



EMECS NEWSLETTER

No. **7**

International EMECS Center

Greeting from President International EMECS Center

It is with profound gratitude that I have accepted the position of President of the new Center for the Environmental Management of Enclosed Coastal Seas, or International EMECS Center for short, established on November 30, 1994.

I am also grateful to the many people and organizations whose support made this Center a reality: the many prominent researchers at home and abroad who are involved in the study of the environmental management of enclosed coastal seas, representatives from related organizations and private corporations, the Ministry of Foreign Affairs, the Environment Agency of Japan, the prefectures and designated cities bordering the Seto Inland Sea, and the Association for Environmental Conservation of the Seto Inland Sea. I would like to take this opportunity to join with you all in celebrating the establishment of the International EMECS Center. It is also a pleasure to meet so many of the people I have known since the very first EMECS conference held here in Kobe.

EMECS -- the Environmental Management of Enclosed Coastal Seas -- is a matter of very great importance. As we approach the 21st century, the world population is growing at an explosive rate, and we are beset by serious environmental problems on a global scale. If present trends continue, the world population will soon double to surpass 10 billion. It will not be possible to provide a population this large with adequate food and living space using only the land areas that cover one-third of the world's surface. In Japan, efforts are underway to freely cultivate fish and other sea creatures in the ocean areas, and techniques for artificial pearl cultivation



and other endeavors have been developed. In the future, it is conceivable that the sphere of human activities will expand to include not only the land but the sea as well.

The Seto Inland Sea is the largest enclosed coastal sea in Japan. It is dear to the hearts of the Japanese people and plays a central role in many different human endeavors. Much of the Inland Sea in and around Osaka Bay has been filled in to create reclaimed land areas.

It is inconceivable that such activities undertaken by human beings would have no effect upon the ocean ecosystem and the ocean environment. To ensure that these activities will be both sustainable and achievable, and that the fragile ecosystem of the ocean will be preserved, it is imperative that we take measures to preserve the global environment.

In the past, excessive human activity in the Seto Inland Sea has given rise to such damaging phenomena such as the "red tides." Fishing yields have also declined and fishing areas have become more restricted in scope. These problems are not limited to the Seto Inland Sea; similar effects of human activity have been observed in Tokyo Bay, Ise bay and other areas. Many other enclosed coastal seas throughout the world are facing similar problems. The first EMECS conference was held in Kobe in 1990 to study these problems on an international scale, with the involvement of not only researchers but private citizens,

companies and government agencies. The second EMECS conference was held in Baltimore, Maryland in 1993, and the third EMECS conference is scheduled to be held in Stockholm, Sweden in 1996.

The management of the environment in enclosed coastal seas is written into the Agenda 21 of the United Nations'Global Summit, and it will undoubtedly continue to be an issue of crucial importance worldwide. The fact that the EMECS conferences have attracted worldwide attention is due to the support of all of those involved in this area, and it is a cause for profound satisfaction and gratitude.

The International EMECS Center was set up to provide a wide range of services. It will promote the holding of future EMECS conferences. It will hold and support workshops involving the environmental management of enclosed coastal seas. It will work to expand the international network of persons and organizations involved in enclosed coastal seas work. It will sponsor training sessions to transfer the techniques for the management of enclosed coastal sea environments to developing countries. It will hold training sessions to cultivate researchers and government officials to work for the environmental preservation of enclosed coastal seas. It will gather and disseminate information on enclosed coastal seas. And it will develop educational materials relating to the environment.

In order to realize all of these objectives, capable personnel and abundant funding will be required. I would like to take this opportunity to ask for the understanding and support of all those involved in EMECS activities.

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Commemorative International Symposium for the Establishment of International EMECS Center



Issue No. 6 of the EMECS Newsletter reported on the progress of the preparations for the establishment of the International EMECS Center as an internationally-oriented organization for the environmental management of enclosed coastal seas. The Center became a reality. The Executive Committee followed by the Board of Directors and the Scientific and Program Council met for the first time in the city of Kobe on the morning of November 30, 1994. Directors, scientific and program council members and executives were elected as shown in the table.

