



CRC Reef Research Centre Ltd

PO Box 772 Townsville
 Queensland 4810 Australia
 Telephone: 61 7 4729 8400
 Facsimile: 61 7 4729 8499
 Website: www.reef.crc.org.au
 Email: info@crcreef.com

In this Issue:

SAFER, SMARTER PONTOONS FOR REEF TOURISTS.....	1
CROWN-OF-THORNS STARFISH AT JOHN BREWER REEF.....	2
FROM THE CEO'S DESK	2
IRUKANDJI UPDATE.....	3
PRIORITY RESEARCH.....	3
INDIGENOUS ENGAGEMENT BY CRC REEF	3
THREATS TO REEF HIGHLIGHTED IN WINNING STORIES.....	3
NEW STUDIES TO PROTECT THE REEF.....	4
ECOTOURISM – A WORLD OF DIFFERENCE	5
LEADERSHIP AND CAREER DEVELOPMENT COURSE.....	6
AUSTRALIAN CORAL REEF SOCIETY CONFERENCE	6
NEW PUBLICATIONS.....	6
IMPAC NEWS.....	6
LIVE FISH TRADE	7
NEW TRAINING CENTRE AND FIRST REGIONAL MEETING FOR IOI	7
OCEAN LEADERS FOCUS ON HUMAN ISSUES IN WESTERN PACIFIC.....	7
DIARY.....	8

SMARTER, SAFER PONTOONS FOR REEF TOURISTS

CRC Reef researchers have released guidelines for planning and designing structures on the Great Barrier Reef that will help to make new structures safer for tourists and the reef.

CRC Reef researchers, Associate Professor Tom Hardy and his team based at the School of Engineering at James Cook University, worked in collaboration with engineers, tourism operators and managers from the Great Barrier Reef Marine Park Authority to produce the guidelines.

"The guidelines will help to ensure that tourism pontoons on the reef perform well during operational conditions as well as survive with little environmental damage during extreme weather conditions, such as cyclones," said Associate Professor Hardy, co-author of the guidelines.

The guidelines will be used together with an atlas of waves that the researchers have already published online. The wave atlas contains information about waves that are encountered during cyclones at thousands of places along the Great Barrier Reef.

"Tourism operators can use the atlas to search for suitable sites for pontoons," said Associate Professor Hardy. "It will also help engineers to design mooring systems that are appropriate for extreme conditions."

"Improved engineering resulting from the guidelines, and more sophisticated design inputs available from the atlas do not necessarily mean making heavier, more intrusive mooring systems but will often result in smarter, lighter engineering," said Associate Professor Hardy.

"The guidelines and wave atlas will assist the Great Barrier Reef Marine Park Authority manage and monitor future pontoon projects on the Great Barrier Reef," said Mr Martin Robinson, Manager of the Environmental Impact Management Unit of the GBRMPA.

'Reef infrastructure guidelines: tourist pontoons' by Ross Kapitzke, Michael Matheson and Tom Hardy are published on CD as CRC Reef Technical Report No 39. Chapter 1 is available on the CRC Reef website at: www.reef.crc.org.au/publications/techreport/techrep39.html. The wave atlas is available on the CRC Reef website at: www.reef.crc.org.au/research/engineer/waveatlas.html



*Pontoons are the base for many tourism activities on the reef.
 Photo by FantaSea Cruises*

CROWN-OF-THORNS STARFISH AT JOHN BREWER REEF

In six weeks during July and August, divers removed more than 6,800 crown-of-thorns starfish (COTS) from John Brewer Reef, due east of Townsville. Around 4,000 of these were removed in the first week of operations.

The divers are working on the Crown-of-thorns Eradication Program. The program also removed 7,000 COTS from reefs off Cairns, Port Douglas and the Whitsundays, north and south of Townsville respectively, over a period of three months.

"The numbers of starfish found on John Brewer Reef were the most yet encountered," said Managing Director of the Great Barrier Reef Research Foundation, Mr David Windsor. "The tourism values of this reef would have been destroyed in a few months if we hadn't acted."



*Crown-of-thorns starfish were in record numbers on John Brewer Reef.
Photo by Vicki Harriott*

Townsville based tour operator, Sunferries had a permit to visit John Brewer Reef and requested help to clean up the site, Mr Windsor said.

