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

Printed on recycled paper

In this Issue:

JELLY BABIES A WORLD FIRST

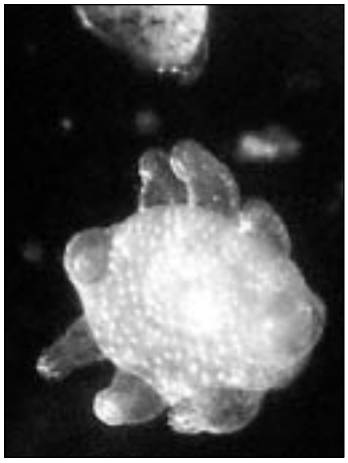
The first Irukandji jellyfish to be bred in captivity were born in Townsville in April, creating worldwide media interest. 'Irukandji syndrome' is a painful and debilitating set of symptoms that has caused the deaths of at least two people on the Great Barrier Reef. Up to 10 species of jellyfish found in northern Australian waters are thought to be responsible for the syndrome, but only one, Carukia barnesi, *is a proven culprit.*

According to CRC Reef researcher Ms Lisa-ann Gershwin, from James Cook University and the Australian Institute of Marine Science, "Being able to breed *Carukia barnesi* jellyfish is a giant step forward for Irukandji research. Specimens raised in captivity will be shared with researchers to develop an anti-venom, study the jellyfish toxins for pharmaceutical benefits, and work on rapid diagnostic techniques for Irukandji stings."

Ms Heather Walling, a research officer at James Cook University, nurtured jellyfish caught by Surf Life Saving Queensland (SLSQ) lifeguards at Palm Cove near Cairns at the beginning of February.

"Several of the jellyfish spawned, and grew through a worm-like intermediate stage to become polyps," she said. "This is the first major hurdle. They are now visible to the naked eye, and are dividing asexually to generate more polyps. Hopefully they will survive the polyp stage and soon change into tiny jellyfish."

In a recent trip to the Kimberley in Western Australia, Lisa-ann Gershwin identified three more species of jellyfish thought to cause Irukandji syndrome.



Carukia barnesi polyp – about 0.1mm across.
Photo by Heather Walling, JCU.

One of the biggest obstacles to developing an anti-venom has been the lack of a regular supply of specimens. Between 10,000 and 1,000,000 specimens will be needed to develop an anti-venom, but typical annual catches have yielded only 200 to 1,000 Irukandji jellyfish. A captive breeding program is key to progressing this research.

For more information visit www.reef.crc.org.au/aboutreef/coastal/irukandji.html or contact Lisa-ann Gershwin, lisa.gershwin@jcu.edu.au

CRC Reef Research Centre Ltd was established and is supported under the Australian Government's Cooperative Research Centres Program. Its mission is to plan, fund and manage world-leading science for the sustainable use of the Great Barrier Reef World Heritage Area. It is a joint venture between Association of Marine Park Tourism Operators, Australian Institute of Marine Science, Great Barrier Reef Marine Park Authority, Great Barrier Reef Research Foundation, James Cook University, Queensland Department of Primary Industries & Fisheries, Queensland Seafood Industry Association, and Sunfish Queensland Inc.

CATCHMENT-TO-REEF

Water Quality Conference

The 'Catchment to Reef: Water Quality Issues in the Great Barrier Reef Region' conference was held in Townsville from 9-11 March.

The majority of current water quality management initiatives have been based on knowledge that was published more than two years ago. In the meantime, new studies have been undertaken, both on the Great Barrier Reef catchment and its waters. This conference updated scientists, managers and other interested parties on new regional water quality research.

The conference was organised by the Great Barrier Reef Marine Park Authority, CRC Reef, James Cook University, the Australian Institute of Marine Science, the Australian Museum and the Rainforest CRC.

A total of 54 oral and 11 poster presentations dealt with research on catchment sources of sediments and nutrients, transport and fate of these sediments and nutrients, ecosystem indicators of water quality, water quality impacts on tropical aquatic plants and on coral reef ecosystems, and contemporary water quality research and monitoring issues.

