



Annual Report

2002-2003



AUSTRALIAN INSTITUTE
OF MARINE SCIENCE

The research reported herein is based on early analyses of complex data sets and should not be considered definitive in all cases. Institutions or individuals interested in all consequences or applications of the Institute's research are invited to contact the Director at the Townsville address given below.

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Office locations:

Townsville, Queensland

PMB No 3, Townsville MC Qld 4810

Telephone (07) 4753 4444

Facsimile (07) 4772 5852

Darwin, Northern Territory

PO Box 40197

Casuarina

Darwin NT 0811

Telephone (08) 8945 9524

Facsimile (08) 8946 6847

Perth, Western Australia

PO Box 83, Fremantle WA 6959

Telephone (08) 9433 4440

Facsimile (08) 9433 4443

www.aims.gov.au

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ABOUT THIS REPORT

This Annual Report informs the Parliament, industry, other stakeholders, educational and research institutions, the media and the Australian community about the performance of the Australian Institute of Marine Science. In line with expectations of Government, it is a key reference document and a document for internal management. It forms part of the historical record, covering the period from 1 July 2002 to 30 June 2003, the third year in the Institute's Research Plan 2000-03.

The Report describes progress towards research goals and intended outcomes listed in the Research Plan, highlighting achievements that address R&D priorities and the needs of customers. The Institute recognises that knowledge drives prosperity and that AIMS has an important role in generating knowledge products and services, and ensuring the sustainability of marine resources. An overview of operational performance is provided within an accrual-based outcomes and outputs framework, our ultimate agreed outcome being "enhanced scientific knowledge supporting the protection and sustainable development of Australia's marine resources".

In accordance with the 2000-03 triennial funding agreement between the Institute and the Government, the Report gives details of performance against effectiveness indicators such as research and development, liaison and collaboration, technology transfer and commercialisation, and customer satisfaction. Finally, this report complies with requirements for authorities under the *Commonwealth Authorities and Companies Act 1997*. Items required for departmental annual reports have been included where appropriate.

The 2002-03 Annual Report has been produced by AIMS Science Communication Services. If you would like copies, please contact the Institute on 07 4753 4444, email marketing@aims.gov.au, or write to us. The Report is also available on-line at www.aims.gov.au

AUSTRALIAN INSTITUTE OF MARINE SCIENCE

Townsville • Darwin • Perth



8 September 2003

The Hon Peter McGauran MP
Minister for Science
Parliament House
CANBERRA ACT 2600

Dear Minister

On behalf of the Council of the Australian Institute of Marine Science, we have pleasure in presenting the Institute's 31st Annual Report for the year ended 30 June 2003. The report is forwarded in accordance with Section 9 of the Commonwealth Authorities and Companies Act 1997 (CAC Act).

This report provides information so that you, the Parliament, and users of the Institute's research output can make an informed judgement about AIMS' performance during the 2002-2003 financial year.

The report has been prepared in accordance with the Commonwealth Authorities and Companies (Report of Operations) Orders and the Commonwealth Authorities and Companies (Financial Statements 2002-2003) Orders. The Council endorsed the content of the Annual Report by a resolution of its meeting of 8 September 2003.

Yours sincerely

A E de Norbury Rogers A.O.
Chairman
Australian Institute of Marine Science

Professor Stephen Hall
Director
Australian Institute of Marine Science

► **Townsville address:**

PMB No 3,
Townsville MC, Qld 4810
Telephone: (07) 4753 4444
Facsimile: (07) 4772 5852

► **Darwin address:**

PO Box No 40197
Casuarina MC, NT 0811
Telephone: (08) 8946 6716
Facsimile: (08) 8946 6847

www.aims.gov.au

► **Perth address:**

PO Box No 83,
Fremantle, WA 6959
Telephone: (08) 9433 4440
Facsimile: (08) 9433 4443

MISSION, VISION AND VALUES

MISSION

To generate and transfer the knowledge to support the sustainable use and protection of the marine environment through innovative, world-class scientific and technological research.

VISION

To lead marine research in our chosen fields and to deliver greater benefits and value to Government, our partners, our customers, our people, and the general public than they can obtain from others.

- ◆ “To lead” connotes excellence and pre-eminence in marine science.
- ◆ “Chosen fields” tempers that ambition with a dose of realism by recognising the need for us to be focused in our choice of research directions.
- ◆ The second part of the statement ties into our mission and stresses our intention to ensure that the knowledge we generate leads to beneficial outcomes and is viewed as having high value, in terms of both cost-effectiveness and quality.
- ◆ Mention of “partners” identifies us as an organisation that values collaboration, while using the words “customer” and “general public” recognises us as a provider of both targeted and public good research.

VALUES

1. Our talents and creativity are the foundations for excellence.
2. The behavioural values we adopt and the way we work together is a key to high achievement.
3. Excellence requires a technically superior, supportive workplace that fosters personal development, teamwork and professionalism.
4. We must continually strive to be at the leading edge of scientific inquiry, generating new knowledge to solve both fundamental and applied problems.
5. Our commitment to the effective transfer of knowledge, benefits and value must be total and we shall use the judgement of Government, our partners, our peers, our customers and the general public to measure our performance.