"The Program has worked on many reefs including Moore, Thetford, Milne, Flynn, Saxon, Norman, Tongue and Agincourt Reefs, between Port Douglas and Cairns and Bait Reef in the Whitsundays. Other reefs require regeneration."

The State and Federal Governments have contributed \$1.4 million in funding to the COTS Eradication Program which began in February 2002. The Great Barrier Reef Research Foundation manages the funding free of charge and also supplies its vessel, Foundation One, to the program at a reduced price. This represented hundreds of thousands of dollars savings to the program.

Research into the causes of COTS outbreaks, including human causes, is the focus of collaboration between The Great Barrier Reef Research Foundation and CRC Reef Research Centre.

CRC Reef Research Centre advises on the scientific validity of all research funded by the Foundation and monitors performance indicators and progress towards milestones.

FROM THE CEO'S DESK



*Russell Reichelt.
Photo by Rob Parsons*

CRC Reef is a joint venture - a knowledge-based partnership - of members who have pooled their resources to provide research that is needed for the sustainable use and conservation of the Great Barrier Reef. As the number of associates with CRC Reef grows, it is likely some of those involved are not aware of the origins of the Centre and its link to the national R&D effort through the CRC Program.

Australia's 67 Cooperative Research Centres (CRCs) have some common attributes: collaboration between researchers and industry; education of new researchers and; innovative science and engineering.

Successful CRCs are much more than research granting bodies. Their goals are clear and they have well-developed strategies for delivering results to their clients. Rather than simply making grants, CRCs plan research, invest in research and manage research for outcomes. Many are incorporated as companies, some as not-for-profit companies such as CRC Reef.

CRC Reef promotes links between researchers and research purchasers - the users of our results. In the case of CRC Reef, the buyers are the Great Barrier Reef Marine Park Authority, the tourism industry, the fishing industry and the Great Barrier Reef Research Foundation. The research providers come from many institutions, however the major contributors are the Australian Institute of Marine Science, James Cook University and the Queensland Dept of Primary Industries. One of the principal mechanisms

we use to forge the links is the Task Associate system, so I urge researchers to build a connection to their task associate and keep them informed of progress in between half-yearly reporting periods.

Although the CRC program grant is for a period of six years, we expect priorities to change over that period. In the past 12 months, several issues have assumed greater importance than was evident in 1999 when the current CRC Reef began. The first is water quality and the measurement of ecosystem health (i.e. indicators), which has increased in importance as a research issue with the development of the Reef Protection Plan (www.ea.gov.au/coasts/pollution/reef). The key clients for this work are the Commonwealth and State Governments, the natural resource management groups now being formed along the Queensland coast, and the public.

Marine stingers, especially irukandji, is another area of increasing importance following the two stinger-related fatalities in early 2002 (www.reef.crc.org.au/aboutreef/coastal/irukandji.html). The tourism industry, governments and health services groups and life savers are all key clients.

CRC Reef is responding to these issues by helping to set research priorities and by working to identify new sources of funds to support the urgent research needed in these fields. With IMPAC now underway, we are also planning to increase the number of international collaborations aimed at solving problems that threaten the future of the world's coral reefs.

Russell Reichelt
Chief Executive Officer

IRUKANDJI UPDATE

By Dave Williams

Last summer was a particularly bad season for irukandji stings in north Queensland, with the first two deaths caused by irukandji reported.

James Cook University (JCU) convened a series of meetings with researchers from JCU and the Australian Institute of Marine Science to draft a major coordinated and collaborative program to fill the gaps in our knowledge about tropical marine stingers.

At the same time, the Great Barrier Reef Research Foundation announced its interest in co-funding research into marine stingers and in conjunction with CRC Reef organised a workshop in May to further develop a coordinated and collaborative program.

The meeting was hosted by the Federal Minister for Science, The Hon Mr Peter McGauran, who provided \$100,000 in Federal funding to the Foundation to assist the program. The Foundation has raised a further \$150,000 for irukandji research.