The conference was attended by about 170 delegates from the scientific community, State and Commonwealth agencies, representatives of Natural Resource Management groups on the Great Barrier Reef catchment, and agricultural industry and community representatives.
The proceedings of the conference will be published as a special issue in the international journal *Marine Pollution Bulletin*, and will be a benchmark of our current state of knowledge on Great Barrier Reef water quality. Through this, currently unpublished information will be made widely accessible for further interpretation and application.

The book of abstracts is published as CRC Reef Technical Report No. 53 and is available as hard copy from CRC Reef and at www.reef.crc.org.au/publications/techreport

New Conference

A follow-up conference *Healthy Country – Healthy Reef* is planned for 23-25 November 2004, with the aim of turning research into water quality solutions that can be delivered 'on ground'. The joint CRC Reef and Rainforest CRC

FROM THE CEO'S DESK

Russell Reichelt. Photo by Rob Parsons.

CRC Reef unsuccessfully bid for further funding in the 2004 CRC Application Round. While it was very disappointing to learn the results of our application, there has been considerable public comment about the valuable role CRC Reef has played in coordinating and promoting research and development in the Great Barrier Reef and Torres Strait. The strong show of public support is a credit to the outstanding research and education results achieved by the participants in CRC Reef.

The wide range of research conducted by CRC Reef researchers is evident in the newsletter contents. Fisheries assessment, Catchment-to-Reef research, links with Traditional Owners, seabed biodiversity, crown-of-thorns starfish and Irukandji all feature. They represent work on the highest priority areas for our members: government reef managers, tourism and fishing industries and the general community.

The highlights of CRC Reef's work over the last year include research into the impacts of terrestrial run-off on inshore reefs, which contributed significantly to the formulation of the Reef Water Quality Protection Plan - a joint initiative of the Commonwealth and Queensland Governments which aims to halt and reverse the decline in water quality entering the reef within 10 years. The Catchment-to-Reef Project, a joint venture with Rainforest CRC, will provide the tools needed to reach this target.

CRC Reef's Marine Modelling Unit, based at James Cook University, is providing vital information on cyclones and storm surge to both industry and government. They are providing Woodside Petroleum with crucial wave information to ensure the safety of offshore oil production platforms in Arafura and Timor Seas. They are also modelling storm surges in Northern Territory and in Townsville to provide local councils with information that could save lives and property during the cyclone season.

The Great Barrier Reef Seabed Biodiversity Project is a collaboration of unprecedented size involving two partners from CRC Reef (Australian Institute of Marine Science, Queensland Department of Primary Industries and Fisheries), CSIRO and the Queensland Museum. These agencies have provided $4 million of resources, attracting $2 million co-funding from CRC Reef, Fisheries Research and Development Corporation and National Oceans Office. This project will help managers to protect the biodiversity of the seabed and will also help ensure sustainable fisheries in the Great Barrier Reef Marine Park.

Both CRC Reef and CRC Torres Strait are working to enable better Indigenous involvement in marine resource management. CRC Reef researchers have developed a framework for co-management of marine resources between Indigenous groups and management agencies. In Torres Strait, CRC Torres Strait researchers are assessing cultural value of marine resources and developing a framework for Indigenous aquaculture.

I hope that I will be able to outline our future directions in the next newsletter and that this cooperative venture will be continued in a way that captures the strengths of the current research and education programs.

Russell Reichelt
Chief Executive Officer

The Barron River.
Photo by Bryony Barnett, CRC Reef.

conference will be run in conjunction with the Rainforest CRC Annual Conference in Cairns, where researchers will network, hear the latest results and put their collaboration into action. Catchment-to-Reef sessions will include theme-based workshops and field trips to demonstration sites.

For more information about the planned conference contact Ms Bryony Barnett, CRC Reef Extension Manager, 07 4729 8401, bryony.barnett@crcreef.com or Mr Tim Prior, Catchment-to-Reef Communication and Liaison Officer, 07 4781 5269, tim.prior@jcu.edu.au

New Staff

James Cook University Masters graduate Mr Tim Prior has been appointed as Catchment-to-Reef Communication and Liaison Officer. Tim will be forging communication links between researchers for the Catchment-to-Reef project and stakeholders including landowners and government agencies.

