



Cover: Canberra, Australia.  
Photo: W.Y. Chiau

# Marine Resource Conservation Working Group Annual Meeting

11-13 June 2002, Canberra, Australia

## Bulletin on APEC Marine Resource Conservation

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The 15<sup>th</sup> APEC Marine Resource Conservation Working Group (MRCWG) Meeting was held from 11-13<sup>th</sup> June 2002 in Canberra, Australia, and was co-hosted by Australia and Canada. The Meeting was attended by 34 participants from 12 economies, namely: Australia; Brunei Darussalam; Canada; Chile; the People's Republic of China; Hong Kong, China; Japan; Republic of Korea; New Zealand; Papua New Guinea; Chinese Taipei; and the United States of America.

Each economy presented a report on their domestic progress on marine resource conservation; their contribution to international marine resource conservation; and efforts being taken to advance domestic and international marine-related policy initiatives, including domestic legislative arrangements and contributions to international oceans governance.

Five new project proposals covering coral reefs; introduced marine pests; ocean models and information; marine environmental training and education; and oceans governance arrangements were submitted to the group for APEC funding.

Other project proposals included an Ocean Law and Policy Research Network, a Roundtable Meeting on the Involvement of the Business/Private Sector in the Sustainability of the Marine Environment, a Water Quality Criteria or Standards project, and a project on Harmful Algae Management and Mitigation.

The ranking process for these project proposals is ongoing within the MRCWG, for submission to the Budget Management Committee later this year.

The Working Group noted that the Seoul Ocean's Declaration has set important timeline directions for the sustainable use and protection of marine resources in the region. To consider ways of adapting the Seoul Oceans Declaration in its work charter, the MRCWG agreed that a voluntary internal oceans policy group would be established to explore approaches to integrated oceans and coastal management. Australia has agreed to be the focal point for the group.

Vietnam has offered to host the next joint MRCWG and Fisheries Working Group meeting in 2003.



Kaoshiung Harbor, Taiwan.  
Photo: W.Y. Chiau

# *APEC Marine Resource Conservation Working Group*

## *Report of the 15<sup>th</sup> Meeting*

*11-13 June 2002, Canberra, Australia*



*Group photo of the 15<sup>th</sup> APEC MRC WG.*

The 15<sup>th</sup> APEC Marine Resource Conservation Working Group Meeting was held from 11-13<sup>th</sup> June 2002 in Canberra, Australia, and was co-hosted by Australia and Canada. The Meeting was attended by 34 participants from 12 economies, namely: Australia; Brunei Darussalam; Canada; Chile; the People's Republic of China; Hong Kong, China; Japan; Republic of Korea; New Zealand; Papua New Guinea; Chinese Taipei; and the United States of America (APEC/02/MRC 15/1.0).

### **Opening**

The meeting was opened by Malcolm Broom of Hong Kong, China, the host economy for the 14<sup>th</sup> Meeting in 2001. Dr. Broom welcomed delegates to Canberra and undertook roundtable introductions.

### **Election of Officers and Adoption of Agenda**

Dr. Broom then facilitated the election of officers for the meeting. The officers were: Alison Russell French, Lead Shepherd MRCWG (Australia) as meeting chair; Laura Richards, Delegate (Canada) as meeting co-chair; and Sam Baird, Meeting Overseer (Canada) as rapporteur. The chair sought and obtained approval for the revised agenda (APEC/02/MRC 15/2.1).

### **Lead Shepherd's General Observations**

The Lead Shepherd provided general observations on the MRCWG's work over the year 2001/2002. These included comments on:

(1) The Workshop on the Involvement of the Business/Private

Sector held in October 2001 in Kaohsiung, Chinese Taipei;

(2) The Workshop on Introduced Marine Pests held in November 2001 in Hobart, Australia;

(3) The 1<sup>st</sup> APEC Oceans-Related Ministerial Meeting held in April 2002 in Seoul, Korea;

(4) The Seoul Oceans Declaration;

(5) The APEC Integrated Oceans Management Forum II held in June 2002 in Canberra, Australia; and

(6) Participation at the SOM 1 Joint Fora meeting held in February 2002 in Mexico City, Mexico.

The activities sponsored by the MRCWG reflected strong progress on a number of important issues.

### General Developments in APEC

Timothy Hsiang, APEC Secretariat, provided a detailed presentation (supported by a written submission) on (APEC/02/MRC 15/4.10, 4.11, 4.12). He also advised the meeting on the 13<sup>th</sup> Fisheries Working Group (FWG) meeting, held in Lima, Peru in May, with particular reference to matters of interest to MRCWG delegates, including the ranking of the FWG's 2003 project proposals. He informed the meeting that the coral reefs and fisheries network, a joint FWG and MRCWG proposal, had been ranked number one by the FWG.



Penghu, Taiwan.  
Photo: W. Y. Chiau

### Round Table Statements

Each economy presented a report on their domestic progress on marine resource conservation; their contribution to international marine resource conservation; and efforts being taken to advance domestic and international marine-related policy initiatives, including domestic legislative arrangements and contributions to international oceans governance.

#### Australia

Discussion surrounded  
(1) Implementation of regional marine planning  
(2) Marine protected areas  
(3) Upcoming coastal policy initiative  
(4) World Summit on Sustainable Development (WSSD) engagements  
(5) the Environmental Protection and Biodiversity Conservation Act (APEC/02/MRC 15/5.1).

#### Brunei Darussalam

Discussion surrounded  
(1) Coastal zone management planning  
(2) International coral reef initiatives  
(3) Conservation of endangered species

(4) Implementation of guidelines in domestic fisheries  
(5) Critical habitat protection  
(6) Current and future domestic legislative initiatives (APEC/02/MRC 15/5.2).

#### Canada

Discussion surrounded  
(1) Contribution to the development and importance of the Seoul Oceans Declaration  
(2) Fisheries and Oceans Canada's Action Plan to implement the sustainable development strategy  
(3) Progress in scientific research  
(4) Global Programme of Action (APEC/02/MRC 15/5.3).

#### Chile

Discussion surrounded  
(1) Global Programme of Action  
(2) Integrated approach to coastal zone management  
(3) Sustainable fisheries management  
(4) Reduction in marine pollution  
(5) Environmental aspects of the new free trade agreement between Chile and the European Union (APEC/02/MRC 15/5.4).

#### The People's Republic of China

Discussion surrounded  
(1) New domestic law on Sea Area Use Management  
(2) Marine environmental monitoring system  
(3) Marine protected areas  
(4) New oceans satellite (APEC/02/MRC 15/5.5).

#### Hong Kong, China

Discussion surrounded  
(1) Domestic program to prevent marine pollution and improve water quality  
(2) Upgrading of sewage treatment works  
(3) Marine parks  
(4) Conservation of corals  
(5) Deployment of artificial reefs (APEC/02/MRC 15/5.6).