Also in May, the Queensland Government formed an inter-departmental committee called the Queensland Government Irukandji Jellyfish Response Taskforce. The Taskforce formed two working groups: the Prevention and Response Working Group and the Research Working Group. CRC Reef was the lead agency on the Research Working Group which was comprised of key researchers from the Foundation/ CRC Reef workshop. The Taskforce reviewed the scientific knowledge and current action about irukandji (www.reef.crc.org.au/aboutreef/coastal/irukandji.html).

The Research Working Group prioritised the needs for research about irukandji (see www.barrierreef.org). Research priorities are:

- identifying jellyfish responsible for irukandji syndrome (traditional and molecular taxonomy);
- treatment (first aid, and emergency and intensive care);
- prevention including barriers (nets, clothing, repellents) and ecology (seasonality, distribution);
- toxinology and;
- epidemiology.

A call for applications to work in these priority areas was posted on the Foundation website (www.barrierreef.org) and closed on 26 October 2002. A Scientific Advisory Committee chaired by Professor Russell Reichelt, CEO of CRC Reef, will decide which research proposals are funded.



An irukandji jellyfish.
Photo by Lisa Ann Gershwin

New research to answer some critical questions about the marine stingers will be starting soon.

PRIORITY RESEARCH

CRC Reef provides research solutions to protect, conserve and restore the world's coral reefs by ensuring industries and management are sustainable and that ecosystem quality is maintained. Our current research priorities are coral bleaching, water quality, crown-of-thorns starfish, use and conservation of biodiversity, sustainable fisheries, sustainable tourism and environmental sustainability of ports and shipping.

CRC Reef manages 80 research tasks which are divided into four programs and twelve projects. The program and project structure has recently been revised and some tasks have been moved between projects to better match CRC Reef's current research priorities.

There are four research programs: Conserving World Heritage Values (formerly Management for Sustainability, Program A); Sustainable Industries (Program B); Maintaining Ecosystem Quality (Program C) and Reef Futures (formerly Information Systems and Synthesis, Program D).

A full list of CRC Reef programs, projects and tasks is enclosed.

INDIGENOUS ENGAGEMENT BY CRC REEF

Much of CRC Reef research is based on sea country estates of Aboriginal peoples who have strong cultural connections to the sea and marine life. CRC Reef is working to develop stronger partnerships with Traditional Owners, to build mutual respect and understanding of traditional environmental knowledge and western science.

Through its extension program, and in collaboration with Rainforest CRC, CRC Reef has established a small Indigenous Working Group, with Aboriginal and Torres Strait Islander representatives, to advise on developing an Indigenous Engagement Strategy. The working group, which met in Townsville on 6 November 2002, is considering different options for Indigenous engagement by CRC Reef. The group will provide advice on an appropriate communication strategy, guidelines for researchers working with Indigenous people and on sea country, and guidelines for protection of Indigenous cultural intellectual property rights.

As part of the strategy, CRC Reef plans to offer more opportunities to improve cross-cultural awareness and to encourage researchers to engage with, and communicate research findings to Traditional Owners.

THREATS TO REEF HIGHLIGHTED IN WINNING STORIES

Three university students have been awarded prizes totalling \$1500 in a national competition for stories about marine science in the Great Barrier Reef World Heritage Area.



The Hon Peter McGauran presents the CRC Reef Marine Science Journalism Prize to Vanessa Woods at the Australian Science Festival.
Photo by Australian Science Festival

Ms Vanessa Woods, a postgraduate student at the Australian National University, won this year's \$1000 CRC Reef Marine Science Journalism Prize for her story about coral bleaching on the Great Barrier Reef.

Ms Woods paints a bleak picture for the reef's future in her story. She quotes Professor Hoegh-Guldberg, from the University of Queensland who says that "corals will not survive the sea temperatures predicted by ninety nine percent of all global climate experts. The rising temperatures will lead to more common episodes of coral bleaching and ultimately to the death of the Great Barrier Reef."

Ms Woods also quotes Dr Terry Done, a research scientist from the Australian Institute of Marine Science and Program Leader with CRC Reef Research Centre, who sees a less bleak but equally uncertain future for the Great Barrier Reef.

"In the long term, I don't think the reefs are doomed," says Dr Done "We may have different reefs, ones which we may not like as much, but they will be there in some form or another." The CRC Reef Marine Science Journalism prize was awarded to Ms Woods by The Hon Peter McGauran, Minister of Science, at the opening of the Australian Science Festival on 16 August.