Catchment-to-Reef Communication and Liaison Officer Tim Prior.
Photo by Neil Young.

New Students

CRC Reef has funded scholarships for four new PhD students as part of the Catchment-to-Reef project. Ms Melanie Shaw from The University of Queensland, and Mr Matt Slivkoff from Curtin University and the Australian Institute of Marine Science are researching advanced technologies for monitoring water quality on the Great Barrier Reef.

Mr Ben Johnson and Mr Tim Cooper, both from James Cook University, are working on new tools to assess the health of inshore ecosystems such as seagrass beds and coral reefs.

For more information on the Catchment-to-Reef project: www.reef.crc.org.au/resprogram/programC/catchment.html

CROWN-OF-THORNS STARFISH PLAGUE LINKED TO RUN-OFF

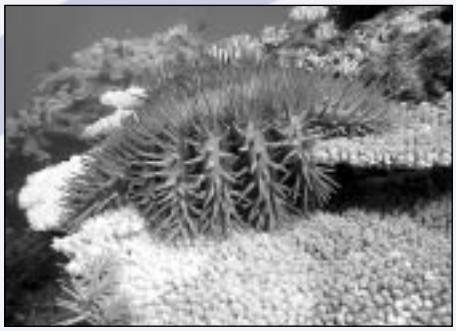
The first conclusive evidence to demonstrate the link between nutrient run-off and escalating crown-of-thorns starfish infestations in the Great Barrier Reef lagoon was revealed at the Catchment-to-Reef conference.

The collaborative effort of CRC Reef scientists Dr Glenn De'ath, Dr Katharina Fabricius and Dr Ken Okaji from the Australian Institute of Marine Science (AIMS), and Mr Jon Brodie from James Cook University (JCU), may end 40 years of intense scientific and community debate as to whether crown-of-thorns outbreaks are a natural phenomenon, or whether they are exacerbated by human activities.

Water quality expert Mr Jon Brodie said the study shows an increase in nutrient run-off has led to higher levels of phytoplankton, which is food for the starfish larvae.

"The levels of nutrients such as nitrate, ammonia and phosphate that run into rivers and out onto the Great Barrier Reef have spiralled since 1850, particularly near developed areas," Mr Brodie said. "Cropping, grazing and urban development are responsible for the rise in nutrient levels."

Statistical modeller Dr Glenn De'ath said laboratory experiments reveal that twice as much phytoplankton results in a ten-fold increase in survival of the starfish larvae. This could stimulate a population explosion causing severe outbreaks of adult starfish.



Crown-of-thorns starfish.
Photo by Katharina Fabricius, AIMS.

A computer model developed by Dr De'ath predicts that such a doubling of phytoplankton will create more frequent outbreaks, from one every 50-100 years to one every 15 years; frequencies consistent with those observed in the northern and central Great Barrier Reef.

The scientists believe the research demonstrates that improved water quality will create greater coral cover and a healthier reef by reducing the frequency of crown-of-thorns starfish outbreaks.

For more information, contact Mr Jon Brodie, jon.brodie@jcu.edu.au or Dr Glenn De'ath, g.death@aims.gov.au

RESEARCHERS MEET TRINITY INLET TRADITIONAL OWNERS

"What we know about Trinity Inlet" was the theme for an information-sharing workshop held in Cairns in March. CRC Reef scientists from Department of Primary Industries and Fisheries Northern Fisheries Centre, and other managers, met with Cairns Traditional Owners, to talk about ways to work together more closely.

Researchers Michael Rasheed, Kerry Neil, Stuart Hyland, Darren Rose, and John Russell presented summaries of their work on seagrass beds, port surveys, introduced pests, barramundi and mudcrab monitoring, and the East Trinity rehabilitation project. Cathy Rankin (State Development) talked about Indigenous aquaculture opportunities.