#### Japan

Discussion surrounded  
(1) Domestic measures to conserve the environment and ecosystems  
(2) Supply of safe marine products  
(3) Land based sources of marine pollution  
(4) Conserving coastal environments  
(5) Conserving the environment from the upper catchment to the lower catchment (APEC/02/MRC 15/5.7).

#### Republic of Korea

Discussion surrounded  
(1) Construction of artificial wetlands  
(2) Information systems for coastal management  
(3) Coastal re-adjustment plan (APEC/02/MRC 15/5.8).

#### New Zealand

Discussion surrounded  
(1) Domestic biodiversity strategy  
(2) Oceans policy development  
(3) United Nations Fish Stocks Agreement  
(4) Ballast water  
(5) Risks to the marine environment (including introduced marine pests)

(APEC/02/MRC 15/5.9).

### **Papua New Guinea**

Discussion surrounded

- (1) International and domestic commitments
- (2) Domestic legislative framework for oceans governance
- (3) Domestic marine conservation and protection programs
- (4) Regional marine conservation and protection programs (APEC/02/MRC 15/5.11).

### **Chinese Taipei**

Discussion surrounded

- (1) Land-based pollution control
- (2) Oil spill emergency response
- (3) Ecological research program
- (4) Ocean models and information systems (APEC/02/MRC 15/5.12).

### **USA**

Discussion surrounded

- (1) "Whitewater to Bluewater" ecosystem-based pilot partnership project
- (2) Ocean observing system and ARGO float arrays
- (3) U.S. Commission on Ocean Policy
- (4) long-standing legislative mandates (APEC/02/MRC 15/5.13).

### **Discussion**

- The meeting believed the

reports were useful and informative and agreed to continue both oral and written reports at future MRCWG meetings, noting progress on initiatives such as the Seoul Oceans Declaration and the Global Programme of Action.

- The meeting thanked Chinese Taipei for the preparation of the combined MRCWG and FWG Bulletin and member economies were requested to continue to provide contributions for this publication through the Lead Shepherd. The next edition of the Bulletin will focus on marine protected areas with a submission deadline of 30 June 2002.

### **Coordination with Fisheries Working Group (FWG)**

Mr. James Lee, Australian delegate to the FWG, provided a presentation on the annual meeting held in Lima, Peru 20<sup>th</sup> to 23<sup>rd</sup> May 2002. The presentation focused on the development of a strategic framework for the FWG, progress against the Osaka Action Agenda, and year 2003 project proposals (APEC/02/MRC 15/6.0 and APEC/02/MRC 15/6.1).

Copies of projects of interest to MRCWG members will be circulated

via the APEC Secretariat. Particular interest was shown in the projects on marine debris, deepwater fisheries and the network of aquaculture centres for the Americas.

### **Year in Review of MRCWG Projects**

Project overseers/sponsors provided presentations on the current status and results of the following projects.

- Development and Validation of Analytical Methods, Standards and Reference Materials for Seafood Product Safety and Certification--

A steering committee was established and a meeting was held in Canada during 2001; budget was rearranged to procure standards and reference materials to be provided to economies; project is on schedule to be completed by end of 2002.

- Application of Monitoring and Mitigation Technologies of Harmful Algal Blooms (AMMHAB) in APEC Economies

This project was not funded in 2001 (at the BMC level). Canada will circulate the final report of the project and



Xiamen, China.  
Photo: W. Y. Chiau

- summary recommendations.
- Workshop to Exchange Information and Improve the Pacific Region Response Capabilities to Spills of Oil and Hazardous Materials
 

USA reported verbally that this project has been delayed and will commence in 2003.
  - Workshop on the Modern Approaches to Linking Exposure to Toxic Compounds and Biological Effects
 

The Republic of Korea and Russia are joint project overseers.  
An organizing committee for the workshop was established in December 2001. The committee is preparing to facilitate a workshop end-September in the Korea Ocean Research and Development Institute (KORDI), Republic of Korea.
  - Ocean Models and Information System for APEC Region 2002
 

Since MRC 14 two workshops were held (Beijing and Taipei); one satellite ground station was established in Ho Chi Minh City and a steering committee meeting was held in Taipei; another 3 workshops will be held in the remaining months of 2002.
  - Whole of APEC Oceans Governance Forum – Canberra, June 2002
 

Canada/Australia reported that this Forum had been completed on 7th June 2002. It was attended by 62 participants from 13 economies. Seven working groups and four lead shepherds participated. A

summary of the outputs was provided.

- Integrated Oceans Management in the APEC Region Stage II – Canberra, June 2002
 

Canada/Australia reported that this project is on-track and is due to be completed in December 2002. The current inventory of oceans governance arrangements in Asia-Pacific and the domestic instruments used by economies for the management of their marine space and activities extends to about 650 pages.
- Workshop on Introduced Marine Pests – Hobart, Australia - November 2001
 

Australia/Chile reported that this workshop was held in November 2001. It was attended by 15 economies, private sector, and representatives from Fisheries and Transport working groups, IMO, and the South Pacific Regional Environment Programme
- Roundtable on the Involvement of the Business/Private

Sector – Kaohsiung, Chinese Taipei

- Roundtable was held in October 2001 and was attended by 8 economies; meeting report and summary conclusions were published in the APEC Bulletin on Marine Resource Conservation (Volume 3/3); Another Roundtable meeting will be held in Chinese Taipei in November 2002.
- APEC Marine Environmental Training Program
 

The first training program was held from 15 October – 2 November 2001 in Korea Ocean Research and Development Institute, Republic of Korea. A second training program will be held at KORDI on 12-13 August 2002.

The meeting agreed that project proponents would provide written progress reports on all ongoing projects. The meeting thanked the APEC Secretariat for the information on MRCWG projects it provided for this meeting and further requested the Secretariat to provide a similar summary table for future MRCWG meetings.



Photo provided by Environment Australia

### **Report on the Outcomes of the 1<sup>st</sup> APEC Oceans-Related Ministerial Meeting (AOMM)**

Republic of Korea reported that the 1<sup>st</sup> APEC Oceans-Related Ministerial Meeting was held from 22<sup>nd</sup> to 26<sup>th</sup> April 2002 in Seoul, Korea. The theme of the meeting was 'Towards Sustainability of Marine and Coastal Resources'. The meeting was attended by about 300 participants including Ministers and Senior Officials from APEC economies.

The meeting consisted of three parts: three Senior Officials Meetings (SOM) (Marine, Fisheries and Joint SOMs); a Ministerial Meeting; and an Ocean Seminar.

At the meeting, comprehensive discussions took place over 5 agenda items:

- Sustainable fisheries;
- Marine science and technology;
- Marine environmental protection;
- Integrated management of oceans and coasts;
- and, preparations for the WSSD.