To commemorate the establishment of the Center, an international symposium sponsored by the Center was held on the afternoon of the same day at the Shin-Kobe Oriental Hotel in Chuo Ward, Kobe. At the symposium, speeches were heard from some of the scholars and representatives from international organizations and government agencies who helped make the Center a reality, and a panel discussion was also held. The symposium was attended by more than five hundred persons including members of the general public.

1. Opening Ceremony of the International Symposium

The international symposium opened with words of welcome from Dr. Jiro Kondo, president of the International EMECS Center, and Mr. Toshitami Kaihara, governor of Hyogo Prefecture and chairman of the International EMECS Center board of directors. Speeches were also heard from the invited guests who included Mr. Koujiro Takano, director-general of the Department of Multilateral Cooperation of the Japanese Ministry of Foreign Affairs; Mr. David Carroll, secretary of the Department of the Environment of the State of Maryland, U.S.A. and Dr. Richard Meganck, director of the International Environment Technology Centre (IETC) of the United Nations Environment Programme (UNEP).



Mr. David Carroll

Secretary of the Department of the Environment of the State of Maryland

(summary) Considering the past successes of the EMECS conferences, I believe the establishment of the International EMECS Center is an important first step toward international cooperation in this area.

When the late Dr. Ian Morris of the University of Maryland visited Japan, he spoke on the common problems in preserving the environment of enclosed coastal seas. With its location on Chesapeake Bay, Maryland has worked for many years in cooperation with neighboring states to preserve the environment of this enclosed coastal sea, and we felt that the same cooperative efforts should be implemented world wide. We look forward to working with Hyogo Prefecture and participating in international cooperative efforts under the auspices of the Center. After Mr. Carroll's address, the text of a proclamation by Governor Schaefer of Maryland establishing an International EMECS Center Day to commemorate the Center's establishment was read and handed by Mr. Carroll to Toshitami Kaihara, chairman of the Executive Committee.



Dr. Richard Meganck

Director of UNEP IETC

(summary) I begin with a note of thanks to the Government of Japan, Hyogo Prefecture and other related organizations for their important decision to serve as host for the International EMECS Center. If our experience in establishing an International Environmental Technology Center in Osaka and Shiga provides any insight, EMECS has a solid future.

I might also note that the EMECS relationship to the Association for the Environment Conservation of the Seto Inland Sea mirrors our very positive experience with the IETC supporting foundations; Global Environment Center (GEC) in Osaka and International Lake Environment Committee Foundation (ILEC) in Shiga. There is much that Japan has to offer in the field of environment and development. Who would have predicted that the land of Minamata would transform itself in one generation into a land where nature is respected and savoured? Japan is well placed in the international arena to serve as an example for developing countries in their quest for sustainable development of their enclosed and semi-enclosed seas.

We do not believe that jurisdictional constraints nor political differences should hinder regional cooperation aimed at better managing these areas, whether it comprises a national or regional marine commons. On behalf of the United Nations Environment Programme, I promise our support and collaboration.

2. Keynote Speech "Seven Curses of Success"



Mr. Bill Long

Director for the Environment
Organization for Economic Cooperation
and Development (OECD)

I decided to address a subject that I have encountered in various forms over the years in my work on international environmental issues; the concept of success.

Western culture, as do others, I am sure, places great value on success. So, on numerous occasions, we all like to wish to ourselves, and to others, "great success."

First, success can be corrupting and can breed arrogance. It can change personalities, and lead to the loss of friends and colleagues when we convey to others that we "know it all," or have risen above them. This is certainly not, however, something I fear for those of us associated with our fledgling EMECS center.

Second, success can cause greed. One success can trigger an insatiable appetite for more. There is never "enough."

Third, we may not recognize success when it arrives, or we may misjudge it. Here I would cite the euphoria associated with the fall of the Berlin Wall. Current world conditions and events demonstrate the fallacy of that notion.