In smaller mixed discussion groups, Traditional Owners from Yirragandgi Aboriginal Corporation, Gungandji Aboriginal Corporation, Giangurra Aboriginal Corporation, Gimuy Cultural Development Corporation, and the North Queensland Land Council shared their aspirations for greater involvement in research and management of their sea country.

For more information contact Ms Bryony Barnett, Extension Manager, CRC Reef, bryony.barnett@crcreef.com

INTERNATIONAL FISH OTOLITH SYMPOSIUM

The Third International Symposium on Fish Otolith Research and Application, hosted by CRC Reef and James Cook University, will be held from 11-16 July 2004 in Townsville.

Otoliths are fish ear bones. They grow continuously throughout the life of a fish, laying down bony calcified material at different rates throughout the year. This 'data logging' can give scientists information about the age and growth rates of fish, as well as their movement and interaction with their habitat.

Information from otoliths has become fundamental to the management of fisheries and protected species around the world. The challenge for researchers is to develop the appropriate technologies to extract the information from otoliths and to interpret it accurately in terms of the biology of the fishes.

The symposium has attracted leading scientists from around the world, who will be presenting state-of-the-art and future directions of this increasingly important area of research, and examining its application to contemporary fisheries assessment and management.

The Third International Fish Otolith Symposium has been organised by CRC Reef Fishing and Fisheries Project Leader Dr Gavin Begg and his team. For more information, visit the Symposium website at www.otolith2004.com or contact Dr Gavin Begg, gavin.begg@jcu.edu.au

REEL VALUES

Recreational fishing is a way of life for more than 800,000 Queenslanders, and generates around $240 million a year for the State's economy. But for recreational fishers, the benefits of their pastime are far more than its economic value. CRC Reef researchers from James Cook University are now studying what motivates people to go fishing.

Queensland has 800,000 recreational fishers. Photo by Stephen Sutton, JCU.

CRC Reef researcher Dr Stephen Sutton from James Cook University has been asking recreational fishers across Queensland about the social benefits of recreational fishing.

"Recreational fishing is about more than the fish on the table at the end of the day, or the money the sport injects into communities, it's about lifestyle and family values," according to Dr Sutton.

Previous surveys of recreational fishers have concentrated on what species have been caught, the types of people who go fishing, and where and how often they fish.

"Queensland Government figures show, for instance, that a lot of men go fishing, as do children of all ages. This suggests that fishing may be an important way for fathers to interact with their kids, so that's one of the things we'll be testing in our survey," Dr Sutton said.

The survey, designed in collaboration with Sunfish Queensland, Queensland Fisheries Service, and the Great Barrier Reef Marine Park Authority, will investigate fishers' attitudes toward conservation, catch-and-release, fish consumption, and the management of fisheries and marine parks. It will also give anglers a voice in how they feel recreational fisheries should be managed.

The team contacted around 10,000 Queensland households as part of a random telephone survey in February. Of those called, 2,400 recreational fishers agreed to take part in a more detailed postal survey. This will be the first time that a postal survey of recreational fishers has been carried out in Queensland.

For more information: www.reef.crc.org.au/resprogram/programA/A1-2-3a.htm or contact Dr Stephen Sutton, stephen.sutton@jcu.edu.au

HI-TECH VIDEO CAMERA GOES OVERBOARD

A state-of-the-art camera system is filming life on the seabed as part of the three-year, $6 million multi-agency Great Barrier Reef Seabed Biodiversity Project.

The camera, designed and built by CSIRO Marine Research, was towed underwater behind the Australian Institute of Marine Science (AIMS) research vessel RV Lady Basten, on her third cruise to map life on the seabed of the Great Barrier Reef Marine Park.

The camera was used to film the seabed from Townsville to the southern border of the Great Barrier Reef Marine Park visiting sites as far out as the edge of the continental shelf.

Roland Pitcher, Greg Smith and Peter Doherty install the new camera system.
Photo by Louise Goggin, CRC Reef.

According to CRC Reef Program Leader Dr Peter Doherty from AIMS, "Much of the seabed between the reefs has never been studied, and tools such as the towed video camera enable us to see these environments for the first time."