Mr Daniel Bateman and Ms Kellie Lobb, both from James Cook University in Townsville, were jointly awarded the \$250 Dorothy Paramore Highly Commended Award for their stories.



*Professor Russell Reichelt congratulates Daniel Bateman on winning the Dorothy Paramore Highly Commended Award.
Photo by CRC Reef*

Ms Dorothy Paramore is an artist who donated the proceeds from the sale of a painting from her Great Barrier Reef Series to benefit a student studying the reef. She has exhibited her works in London, Johannesburg and Sydney. Ms Paramore now lives in Sydney.



*Ms Kellie Lobb
Photo by CRC Reef*

Ms Lobb's story was about the threat of run-off to inshore reefs. She says in her story that there has been a several-fold increase in the concentrations of sediment and nutrients in the waters that drain from the adjacent land into the sea. The "indirect effects of terrestrial run-off change the capacity of reef systems to recover from disturbances which are otherwise a natural part of reef environments."

Mr Daniel Bateman's story was about the difficulty of finding employment as a marine scientist in Australia. According to Mr Bateman, "We may see marine students... in the near future flipping burgers for a living instead of finding a way to prevent coral bleaching."

The CRC Reef Marine Science Journalism Prize and Dorothy Paramore Highly Commended Awards are awarded annually by CRC Reef Research Centre for factual stories about marine science in the Great Barrier Reef World Heritage Area

The CRC Reef Marine Science Journalism competition is open to full-time students from tertiary institutions in Australia. This year's entries were judged by journalists from *Australasian Science* magazine. All three stories will be published in the September edition of *Australasian Science*.

NEW STUDIES TO PROTECT THE REEF

CRC Reef has awarded two new scholarships to postgraduate students from James Cook University for studies to enhance the sustainable development of the Great Barrier Reef. The Kelleher Prize was awarded to Ms Janice Ballard from the School of Engineering who has just completed her Honours degree and the Ken Woolfe Prize was awarded to Mr Mike Page from the School of Earth Sciences who is studying for his doctorate. Both awards are for \$3,000.

Kelleher Postgraduate Scholarship

Janice Ballard – Honours student

I am modelling prehistoric supercyclones at Curacoa Island, off Lucinda in Queensland. A supercyclone is a cyclone of extreme intensity, measuring to a category four or five on the Australian cyclone scale.

There are about 100 years of historical cyclone data, but more accurate data has only become available since 1969 when meteorological satellites were introduced. Therefore, scientists have been searching for other methods to obtain historic cyclonic data. One method is by examining coral ridge formation in the geologic record.

Geographers from the School of Tropical Environmental Science and Geography (TESAG) at James Cook University recently studied coral ridge formations at Curacoa Island. They found that cyclones with central pressure less than 920 hPa produced coral ridges above the highest water levels obtained under normal conditions. By using radiocarbon dating, the geographers also found that the return period of these storms was 200–300 years.

The results of this study are extreme compared with the existing cyclone data record. There have been few cyclones of central pressure less than 920 hPa in Australia, and the expected return period of cyclones of this intensity was previously thought to be once every few millennia.

I will replicate the experiments of the TESAG geographers at Curacoa Island to more accurately determine the properties of cyclones that form coral ridges above highest normal water levels.

By modelling the effects of several cyclone properties on storm surge and wave properties, I will be able to determine the maximum possible water levels that can be obtained under such conditions. One major component of my work will be to determine how wave effects transport coral onto the shores of beaches.

My thesis will provide better information about the severe cyclone population that affects Curacao Island. Better understanding of this population will enable better design of coastal and offshore structures.

Our understanding of the biological nature of the Great Barrier Reef will also be enhanced by this work. More extensive knowledge of historical cyclones may provide a better understanding of the movement of coral species, and formation of the Great Barrier Reef.

Ken Woolfe Postgraduate Scholarship

Michael Page – PhD student

In geological terms, the Great Barrier Reef region extends from the shoreline, past the continental shelf edge and into the deep sea. This environment has sediments that are composed of large amounts of quartz, feldspars and clay minerals (siliclastic minerals) from the land, as well as calcite and aragonite (carbonate minerals) from the marine environment. The carbonate minerals come from marine organisms (corals, shells, etc) or from direct precipitation from the water column.