Fourth, we have difficulty in measuring success. Many environmentalists contend that there is need for a new measuring rod for a nation's wealth . . . a "Green GDP" . . . one which also takes into account the stock and quality of the nation's natural resources base and its environmental values.

The fifth "curse" is the strong differences of opinion that often exist about what actually constitutes a "success." A success for whom? For every "winner" there is, often, a "loser."

Environmental policymakers seem to be talking about, and searching for, so-called "win-win" situations where all sides come out ahead, thus reducing the opposition to new policy proposals.

Sixth, for some individuals, "success" can be something to be feared when it comes too near. The question is, what do we do when the quest is won?

Seventh, and last, for a variety of reasons, some of which are apparent and other completely inexplicable, individuals often refuse to recognize success, or to admit to having observed it.

This last point--failure to recognize or to acknowledge success -- has, in my view, long been a major curse in the environmental field. The identification of "success stories" is not something the

environmental community is still very comfortable with.

For my part, I do not want to see the country lose heart, to conclude that the great environmental enterprise, although well-intentioned, is beyond our capability. It stands conspicuously apart from so many other failed government efforts on crime, drugs, welfare and education. We need to make more of our education.

A major concern of governments at the moment is the transport sector. The need to find, and employ, improved strategies and policy tools to address non-pollution problems is often on the minds of many of you in this audience. This represents the major challenge for the protection and rehabilitation of inland and coastal seas in most parts of the world.

Earlier this year the OECD conducted a major examination of Japan's environmental performance. One aspect that we singled out for special praise was the manner in which Japan has embraced the Sustainable Development concept, and has moved to the front internationally in the environmental field. Not only has Japan called for and proposed new approaches to global problems, but it has backed this up by tangible commitments of intellectual, technological and new and substantial financial resources. And, we have a good example of this leadership right before us: the establishment of the EMECS Center.

One final area where I believe that notable achievements are being made in environmental management -- also with important implications for the management of inland seas and coastal areas. Today, there is what amounts to a "giant experiment" underway in OECD countries to find ways to achieve their environmental goals more efficiently, and at much lower cost. Particular attention is being given to the use of market-based incentives and disincentives, including new types of eco-taxes, reform of overall national tax systems, and the introduction of tradeable permit systems for managing both natural resources and environmental pollutants.

There is a "success story" which relates to the growth of voluntary approaches for managing pollution and natural resources. This has been possible only because government, industry and environmental groups have found that it is mutually advantageous to work together. For years there have been calls for the development of "new partnerships," without much response; now we find that this is actually happening, and with some important, positive results.

In its future efforts to promote the improved management of enclosed coastal seas -- involving as it must be such a wide spectrum of government institutions, competing land and water uses, and special interest groups -- I would propose that this matter of "partnership building" become a high priority for the EMECS Center, and indeed a major theme.

3. International Panel Discussion

The academic members of the Board of Directors of the Center, who are active in environmental management of coastal seas throughout the world, participated in a panel discussion the theme of which was "Translating Science for Policymakers and

Citizens: Examples, Problems, and Ideas for More Effective Coastal Seas' Programs.

Dr. Wayne H. Bell chaired the panel discussion. And Dr. Bengt-Owe Jansson, Dr. Tomotoshi Okaichi, Dr. Arsen Pavasovic, Dr. Twesukdi Piyakarnchana and Dr. Thomas J. Schoenbaum joined as panelists and pointed out the present condition of and problems in their coastal seas.



Dr. Wayne H. Bell

Vice President for external Relations
Center for Environmental
and Estuarine Studies (CEES)
University of Maryland System, U.S.A.

The question is how we turn effective science into better policy; and how good research is linked to, in fact, the citizens and levels of support that we need to maintain long-term commitment to the preservation of our coastal seas.

There are signs of course, and we have known about them for some time, that the water qualities and other factors of our coastal seas are threatened. This is depicted here by showing the extent of low oxygen and actually anoxic oxygen-water in the Chesapeake Bay, in an area which we believe is expanding, as a sign of decreasing water quality. There are other signs as well. The increased concentrations of nutrients, the increasing numbers and, length of time of, plankton blooms that used to be simply seasonal phenomena, that now it extends over many months. And of course still other signs that are very obvious to those that would harvest the resources of these regions.