HIGHLIGHTS

- ◆ The Minister for Science, the Honourable Peter McGauran MP opened new and refurbished facilities at Cape Ferguson, near Townsville. The opening in November 2002 marked the end of a two-year \$12.5 million program that included the commissioning of a new south wing devoted to marine biotechnology.
- ◆ A new joint venture between AIMS and James Cook University, AIMS@JCU, received funding in the 2003 Federal Budget. This venture will enhance collaboration and provide synergy in tropical marine research and education focused in North Queensland.
- ◆ The Representative Areas Program was rolled out by the Great Barrier Reef Marine Park Authority. The development of this major initiative, aimed at conserving marine biodiversity in the Great Barrier Reef World Heritage Area, was underpinned by AIMS scientific data, analyses and decision-support tools.
- ◆ The landmark book, *Catchments and Corals: Terrestrial Runoff to the Great Barrier Reef*, was launched in June 2003. This book by AIMS scientist Dr Miles Furnas presents the first comprehensive description of the Great Barrier Reef catchment and an estimate of runoff to the Reef based on direct measurements. It draws on 15 years of original research at AIMS demonstrating increasing levels of sediments and nutrients washing into Reef waters.
- ◆ Biotechnology innovations based on the creation of fast, sensitive and cost-effective biosensor tools will support the seafood industry by improving food quality and optimising farm production management processes.
- ◆ New patents and protocols are set to make the farming of high-value prawn species more profitable and sustainable through development of fully domesticated stock. AIMS demonstrated the potential to select for black tiger prawns with enhanced ability to survive and reproduce in captivity, with animals spawned at AIMS growing to reproductive size in less than 12 months.
- ◆ Successful pilot work was completed on sponge aquaculture for biomaterials and fine chemicals, signalling new employment opportunities for remote indigenous and regional communities.
- ◆ Scientists continued to develop new non-destructive methods for observing and sampling marine biodiversity, including Baited Remote Underwater Videos (BRUVS) that can be placed in areas out of reach to research divers. The high level of information provided by these remote tools demonstrates their utility well into the future.
- ◆ The Sea Surface Temperature Atlas for the Great Barrier Reef was launched in July 2002, developed from data collected via satellite. It provides a major resource in the prediction of coral bleaching risks in warming seas.
- ◆ Major new collaboration began to investigate seabed biodiversity in the Great Barrier Reef World Heritage Area.

HIGHLIGHTS

- ◆ There was a significant rise in the number of organizations collaborating with AIMS, from 132 to 162, indicating the realisation of a strategic approach to research that has a multi-disciplinary, multi-agency focus on issues and opportunities.
- ◆ Sixteen members of AIMS scientific staff were employed in adjunct teaching positions at universities, both in Australia and overseas. This was matched by a growing number of postgraduate students working at the Institute, utilising the high-technology facility, accessing the Reef and collaborating with AIMS scientists.
- ◆ An increase of 18% in external earnings brought total non-appropriation income to \$5.6 million, the highest recorded in more than five years.
- ◆ A strategic alliance between AIMS and the US National Oceanic and Atmospheric Administration (NOAA) deepened, with an integration plan drawn up to drive coordinated research activities.
- ◆ Following extensive consultation with stakeholders and clients, research planning for the new triennium was finalised, culminating in production of the AIMS Research Plan 2003-06 and the National Research Priorities Implementation Plan.
- ◆ Dr Eric Wolanski received the Australian Centenary Medal awarded by the Prime Minister for his contribution to society in estuarine and coastal oceanography.

CONTENTS

About This Report	iii
Letter of Transmittal	iv
Mission, Vision and Values	v
Highlights	vii
REPORT OF OPERATIONS	1
Certificate of Report of Operations	2
Chairman's Review	3
Director's Report	5
1. OPERATIONAL PERFORMANCE	9
Science Reports: Performance Against Agreed Targets	11
Conservation and Biodiversity Group	11
Coastal Processes Group	15
Marine Biotechnology Group	19
Measuring Performance	25
Research Output and Community Outcomes	27
Research Services	43
2. CORPORATE OVERVIEW	47
Role, Legislation and Minister	49
Organisation and Staffing	51
Outcome and Output Structure	52
Corporate Governance	55
Public Accountability	63
Key Management Events	67
FINANCIAL STATEMENTS	69
Statement by Directors	70
Auditor General's Report	71
Financial Statements at 30 June 2003	73
APPENDICES	111
Legislative Foundation and Ministerial Powers	113
Freedom of Information Statement	115
Science Publications List 2002	117
AIMS Scientists' Membership of External Committees and NGOs	127
Web Addresses	129
GLOSSARY	131
COMPLIANCE INDEX	133
ALPHABETICAL INDEX	135

REPORT OF OPERATIONS

Certificate of Report of Operations

Chairman's Review

Director's Report

Operational Performance

Corporate Overview

AUSTRALIAN INSTITUTE OF MARINE SCIENCE

Townsville • Darwin • Perth



Certification of Report of Operations

The Council of the Australian Institute of Marine Science is responsible under Section 9 of the *Commonwealth Authorities and Companies Act 1997* (CAC Act) for the preparation and content of the Australian Institute of Marine Science's Report of Operations, in accordance with the Finance Minister's Orders.

