

Reef Briefs- No. 4 April 2002

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ACRS members - the best way to keep in contact with ACRS business is to get your information updates through e-newsletters and the ACRS-List. To make sure you're on the ACRS-List, go to the ACRS website (www.australiancoralreefsociety.org) and follow the prompts. Keep an eye on the website too.

Editorial

I hope everyone has had a pleasant break over the Easter Holidays and is enjoying the cooler weather. This e-newsletter has contributions on a couple of workshops - bleaching and coral diseases, with potential for interesting developments. As the year progresses you might like to contribute a piece from a workshop you attended. There are also several important ACRS announcements – the AGM, Student Awards and Annual Conference. Take note also of other events and conference announcements included with this e-newsletter. Many thanks to those who contributed to this e-newsletter. Cheers, Johnston.

ACRS AGM

To start April, announcements have now gone out for the ACRS AGM, to be held at JCU on May 10th (TESAG Building – Courtyard room 018, 5pm start followed by BBQ). Along with this announcement, calls for nominations for Council positions have been made: President, Vice President, Honorary Secretary, Honorary Treasurer, and 14 Councillor positions. For those nominating, please complete this form and send it in. If you wish to nominate but have not received a nomination form, contact your Society Treasurer, Selina Ward, at "Selina Ward" <Symposium@riverfestival.com.au> . Selina will email you an attached nomination form for you to print out, fill in and send in. It is possible we need to update your address, so please add that to the form. Thank you.

ACRS Conference Update

Mark your calendar now; the Australian Coral Reef Society's Annual Conference will be held on Stradbroke Island from 27th – 30th September 2002. A call for papers to contribute to an exciting program will go out in a special ACRS announcement. [Special discount for student members.](#) Keep your eyes open for the latest announcement, coming to the screen in front of you.

ACRS Student Awards

The ACRS normally supports the research of up to four students by the provision of Student Grants. The best proposals received will be awarded the Terry Walker Prize of \$2500 and the Danielle Simmons Prize of \$2500. The two remaining awards are for \$2000 each. See last section of e-newsletter for full application details.

Representative Areas Program update.

GBRMPA is expected to announce the start of the 1st formal community participation phase of the RAP. Broadly, the objectives of the RAP are to re-zone the entire GBRMP to protect representative examples

of every kind of habitat in 'no-take' areas. Two formal community participation phases are required by legislation, while informal consultation continues as an ongoing process. For more information see www.gbrmpa.gov.au under 'Hot Topics'.

The ACRS has always been a highly regarded participant in the consultative processes involved in the establishment and management of tropical marine communities, and this will continue with submissions addressing the RAP. The ACRS draws upon the views, experience and expertise within its membership and encourages members to contribute to the ACRS submission. In the process of reviewing the zoning of the entire Marine Park, GBRMPA has also been considering Scientific Research Zones. The ACRS will invite Dr Leanne Fernandes (Program Manager, RAP) to briefly discuss the implications of zoning under the RAP with the ACRS membership at the ACRS AGM (10th May 5pm TESAG Rm 018 – don't forget).

On another note, the benefits of 'no-take' areas to the conservation of biodiversity within the GBRMP is being challenged by a view that there is no evidence to support the establishment of 'no-take' areas. A well considered statement from coral reef researchers on the benefits and limitations of establishing 'no-take' areas in a managed marine park would provide a strong measure of clarification to the broader community of reef users. Certainly, the ACRS should be in a good position to construct such a Statement without necessarily pushing the RAP. We should discuss with AMSA the efficacy of issuing a combined Statement to include opinions from both temperate and tropical marine researchers. Your comments on this would be most welcome – put 'Rap discussion' in the subject header of your emails. Send to Johnston.Davidson@jcu.edu.au.

Heron Island is the "eye of the storm" as regards mass bleaching.
(Report on recent workshop, passed on by ACRS President Ove Hoegh-Guldberg)

Climate change is set to significantly affect the world's coral reefs. Recent warming on the Great Barrier Reef has heightened concerns that reefs may be destroyed by the middle of this century. In response to this, Intergovernmental Oceanographic Commission has dispatched a large group of experts to Heron Island to study the outbreak of coral bleaching there.

