing a Japanese folk song at the EMECS Night.

The EMECS-SSP special excursion took place on the following day. A total of 21 participants first visited the UNESCO Asia and Pacific Regional Bureau (ROAP) for presentations on community-based programs in Thailand. The group then journeyed to the Nakhon Pathom Province for visits to the Wat Don Wai School and the Nakhon Pathom Special Studying School. These visits, arranged through a partnership between the Tha Chin River basin and the state of Maryland, USA, were organized by Mr. David A. Nemazie of the University of Maryland Center for Environmental Science and Ms. Densiri Tongnopakun, a school teacher from Nakhon Pathom Province.

What was learned from these first experiences under the EMECS-SSP? First, the environment serves as a universal context for learning how mankind relates to the natural world. The papers by the Japanese students clearly demonstrated how the environment could be used in teaching both science and cultural heritage. However, participants also agreed that young people are receiving fewer and fewer opportunities to experience nature or, as middle school teacher Ms. Patricia Chambers stated in the opening panel, "To get off the sidewalk and into the creek." Therefore, it was fascinating to see the "River Detectives" program at the Wat Don Wai School, where 7th-9th grade students took water samples, performed sophisticated chemical and biological analyses of pH, nutrients, and dissolved oxygen content, and proceeded to correctly and thoroughly interpret the results! Their original artwork, displayed with obvious pride, also showed how important a clean coastal environment is to their sense of a good place to live.



Middle school "River Detectives" at the Wat Don Wai School demonstrate how they analyze a water sample taken minutes before from the Tha Chin River.

The message was repeated at the Nakhon Pathom Special Studying School where children of all ages were given an opportunity to grow crops, practice aquaculture, and raise farm animals on a truly working school landscape. The EMECS-SSP developed a clear message that the best environmental education is "hands-on," furnishing students and teachers alike with authentic experiences in habitats where people in local communities are participants rather than intruders.

Environmental education is an important way to reconnect young people with their community heritage. Japanese student Natsumi Murogaki summarized it this way:

"We visited the Tha Chin River. People built their houses above it. They were so beautiful and calm. People living there depended on the river. The river produced plants and many traditions. People



A view from the environmental education classroom onto the working landscape of the Nakhon Pathom Special Studying School where students learn organic farming and other methods of environmentally sustainable agriculture.

have learned how to save their water in many ways, as the Thai students showed us . . . They had warm hearts and their eyes were shining. They saw us off with tears. I was deeply impressed." Environmental education can reconnect young people with nature, with their heritage, and with the global community.



A 9th grade student at the Wat Don Wai School conveys her sense of the relationship between clean environment and quality of life by showing her art against a backdrop of the Tha Chin River and the community in which her school is located.

The outcomes of the first EMECS-SSP are so universally important that they have been incorporated into the Bangkok Declaration of EMECS2003. This initiative will be continued at the EMECS2006 conference in France. But between now and then, let us all work to realize the goals of using environmental education to bring more schools and students together. Let us enrich our respective school curricula using authentic environmental data obtained from coastal studies around the world. And let us reaffirm a commitment to convey to young people

and their teachers a sense of wonder about water and watershed, forest and field, heritage and home.

Call for Articles

Contributions from readers (reports on research on enclosed coastal seas, conference information, etc) would be greatly appreciated.

International EMECS Center

IHD Bldg. 5-1 Wakino-hama-kaigandori 1-chome, Chuo-ku, Kobe 651-0073 Japan

TEL: +81-78-252-0234 FAX: +81-78-252-0404

URL: <http://www.emecs.or.jp> E-mail: secret@emecs.or.jp