Mapping the biodiversity of the Marine Park seabed will help managers to protect important plants and animals, and provide a snapshot of the current status of the seabed so we can monitor changes in these populations in the future. The project will also help ensure sustainable fisheries in the Great Barrier Reef Marine Park.

The team collected around 500 hours of video footage and 15,000 high-resolution photographic images of the seabed during their 37 days at sea. The camera system generates stereoscopic images so scientists can see the seabed in 3D, and take accurate measurements of bottom-dwelling plants and animals. The new system also measures the water turbidity, salinity, temperature and light level as it records. Information gathered from surveys across the Marine Park will be meticulously analysed by scientists over the next two years.

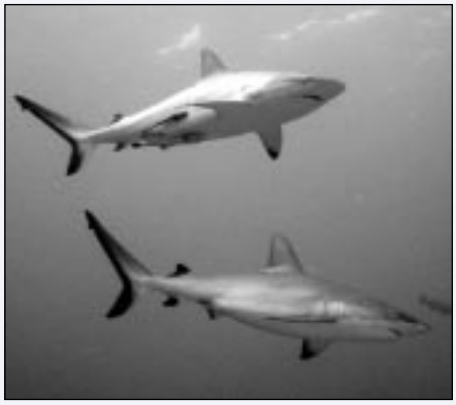
The Great Barrier Reef Seabed Biodiversity Project is funded by CRC Reef, the Fisheries Research and Development Corporation, and the National Oceans Office. It is co-funded by the Australian Institute of Marine Science, CSIRO, Queensland Department of Primary Industries and Fisheries, and the Queensland Museum.

For more information: www.reef.crc.com.au/resprogram/program/seabed.htm or contact Dr Peter Doherty, p.doherty@aims.gov.au, or Dr Roland Pitcher, roland.pitcher@csiro.au

SHARKS GET A BITE AT MARINE WILDLIFE WORKSHOP

CRC Reef organised a Marine Wildlife Workshop in March to help forge closer links between managers, stakeholders and students researching marine wildlife. Students presented the results of their research on sea turtles, dugongs, sharks and dolphins, and outlined how their findings can be used by managers to protect these species.

CRC Reef Associate Student Mr Will Robbins, from James Cook University, told the workshop that sharks have more in common with marine mammals such as dolphins and dugongs than with other fish, and need specific management to ensure their ecological sustainability.



Black tip reef sharks.
Photo by Dean Miller.

"Sharks are not like other fish, because they have internal fertilisation, and give birth to fully developed pups after quite long pregnancies," says Mr Robbins. "White-tip reef sharks, for example, live for up to 19 years, and only give birth to one or two pups every couple of years after they mature. This means that fishing can make a big difference to shark populations."

Mr Robbins hopes to calculate mortality levels that are sustainable for these species of reef sharks, and help managers develop strategies for managing their catch.

The workshop was attended by managers from the Great Barrier Reef Marine Park Authority, Queensland Parks and Wildlife Service, and the Department of Primary Industries. Stakeholders from Indigenous, fishing and conservation groups, and scientists from James Cook University and the Museum of Tropical Queensland also attended.

The students are now developing policy briefings intended to assist managers to access and consider current research knowledge in their policy-making processes. These will be published on the CRC Reef website.

For more information contact Dr Britta Schaffelke, Manager of Knowledge Exchange and Education, CRC Reef, britta.schaffelke@crcreef.com

SCIENCE ON RADIO

Every Wednesday morning, ABC Radio North Queensland gets scientific. In a five-minute slot co-ordinated by CRC Reef, North Queensland Morning Show host John Nutting talks to Townsville-based scientists about their work here, and all over the world.

Tune to 630AM on your dial Wednesdays at 9.40am to hear the latest stories from researchers at CRC Reef, the Australian Institute of Marine Science, the Great Barrier Reef Marine Park Authority, James Cook University, Queensland Department of Primary Industries and Fisheries, Marine and Coastal Community Network, Museum of Tropical Queensland, Tropical Savannas CRC and Townsville Hospital.