Council endorsed the content of the Report of Operations by a resolution of its meeting of 8 September 2003.

A E de Norbury Rogers A.O.
Chairman
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Professor Stephen Hall
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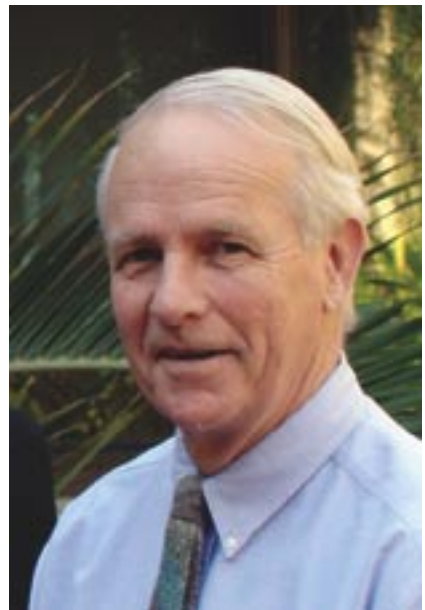
CHAIRMAN'S REVIEW

'The Institute has delivered on its promise.'

Norbury Rogers A.O.

The completion of this, the last year of the triennium, is an appropriate time to review the work undertaken by AIMS since 2000. I am happy to report that, when I compare the commitments made in the Institute's 2000-03 Research Plan with the work described in this Annual Report, there is no doubt AIMS has delivered on its promise.

Consider for example, our commitment to "contribute scientific knowledge to the public interest debate about water quality in the Great Barrier Reef World Heritage Area" (Page 16, AIMS Research Plan 2000-03). One need only point to the publication, *Catchments and Corals: Terrestrial Runoff to the Great Barrier Reef*, the landmark book by Dr Miles Furnas, to show that AIMS has worked diligently towards that objective in the last three years. This landmark book draws together the long-term data collected by AIMS and others, and summarises it in a highly accessible form to ensure that the debate on this important issue is an informed one. Scientific outputs such as this will ensure that outcomes such as Queensland's Reef Protection Plan are founded on firm scientific footings.



NORBURY ROGERS A.O.

Another example is our commitment to "provide scientific knowledge that will assist the Great Barrier Reef Marine Park Authority to determine how well its Representative Areas Program has met its goals of conserving habitats and biodiversity" (Page 28, AIMS Research Plan 2000-03). Over the last three years AIMS has drawn on the expert opinion of



CATCHMENTS AND CORALS LAUNCH

its researchers and its extensive data holdings, collected over the last 15-20 years, to help GBRMPA complete a bioregionalisation of the GBR and develop the proposed network of Representative Areas that is currently in the public consultation phase. Establishing the new Representative Areas system will be a very significant outcome

for GBRMPA and Australia, to which AIMS has made a very substantial contribution.

In the marine biotechnology domain we have seen progress towards delivery of our intended outcomes. “A safer seafood industry” (Page 64, AIMS Research Plan 2000-03) can be expected from the successful commercialization of the technologies that are being developed with the spin-off company Toxitech Pty Ltd, in partnership with James Cook University. In addition, “New opportunities for aquaculture industries in Northern Australia” (Page 62, AIMS Research Plan 2000-03) are being provided by the pilot work now being undertaken on sponge aquaculture.

In the few paragraphs available to me here, I cannot begin to do justice to the work of our people and the outcomes they have contributed towards achieving. I hope, however, that these few examples and the others outlined in this report convince you that we are committed to making a difference. As our vision statement emphasizes, AIMS will strive to deliver greater benefits and value to stakeholders than they can obtain from others – it is for you to judge whether we are realizing this vision.

DIRECTOR'S REPORT

'The major highlight of the year was the completion of the Institute's \$12.5m refurbishment program.'

Professor Stephen Hall

Q & A SESSION WITH THE DIRECTOR OF AIMS, PROFESSOR STEPHEN HALL

WHAT HAS BEEN ACHIEVED THIS YEAR?

This has been a busy year for the Institute as we continue to deliver high quality science outputs, implement a vigorous program of change to develop our organizational culture, improve our business and people systems, and invest in the skills and infrastructure needed to keep AIMS at the forefront of international science.

Perhaps the major highlight of the year was the completion of the Institute's \$12.5m refurbishment program and the official opening of the new Marine Biotechnology Wing by the Science Minister the Hon Peter McGauran. All staff at Cape Ferguson are enjoying the benefits of our new surroundings and the disruption of the refurbishment now seems a distant memory.

Of the scientific achievements for the year, there are many worthy of celebration. In addition to those noted by our Chairman in his report, I would draw particular attention to new work by Dr Madeleine van Oppen and others on coral genetics. The team's studies have shown that the level of cross-breeding between species that



PROFESSOR STEPHEN HALL

occur in nature are higher than expected - an observation that has important implications for understanding how corals might adapt to an increasingly warm world. Here is an example of world class science directed at an important management problem. In my view, a trademark characteristic of the work undertaken by AIMS.