Professor Ove Hoegh-Guldberg, from the Centre for Marine Studies at the University of Queensland, chairs the IOC-World Bank Target Group on coral bleaching and climate change. "Coral bleaching and climate change are the largest threat to coral reefs. In 1998 alone, an estimated 16% of the world's coral reefs died. This has nations all over the world alarmed. If these warm events are on the increase due to climate change, then serious problems are in the making", he said.

The recent warming of the seas around the Great Barrier Reef form the perfect backdrop to the workshop. Currently, the seas are as much as 3 degrees warmer than they should be (relative to the last 10 years). Dr Ross Jones, a postdoctoral scholar in the Centre for Marine Studies at the University commented, "This has many of us concerned – these are the warmest temperatures on record. Because coral bleaching is caused by warmer than normal sea temperatures, many of us are expecting a major bleaching event". Coral bleaching is when the symbionts in corals (that power the energy needs of the coral) are damaged and get spat out by the coral. In 1998, 25% of inshore reefs on the Great Barrier Reef died as a result.

The IOC-World Bank targeted working group will address some of the key questions associated with coral bleaching. The group involves over 30 scientists from over 10 nations. The working group will do experiments and collect information on the current bleaching event that has expanded over the past month to include reefs across the entire Great Barrier Reef. "The projected impacts are dire" said Professor Hoegh-Guldberg. "We could loose as much as half the coral on the Great Barrier Reef. This happened in the Indian Ocean in 1998 with similar elevated sea temperatures as we are seeing this year."

Dr William Leggat, also from the Centre for Marine Studies, is one of the young scientists helping prepare for the arrival of the bleaching event. He is planning to study the biochemical damage that occurs within the symbiotic algae within reef-building corals. "What we know is that the algae, which are essential to coral health, become dysfunctional and die when it gets warm. We need to find out why this happens during this expedition. If we know this, then perhaps we can explore whether there are resistant strains of symbiotic algae out there on the reef."

The experiments associated with the IOC-WB research expedition start on Feb 25 and continue through to March 18. Scientists are bringing teams that will actively explore the bleaching event at Heron Island and will produce a better understanding of the changes that are occurring on the reef. Representatives from the Great Barrier Reef Marine Park Authority, the peak management authority, will be in attendance. Professor Hoegh-Guldberg commented, "The integration of science and management is essential to finding a way to manage this crisis on coral reefs. Given the urgency of the situation, we have to rapidly improve our understanding of how global climate change may impact this important ecosystem."

The Centre for Marine Studies coral bleaching web page may be accessed on:

<<http://www.marine.uq.edu.au/news/bleaching.html>>

Coral Health and Disease Workshop

By Bette Willis

In January 2002, NOAA sponsored the *Coral Health and Disease Workshop* in Charleston, South Carolina to develop a National (US) Research Plan to promote the effective detection, identification and management of coral reef diseases. Coral diseases have been recognised as major threats to the health of Caribbean reefs. Consequently, the Coral Disease and Health Consortium (CDHC) was created in response to the Coral Reef Taskforce's *National Action Plan* with the express purpose of organising and coordinating scientific resources to focus specifically on coral health issues. This was the first workshop of the newly formed Consortium. The primary role of the CDHC will be to recommend research priorities to cooperating agencies (NOAA, the US Geological Survey and the US Environmental Protection Agency) and coordinate research activities related to its mission.

The workshop was a working meeting involving an interesting mix of experts from a cross-section of the biomedical sciences, coral biology and disease specialists, and resource managers. Most participants were from mainland US, the Caribbean or Hawaii, with only a couple of us coming from overseas countries like Israel and Oz. Following a day of position papers on topics relating to the current state of knowledge of coral diseases and the process of disease investigation, four working groups were charged with the tasks of: identifying critical gaps in scientific knowledge required to move the field forward, identifying current impediments to acquiring information, detailing how such impediments could be overcome, and providing a synthesis of information to be used in developing the National Research Plan for the CDHC. The formal recommendations of the workshop should be finalised in the near future and I will provide a further report in the next ACRS newsletter.