The Great Barrier Reef is the largest existing mixed siliclastic/carbonate environment in the world and yet, little is known about the evolution of this margin and about other mixed systems over geological time and space. The deposition of siliclastic sediments sourced from mainland Australia, their interaction with and influence on the carbonate/reef environment is also not well understood.

The north-eastern Australian margin responded differently to the changes in sea-level over the last 20,000 years than expected from predictions by generic models for mixed systems. The consistency of this response over time is unclear. Mechanisms influencing the margin's recent behaviour are also yet to be fully resolved.



Mike Page won the Ken Woolfe Postgraduate Scholarship. Photo by CRC Reef

My project will address these issues and formulate broad models for the evolution of the north-eastern Australian margin during the Late Quaternary. The project will make significant advancements in our knowledge of this margin concerning both the depositional and fluvial response to sea-level change. Direct implications regarding regional patterns of sediment dispersal over space and time, fluvial evolution and the evolution of the Great Barrier Reef itself make the project of great relevance not only to CRC Reef, but also to hypotheses examined by the late Dr Ken Woolfe, and his colleagues at JCU's School of Earth Science.

ECOTOURISM – A WORLD OF DIFFERENCE

The International Ecotourism Conference, held in Cairns from October 21–25, attracted over 400 delegates from around the world, to share information on ecotourism research, planning, accreditation, monitoring and marketing.

The high-profile keynote speakers included the GBRMPA Chair, the Hon. Virginia Chadwick who spoke about GBRMPA's role in adaptive management to balance the need for conservation with the needs of 'a vibrant competitive tourism industry' on the reef. Members from the Association of Marine Park Tourism Operators (AMPTO) from the Cairns tourism industry were among the presenters and participants in a workshop hosted jointly by United Nations Environment Program (UNEP) and GBRMPA. This workshop explored the national and international application of a proposed new framework for sustainable tourism use and management of the Great Barrier Reef.

CRC Reef was represented by CEO Professor Russell Reichelt, Extension Manager Ms Bryony Barnett, and researchers from JCU School of Tourism who presented papers from their CRC Reef funded research. Ms Rebecca Saltzer spoke about her work on wildlife tourism and the value of interpretation to enhance visitor interaction, demonstrated through case studies from Lady Elliott and Lady Musgrave Islands. Ms Anne Galletly presented a market analysis of reef ecotourists based on data from surveys of over 2,000 reef visitors, mostly in the Cairns and Whitsunday areas. Dr Alastair Birtles wooed his audience with footage of dwarf minke whales filmed on the Ribbon Reefs, and an account of the collaborative activities of researchers, industry and managers to develop a Code of Practice to promote industry self-regulation.



Dwarf minke whales are the focus of a growing ecotourism industry in North Queensland. Photo by Alastair Birtles, CRC Reef

There was a strong Indigenous presence at the conference. Following a powerful keynote presentation on Cape York Partnerships by Mr Noel Pearson, a series of workshops focused on the role of traditional owners in cultural tourism.

Ecotourism policy and standards also featured heavily in the keynote discussions. The Queensland Ecotourism Plan 2003–2008, and the International Ecotourism Standard – an accreditation scheme based on the international Green Globe in partnership with Ecotourism Australia, were promoted. Marking the end of the International Year of Ecotourism, the conference closed with discussion on the draft 'Cairns Charter on Public Private Partnerships for Ecotourism' (CCPPPE). Built on the 2002 Quebec City Declaration on Ecotourism, the Cairns Charter will provide guidance on the development and operation of ecotourism partnerships. These policies should serve as a useful reference for CRC Reef, to guide future tourism research.

LEADERSHIP AND CAREER DEVELOPMENT COURSE

Gavin Begg

I attended the Leadership and Career Development Course organised by the Cooperative Research Centres Program at the Melbourne Business School from 8-11 October.

I recently became leader of the Fishing and Fisheries project in CRC Reef Research Centre so I found the course particularly rewarding because I could relate to a lot of issues that were discussed about understanding the requirements for a successful research team.