THE REFURBISHED FACILITIES AT CAPE FERGUSON ARE OPENED BY THE MINISTER FOR SCIENCE, THE HON PETER McGAURAN

Although completing our research for the year has, as always, been a key focus, we have also been deciding on our research directions for the new triennium. Consistent with our vision, which is explicit about delivering greater benefit and value to stakeholders than they can obtain from others, our guiding principle is always that our research be directly linked to outcome statements validated by stakeholders.

The other element of our vision, “to lead in our chosen fields,” is also important, however, so we have also included investment in frontier areas of science, such as biosensor technologies, that anticipate the future needs of stakeholders.

An important event this year was the completion of our second culture benchmarking survey. For me, the most encouraging result was the progress achieved in those areas targeted in our organizational improvement program. In particular, 76% of staff believed our various efforts to encourage a more supportive workplace culture had led to improvements. On the negative side, however, the survey identified, among other things, the need to increase the levels of communication between the Senior Management Group and staff, and to further develop the people and management skills of all staff. These are messages that we have taken on board and will act upon.

HOW IS THE INSTITUTE PERFORMING?

In addition to the performance indicators agreed with the Commonwealth, this year saw the first trial of a new framework for defining and setting Key Performance Goals for the organization. Based around the Strategic Factor System¹, this framework explicitly recognises that AIMS’ success depends on delivering benefits to stakeholders and, in turn, obtaining support from them. Our Key Performance Goals reflected this fact and were developed to capture all the dimensions of performance, not simply those relating to finance. For example, we identified that the accessibility of AIMS science was an important element of performance from the general public’s perspective and set targets for media coverage. That capital city media coverage more than doubled this year to \$881,000 is due, I suspect, in no small part to the fact that we set a goal for ourselves.

Other important performance highlights for the year included an 18% increase in external

¹ © Strategic Factor System-Strategic Factors Pty Ltd

earnings to \$5.6 million, and an increase in the number of internationally refereed publications by 8%. I am very proud of the effort that has been put in by our people to achieve these goals.

A final task for this year will be an evaluation of customer satisfaction that will form the baseline for targets in future years. This survey is incomplete at the time of writing, but I am hopeful that I will see more responses like the e-mail from a client to one of our staff which read:

Kate, Received the CD today. I don't know what to say. Fantastic and significantly exceeding any expectations come to mind!

WHAT IS IN STORE FOR THE COMING YEAR?

There will be three key tasks for AIMS in the coming year: improving performance measurement and evaluation, IP management and enhancing collaboration.

Providing a clearer picture of how we measure success and set clear performance expectations for our people will be an important driver of further improvement.

Similarly, managing our IP effectively and ensuring that it is transferred appropriately to stakeholders is vital for AIMS' continuing success. This year we will be working hard and investing further resources to refine our IP policies and management processes to ensure that we are making the most of the great science that AIMS produces.

Maintaining and enhancing partnerships and collaborations will be the final focus this year and a key to increasing our capacity to deliver outcomes and fulfil our mission. Central among

these initiatives will be the affiliation between the Institute and James Cook University. To be known as AIMS@JCU, this affiliation will increase the capability and flexibility of both institutions to share skills and infrastructure, provide a more effective focus on priority applications of marine science, and help drive economic and social development in North Queensland. This alliance will help to consolidate Townsville as one of the world's acclaimed centres for research and teaching in marine science.

In addition, the enhancement of our research activities in Darwin will be an important element of our nationwide collaborative endeavours. In particular, the design and construction of the Arafura Timor Research Facility (ATRF), which is supported under the Commonwealth's Major National Research Facility scheme, will occupy us throughout 2003-04. Run as a joint venture between ourselves and the Australian National University, the ATRF will greatly enhance the capacity of our Research Teams to collaborate and deliver outcomes for Northern Australia. I also hope to see further development of our highly successful operation in Western Australia, and the implementation of a coordinated set of research activities with the U.S. National Ocean and Atmospheric Administration, as part of a strategic alliance we have formed with them.

HAVE THERE BEEN ANY NOTEWORTHY DEVELOPMENTS SINCE JUNE 30?

An important milestone was achieved in early July, with the signing in Washington of a new five-year agreement between AIMS and the U.S. National Cancer Institute. This allows marine samples collected from the Great Barrier Reef to be used in research that may lead to a cancer

REPORT OF OPERATIONS

cure. Under the deal, extracts from Reef organisms such as soft corals, sponges and starfish will be examined for anti-tumour activity within the NCI's world-leading screening program. This type of screening isn't available in Australia and the deal enables AIMS to retain IP ownership of screening results, as well as any new and useful compounds discovered.