The output product from the meeting was 'The Seoul Oceans Declaration'. Republic of Korea reported briefly on the text of the Seoul Oceans Declaration (APEC/02/MRC 15/8.0).

### **Lead Shepherd's Advance Statement**

The Lead Shepherd had provided a statement in advance of the meeting that outlined some new directions that she wished the MRCWG to consider. While there was support for strengthening the policy focus of the MRCWG, it was noted that this should be complementary to the strong scientific and technical cooperation focus which has been a



Hunan, China.  
Photo: W. Y. Chiau

strength of the working group to date. After discussion it was agreed that:

- The MRCWG pursue a greater role in integrating ocean and coastal programming within APEC. This would amount to working closely with other working groups and committees to share information on ocean and coastal matters and to encourage their participation on projects of joint interest.
- An 'Informal Group on Oceans Policy' be established to analyze the MRCWG's traditional and historic roles and the newer policy directions arising from leaders' statements; and develop a strategic policy direction for the MRCWG that strengthens its policy role on ocean and coastal matters within APEC. Australia will assume an ad hoc lead position for this Informal Group. All economies are encouraged to participate. Economies should identify their desire to participate and the

contact information of their representative before the end of September 2002. The Group will report on their work at MRCWG 16 at which time the MRCWG will decide the future direction of the Group.

- A team will be established to undertake a review of MRCWG operations in relation to the *APEC Action Plan for the Sustainability of the Marine Environment*; identify gaps; and recommend future actions. Australia will assume an ad hoc lead position for this team. All economies are encouraged to participate. Economies should identify their desire to participate and the contact information of their representative before the end of September 2002. The Group will report on their work at MRCWG 16.
- The meeting recommended that a proponent be found to scope a project that will define and determine the value of current marine-related activities across both domestic and international jurisdictions in Asia-Pacific, to be used to inform Ministers of the economic context of marine-related activities in the APEC region. (APEC/02/MRC 15/9.0)

### **MRCWG Operational Plan**

The Lead Shepherd presented a view on how an immediate (2003) and a forward looking operational plan could be developed. Following discussion it was agreed that the Lead Shepherd would facilitate the development of the immediate plan for circulation to economies for comments by the end of September and that a draft forward looking plan would be prepared for discussion at MRCWG 16 (APEC/02/MRC 15/10.0).



*A small fishing port in Taiwan.  
Photo: W. Y. Chiau*

### **New Project Proposals**

#### **APEC Coral Reefs and Fisheries Network**

This project was proposed by Australia and Thailand; Australia spoke to the proposal. The objective of the project is to create a network that links existing information on coral reefs and the fisheries they support. The proponents suggested that two nodes be created to implement the project, primarily through annual workshops and training and capacity building programs.

It was noted that this project had received high level support from Ministers and senior officials, including those of Indonesia and the Philippines, at the AOMM and that it was potentially a major regional contribution to the WSSD oceans agenda. Australia has invested significantly in the design of the project. A formal link from this project has been established with the 2001 FWG project on the development of industry standards for live reef food fish trade (LRFFT) (APEC/02/MRC15/11.3).

#### **APEC Member Profile Database of Ocean Governance Arrangements**

This project was proposed by Canada and Australia; Canada spoke to the proposal. The objective of this project is to incorporate the

findings of governance arrangements in each member economy in relation to integrated oceans management in a main database. A paper will also be prepared, to summarize the findings succinctly for each economy. This project builds upon the previous research completed on integrated oceans management in the APEC region, and follows on from the outcomes of the first Integrated Oceans Management Forum, held in Vancouver in December 2000. The proponents noted that this proposal is intended to finalize this initiative, and that the first two phases of collection and collation of research were supported by Canada and Australia (APEC/02/MRC15/11.2).

#### **APEC Ocean Law and Policy Research Network**

This project was proposed by Canada and Australia; Canada spoke to the proposal. The objective of this project is to develop a research network that supports the strategic policy direction of oceans issues within APEC.

This project will seek to expand the Australian Canadian Oceans Research Network (ACORN) to include researchers from around the Asia-Pacific (APEC/02/MRC15/11.1).

The United States noted that networks could be less costly and more informal, and that existing centres for ocean policy could be utilized.

Given the decision to form an MRCWG informal group on oceans policy and also in light of the forthcoming WSSD, the proponents decided to defer the proposal for one year.

#### **APEC Marine Environmental Training and Education Program (Year 3)**

This project was proposed by the Republic of Korea. The objective of this project is to continue the training programs held at the Korean Ocean Research and Development Institute for technical personnel and instructors from developing economies.

This will also include the development of manuals on practical means to address problems caused by the nutrients in sewage and persistent organic pollutants in marine sediments and oysters. This project will also support the work of the APEC Marine Environmental Training and Education Centre (AMETEC), as announced at the 1<sup>st</sup> APEC Ocean-related Ministerial Meeting in Seoul in April 2002 (APEC/02/MRC15/11.4).

#### **Third APEC Roundtable Meeting on the Involvement of the Business/Private Sector in the Sustainability of the Marine Environment**

This project was proposed by Chinese Taipei. The objective of the project is to share information, address common concerns and evaluate future options in relation to involving the private sector increasingly in sustainable marine activities. This meeting will provide a forum for stakeholders from relevant agencies, academia, business and nongovernmental organizations and will focus on the themes of integrated ocean and coastal management; marine protected areas; multilateral

cooperation in the region; and the role of NGOs in environmental education (APEC/02/MRC15/11.5). The meeting endorsed this proposal as a self-funded project.

#### **Development of a Management Framework for APEC Economies for use in the Control and Prevention of Introduced Marine Pests**

This project was proposed by Chile and Australia; Chile spoke to the proposal. The objective of this project is to develop a management framework—for reference in both domestic and regional contexts—to better and more collectively address problems caused by introduced marine pests and pathogens. The proponents suggested that this project is an example of a cross-sectoral issue, and will involve input from various APEC working groups, and also could be considered as a possible “pathfinder initiative”. The project will include a workshop that takes into consideration related international initiatives and findings from the Integrated Oceans Management Forum.

It was agreed to delete the term “risk management” from the title and throughout most of the project proposal so that “risk management” becomes a component of the project. The proposal will now more broadly encompass the range of activities, including scientific and technical, that are needed to address this issue (APEC/02/MRC15/11.6).

#### **Water Quality Criteria or Standards Adopted in the Asia Pacific Region**

This project was proposed by Hong Kong, China. The objective of this project is to collect and compile water quality criteria or standards that have been adopted by APEC economies, and to identify ways in which they are developed. The project would rely on the exchange of information between member economies and will

involve input from a nominated domestic contact point. By identifying a body of expertise in the region and circulating information on experiences in water quality management, this project will also build capacity across the Asia-Pacific.

Through their endorsement of the project, MRCWG members committed to provide relevant substantive information through their nominated contact points to the project overseer.