Much of our management in the historic past has been top down, and it is very important that it has been so. On the other hand there are the bottom up controls that lead to citizen understanding and stewardship. The types of environmental education that reach our young people and train the next generations of researchers. The things that get to the very culture and the very way of life in which we approach our coastal seas, and incorporate the environment into the kinds of decisions we make about how we conduct our daily lives.

What we need is a slightly different paradigm than just the traditional need for more research. We are looking again to the way in which we translate science, not only for top down control for more effective policy making and more effective and enlightened regulations, but also from the bottom up, to translate science in traditional ways that are not traditional, that is, to have young people understand what ecology is about, what it is we understand about coastal seas, and to realize that they are a part of this larger ecosystem, they are a part of the watershed.



Dr. Bengt-Owe Jansson

Professor and Director
Stockholm Marine Research Center
University of Stockholm, Sweden

We have an immense amount of data of the Baltic Sea although it is fairly large, we started looking at the Baltic sea as a total ecosystem in the late 1960's. I will take for granted for our discussion that as I feel it we have data enough to take strong measures from society to use the Baltic resources continuously. In this process, information is extremely important.

In this process of information transfer, I can see three phases. The first one is to decide the content of the information. Secondly you have the stage that ways of information. And the third one, and equally important, is the reception of information. Concerning basic information, I have just picked two examples which I feel are so important that everybody should know them. The first one is the concept of nature as our life support system. The second example concerns the feedback couplings.

Here are some examples of specific knowledge. First, time scales are important. When we are explaining for the public, that the total water residence time in the Baltic is 25 years, it follows from that if we could stop every pollutant outflow from the coast to the offshore, it would still take some ten or fifteen years until we see a success in the open waters. Much shorter along the coast, of course.

Bio-diversity stability is another concept. Large, complex systems might be fairly resilient, but we know from modeling that these large-scale living systems usually have several stability domains, areas where they can fluctuate back and forth a bit but when we push them too far they are going off to quite another stability domain, where there are properties maybe we do not like.

And the last one, predictability, is difficult. Even if we have a lot of data, the large ecosystems are so dynamic, and even difficult to understand, so we have to take decisions without being able to say, well, we can predict this with 90% certainty or whatever.

Now, the different goals, the different targets, of your information, what are those? Citizens' groups are also both inspiring, and to a great extent promote a dialogue which we have to be very careful to always encourage and take very good care of.

And last, the political support is most essential. It even happens that they take some of their collaborators and just come and ask us. But they have a longer way to go than to convince their party what kind of measures we should take, so this is another most important dialogue.



Dr. Tomotoshi Okaichi

Chairman, National Council for the
Environmental Management of the
Seto Inland Sea, Environment
Agency of Japan.
President, Kagawa University

The problems of red tide in the Seto Inland Sea have appeared and have become much more punctuated since the 1970's. The total area of the Inland Sea is 22,000 square kilometers. In the

1960's, there were only 10 occurrences of red tide per year; and industrial output was less than 10 trillion Yen annually. But as you are aware, the government undertook rapid economic growth policies and industry grew in the coastal zones. In 1977, the total output became 40-50 trillion Yen per annum, and at that time red tides occurred 250 times, which increased 299 red tides in 1976; that was the peak.

Before that, in 1973, the Interim Act for the Preservation of the Environment of the Seto Inland Sea had gradually become much more effective. Since 1975, the number of red tides decreased dramatically. At the moment the total is 87 per annum, or about one third of the peak. Yet industrial output in the coastal zones has continued to increase, and at the moment the total output is 95 trillion Yen, or close to quarter of the whole GDP of Japan, produced by the industrial areas around Seto Inland Sea.