Dr Gavin Begg.
Photo by CRC Reef

The course gave me a unique opportunity to interact with stakeholders, researchers and students from a wide array of CRCs. We discussed issues pertinent to leadership, conflict resolution, team building and career development.

I am fortunate to have been given the opportunity to lead an already successful and productive team, and I look forward to fostering an environment that will continue to achieve these objectives that are characteristic of the CRC Reef Research Centre.

Dr Gavin Begg won a BIHERT (Business and Higher Education Round Table) Scholarship to attend the course in recognition of his outstanding leadership potential. CRC Reef also supported his attendance at the course.

AUSTRALIAN CORAL REEF SOCIETY CONFERENCE

Tim Harvey

The future of coral reefs was the theme for the 79th Annual Conference of the Australian Coral Reef Society. The conference was held in the beautiful Moreton Bay Research Station on north Stradbroke Island, near Brisbane.

The focus of the conference was on good science underpinning good management practice, especially within the Great Barrier Reef. Professor

Hugh Possingham, from the University of Queensland, kicked off the talks by looking at design models for possible futures, a theme taken up by Mr John Tanzer (Great Barrier Reef Marine Park Authority), who spoke about research in the Great Barrier Reef Marine Park and World Heritage Area. This set the tone for the remainder of the conference, with sessions examining the detail in such complex ecosystems, punctuated with more expansive themes of climate change and government involvement in reef protection.



Vimoksalehi Lukoschek presented a poster about her work on the relationships among seasnakes. Photo by Emma Hutchinson

The talks were grouped under six main themes; Biodiversity, Symbiotic dinoflagellates, Fish dynamics, Coral reef processes, Corals – management and change, and Anthropogenic impacts. There was something for everybody. Tube worms, guano, faithfulness of dinoflagellates, nocturnal navigation and sex, or rather the lack of it, sat beside discourses on adaptation as a result of global warming, connectivity in reef fish and anthropogenic impacts.

Dr John (Charlie) Veron gave an entertaining display of Coral ID, his guide to coral reef identification. After baffling most of us with statistics and scientific names, Charlie proceeded to show that with the touch of a button we too could be world experts on coral identification. His new CD was very detailed and seemed very simple to search. If we could only remember which buttons to press!

CRC Reef associate student Ms Heather Patterson gave a talk on elemental signatures in pre-settlement reef fish otoliths, and CRC Reef scholarship student Ms Vimoksalehi Lukoschek presented a poster on her work on phylogenetic relationships of hydrophiid seasnakes.

NEW PUBLICATIONS

CRC Reef has published four new technical reports:

- Kapitcke IR, Matheson M, Hardy TA. *Guidelines for Reef Infrastructure: Tourist Pontoons*. CRC Reef Tech Rept 39. (on CD with introduction available online. Copies for sale for \$30 from CRC Reef office).
- Birtles A, Valentine P, Curnock M, Arnold P, Dunstan A. *Incorporating visitor experiences into ecologically sustainable dwarf minke whale tourism in the northern Great Barrier Reef*. CRC Reef Tech Rept 42. (in print with executive summary online)
- Rasheed MA, Roder CA, Thomas R. 2002. *Port of Mackay. Seagrass, algae and micro-invertebrate communities*. February 2001. CRC Reef Tech Rept 43. (in print with chapter 1 online).
- King B, Zapata M, McAllister F, Done T. *Impact of river plumes in the central and northern Great Barrier Reef*. CRC Reef Tech Rept 44. (online only.)

IMPAC NEWS

CRC Reef has established a non-profit company, the International Marine Project Activities Centre Ltd (IMPAC) which provides a host facility for marine project managers from around the world. IMPAC is located adjacent to CRC Reef in Townsville.

Dr Clive Wilkinson is the Coordinator of IMPAC. He brings with him the Global Coral Reef Monitoring Network (GCRMN) which is hosted by the Australian Institute of Marine Science (AIMS).

In April 2002, the International Ocean Institute established a regional office for Asia and the western Pacific (IOI-Australia) in IMPAC with Professor Robin South (Director) and Mr Posa Skelton (Project Manager). IOI –Australia oversees work in Asia and the Pacific Islands and networks with IOI offices in Fiji, Indonesia and Thailand. In addition, the International Marinelifelife Alliance has an office in IMPAC staffed by Regional Coordinator, Mr Geoffrey Muldoon. The Great Barrier Reef Research Foundation also has an office in IMPAC. Negotiations are ongoing with other international agencies.