The meeting endorsed this proposal as a self-funded project.

#### **Strategy and Implementation of Harmful Algae Management and Mitigation in the APEC Region (SIHAB)**

This project was proposed by Chinese Taipei, and supported by the People’s Republic of China and Hong Kong, China. The objective of this project is to establish a continuing and open forum to strengthen and facilitate safe seafood trade in the APEC region.

This will be implemented through a symposium on harmful algae management and mitigation and training workshops focused on algal toxin identification and analysis. This project will also facilitate the exchange of information and

establish a close informal network of scientific experts on harmful algal blooms and marine biotoxins. This project will expand on the previous work of the MRCWG on algal blooms and red tides (APEC/02/MRC15/11.8).

Chinese Taipei offered to revise their proposal, and to fund the project from domestic resources. The meeting endorsed the proposal as a self-funded project.

#### **Ocean Models and Information System for APEC Region (OMISAR)**

This project was proposed by Chinese Taipei and supported by the People’s Republic of China and Hong Kong, China. Chinese Taipei spoke to the proposal. The objective of this project is to share oceanographic data across the APEC region, including the cross-validation of wave forecasts. Specifically, this project will involve the collection of marine environment data and the creation and maintenance of a databank to facilitate the exchange of this information. This will also facilitate the improvement of models for understanding hazardous events. This will build upon previous MRCWG projects on oceans observing and continue OMISAR activities in APEC (APEC/02/MRC15/11.9).

#### **Prioritization of projects seeking APEC funding**

Noting the Budget Management Committee’s (BMC) requirements,



*Penghu National Scenic Area, Taiwan.  
Photo: W. Y. Chiau*



East Coast Highway, Taiwan.  
Photo: W. Y. Chiau

the meeting discussed a method for submitting MRCWG projects to the BMC.

It was recognized that the five project proposals totalled less than the assumed allocation of \$300,000.00 USD and economies questioned the need to rank the projects in this circumstance. Australia suggested that the MRCWG recommend to the BMC that if a working group's total project funding for a given year does not exceed that group's assumed allocation then all projects should be approved by the BMC and not be ranked in this manner. This was agreed by the meeting, and the Lead Shepherd undertook to write to the BMC in support of this proposal.

The meeting discussed the best way to proceed, recognizing that in the current structure the BMC would require scored rankings in order to approve projects. It was agreed that all member economies should have the opportunity to rank the proposed projects and the Lead Shepherd, in consultation with the Secretariat, indicated the following timeframe to facilitate the submission of MRCWG projects to the BMC.

- All project proponents should revise their proposals in light of comments from the Secretariat and member economies and return finalised proposals to the Lead Shepherd by 20 June 2002.
- The Lead Shepherd will circulate final project proposals to all member economies by 27 June 2002.
- All economies will forward their preferred ranking to the Lead Shepherd by 5 July 2002.
- The Lead Shepherd will send the MRCWG's rankings to the

APEC Secretariat to forward to the BMC and onto the member economies.

- All documentation required for BMC must be with the APEC Secretariat by 16 July 2002 (the meeting noted that the BMC had granted an extension of two weeks to the MRCWG in this context due to the date of the 15<sup>th</sup> meeting).

The meeting participants agreed to also provide the Lead Shepherd with their economy's preferred ranking at the conclusion of this meeting in order to have a "back-up" ranking in case the Lead Shepherd does not receive sufficient responses from all economies by the dates indicated above.

#### Other Matters

- The meeting agreed that Australia will be the Gender Focal Point for the MRCWG. The Secretariat informed the meeting that all APEC working groups are required to provide such a focal point.
- Chile questioned the role of a small group that was formed in 1998 to review MRCWG project proposals and project annual reviews. The meeting noted that the group had not reviewed projects for some time and agreed to dissolve this group.
- The United States reported on a recommendation by the Asia Pacific International Assessment Network (APIAN) (an APEC body that comprises 16 member economies) to conduct a pilot project in 2003 on the assessment of ECOTECH activities in relation

to the MRCWG and the FWG. This will involve an independent evaluation of the decision-making mechanisms in each working group.

- Australia suggested that, in the course of their evaluation, the project consultants should contact the project overseers (Australia and Canada) for the MRCWG integrated oceans management project. The U.S. will advise members regarding the funding arrangements for this project.

#### **Date and Location for the next MRCWG Meeting, to be held concurrently with the next FWG Meeting.**

The APEC Secretariat reported that Vietnam has offered to host the next joint MRCWG and FWG meeting in 2003. The meeting welcomed the offer by Vietnam. The date and place is to be confirmed.

#### **Access to MRCWG 15 Documents**

The Secretariat provided a list of documents that have been tabled at the MRC working group meeting, with recommendations as to which documents could be made public. The meeting endorsed the recommendations and agreed to their release following the meeting.

#### **Adoption of the Report of the Meeting**

The Working Group adopted the report of the meeting.

#### **Close**

The meeting thanked Australia and Canada for hosting the 15<sup>th</sup> MRCWG meeting in Canberra. The Secretariat and Rapporteur(s) were also thanked for their contribution.

## *Integrated Oceans Management Forum 2*

*3 – 7 June 2002 in Canberra, Australia*

**The APEC Integrated Oceans Management (IOM) Forum 2 was held on 3 – 7 June 2002 in Canberra, Australia,** and was co-hosted by Australia and Canada. The Forum was attended by 62 participants from the 13 APEC economies of Australia, Canada, Chile, People's Republic of China, Indonesia, Korea, Mexico, New Zealand, Papua New Guinea, Republic of the Philippines, Peru, Thailand, and the United States of America.

The Secretariat of the Pacific Community (SPC) attended as an observer representing the Pacific Islands Forum – Council of Regional Organizations in the Pacific.

The aim of the meeting was to bring together opinion leaders from across all APEC Working Groups, Committees, Economies, and established institutions and governance structures within the region,

to consider the challenges and opportunities for the development of an APEC integrated ocean management model.

APEC Experts attending the Forum included the Lead Shepherds of the Transportation, Human Resource Development, Small and Medium Enterprises, and Marine Resource Conservation working groups, the Chair of the APEC Sub-committee on ECOTECH, a consultant for the Tourism working group, and representatives from the Fisheries, and Industrial Science and Technology working groups. Each gave an overview of the Marine-Related activities that have occurred in their Working Groups.

Delegates divided into three breakout groups (each with three tasks over a 11/2 day period) to discuss policy and programming

implications/connections of current and emerging marine activities facing APEC.

They developed responses and recommendations towards the development of an integrated ocean and coastal management agenda within APEC.

The recommendations include implementing the Seoul Oceans Declaration, developing an inventory of oceans governance mechanisms, facilitating an integrated oceans and coastal management forum, and developing a research agenda in support of integrated oceans and coastal management decision-making.