Recent highlights include CRC Reef Program Leader Prof Tom Hardy, from James Cook University, explaining the art of cyclone modelling, and Reef Check director Jos Hill talking about how volunteer scuba divers can help monitor the Reef. If you miss the show you can hear the latest interviews online at www.abc.net.au/northqld/features/radioscience.htm

CRC Reef researcher Guido Parra being interviewed for ABC North Queensland.
Photo by Andrew Rumsby.

SUPPORTING REEF STUDIES

This year CRC Reef is supporting the work of nine students from James Cook University through the annual augmentative research grants program. One Honours student, two MSc and six PhD students were successful in gaining grants totalling almost $10,000. Augmentative research grants are available to students from James Cook University who do not receive a CRC Reef scholarship. The next round will be in April 2005.

Mr Neal Cantin received the Dorothy Paramore Award of $250 for his research on the effects of the herbicide diuron on corals.

STUDENT	DEGREE	PROJECT TITLE	GRANT
Marissa Land	BSc Hons	Tracking sediment input of the Tully River. Sedimentology and geochemistry of the northern Rockingham Bay area.	$800
Raymond Bannister	PhD	Feeding biology of the sponge *Rhopaloeides odorabile*: shifting between heterotrophy and autotrophy.	$1,000
Melanie Blanchette	MSc	Development of a rapid bioassay for the detection of copper pollution in the Great Barrier Reef: the effect of copper on the esterase activity of cultured zooxanthellae isolated from corals of North Queensland.	$1,200
Neal Cantin	MSc	Implications of parental diuron exposure for coral reproduction and larval metamorphosis.	$1,300
Alana Grech	PhD	Spatial models of dugong and seagrass distribution for habitat management.	$900
Jana Guenther	PhD	Behavioural, physical and chemical antifouling properties of starfish (Echinodermata, Asteroidea).	$1,000
Darren Peck	PhD	Foraging behaviour in the wedge-tailed shearwater.	$1,475
William Robbins	PhD	Growth, demography and genetic stock structure of Queensland reef sharks.	$1,300
Steve Whalan	PhD	Population genetic structure of the sponge *Rhopaloeides odorabile*.	$1,000

IMPAC NEWS

RECOGNISING TRADITIONAL LAW

Customary law has been used for thousands of years to manage both land and sea in the Pacific region. A workshop co-ordinated by the International Marine Project Activities Centre (IMPAC) in April focussed on how Melanesian countries could incorporate traditional laws into modern legislation.

Subsistence fishing is vitally important in 21 of 22 Pacific Island countries, accounting for about 80% of total production. Many Pacific islanders have traditional management practices to ensure the sustainability of fisheries, which are based on detailed knowledge of the biology of the species involved. However, much of this customary knowledge is being lost.

"Because customary laws were never written down, they have not become part of modern legislation in most countries," said Dr Clive Wilkinson, co-ordinator of IMPAC and senior research scientist with the Australian Institute of Marine Science. "Governments are now seeing the potential benefits of recognising traditional law."

Government regulations in the Pacific tend to be based on management concepts and models developed internationally, which do not take account of customary practices or traditional knowledge. Recognising traditional management, knowledge and laws can enable better involvement of communities in sustainable development.

Representatives from Fiji, New Caledonia, Papua New Guinea, Solomon Islands, and Vanuatu, international institutions, academics and a representative from the Christensen Fund attended the workshop at IMPAC in Townsville.

Debate centred on a series of case studies demonstrating the incorporation of traditional law into codified national and local government law. Delegates drafted a series of principles for the recognition of customary law. These principles will be finalised and made available to people and governments in the region to help in coastal resource management, especially nearshore fisheries.

"Customary law underpins everything in Papua New Guinea. It is the soul and spirit and lifeblood of Papua New Guineans," according to John Genolagani, First Assistant Secretary on National Conservation Matters for the Department of Environment and Conservation in PNG.

Traditional fishing in Kimbe Bay. Photo by The Nature Conservancy.