LIVE FISH TRADE

Geoffrey Muldoon

A three-day workshop was held in IMPAC in August to develop standards and protocols for the live reef food fish trade (LRFFT). Townsville hosted the workshop because of Australia's importance as a supplier of live reef fish to south-east Asia. Australia's live reef fish fishery, centred on the Great Barrier Reef, is regarded as the best managed fishery of its kind in the world.

The workshop represented part of a larger collaborative project being undertaken by the Marine Aquarium Council (MAC), International Marinelifelife Alliance (IMA) and The Nature Conservancy (TNC) to develop best-practice standards for the industry. The project is funded by APEC and the McArthur Foundation. It focuses on wild-caught and cultured fish to address stock assessment, capture and culture methods, holding, transportation, and human health and safety concerns.

The workshop was convened by IMA (Australia) with technical assistance from the MACs Standards and Accreditation Coordinator, Peter Scott and logistical support from IMPAC and CRC Reef.

The main objectives of the workshop were to:

- Summarise the main fisheries dependent and independent methods to collect and analyse data in tropical coral reef fisheries;
- Prescribe the application of these techniques to the LRFFT with emphasis on assessing initial fishery viability and the ongoing assessment and monitoring programs required to sanction or approve expansion of a fishery;
- Identify the management tools and strategies most appropriate for the LRFFT given capacity constraints; and
- Responsible fishing behaviour of fishing operations in terms of capture and post-harvest handling and consumer safety

Although this was primarily a technical workshop, representatives from industry, government, science and marine conservation organisations from Australia, the Pacific and throughout south-east Asia attended. By providing a forum for multi-stakeholder discussion the workshop was able to build consensus on what "best practices" were needed to move the industry toward increased responsibility sustainable industry in

terms of sustainable reefs, fish stocks and fishing communities.

The outcomes from this workshop are being synthesised into a comprehensive draft standards document for review, discussion and revision by stakeholders. The 'standards document' embraces the entire chain of custody covering wild harvest, aquaculture and import, holding, distribution and marketing.

NEW TRAINING CENTRE AND FIRST REGIONAL MEETING FOR IOI

The Hon Joseph Warioba, the President of the International Ocean Institute (IOI), officially opened the first regional centre for the IOI, and dedicated a new marine training centre for Asia and the Western Pacific in July.



The Hon Warioba officially opened IOI - Australia. Photo by CRC Reef

The Hon Warioba is a lawyer and expert in ocean policy and the Law of the Sea. He was one of 11 Judges on the International Tribunal for the Law of the Sea (1996–99) and is also a former Prime Minister of Tanzania (1985–90). The IOI trains upper-level government employees in ocean law issues; and coastal and fisheries managers in FAO code of conduct for sustainable fisheries. IOI also runs seminars for leaders in the Law of the Sea and Oceans Policy. IOI has 21 operational centres and affiliates around the world.

The Hon Warioba also dedicated a new marine training centre in IOI-Australia to Elisabeth Mann Borgese who started the IOI in 1972. Mann Borgese was a consultant to UNEP, UNESCO and the World Bank and was awarded the UN Sasakawa Environment Prize, Francis of Assisi Environment Prize and the Order of Canada. She wrote more than a dozen books and many research papers. She died in 2002.

The Elisabeth Mann Borgese Training Centre will be used by IOI – Australia and by the UN Division of Ocean Affairs and Law of the Sea TRAIN-SEA-COAST program to train participants from Asia and the Pacific Islands about the Law of the Sea and sustainable fisheries management. The first course about Law of the Sea is likely to be offered early in 2003.

OCEAN LEADERS FOCUS ON HUMAN ISSUES IN WESTERN PACIFIC

Directors of the International Ocean Institute (IOI) from Thailand, Indonesia, Australia and Fiji held their first regional strategic meeting in Australia in October.

The Directors discussed region-wide projects in training; women in fisheries; and raising consciousness in indigenous youth about the importance of marine resources to their future.

"IOI-Australia has already developed a joint proposal with James Cook University to focus on the role of women in fisheries in Torres Strait," said Professor Robin South, Director of IOI –Australia.