*Group photo of IOMF 2.  
Photo provided by Environment Australia.*

# *Australian/Canadian Oceans Research Network Meeting*

*3 – 7 June 2002 in Canberra, Australia*



*Canberra, Australia.  
Photo: W. Y. Chiau*

## **The Australian/Canadian Oceans Research Network Meeting (ACORN) was held in Canberra, Australia on 31 May – 2 June 2002.**

The meeting was attended by 45 participants – 24 Australians and 21 Canadians. Art Hanson, Canada's Oceans Ambassador, provided the keynote address.

ACORN is a network of Australian and Canadian oceans researchers. The meeting was the final reporting session for ACORN 2 research results following an initial organising meeting held in Sydney in October 1999, and a research scoping meeting held in Vancouver in December 2000, where eleven scholarly themes were chosen and research teams were assembled.

Twenty-nine papers on policy, law, management and science relating to oceans were presented at the meeting in Canberra.

During 2002/2003, these twenty-nine papers will be refined and published as a book by Kluwer Publications entitled 'Towards Principled Oceans Governance: Australian and Canadian Experiences and Challenges'.

This ACORN 2 meeting included a challenge session where research results were challenged by a team of six high-level practitioners and scholars in the field of oceans governance and management. One concept considered by the ACORN meeting was the potential for an APEC-wide oceans research network.

It was suggested that an Asia Pacific Economic Cooperation Oceans Research Network could bring together representatives of member economies, and a possible research agenda could focus on emerging marine issues and could feed into the marine-related programming of APEC working groups and member economies. The proposal will be discussed in more detail at MRCWG meetings.



*Group photo of the meeting.  
Photo: W. Y. Chiau*

# Commonwealth Ocean

## Environment Australia

- Australia's ocean resources are owned by the Federal, or Commonwealth, and State Governments on behalf of the people of Australia and are managed as a common resource for the common good.
- This means that governments must allocate these resources to a range of purposes, both now and into the future, according to the principles of ecologically sustainable development (ESD). The fundamental premise of ESD is that whenever we use natural resources, we should do so in a way that ensures the ongoing sustainability of that resource. As our understanding of the importance of ecosystem-based management increases, governments are seeking to ensure that resources are allocated and used within a framework that maintains ecological processes.

Until relatively recently, little regard was paid to the potential impacts of resource uses on environmental processes, when allocating natural resources.

We just have to look around us to see the results – loss of biodiversity, salinisation of once valuable farmland, degradation of river systems, and loss of fish nurseries in estuaries. We also have examples of the ecological In Australia, a national, representative system of marine protected areas (the NRSMPA) is one of the tools being used ensure the ongoing viability of the ecology of the marine environment.

The primary goal of the NRSMPA is to protect marine biodiversity and maintain ecological processes and systems, through establishment and management of a comprehensive, adequate and representative system of MPAs.

The NRSMPA includes a mix of reserves, ranging from no take to multiple use areas, where fishing activities compatible with the objectives of the reserve are allowed. Australia currently has 13 Commonwealth MPAs. The Federal Government is embarking on conservation assessments for 11 areas of interest as potential MPAs in Commonwealth waters. Each of these areas will be assessed for their conservation and socio economic values.

Before any decision is taken to proceed with the creation of a new MPA, a number of questions have to be answered. Does the area have significant conservation values warranting protection? If it does, what is the best form of protection?

If an MPA is the most appropriate form of protection, what are the values to be protected, what are the risks to those values and what management arrangements are needed to manage them?

Through consultation with the fishing industry and other stakeholders, Environment Australia has developed a comprehensive and transparent consultation and decision-making process to help answer these questions. A Stakeholder Reference Group (SRG) has been established to guide the process. The SRG has representatives from all stakeholder groups.

At the local level, Environment Australia consults widely with those who have a direct interest in any possible MPA area.

The consultation process developed with the SRG provides opportunities for the fishing industry to:

- provide input into the assessment of conservation values, human uses, current



*The coastal environment.*  
Photo provided by Environment Australia.

management arrangements and threatening processes;

- comment on the draft conservation assessment reports;
- participate in socio-economic and risk assessments;
- identify conservation options; and
- participate in the design of an MPA, including defining the boundaries, assigning IUCN categories and developing management proposals.

This strategy for consultation involves the fishing industry at every step of the process, ensuring that industry is involved throughout.

By participating in the Commonwealth MPA process, all parties will be clear on the Government's objectives for MPAs and the processes surrounding their assessment, design, declaration, and management.

For further information on Marine Protected Areas in Australia please contact: Erica Welford  
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# High Seas Biodiversity

Environment Australia



Unique marine species.  
Photo provided by Environment Australia.



The world's oceans are home to a diversity of living and non-living resources, including foods, medicines and raw materials. While our knowledge of the resources of the high seas is limited, increasingly areas with significant biodiversity values are being identified that would benefit from a conservation and sustainable use approach, or at least from a precautionary approach to their initial exploration and use.

A significant portion of the ocean's biodiversity can be found in areas far from shallow coastal waters and beyond the jurisdictional limits of coastal states. That is, on the high seas. Varied biodiversity can be found in, for example, deep ocean trenches, seamounts and hydrothermal vents.

Unmanaged or irresponsible fishing on the high seas poses a major threat not only to the fish stocks but also to the unique benthic communities and biodiversity on ridges and seamounts.

To prevent a 'tragedy of the commons', the international community must seek to integrate established multilateral bodies and

existing legal mechanisms to identify areas suitable for collaborative management action, and to reach agreement by consensus on regimes for their conservation and management.

Such arrangements must necessarily be consistent with international legal norms, including the freedom of the high seas, and the provisions of the UN Convention on the Law of the Sea.

In response to increasing awareness of this issue within the international community, Australia will host a workshop on high seas biodiversity, as announced recently by the Honorable Dr David Kemp, Minister for the Environment and Heritage at

the APEC Ocean-Related Ministerial Meeting in Korea in April 2002. The workshop will run from 2 – 5 June 2003 and will be held in Cairns, Australia. The workshop will involve legal, scientific and policy experts, and will aim to provide an increased international understanding and awareness of the biodiversity in the deep oceans and high seas and to identify possible measures for conservation and sustainable management, including through appropriate legal instruments and management tools.

For more information on the High Seas Biodiversity Workshop please contact:

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A vivid coral ecosystems.  
Photo provided by Environment Australia.