"Ninety-seven per cent of our country, our coasts and marine areas have traditional laws acknowledging the ownership of resources, and it is one of the goals of our constitution to recognise these laws," he said.

The workshop was co-ordinated by IMPAC and supported by the Christensen Fund, CRC Reef, Institute of Advanced Studies at the United

Nations University, International Ocean Institute (Australia), IUCN Law Commission, South Pacific Regional Environment Program, and the World Bank.

For more information contact Dr Clive Wilkinson, clive.wilkinson@impac.org.au

SOLVING THE MYSTERY OF THE CORAL TRIANGLE

Australian scientists are visiting the Solomon Islands to take part in a pioneering survey of the area's marine biodiversity.

"The underwater life of the Solomon Islands is one of our region's great mysteries," according to IMPAC associate Dr Alison Green, Marine Science Coordinator (Asia Pacific) for The Nature Conservancy, who is leading the survey. "The Solomon Islands could be within the 'Coral Triangle' – an area with the highest diversity of corals anywhere in the world. This survey will find out whether the Solomon Islands are within the 'Coral Triangle'. It will also identify areas that are a high priority for marine conservation."

The survey is being conducted by a team of local and international experts who will survey corals, fish, seagrass, trochus shell and beche-de-mer as well as whales and dolphins. Never before has such a comprehensive, large-scale survey been conducted in the Solomon Islands.

"The survey is very important for people of the Solomon Islands. The majority of Solomon Island communities depend on the natural marine resources for their livelihood and as a means of generating income," according to Mr Paul Lokani, Director of The Nature Conservancy's Melanesia Program, which is organising the survey. "In many regions of the Solomon Islands, these resources are being put under mounting pressure as human populations rise, and individuals increasingly turn to the natural resources as a means of raising cash."

The survey will find out the condition of these resources, including which species are abundant and which species are already overfished. This information is vital for government agencies, non-government organisations and resource owners in assisting and focusing their efforts to develop and manage

Surveying reefs in the Solomon Islands. Photo by Benjamin Kahn, APEX Environmental.

Solomon Islands resources in a sustainable way. The five-week survey will circle the main island chain of the Solomon Islands, departing from Honiara on Guadalcanal, and steaming northwest to survey the islands of Santa Isabel and Choiseul before steaming south and surveying the islands of New Georgia, Malaita, Makira and finally returning to Honiara on Guadalcanal.

The survey is a cooperative project by the Solomon Islands Government, local and international non-government conservation organisations (particularly The Nature Conservancy, World Wide Fund for Nature, Conservation international and Wildlife Conservation Society) and Australian scientific institutions including the Australian Institute of Marine Science, CRC Reef, Queensland Department of Primary Industries & Fisheries, and APEX Environmental Pty Ltd.

For more information contact Dr Alison Green, agreen@tnc.org

PROTECTING PNG'S UNDERWATER PARADISE

IMPAC associates The Nature Conservancy (TNC) have been working with marine conservation managers from Papua New Guinea to create a network of Marine Protected Areas in Kimbe Bay, West New Britain.

Kimbe Bay has one of the world's richest and most diverse coral reef environments, with vibrant coral reefs and volcanic seamounts supporting a huge variety of reef fish, marine mammals and other sealife.

However, this area faces a number of threats. Papua New Guinea (PNG) has one of the world's fastest growing populations, and Kimbe Bay is experiencing increasing pressure from fishing and run-off from land-based activities. Some of the reefs in this area have also suffered serious damage from coral bleaching.

Marine conservation managers from PNG came to Townsville for a three-day workshop, looking at ways to protect this unique area.

"Australia is a leading country in the design of Marine Protected Areas," according to Mr Paul Lokani, Director of The Nature Conservancy's Melanesia Program. "We hope to absorb and benefit from the knowledge of scientists who have worked both in Kimbe Bay and on the Great Barrier Reef."

This was the first step toward developing the Marine Protected Area in Kimbe Bay. Managers are now working with local partners in PNG to design a Protected Area which has the support of local communities.