"Regionalism is a new concept for the IOI. It is hoped that the meeting in Townsville will establish ground rules on how regionalism can work for the institution," said Professor South.

A Memorandum of Understanding has been negotiated between IOI-Australia and the Sam Ratulangi University in Manado, Indonesia, to establish a Bunaken Research and Education Centre. The Centre is designed to enhance activities associated with the Bunaken National Park in North Sulawesi. This park is one of the earliest established marine national parks in Indonesia.

This is a significant development towards establishing closer relations between IOI-Australia and Indonesia. For more information about outcomes from the meeting see www.reef.crc.org.au/research/consult/ioi_regional_consult.htm.

DIARY ←

24–27 March 2003. Second International Tropical Marine Ecosystem Management Symposium, Manila, Philippines. (rescheduled from November 2002).

Visit: www.icriforum.org/itmems/draft_prog.html for draft program or for contacts see: www.icriforum.org/itmems/contactus.html

26–28 March 2003. Commercialisation Forum and Fair of Ideas, Sydney.

Visit: www.kca.asn.au or contact: kca@icmsaust.com.au.

6–10 April, 2003. Australia Water Association's OZWATER 2003, Perth.

Visit: www.ozwater.org/

28 April-1 May 2003. National Landcare Conference, Darwin, Northern Territory.

Themes include emerging natural resource management issues, building capacity and working with diverse cultures, managing land remote from urban centres and international Landcare. Visit: www.landcareconference.nt.gov.au or contact: peter.jacklyn@ntu.edu.au

4–5 June 2003, Australian Water Association special conference, Sydney.

Chemical concerns in water. The conference will study the risks posed by chemical residuals and industry by-products, such as endocrine disrupting chemical (EDCs) and MTBE, to public health and Australia's environment. It will also describe and outline solutions for disinfection by-products produced during wastewater treatment. Contact: dwiesner@awa.asn.au

13–17 June 2003, Coastal Zone '03, Coastal Zone Management Through Time, Baltimore, Maryland.

The largest conference for the world's coastal resource management community. Visit: www.csc.noaa.gov/cz2003/

1–4 October 2003, 37th International Conference on Nearshore and Estuarine Cohesive Sediment Transport Processes, Virginia Institute of Marine Science, Gloucester Point, VA, USA.

Visit: www.vims.edu/intercoh/

28–30 May 2003 MARINE 2003 Fifth International Conference on Marine Technology and Transportation. Szczecin, Poland.

A forum for the discussion between international shipbuilding enterprises, relevant professional bodies as well as classification societies, research and design centres, and hydraulics and shipping companies. The conference will focus on marine transportation issues, including ports and environmental aspects and will discuss both traditional and improved techniques in design, building and operation of ships. Emphasis will be given to modern areas of research and development such as, new and lighter materials, transportation, ergonomics, environmental concerns and other advanced topics. Visit: www.wessex.ac.uk/conferences/2003/marine03/ or contact the Conference Secretariat, Louise Hammond, Marine03, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK. Phone: 44 (0) 238 029 3223 Fax: 44 (0) 238 029 2853 Email: lhammond@wessex.ac.uk

18–20 June 2003. National Environment Conference, Environmental Engineering Society, Brisbane.

The Environment. Whose business is it anyway? – Environment, Ethics, Economics and Engineering. Contact: Deborah Gaudie, phone: 02 6270 6599 or email: dgaudie@ieaust.org.au or visit: www.eesq.com.au/nec

14–17 July 2003. MODSIM International Congress on Modelling and Simulation, Townsville.

Integrated modelling of biophysical, social and economic systems for resource management solutions. Abstracts due 29 November 2002. Contact: David Post email: David.Post@csiro.au or visit: mssanz.cres.anu.edu.au/modsim2003.html

21–27 September 2003. Marine Biotechnology Conference 2003, Chiba, Japan. Visit www.tuat.ac.jp/~marine/ or email: MBC2003@knt-tokyo.gr.jp.

28 June – 2 July 2004. Tenth International Coral Reef Symposium, Okinawa, Japan.

Stability and Degradation of Coral Reef Ecosystems. Visit: www.plando.co.jp/icrs2004