# *Inter-American Tropical Tuna Commission Comisión Interamericana Del Atún Tropical*

## *Resolution on Compliance*

*26-28 June 2002 , Manzanillo (MEXICO)*



The Parties to the Inter-American Tropical Tuna Commission (IATTC) have agreed as follows:

- That the IATTC staff, and the national authorities managing the national observer programs, ensure that observers include sufficient information to allow the staff to better assess the implementation of the Resolution on Bycatch adopted at the 66th Meeting of the Commission in June 2000.
- To request that each flag State send a letter to the owners and captains of its vessels reminding them of the requirement and reiterating the importance of complying with it.
- To make two modifications to the Resolution concerning the release of sea turtles. First, to change the first sentence of paragraph 5 of the resolution to read as follows: "Whenever a sea turtle is sighted in the net, all reasonable efforts should be made to rescue the turtle before it becomes entangled in the net, including, if necessary, the deployment of a speedboat".
- Second, to change the third requirement of paragraph 5 of the resolution to read as follows: "If a turtle is brought on board a vessel, all appropriate efforts to assist in the recovery of the turtle should be made before returning it to the water".
- In considering whether to extend the full retention requirement established by that Resolution on Bycatch of June 2000, consider the logistical complexity of the program and the additional effort that would be required by crews, IATTC and national observer programs, and the Commission staff in order to implement the program and monitor and assess compliance, particularly in light of the uncertain benefits of the requirement.
- To request each flag state that has not yet provided to the Secretariat a copy of its legal instrument implementing the 2001 yellowfin closure to do so as soon as possible.
- To request that each flag state send a letter to the owners and captains of its vessels reiterating the importance of timely at-sea reporting and urging them to provide such reports on a weekly basis as provided in the Resolution on At-Sea Reporting adopted by the Commission at its 68th Meeting.
- To request that each flag state investigate reports of alleged violations of the resolutions-in-force and report back to the Working Group at its next meeting on the results of those investigations and the actions taken by the flag state.
- To direct the IATTC staff to establish a process for tracking notifications to flag states of possible violations of the resolutions-in-force and the responses received.

For more information: [www.iattc.org](http://www.iattc.org)

# *Inter-American Tropical Tuna Commission Comisión Interamericana Del Atún Tropical*

## *Resolution on Bycatch*

26-28 June 2002 , Manzanillo (MEXICO)



*The ocean is one of the most important sources of food supply.  
Photo: W. Y. Chiau*

The Inter-American Tropical Tuna Commission (IATTC), meeting in Manzanillo (Mexico), on the occasion of its 69th Meeting: Recalling and reaffirming the Resolutions on Bycatch adopted at the 66th and 68th Meetings of the Commission in June 2000 and June 2001;

Recognizing that a number of the objectives established in these resolutions have not been achieved; Considering that many of these objectives can be achieved easily and with little expense;

Noting the recommendations of the meeting of the Working Group on Bycatch in March 2002;

Has agreed as follows:

- To continue the program requiring the full retention and landing of tunas and the release, to the extent practicable, of non-target species, as described in those

Resolutions, for two additional years, beginning January 1, 2003, with an annual review of the effect and effectiveness of this program so adjustments can be made if appropriate;

- To urge the Parties to ensure that their respective fleets comply fully with the requirements of these resolutions and the guidelines for implementation prepared by the Commission staff;
- Regarding the reduction of the incidental mortality of juvenile tunas:
  - a. To pursue the establishment of mechanisms for communicating information on areas of high concentration of juvenile tunas in real time within the fleet or parts of the fleet, taking account of the importance of ensuring confidentiality of such information;
  - b. To support, and seek the necessary funds for, the

following future studies and research:

1. Develop technology for releasing juvenile tunas, particularly sorting grids.

2. Apply technology for the identification of species and size composition in schools prior to setting, for example acoustic technology.

- Regarding sea turtles:
  - a. To encourage all the Parties to voluntarily provide the Commission with all data on incidental catches of sea turtles in all fisheries, mainly those for tunas, recognizing that a comprehensive approach is necessary to deal effectively with sea turtle issues;
  - b. To encourage FAO to address the conservation and management of sea turtles, including the issue of bycatches of sea turtles as part of such a comprehensive approach;
  - c. To fully enforce the requirements of the resolutions regarding releasing captured sea

turtles;

- d. That all cases of non-compliance be addressed by the Permanent Working Group on Compliance, and that the Parties apply suitably severe sanctions in such cases to ensure effective compliance;
- e. To implement the following actions:
  1. Publicize the requirement to release turtles and the other provisions of the Resolutions.
  2. Train crews of tuna purse-seine vessels, particularly those without observers, in techniques for handling turtles to improve survival after release, and encourage States to take similar actions for other tuna fisheries.
  3. To study and formulate recommendations regarding modifications of the design of FADs to eliminate entanglement of sea turtles, particularly the use of webbing hanging below FADs.
  4. To prohibit tuna-fishing vessels disposing of salt bags or any other type of plastic trash at sea.
  5. To encourage the release, when practicable, of sea turtles entangled in FADs.



Putze Estuary, Chiayi County, Taiwan.  
Photo: W. Y. Chiau

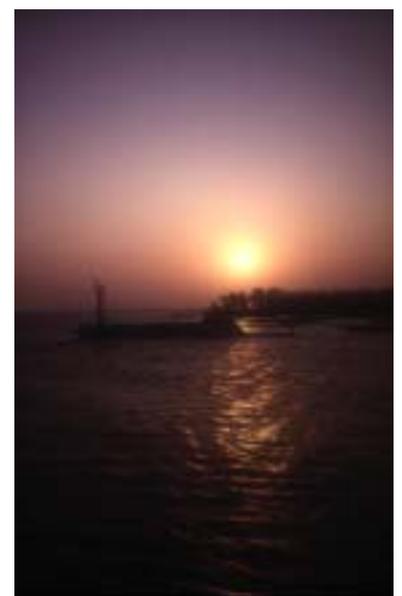
6. To foster the recovery of FADs when they are not being used in the fishery.

- To implement the following actions regarding billfish, sharks and rays to further the objectives of the resolution on bycatch of June 2000:
- a. Publicize the requirement to release sharks, billfishes and rays, and develop techniques and/or equipment to facilitate the release of these species from the deck or from the net.
  - b. Seek the necessary funds to carry out experiments to determine the survival rates of released billfish, sharks and rays.
  - c. Define areas and periods in which any of these species are most likely to be caught.
  - d. Encourage all Parties, as well as States and fishing entities with vessels fishing for tunas and tuna-like species in the eastern Pacific Ocean, to adopt similar measures, as appropriate.
  - f. Regarding other species of large pelagic fish of interest to the artisanal fishery, particularly mahi mahi, to identify areas of high bycatches of these species, and verify the stability in time and space of any such areas.

- g. Regarding bycatches by vessels not already covered by programs to obtain information on such by-catches implemented in accordance with the resolution of June 2000, to pursue actions to obtain such information.

- h. For longline vessels, to urge those governments with such vessels operating in the region to provide the required bycatch information as soon as possible.