Kimbe Bay, West New Britain. Photo by The Nature Conservancy.

Experts from Australian Institute of Marine Science, APEX Environmental, CRC Reef, Curtin University, Great Barrier Reef Marine Park Authority, James Cook University, Papua New Guinea's National Fisheries Authority, The Nature Conservancy, University of Papua New Guinea, and The University of Queensland attended the workshop to advise on marine science and socio-economic aspects of setting up a Marine Protected Area.

CRC TORRES STRAIT NEWS

Researcher visits

CRC Torres Strait research is up and running, with 14 researchers visiting the islands so far this year. As well as sampling for projects on fisheries, seabed biodiversity and port surveys, researchers met with Islander communities in Waibene (Thursday Island), Mer, Erub, Massig and Mabuiag islands.

CRC Torres Strait researcher Jane Mellors shows students at Thursday Island High School how to identify seagrasses.
Photo by Bryony Barnett, CRC Reef.

Website

Dates and locations of researchers' visits to the Torres Strait, as well as information about research tasks, and guidelines for researchers can be found on the website at www.crctorres.com.

Islander scholarship

Masters student Mr Frank Loban received the CRC Torres Strait Prestige Research Scholarship, which is awarded to a Torres Strait Islander. He will be researching the potential for Torres Strait Islander participation in fisheries management, and will be based at James Cook University.

Port of Thursday Island clear of introduced marine pests

CRC Torres Strait researcher Dr Kerry Neil and her team from the Department of Primary Industries and Fisheries conducted a survey of the Port of Thursday Island in March, looking for introduced marine species that could become pests.

Introduced pests can arrive on the hulls of ships or in ballast water. If established, marine pests

Scientists look for introduced species in Thursday Island Port.
Photo by DPI&F.

can have a devastating effect on native marine life, and could affect local fishing.

During their survey of the port, the team found no introduced marine species that would threaten the area. However, many introduced species can be small and difficult to recognise, so the corals, fishes, crabs, bivalves and worms collected during the survey will be analysed in the laboratory over the next few months to confirm that none of them are introduced.

NEW PUBLICATIONS

Technical reports

Mapstone BD, Carlos G, Lunow CP, Reid AR. 2004. Uncertainty in length measurements of coral trout. Implications for compliance to and enforcement of minimum legal size limits. CRC Reef Research Centre Technical Report No. 54. (in print).

Haynes D, Schaffelke BD. 2004. (eds). Catchment to reef: water quality issues in the Great Barrier Reef region. 9-11 March 2004, Townsville. Book of abstracts. CRC Reef Research Centre Technical Report No. 53. (in print and online).

Mapstone BD, Davies CR, Little LR, Punt AE, Smith ADM, Pantus F, Lou DC, Williams AJ, Jones A, Ayling AM, Russ GR, McDonald AD. 2004. The effects of line fishing on the Great Barrier Reef and evaluations of alternative potential management strategies. CRC Reef Research Centre Technical Report No. 52. (in print).

Tobin A, Mapleston A. 2004. Exploitation dynamics and biological characteristics of the Queensland east coast Spanish mackerel (*Scomberomorus commerson*) fishery. CRC Reef Research Centre Technical Report No. 51. (in print).

George M, Ross H, Innes J. 2004. Managing sea country together: key issues for developing co-operative management for the Great Barrier Reef World Heritage Area. CRC Reef Research Centre Technical Report No. 50. (in print and online).

Mapstone BD, Tobin A, Jones A, Begg GA. 2003. A review of reef line fishing in the eastern Torres Strait. CRC Reef Research Centre. Report to AFMA. (in print).

Gallagher M, Volker R. 2003. Numerical studies of nitrogen flows under effluent irrigated lawns on islands in the Great Barrier Reef. CRC Reef Research Centre Technical Report No. 34. (online only).

Current state-of-knowledge brochures

- Seagrasses in Queensland waters. March 2004.
- Introduced species in tropical waters. March 2004.

DIARY

The diary of conferences and events can be viewed at the CRC Reef website: www.reef.crc.org.au/calendar2.html