Local Retention of Production in Marine Populations: Evidence, Mechanisms and Consequences, RR Warner and RK Cowen (eds). *Bulletin of Marine Science* 70(1B).

From Jeff Leiss

This special issue is derived from the efforts of a Working Group set up under the auspices of the US National Centre for Ecological Analysis and Synthesis and convened by Bob Warner. It examines the important question of the degree of connectedness between local marine populations: that is, how demographically open or closed are marine populations? The publication consists of three sections, each of which examines different aspects of the question.

- 1) The Evidence section contains four papers:
 - Swearer et al review and evaluate the sources of information brought to bear on the problem, providing a broad overview.
 - Hellberg et al organize the existing information on population genetics of marine organisms to evaluate connectivity.
 - Ruiz et al use data on rate of spread of invading species to estimate actual dispersal distances.
 - Thorrold et al review the attempts to use natural or artificial markers as evidence for local retention and provide a guide for future work.
- 2) The Mechanisms section of two papers explores the physical and biological bases for larval retention:
 - Kingsford et al review the evidence on the sensory and locomotory capabilities of marine larvae.

- Sponaugle et al evaluate the biological and physical features that may be associated with larval retention.
- 3) The Consequences section consists of a single paper with two major themes:
- Strathmann et al reexamine the evolutionary basis of the pelagic larval phase, and then discuss the implications of local retention in marine populations on evolution (eg, speciation, local adaptation) and on ecology (eg, population dynamics and management).

This issue, scheduled for April/ May 2002 publication will be of interest to marine biologists and those attempting to manage marine living resources.

For further information, contact the Editor of Bulletin of Marine Science,
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The above is derived from the Editors' introduction to the special issue.

Jeff Leis
Australian Museum

Events and Conferences Calendar

1.

The ***Australian Marine Sciences Association***

Invite you to participate in the 2002 National Conference to be held in
Fremantle, Western Australia: 10-12 July 2002

<http://www.science.murdoch.edu.au/centres/others/amsawa/conf/index.html>

2.

From Ian Baxter:

The Asia-Pacific Conference on Marine
Science and Technology - Malaysia, 12-16 May.

Details used to be available through the Uni of Malaysia website (<http://biology.um.edu.my>), but this site appears to be under re-construction. Would be interested to know whether anyone else tracking the Conference has an alternative way of accessing info about it.

Ian Baxter
Principal Marine Environmental Scientist
Group Leader - Environmental Services
URS Australia Pty Ltd
Ian_Baxter@URSCorp.com

3.

From Bob Lester

Event: 5th Symposium on Diseases in Asian Aquaculture (DAA5)
Dates: 24-28 November 2002
Venue: Gold Coast International Hotel, Gold Coast, Queensland, Australia
Symposium Host Body: Asian Fisheries Society, Fish Health Section

Call For Papers:

The Symposium Announcement and Call for Papers brochure will be available shortly. Themes for submission include:

- Biosecurity and Risk Assessment
- Emerging Diseases of Finfish and other Vertebrates
- Molluscan Health
- Molecular Technologies
- Genetic Selection for Disease Resistance
- Finfish and Shellfish Immunology

Symposium Contact Details:

C/- OzAccom Conference Services
PO Box 164
Fortitude Valley, QLD 4006
Ph. +61 7 3854 1611
Fax. +61 7 3854 1507
Email: daa5@ozaccom.com.au

Satellite Workshops:

The symposium will be followed by two satellite workshops: Epidemiology and Risk Assessment from 29-30 November 2002 at the Gold Coast International Hotel and the Asia Pacific Regional Molluscan Health Management Training Program Phase II from 29 November - 4 December 2002 to be held at the University of Queensland in Brisbane.