For more information: [www.iattc.org](http://www.iattc.org)



Sunset at Pudai Fishing Port, Taiwan  
Photo: W. Y. Chiau

# *Inter-American Tropical Tuna Commission Comisión Interamericana Del Atún Tropical*

## *Resolution on the Capacity of the Tuna Fleet Operating in the Eastern Pacific Ocean*

*26-28 June 2002 , Manzanillo (MEXICO)*

The Parties to the Inter-American Tropical Tuna Commission (IATTC):

Aware that the issue of excess fishing capacity is of concern worldwide and is the subject of an International Plan of Action developed by the United Nations Food and Agriculture Organization;

Understanding that excess fishing capacity in a region makes it more difficult for governments to agree on and implement effective conservation and management measures for the fisheries of that region;

Concerned that purse-seine fishing capacity in the eastern Pacific Ocean (EPO) has been increasing in recent years;

Believing that it is important to limit fishing capacity in the EPO in order to help ensure that the tuna fisheries in the region are conducted at a sustainable level;

Aware of the importance of tuna fishing to the economic development of the Parties;

Committed to giving full effect to the relevant rules of international law, as reflected in the United Nations Law of the Sea Convention;

Recalling the resolutions to limit the capacity of the tuna purse-seine fleet in the EPO approved by the IATTC at

its 62nd Meeting in October 1998 and by correspondence on 19 August 2000;

Seeking to address the problem of excess capacity in the tuna purse-seine fleet operating in the EPO by limiting such capacity to a level which, in harmony with other agreed management measures and projected and actual levels of catch, will ensure that tuna fisheries in the region are conducted at a sustainable level:

Have agreed as follows:

➤ For the purposes of this Resolution, the EPO is defined as the area bounded by the coastline of the American continents, the 40° North parallel, the 150° West meridian and the 40° South parallel.

➤ For the purposes of this Resolution, and without setting any precedent, "participant" means Parties to the IATTC, and States and regional economic integration organizations (REIOs), and fishing entities that have applied for membership of the Commission or that cooperate with the management and conservation measures adopted by the Commission. The Commission shall

determine which States, REIOs and fishing entities are considered to be cooperating with such management and conservation measures.

➤ To finalize and adopt, as soon as possible, a plan for regional management of fishing capacity, as specified in the resolution on fleet capacity of 19 August 2000. Such a plan shall take into account the right of coastal States and other States with a longstanding and significant interest in the tuna fisheries of the EPO to develop and maintain their own tuna fishing industries.

➤ To review on a regular basis, and modify if necessary, the methods for estimating fishing capacity and the target level of 158,000 m3, established in the resolution on fleet capacity of 19 August 2000, for the total capacity of the purse-seine fleet, taking into account the level of the stocks of tuna and other relevant factors.

➤ To use the Regional Vessel Register ("the Register") established by the resolution of the 66th Meeting of the Commission, as of 28 June 2002, with any subsequent modifications that do not increase the total capacity of



A clear beach in Palau.  
Photo: W. Y. Chiau

purse-seine vessels established in the Register, as the definitive list of purse-seine vessels authorized by the participants to fish for tunas in the EPO. Any purse-seine vessel fishing for tunas in the EPO that is not on the Register would be considered to be undermining IATTC management measures. The Register shall include only vessels flying the flags of participants. Each participant shall verify the existence and operational status of, and confirm the accuracy of the information on, its vessels, as required by that resolution, including the requirement to promptly notify the Director of the Commission ("the Director") of any modifications to that information. For purse-seine vessels, the Register shall include only vessels that have fished in the EPO before 28 June 2002. A participant may remove any vessel flying its flag from the Register by notifying the Director.

- The well volume of each purse-seine vessel, once confirmed by the relevant participant and verified by an independent survey supervised by the Director, shall be reflected in the Register.
- To prohibit the entry of new vessels, defined as those not included in the Register, to the EPO purse-seine fleet, except to replace vessels removed from the Register, and provided that the total capacity of any replacement vessel or vessels does not exceed that of the vessel or vessels replaced.
- To prohibit increasing the capacity of any existing purse-seine vessel unless a purse-seine vessel or vessels of equal or greater capacity is

removed from the Register.

- Notwithstanding paragraphs (7) and (8), above, by January 1 of each year, a participant may notify the Director of any purse-seine vessel operating under its jurisdiction and listed on the Register that will not fish in the EPO in that year. Any vessel identified pursuant to this paragraph shall remain on the Register as "inactive" and shall not fish in the EPO in that year. In such cases, the participant may substitute another purse-seine vessel or vessels on the Register, and those vessels shall be authorized to fish in the EPO provided that the total "active" capacity of purse-seine vessels flying the flag of that participant in any year does not exceed the capacity listed for such vessels on the Register as of 28 June 2002.
- Subject to the provisions of this resolution:
  - a. Notwithstanding paragraphs (7) and (8), the following participants may add purse-seine vessels to the Register after 28 June 2002, within the following limits:
 

Costa Rica:	9364m <sup>3</sup>
El Salvador:	861m <sup>3</sup>
Nicaragua:	4038m <sup>3</sup>
Peru:	3195m <sup>3</sup>
  - b. Guatemala may increase its purse-seine fleet by 1700 m<sup>3</sup> and commits to obtaining that capacity within a period of two years.
- In the implementation of paragraph (10.1) above, a participant wishing to bring a new vessel into the EPO shall

(1) so notify the other participants, through the Director, and (2) undertake efforts to find a suitable vessel from the Register for at least four months following such notification before bringing a new vessel into the EPO.

- Notwithstanding paragraphs (7) and (8), a limit of 32 United States vessels authorized and licensed to fish in other areas of the Pacific Ocean under an alternative international fisheries management regime, and that may occasionally fish to the east of 150° West, shall be authorized to fish in the EPO provided that: a) the fishing activity of any such vessels in the EPO is limited to a single trip not to exceed 90 days in one calendar year; b) the vessels do not possess a Dolphin Mortality Limit pursuant to the Agreement on the International Dolphin Conservation Program; and c) the vessels carry an approved observer. A similar exception shall be considered for vessels of other participants with a similar record of participation in the EPO tuna purse-seine fishery and that meet the criteria listed above.
- Nothing in this resolution shall be interpreted to limit the rights and obligations of any participant to manage and develop the tuna fisheries under its jurisdiction or in which it maintains a longstanding and significant interest.
- To urge all non-Parties to provide the information required by this resolution and comply with its provisions.