OPERATIONAL PERFORMANCE

Science Reports: Performance Against Agreed Targets

Conservation and Biodiversity Group

Coastal Processes Group

Marine Biotechnology Group

Measuring Performance

Research Output and Community Outcomes

Research Services

SPECIAL REPORT: WORLD'S REEFS IN FRAGILE RECOVERY

In December, AIMS produced *Status of Coral Reefs of the World: 2002* for the Global Coral Reef Monitoring Network. This report, produced in-house every two years, is considered the most authoritative document on the health of reef systems. The 2002 report showed a slight improvement in the condition of reefs on a global scale, but indicated that the improvement was patchy. The recovery was recorded mainly in areas quarantined from other activity.

The author of *Status of Coral Reefs of the World: 2002*, Dr Clive Wilkinson, a Leading Scientist in the AIMS Conservation and Biodiversity Group, attributed the recovery to greater international influence and commitment to addressing the generic degradation of reef systems. At the launch of the book, he said he was heartened by the recovery, but apprehensive for the future of reef systems. "A large proportion of the stocks of big, old corals which facilitate fish productivity, have been lost," he said. "Another bleaching event in 10 or 20 years would see a major shift from branching corals, which are part of the fish-breeding cycle and a tourist drawcard, to conglomerate or massive corals, which are more hardy but less attractive."

The 2002 report contained a mix of good and bad news, including strong lessons about how to stop reef decline. It predicted gains in coral reef health at specific sites in many regions within two decades, provided there was sufficient political will and financial support. Many countries were reducing the damaging human impacts and setting more

coral reefs aside for protection. However, a large proportion of the world's reefs still lie outside protected areas, and the report concluded that much effort will be needed to expand small-scale successes to national and regional scales. Moreover, some coral reef countries have no national reef management or monitoring programs, and may be unaware of the extent of damage.

The report found that Great Barrier Reef was in better shape than most, despite coral bleaching and a relatively high incidence of crown-of-thorns starfish. Dr Wilkinson said the size of the Great Barrier Reef was its strength, with reefs spreading across a number of latitudes, and from the coast to the continental shelf. However, it was badly hit by coral bleaching episodes in 1998 and early 2002, and if the same areas were hit again two or three times over the next 10 years, it would suffer major damage.

On a global scale, the report recorded sufficient management successes to show the way to reduce, and even eliminate, most of the human pressures that degrade coral reefs. While the rate of damage to coral reef resources appears to be increasing, it is being counteracted by an increase in conservation efforts. If these efforts succeed and countries increase their investment in conservation, we should witness within the next 10 years large areas of the world's reefs recovering from the direct and indirect damage caused by human activities. However, if global climate change causes major coral bleaching events, thereby reducing the capacity of reefs to calcify, then many of these efforts will be negated.

CONSERVATION & BIODIVERSITY

BY RESEARCH GROUP LEADER, DR JULIAN CALEY

The conservation and sustainable use of marine biodiversity is fundamental to maximizing long-term social and economic benefits, yet marine biodiversity remains poorly known. As a consequence, we lack much of the knowledge required to make informed decisions in resource management. The research conducted by the AIMS Conservation and Biodiversity Group is tailored to address such knowledge gaps for tropical marine biodiversity and to build understanding of these complex ecosystems. The Group also focuses on developing new methodologies and decision-support tools in support of the conservation and resource management of tropical marine biodiversity.

Our ongoing programs for monitoring coral reef communities on the Great Barrier Reef and off Western Australia, as well as surveys of biodiversity in both State and Commonwealth northern waters, have provided new information improving the ability of agencies to create and manage marine protected areas. Our researchers are leading in the development of non-destructive sampling tools for use in areas inaccessible to divers and to sample species that are sensitive to the presence of divers, or whose destructive sampling cannot be justified.

In 2002-03, our emphasis on delivery of relevant science to stakeholders in a manner that facilitates its use remained a high priority. Delivery took many forms, from up-to-the-minute data collected by monitoring teams on the status of coral reefs over large geographic areas, to the development of new analytical tools for understanding the spatial context of reefs and things which may affect them. The usefulness of these products was demonstrated by their immediate application to new management initiatives (e.g. the Great Barrier Reef Representative Areas Program and the Reef Protection Plan).

HELPING RESOURCE MANAGERS

Both industry and government continued to support AIMS research into biological resources off Australia's west and north-west coastlines. This support was forthcoming because of recognition of the need for new knowledge to underpin effective resource management, as well as AIMS' reputation for providing value-for-money research. The research is helping to build understanding of the long-term dynamics of exploited and unexploited areas, and the role of individual species in these ecosystems. For example, research done in collaboration with CSIRO and CALM has demonstrated that whale sharks visiting Ningaloo Reef undergo extensive international migrations, once again highlighting the need for multinational approaches to conservation and resource management.



RESEARCHERS IN THE FIELD

While we have been able to contribute significantly to understanding what resources are present in many areas, it is also evident that many marine ecosystems remain poorly understood and methods of management poorly developed. The recognition of these knowledge gaps has stimulated considerable technological advances by AIMS into new methodologies. The need for non-destructive sampling methods that can operate in depths beyond the reach of divers, has led to the further development and roll-out of a fleet of Baited Remote Underwater Videos (BRUVS) with stereo-viewing capability that allows for size estimation of individual organisms. This information is critically important for estimating resource availability, but until now has involved methods that have killed the organisms being sampled. Fishers may also be putting pressure on

populations of shark species, but good estimates of shark numbers are hard to achieve. Consequently, AIMS researchers began pilot work on acoustic-based technology to estimate shark abundances. Work has also begun on technologies for restoring corals on degraded reefs.