Bob Lester.

Bob Lester <R.Lester@mailbox.uq.edu.au>

Credits for illustrations in ACRS Newsletter 2002

Johnston Davidson

I would like to correct the omission of credited sources for the illustrations used in the ACRS Newsletter 2002. I would like to credit the following illustrations:

Page 3 - Coral – drawing by Geoff Kelly - from Veron, JEN, 1986 *Corals of Australia and the Indo-Pacific*, Angus and Robertson, 644pp

Page 25 – Jellyfish – drawing by Steve Francis – from Mather and Bennett, 1993 *A Coral Reef Handbook: a guide to the geology, flora and fauna of the Great Barrier Reef*, 3rd Ed. Australan Coral Reef Society Handbook Series; No 1. 264pp

Page 29 – Starfish – drawing by Bronwyn Perkins - from Mather and Bennett, 1993 *A Coral Reef Handbook: a guide to the geology, flora and fauna of the Great Barrier Reef*, 3rd Ed. Australan Coral Reef Society Handbook Series; No 1. 264pp

Page 37 – Larval fish – from Leis, J.M. and B.M. Carson-Ewart. (editors). 2000. *The larvae of Indo-Pacific coastal fishes. An identification guide to marine fish larvae. (Fauna Malesiana Handbooks 2)*. E.J. Brill, Leiden. 850pp

Page 40 – Crab – drawing by Peter Davie – from Mather and Bennett, 1993 *A Coral Reef Handbook: a guide to the geology, flora and fauna of the Great Barrier Reef*, 3rd Ed. Australan Coral Reef Society Handbook Series; No 1. 264pp

ACRS STUDENT AWARDS FOR 2003

ACRS normally supports the research of up to four students by the provision of Student Grants. The best proposals received will be awarded the Terry Walker Prize of \$2500 and the Danielle Simmons Prize of \$2500.

Given Terry Walker's commitment to field studies on Australian coral reefs and cays, this award is to be spent primarily on field studies on Australian coral reefs.

Given Danielle Simmons commitment to field work at Heron Island, successful applicants for this award will need to spend some time at Heron Island working in the field.

The remaining two research grants of \$2000, are to be used for laboratory and/or field studies relevant to Australian coral reefs.

Any student who is enrolled at an Australian university on the 1st January 2001 and working towards a PhD or MSc on a topic involving research on Australian coral reefs is eligible to apply. Awards may not be used to fund conference attendance, or travel not related to field studies. Recipients must be a financial member of the society before applying for these awards.

Applications of no more than four pages, must include the following information:

1. Name, address, date of birth and tertiary qualifications.
2. Project title and degree for which enrolled.
3. Brief description of the project, stating: aims and justification, methods, including project design, progress made to date, and expected year of completion.
4. An indication of how the award would be spent.
5. Details of all other sources of funding for the project.
6. Name of department and supervisor.
7. A signed statement by the supervisor and a representative of the university, verifying that the project has been represented accurately and that the Institution is prepared to administer the award.
8. Students should indicate whether they wish to be considered for the Terry Walker and or the Danielle Simmons award, bearing in mind the requirements for these awards, extensive field work and working at Heron Island at least for part of the project respectively.

Proposals will be judged on:

- Scientific merit of proposed research
- Relevance of topic to current Australian coral reef research
- Design of project
- Project scope, given the degree to be awarded and applicable resources
- Proposal presentation
- Track and research record of the student (e.g. publications, talks, prizes)

Applications by single authors only must be submitted through the supervisor to the administration of the University.

Successful applicants are required to prepare a one-page report for publication in the Society's newsletter at the end of the one-year grant period, and provide a summary of how the research grant was spent.

Please send 4 copies to : Dr Pat Hutchings
The Australian Museum
6, College Street
Sydney, NSW 2010

CLOSING DATE IS FRIDAY 6th DECEMBER 2002. The successful applicant will be notified by late January 2003