Despite the rapid economic and industrial growth we have been to contain red tides. I think that all of the people concerned with the Inland Sea coastal zones have made a great effort, especially with regard to the effectiveness of environmental regulations for the preservation of the Inland Sea and also the water treatment facilities for effluent water from industrial complexes have been put into place. Also the residents in this area have started to enhance their awareness as to environmental issues; fishermen in particular have enjoyed much more sophisticated fish husbandry techniques.

When a problem occurs, researchers in the 13 prefectures can cooperate and joint projects can be participated in by more than one hundred researchers and people from academia together. This is a great asset: the research support environment. As Dr. Bell and Professor Jansson mentioned, we can translate science into practices and activities. From the 1970's to 1990, research activities centered on the Inland Sea have been translated into actual policies for the preservation of the environment. But in order to proceed with research activities we would like to suggest a number of policy proposals.



Dr. Arsen Pavasovic

Adviser (former director)
UNEP Priority Actions Programme
Centre

First I would like to say three points, just to pinpoint three basic facts. One is that one of the most important functions of management is decision making, and sound decision depends on the role of science. On the role of science which consists of data, information, assessment, evaluation, which altogether we could call knowledge; and interpretation, interpretation at various levels of management. From one side, in the scientific world, we have different scales and different disciplines, but more or less these scales are corresponding to management levels, from global to local management level.

The second point is that we were all witnessing the

consequences of uncontrolled development, but one of the consequences was a general awareness of the need for coastal zone management.

And the third fact is that as a consequence a new era of ocean and coastal studies started.

And introducing then few new approaches, preparing general guidelines for each type of these development projects, and then expecting from local authorities and institutions to develop specific guidelines for each site-specific project, and then, requesting monitoring and re-evaluation criteria as part of the environmental impact assessment, and then defining or trying to suggest to the countries the responsibilities and liabilities which should lay during all the lifetime of the project to the entrepreneur.

And we found that in these conditions, although we were not able to apply a scientific approach, we were quite successful. And naturally, for a number of big projects, we had to apply then the precautionary principle. When we were able to understand the level of uncertainty, within the knowledge of the problem, then we were able to suggest, in a more or less cautious, precautionary or safe way, the decisions to be made. Our experience indicates that we are not in the possession of a comprehensive set of scientific information about the congestion in coastal areas as a global change.

I will conclude my presentation with one general conclusion that if we want to have success in coastal zone management projects, we have to have involved national and local scientists, from the very beginning to the end, and that is maybe a basic understanding of the role of science in the projects.



Dr. Twesukdi Piyakarnchana

Professor Emeritus
Chulalongkorn University, Thailand
Advisor of the National Research
Council of Thailand

We seem to understand that the success or failure of the prevention or conservation of the natural, beautiful environment, especially in the coastal zone area of Thailand depends on getting communication from the natural resources scientists through to the policy makers, decision makers, and also to the citizens at large.

I can say that all types of mass media produce articles that deal with the environment. I am not so sure that the policymakers will have time to read them or not. It seems to me that the time within ten years in the future, if they are not interested in the matter of environment it seems to me they will not succeed in polics, that is my expectation.

If you look further at the Gulf of Thailand, we see a lot of waste from the land. Nutrients, and some heavy metals, something like that, spread out like this and then go to the Gulf. At the present time, we are in a state of what they call over-fishing, over-exploitation.

In 1961, we could see about 300,000 hectare of mangrove forests around the coastal zone of the Gulf of Thailand. But 30 years later, that means in 1991, only half of them are left. So you can see that the changing land of the mangrove forest, marine culture, is one of the main resources, 64% change to marine culture, mainly prawn.

To my mind, to translate our information into a policy statement for the policy makers, we need to use three basic criteria: environmental quality, marine pollution, and marine resource exploitation.

I would like to recommend as my conclusion that we should strictly enforce the new conservation laws, this is very important for Thailand; and also bring the concept of sustainable development into the material of the law, for example, the Environment Quality Act, Fishery Act and so on.