DEVELOPING TOOLS TO IDENTIFY CORALS

Around the world, coral reefs are under threat. In 2002-03, The Conservation and Biodiversity Group launched a new research tool called *Coral ID*, a sophisticated, inexpensive means of identifying coral species based on a few traits that allows user-friendly access to taxonomic and biogeographic information. Sold as a CD-ROM, *Coral ID* is proving a valuable resource to a wide range of users, from resource managers and researchers to recreational divers and tourism operators. Work on *Coral ID* version 2 has begun, as has *Coral Geographic*, a web-based product designed to capture all current knowledge of corals.

MONITORING TRENDS IN REEF HEALTH

Understanding the need for action in resource management and the effectiveness of management initiatives requires knowledge that can only be provided by long-term monitoring. The usefulness of such data is dependent on the accuracy and precision of the collection process in the field, as well as effective archiving and reporting. In 2002-03 AIMS' long-term monitoring team continued to provide these valued services to resource managers. They observed coral health and population trends in key groups of marine organisms (e.g. Crown-of-Thorns starfish, corals, algae, and reef fishes) over the length and breadth of the Great Barrier Reef World Heritage Area. In consultation with users, web-based reporting was tailored to

users needs, and feedback indicated a high degree of satisfaction with the outcome. In addition, the team undertook an international consultancy in the Kingdom of Saudi Arabia to investigate environmental impacts on coral reefs of the 1991 Gulf War.

PREDICTION TOOLS FOR MANAGERS

AIMS research was a major contributor to the development of the Representative Areas Program, an initiative of the Great Barrier Reef Marine Park Authority unveiled in 2002-03. Similarly, using novel methods in a collaborative study, AIMS scientists demonstrated that sedimentation onto the Great Barrier Reef has increased considerably since European settlement. This work contributed to the instigation of the new Reef Protection Plan. Other examples of AIMS research contributing to resource management initiatives include the mapping of coral bleaching risks on the Great Barrier Reef, and scenario-based models of bleaching which show what might happen in the future, depending on the severity of impending climate change. The AIMS SST Atlas launched in July 2002 draws on satellite-based remote sensing to record sea-surface temperatures from the Great Barrier Reef between 1990 and 2000. This data can be used to track currents and hot spots in the ocean, enabling resource managers to predict where coral bleaching may occur in the future. The SST Atlas is also helpful in predicting the location of fish stocks, as fish often aggregate where warm and cold waters meet.

CREATING GLOBAL NETWORKS

Australian reefs, although under threat, are in much better shape than others worldwide. The ability to make this statement is provided by research done by the Global Coral Reef Monitoring Network. AIMS staff coordinate this

network, which seeks to improve management of reef resources, particularly in nations with little domestic capacity for this task, and to raise awareness of the global state of coral reefs. To this end, the publication *Status of Coral Reefs of the World: 2002* was produced at AIMS and released in December. The editor, Dr Clive Wilkinson, expressed cautious optimism. He said the condition of reefs appeared to be improving slightly, but only in areas that were well protected. He also reported a greater international commitment to address the degradation of reef systems. The release of this book enjoyed extensive international media coverage.

TRACKING CLIMATE CHANGE

To predict how reefs might respond to climate change in the future, it is helpful to know something about both the extent and pace of environmental change and variation endured in the past. It is also helpful to know precisely how corals are responding to climate change occurring now. AIMS is a world leader in extracting climatic records from corals, enabling centuries of weather data to be analysed. Scientists can learn everything from when floodwaters entered reef environments, to the prevalence of past outbreaks of Crown-of-Thorns starfish, a predator of corals. In addition, it is becoming clear from other research at AIMS that corals may have some capacity to adapt to climate change, and that risk of bleaching can be predicted from knowledge of small-scale temperature variations in sea surface temperatures derived from satellite remote sensing.

OUTPUTS AT A GLANCE

- ◆ Underwater video technology played an increasing role in data collection, with stereo video developments allowing precise size estimations to be made remotely.
- ◆ A new *Coral ID* tool was developed for research and recreational uses enabling easy identification of coral species. Work also began on *Coral Geographic*, a web-based system designed to summarise current knowledge of corals and their geographic distribution.
- ◆ The long-term monitoring team continued high-quality and rapid reporting of reef health and population trends on the Great Barrier Reef.
- ◆ The Satellite SST Atlas was finalised, capturing sea surface temperatures from the Great Barrier Reef between 1990 and 2000.
- ◆ *Status of Coral Reefs of the World: 2002* was launched, showing slight improvement in the condition of reefs on a global scale.
- ◆ Scientists showed sedimentation on the Great Barrier Reef had increased considerably since European settlement.
- ◆ AIMS, in association with the Australian Academy of Science, put the spotlight on Australian research into coral bleaching.
- ◆ Scientists worked with journalists on many stories resulting in international coverage, including the SST Atlas, Great Barrier Reef coral disease and coral bleaching, whale sharks, fish behaviour, the state of reefs worldwide, and climate change.
- ◆ The final report was provided to The Nature Conservancy on "Testing Bleaching Resistance Hypotheses for the 2002 Great Barrier Reef Bleaching Event".