For more information: [www.iattc.org](http://www.iattc.org)

# *Inter-American Tropical Tuna Commission Comisión Interamericana Del Atún Tropical*

## *Resolution on the Conservation of Yellowfin and Bigeye Tuna in the Eastern Pacific Ocean*

26-28 June 2002 , Manzanillo (MEXICO)



*Linking conservation from  
mountains to the seas.  
Photo: W. Y. Chiau*

The Inter-American Tropical Tuna Commission, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean (EPO), which for the purpose of this Resolution is the area bounded by the coastline of the Americas, the 40°N parallel, the 150°W meridian, and the 40°S parallel, and for the formulation of recommendations to the High Contracting Parties with regard to these resources, and having maintained since 1950 a continuing scientific program directed toward the study of those resources,

Notes that the tuna resource of the EPO supports one of the most important surface fisheries for tunas in the world, and

Recognizes that, based on past experience in the fishery, the potential production from the resource can be reduced by excessive fishing effort,

Notes that in the years from 1980 through 2001, excepting 1987, the Director recommended conservation measures to the Commissioners, and that in turn such measures were approved by the Commissioners for recommendation to their respective governments, and

Believing that it is important to follow a precautionary approach when addressing conservation and management measures for the tuna resource of the EPO, and

Recognizing Japan's initiative to reduce the number of large-scale tuna longline fishing vessels in its fleet by 20% (132 vessels) by the scrapping of vessels in accordance with the FAO Plan of Action,

Considering that the studies of yellowfin and bigeye tuna presented at this meeting show that, the current fishing effort (2000-2001 average) would be above the average maximum sustainable yield levels for both species if recruitment is strongly dependent on the amount of spawning.

Resolves:

- That a limitation on the catches by purse-seine tuna-fishing vessels in the EPO is necessary before the end of 2002;
- That the fishery by purse-seine tuna-fishing vessels in the EPO be closed from 0000 hours on 1 December to 2400 hours on 31 December 2002;
- To discourage landings and commercial transactions in tuna or tuna products originating from fishing activities prohibited by this resolution. The Director may provide relevant information to the Parties to assist them in this regard.
- Each Party shall:
  - a. On or before 1 October 2002, inform all interested parties in its national tuna industry of the closure, and send a copy of this notice to the Director.
  - b. Ensure that at the time the closure begins, and for the entire duration of the closure, all purse-seine tuna-fishing vessels flying its flag in the EPO are in port. The only exception to this provision shall be that vessels carrying an observer from the AIDCP On-Board Observer Program may leave port during the closure.
  - c. Take the relevant measures and inform the Director of these on or before October 1, 2002.
  - d. Longline, pole-and-line and sportfishing vessels are not subject to the measures above.
  - e. States and fishing entities with large-scale tuna longline vessels are encouraged to undertake initiatives similar to that of Japan with respect to fleet reduction in the EPO, and not to increase their fishing effort in the EPO.
  - f. That all Parties and other interested States work diligently to achieve the implementation of such a program for the conservation of the tuna resource for 2002.

For more information:  
[www.iattc.org](http://www.iattc.org)



Fishing Training Ship No.2 of Chinese Taipei  
 Photo: Y. Y. Lin

# *Establishing the Dongsha (Pratas) Islands as the First MPA of Chinese Taipei*



*Dongsha Lagoon, Taiwan*  
Photo: W. Y. Chiau

## **Introduction**

The Dongsha Islands are comprised of Dongsha Island, two coral reefs, the North Vereker Bank, and the South Vereker Bank. The archipelago is actually a coral atoll which is located in a strategically important position along the major sea route connecting the Pacific and Indian Oceans, between 116°40' and 116°55'E longitude, and 20°35' and 20°47'N latitude. The group is 140 nautical miles south of Shantou in Guangdong Province, China, 430 nautical miles northwest of Manila, the Philippines, 170 miles southeast of Hong Kong, and 240 nautical miles southwest of Kaohsiung.

In 1993, the government's policy towards the region was set by the *Policy Guidelines for the South China Sea*, which expresses Taiwan's desire to resolve all disputes

peacefully, to step up the exploration and management of resources in the South China Sea, to promote cooperation with other claimant states, and to protect the ecology of the region. In 1999, responsibility for defending both islands was transferred from the Ministry of National Defense to the newly created Coast Guard Administration (CGA), and the administration of the Dongsha and Taiping Islands was officially transferred to the Kaohsiung City government. Since that time, the Kaohsiung City government has been actively involved in the development of tourism on Dongsha Island.

## **Needs and Issues for Establishing the Dongsha**

The establishment of a marine protected area (MPA) can serve many purposes and has been regarded as an effective way to

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protect the marine environment and biodiversity. For instance, Slam et al. (2000) summarized the typical objectives of establishing MPAs as including:

- maintaining a high-quality coastal environment;
- conserving special habitats and environmentally sensitive areas;
- protecting species and species diversity;
- conserving critical ecological processes;
- combining natural hazards protection with nature conservation by protection of natural features like coral reefs, sand dunes, and mangrove stands;
- restoring damaged ecosystems and replenishing depleted fisheries; and
- involving and educating the community to create public awareness of ecological values and needs for coastal and marine conservation.

The Dongsha Islands are ideal for scuba diving, with clean and clear waters in addition to coral reefs. Besides protecting the marine ecosystem, a well-planned MPA can also accommodate ecotourism development. The Kaohsiung City government is already implementing a tourism development plan. Nevertheless, there are several major issues which should be well considered in the planning and management of the future Dongsha MPA.

**Severe Damage by Destructive Fishing**

The areas around Dongsha provide excellent fishing grounds, and fishermen from Taiwan, mainland China, Hong Kong, and even Vietnam arrive in the region during March and April. They usually operate for several months until the monsoon arrives in the late fall. According to CGA enforcement records, unsustainable methods used to catch fish are commonly employed in the region. Dynamite and cyanide fishing have been the most destructive to the fisheries of Dongsha and have severely damaged its coral reefs. Inevitably, this will destroy the habitat, deplete the source of the fisheries, and ultimately hurt the economy which

depends on the seas. Because of limitations of manpower and equipment, the enforcement of marine resources protection by the CGA and formerly by Navy troops has long been a tough issue.

**Development of Tourism and Its Possible Impacts**

Administration of Dongsha was official shifted to the Kaohsiung City government in 1999. Since then, the city government has been actively promoting tourism on Dongsha Island. However, getting there from Kaohsiung takes almost one night, or 10 hours on a naval supply ship. The danger of transferring tourists from the ship to the reef atoll using a small boat to land on Dongsha Island scared away many tourists. The long journey on the high seas also discouraged people, who are not familiar with sea voyages, from touring the island.

**Limitations of Field Research**

Environmental information is essential to the planning and management of an MPA. Due to the military control and budget limitations, however, there were few field studies conducted in the Dongsha area until June 1994. For the moment, the most-recent and available data are

derived from the comprehensive survey of June 20-24, 1999. Kaohsiung City contracted a consulting firm to perform some studies on the remote island's development, but they focused on port reconstruction. Thus, an overall picture of the marine environments and natural resources in Dongsha is still lacking. More research is needed in order to sustainably manage the future Dongsha MPA.



*Beaches in Dongsha, Taiwan (above & below).  
Photo: W. Y. Chiau*