My second point would be to decentralize the management power for the natural resource to the local people. The third one is to encourage the participation of the small-scale fisheries' group in conservation, that means in the fishery part, let them participate. The last one is important and also has been suggested by some other groups dealing with the fishery resources that Thailand should bring a concept of fishery rights into our law.



Dr. Thomas J. Schoenbaum

Director of the Dean Rusk center for International and Comparative Law University of Georgia, U.S.A.

First, I believe it is important to take, and to get the public to take, an integrated approach to preservation of enclosed inland seas. By that I mean that it is not enough to look merely at the sea itself, one must look at the land and the interaction between the land and the sea.

My second point is that we must do a better job in getting citizens and policy makers to focus on ecosystems. We must enhance communication between the scientists and politicians and managers. We must translate Science into Law. An example of this is the Wetland Law in the United States.

A third point that I want to make is that protecting enclosed inland seas around the world will most often involve the passage of new, comprehensive laws, and programs. This is because ecosystems and enclosed inland seas cut across political jurisdictions. In the United States, we have found it necessary to pass special laws that cut across political lines; and each state and the Federal Government has special laws relating to coastal area management and preservation of enclosed inland seas.

My fourth point is that passing a law alone is not enough. The laws must be implemented and the laws must be accepted by ordinary citizens. The way to get implementation of the law is through, first of all, education, and second through public participation.

My fifth point is how do we get people to comply with the law.

In our experience it is best to avoid force and compulsion as much as possible. There are various incentive and disincentive techniques. This is the economist's approach and it is often more efficient than government regulation alone.

My sixth point is how do you resolve disputes in the coastal area. In the United States, we tend to resolve disputes through litigation, through court action, and through confrontation; but I believe that this is not the way to resolve disputes in a constructive manner. Instead, we should create alternative systems of dispute resolution, cooperative ways of resolving disputes. We should institute systems of mediation between governments, citizens, environmental groups, and companies. There should be much cooperation because all parties have basically the same interest, the preservation of the resource. The companies as well as citizens and government all want to preserve the resource. It is a question of how to use the resource in a sustainable way; and if parties realize this it is usually possible to come to a cooperative method of resolving disputes.

Conclusion

Dr. Wayne H. Bell

I want to summarize just a couple of points for the panels:

One of them is the need to "translate." There is no question that in fact scientists must leave some of their traditional roles and play a larger role in getting information in an understandable form to management and citizens alike.

The second one: think big! It is clear that we need to understand whole ecosystems and the involvement of the land and the effects of development and other aspects of land use on our coastal seas.

The third is: involve. We need to provide a forum for developers, industries, citizens and others to participate together to realize what really, in fact, are their common goals for a better way of life, a high quality of life, which often involves our coastal waters in one form or another. And to realize those goals on the basis of sound scientific advice, economic advice, and even cultural advice from the individuals who will be most impacted.

Finally, I think there is something new under the sun. There are needs for new regulations, new organizations such as the International EMECS Center, and new environmental concepts. Truly we need to maintain a global point of view, while we act locally.

Second Meeting of the Executive Committee Held

The executive committee for the International EMECS Center met for the second time in Kobe on March 27, 1995. The executives decided on the supplementary budget for fiscal 1994 and the projects and budget for fiscal 1995. They also discussed how to develop the International Fund for the Center and heard reports from the secretariat on the status of projects implemented during the financial period ending March 1995.