COASTAL PROCESSES

BY RESEARCH GROUP LEADER, MR FRANK TIRENDI

The Coastal Processes Group made substantial progress in 2002-03 towards developing understanding of tropical coastal ecosystems. The majority of the Australian population (and that of the world) is centred in the coastal zone, yet our understanding of these complex ecosystems is still at an early stage. Continued economic development in coastal zones needs to occur from a sound knowledge base if adverse impacts on natural processes are to be avoided. As well as adding to this knowledge base in our traditional areas of focus – the northeast coast of Australia and major river systems in northern Australia – we began developing our research capability in Darwin Harbour.

REPORTING ON RUNOFF

Analysis of 15 years of data on sediments and nutrients washing from wet and dry catchments to the Great Barrier Reef has allowed the development of predictive models of river flow and sediment exports from non-sampled catchments. A public launch of the new AIMS publication *Catchments and Corals: Terrestrial Runoff to the Great Barrier Reef* by Dr Miles Furnas was held in Townsville and was well reported in national media. A documentary on the subject was also produced and broadcast on SBS Television. Entitled *Muddy Waters: Life and*

Death on the Great Barrier Reef, it featured AIMS scientist Dr Katherina Fabricius, who was filmed in the field conducting research into the effects of runoff on young corals. Two other contributions by the Coastal Processes Group to public debate on runoff issues included major input to the Reef Water Quality Protection Plan and submissions to the Productivity Commission on water quality issues in the Great Barrier Reef catchment and the World Heritage Area.

REMNANTS OF ANCIENT MANGROVES DISCOVERED

Relict mangrove deposits about one metre below the surface of the present seafloor of the Great Barrier Reef lagoon indicate that paleo-channels for river systems existed before sea level rise in the northern and far northern Great Barrier Reef. Radiocarbon dating put these deposits at between 8550 and 8740 years. They contained intact root systems and preserved bark that allowed the mangrove species to be identified. These deposits appear to be slowly decomposing, contributing nutrients to the Great Barrier Reef.

BIO-INDICATORS OF STRESS

AIMS researchers have discovered that low diversity of soft corals, reduced coral recruitment, and macro-algae dominance over corals are indicators of environmental stress caused by excess nutrients. They have also determined that barramundi and coral trout are suitable indicator species for environmental



DALY RIVER RESEARCH

exposure of specific pollutants. Surveys in northeast Australian river systems in 2002-03 indicated elevated effects of toxic contaminants in intense land-use areas, when compared to more pristine areas. Studies of the environmental impact of reef pontoons and associated boat traffic (e.g. petroleum products released) showed no measurable effects on resident coral trout, but there was evidence of antifoulants having an effect.

Complementary research investigated “chemical tags” useful in determining fish habitats and migratory patterns in coastal creeks and lagoons. Scientists studied the chemical signals in barramundi ear bones and scales. In 2002-03 they obtained strong signals for some chemical elements with changes in salinity, i.e. from freshwater creeks and rivers to salty brines of salt pans. Another study for the State Department of Natural Resources and Mines

reviewed the effects on fish of regulating Burdekin River water flows and irrigation practices and found that freshwater flow from the Burdekin was critical in sustaining peaks in seafood production. Investigations into fish recovery after mechanical weed clearing in lagoons in the Burdekin delta also found that recovery of oxygen levels and fish populations was extremely rapid, commencing within two weeks of clearance. Within six months, spawning of fish was occurring in the lagoons and the biodiversity had gone up from 4 to 14 species. However, exotic gouramis and mosquito fish numbers declined, due to the increasing number of native predator fish recruited back into the lagoons, which started to eat the invasive fish species.

SUBMARINE SPRINGS

Investigations into submarine springs (“wonky holes”) in the Great Barrier Reef identified a large number between the Herbert River delta and Palm Island. Water from some of these seabed cavities off Innisfail and Cape Flattery showed evidence of low salinity, suggesting the input of fresh groundwater from the mainland aquifers.

CONTINENTAL SHELVES STUDIED FOR CARBON STORAGE

Global-scale carbon budget questions are also being addressed by scientists in the Coastal Processes Group. In 2002-03 they investigated whether tropical seas remove significant quantities of atmospheric carbon dioxide. Continental shelves of northeast Queensland and northern Australia indicate little net annual carbon storage (sequestration), whereas the wet tropical Gulf of Papua appears to be a carbon source to the atmosphere despite burying large amounts of organic carbon on the inner shelf. Natural and pollution sources of petroleum carbon to the sea were also studied in these

regions, finding that most components of oil are rapidly decomposed in seawater and sediments. Some fractions of oil, organic matter and land-derived radioisotopes were found to be useful tracers for the movement of western Pacific water through the Indonesian Archipelago into the Indian Ocean. This work was done in collaboration with scientists from other Australian institutions, as well as Indonesia, Papua New Guinea, and USA.