Members' List of the officials of the International EMECS Center

President	Jiro Kondo	President, Central Council for Environmental Pollution Control, Japan
Board of Directors		
Jiro Kondo	Toshitami Kaihara	President, International EMECS Center President, Assoc. for Environmental Conservation of the Seto Inland Sea
Kumao Kaneko		Former Director, Atomic Energy Div. Japanes Ministry of Foreign Affairs
Tsugumi Suzuki	Tomotoshi Okaichi	Director, National Institute of Environmental Studies President, Seto Inland Sea Environmental Conservation Council
Takeshi Goda	David A.C. Carroll	Chair, Research Institute of the Seto Inland Sea Secretary, Department of Environment Maryland State (U.S.)
Wayne H. Bell		Vice President for External Relations CEES, Univ. of Maryland System (U.S.)
Thomas J. Schoenbaum		Prof. and Director, Dean Rusk Center Univ. of Georgia (U.S.)
Bengt-Owe Jansson		Director, Baltic Marine Center Univ. of Stockholm (Sweden)
Twesukdi Piyakarnchana	Jiayi Zhou	Adviser, National Research Council of Thailand Prof., N. Pacific Marine Science Organization(China)
Bill Long	Arsen Pavasovic	Director for Environment, OECD Consultant, UNEP PAP/RAC
Executive Committee		
(chair)	Toshitami Kaihara	Governor, Hyogo Pref.
(director)	Yoshio Ookawa	Former Director General of U.N. Bureau Japanese Ministry of Foreign Affairs
Takashi Kaji		Managing Director of Japan Environment Assoc.
Kazuo Nakagawa		Governor, Osaka Pref.
Toshio Endo		Governor, Tokushima Pref.
Masaya Nishio		Mayor, Osaka City
Kazutoshi Sasayama		Mayor, Kobe City
Sokichi Kametaka		President, Kobe Steel, Ltd.
Hiroshi Ooba		President, Kawasaki Heavy Industries, Ltd.
Shinobu Tousaki		President, Kawasaki Steel Corp.
Syunsaku Hashimoto		President, Sakura Bank, Ltd.
Yoshihisa Akiyama		President, Kansai Electric Power Co., Inc.
Shinichirou Ryoki		President, Osaka Gas Co., Ltd.
Choji Ashio		Vice-Governor, Hyogo Pref.
(Executive Director)	Jiro Nagata	Executive Director, Assoc. for Environmental Conservation of the Seto Inland Sea
Scientific & Program Council		
Takeshi Goda	Tomotoshi Okaichi	Prof. Emeritus, Kyoto Univ. President, Kagawa Univ.
Kumao Kaneko	Nobuo Kumamoto	Prof., Dept. of Int. Studies, Tokai Univ. Prof., Faculty of Law, Hokkai Gakuen Univ.
Masataka Watanabe		Director, Water and Soil Environment Div. National Institute for Environmental Studies
David A.C. Carroll		Secretary, Dept. of Environment Maryland State (U.S.)
Wayne H. Bell		Vice President for External Relations CEES, Univ. of Maryland System (U.S.)
Thomas J. Schoenbaum		Prof. and Director, Dean Rusk Center Univ. of Georgia (U.S.)
Bengt-Owe Jansson		Director, Baltic Marine Center Univ. of Stockholm (Sweden)
Twesukdi Piyakarnchana	Jiayi Zhou	Adviser, National Research Council of Thailand Prof., N. Pacific Marine Science Organizatio(China)
Bill Long	Arsen Pavasovic	Director for Environment, OECD Consultant, UNEP PAP/RAC
Auditor		
Kunio Orino	Hiroyuki Kisaka	Vice-Governor (Treasury), Tokushima Pref. Managing Director, Kubota Ltd.

Great Hanshin Earthquake hit International EMECS Center

In the early morning hours of January 17, 1995, Japan time, a devastating earthquake measuring 7.2 on the Richter scale struck the heavily populated southern region of Hyogo Prefecture, from the island of Awaji to the city of Kobe and the area between Kobe and Osaka. Houses and buildings in Kobe and its environs tilted and collapsed and fires broke out in many areas. The transportation network was severely damaged by buckled and toppled expressway supports and elevated sections of the "shinkansen" (bullet train) railway which collapsed. Electricity, gas, water and phone lines were cut. 5,500 people died, 90,000 homes were destroyed and 300,000 people sought refuge in schools and other emergency centers. The Japanese government and Hyogo Prefecture, Kobe City and other local governments in the affected areas are working to restore the quake-devastated regions as quickly as possible. Effective emergency management systems used in other parts of the world are being studied in an effort to apply the lessons learned from the earthquake and improve disaster preparedness in urban planning efforts.

The employees of the International EMECS Center suffered damage to their residences, but fortunately none were killed or injured. The Center personnel are grateful to all of those at home and abroad for their expressions of concern and offers of assistance.

The International EMECS Center, established less than two months before the earthquake, had been located in downtown Kobe. However, this building was partially destroyed in the earthquake and was subsequently torn down. Thanks to the assistance of Hyogo Prefecture, temporary offices for the Center have been established. In the difficult circumstances following the earthquake, with frequent aftershocks, lack of water and gas in almost every area, and long commutes necessitated by the disrupted transportation network, Center staff members retrieved the minimum necessary documents and equipment from the damaged building and worked hard to restore the Center. As we go to press, the services of the International EMECS Center have finally resumed.

However, the earthquake caused considerable damage to equipment and records, and some of the data for the EMECS Newsletter Mailing list were lost. It is therefore possible that some readers may suffer some inconvenience as a result. The staff asks for your patience and understanding as they work to restore operations to normal.



(Chairman Kaihara, ivestigating the damaged area)

Forthcoming Conferences

(1995)

May 14 ~ 16

1st Specialized Conf.on River
Basin Management for Sustainable
Development
Kruger, National Park
Contact:Secretariat
Address:P.O.Box 82,Irene 1675
South Africa
Fax: + 27 12-63-1680

June 13-15

Black Sea Regional Conf.on
Environmental Protection Technologies
for Coastal Areas
Varna, Bulgaria
Contact:Paskalev
Address:c/o Union of Scientists in
Bulgaria
35 Oborishte Str,Sofia 1504,Bulgaria
Fax: + 359 2-44-15-90

June 19-23

The Offshore Oil & Gas Industry and
Coastal States:
An International Seminar on Impact and
Options for Planning and Management
Aberdeen, Scotland, U.K.
Contact:Center for Environmental
Management and Planning
Address:c/o AURIS Business Center

23 St., Machar Drive, Old Aberdeen, AB2
1RY, Scotland, U.K.
Tel: + 44 1224-272483
Fax: + 44 1224-487658

Oct.17-20

2nd Int.Sympo.on Wastewater
Reclamation and Reuse
Iraklio,Crete,Greece
Contact:Secretariat:Furnaraki,Municipal
Enterprise for Water Supply and
Sewerage of Iraklio
Address:1 Vironos Street 71202

Iraklio,Crete
Greece

Tel: + 30 81-245-851
Fax: + 30 81-245-858

Oct.21-25

WEFTEC '95
(68th Annual Conf. & Expo.
of Water Environment Federation)
Miami Beach, Florida, U.S.A.
Contact:Secretariat

Address: Water Environment Federation
601 Wythe St.,Alexandra, VA 22314-
1994
U.S.A.

Tel: + 1 703-684-2464

Oct.24-27

2nd Int.Conf.on the Med.Coastal
Environment

(MEDCOAST 95)

Tarragona,Spain
Contact:Secretariat
Address:Laboratori d'Enginyeria
Maritima(LIM/UPC)
Universitat Politecnica de Catalunya
Gran Capita s/n, modul D-1
08034 Barcelona Spain
Tel: + 34 3-401-64-68
Fax: + 34 3 401-73-57

Oct.23-27

6th Int.Conf.on the Conservation &
Management of Lakes
(Kasumigaura'95)
Tsuchiura & Tsukuba,Japan
Contact:Secretariat
Address:c/o Ibaraki Pref.Gov.
5-38,Sannomaru 1-chome,Mito 310,Japan
Tel:+81 292-24-6905
Fax:+81 292-33-2351

November 5-9

2nd Society of Environmental Toxicology
& Chemistry (SETAC) World Congress
Vancouver, BC, Canada
Contact: the SETAC Office
1010 North 12th Ave., Pensacola
FL 32501-3307, U.S.A.
Fax: +1 904-469-9778
Tel: +1 904-469-1500

From Secretariat

Previous issues of the EMECS Newsletter have been published by Hyogo Prefecture. Starting with this issue, the EMECS Newsletter will be published by the International EMECS Center.

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