WHALE SHARKS TRACKED

Research into the biological oceanography of the North West Shelf provided new understanding in 2002-03 of seasonal gatherings of whale sharks near Ningaloo Reef, and improved ability to forecast shark abundance. This forecasting ability will support the ecotourism industry focused on whale shark viewing. This increased capacity to predict their abundances was achieved through acoustic tracking, sampling for food sources that attract whale sharks, bathymetry, satellite tags and new shipboard software for 3-D tracking. A highlight of this research was the attachment of a "crittercam" to the head of a whale shark. The movement of sharks has assisted scientists to locate "hotspots" of biological productivity which, in turn, will help us understand ocean processes that drive these marine food webs.

FOLLOWING THE OCEAN'S FLOWS

Scientists developing real-time models of water circulation on the Great Barrier Reef achieved significant progress in 2002-03 modelling connectivity of fish populations through the transport of larvae with ocean currents, and the fate and impacts of mud. An oceanographic buoy built at AIMS was deployed near Davies Reef, off Townsville, to obtain real-time ocean current data over the 2002-03 summer. This data was used in conjunction with numerical

models to predict the distribution of coral reef fish larvae in a section of the central Great Barrier Reef. A model of the movement of sediment in the Cairns-Trinity bay region was also developed, and an eco-hydrological model published that is capable of forecasting reef health by linking ecology, hydrodynamics, population connectivity and disturbances due to floods and cyclones.

NEW STUDIES COMMENCE IN THE TERRITORY

An important project in the Darwin Harbour began with a collaboration between AIMS and the Northern Territory Department of Infrastructure, Planning and Environment (DIPE) to monitor and compare water quality in the east and middle arms of the harbour. A website was established to communicate knowledge to all stakeholders.

A study of the Daly River estuary was also initiated with DIPE. Two field trips focused on dry-season estuarine dynamics. The NT Government, in its economic development strategy, aims to explore the conversion of pastoral leases to agriculture. This research will help inform stakeholders of the potential impacts, as well as contribute to management strategies for sustainable development in the region.

PROJECT LOOKS AT COASTAL WATER RECYCLING

Our project in the Fujian province of China aims to solve pollution problems in waterways. It is based on an eco-village concept and explores more efficient water recycling and fertilizer usage, to minimize downstream estuarine pollution. A model is being developed for replication elsewhere. This is a co-invested project with Western High Pty Ltd (Aust), Greenfields Resources Holdings (Japan) and Pennington Seeds Inc. (US).

OUTPUTS AT A GLANCE

- ◆ New research started in Darwin Harbour and Northern Territory rivers.
- ◆ Scientists discovered ancient mangroves found below the seafloor may still be contributing nutrients to Great Barrier Reef.
- ◆ Analysis was completed of 15 years of data on sediments and nutrients washing to the Great Barrier Reef from river catchments. The work culminated in the publication by Dr Miles Furnas of *Catchments and Corals: Terrestrial Runoff to the Great Barrier Reef*. This landmark AIMS book concludes that the health and productivity of the GBR ecosystem is influenced by the nutrients and sediment running off the adjacent catchment and, since 1850, human activities in the catchments bordering the GBR have changed runoff patterns. A documentary featuring another AIMS scientist, Dr Katharina Fabricius, also highlighted runoff concerns and was broadcast on SBS Television.
- ◆ Bioindicators of environmental stress were identified in both reef ecosystems and coastal rivers.
- ◆ More wonky holes were discovered in Great Barrier Reef seafloor, suggesting the presence of submarine springs and inputs of fresh groundwater to the inner shelf.
- ◆ Scientists found that continental shelves in the wet tropics of New Guinea are a source of atmospheric carbon, not a sink as widely assumed.
- ◆ Investigations into fish recovery after mechanical weed clearing in lagoons in the Burdekin delta found that recovery of oxygen levels and fish populations was extremely rapid, commencing within two weeks of clearance. Within six months, spawning of fish was occurring in the lagoons and the biodiversity had gone up from 4 to 14 species.
- ◆ A "critter-cam" (small spy camera) attached to the head of whale shark, an important species in ecotourism, provided new information about their behaviour, food sources, and migratory patterns.
- ◆ The impact of sediment flows from the Cairns-Trinity Bay region were found to possibly extend far offshore.
- ◆ Real-time models were developed of water circulation on the Great Barrier Reef, showing connectivity of fish populations through the transport of larvae with ocean currents, and the fate and impacts of mud.
- ◆ A model for water recycling in rural villages was further developed, as part of a project being undertaken with industry backing in the Fujian province of China.
- ◆ An AIMS study showed sedimentation changes in the Cambridge Gulf in northern WA, associated with the Argyle dam, threaten the mangrove nature reserve at the false mouth of the Ord River.

MARINE BIOTECHNOLOGY

BY RESEARCH GROUP LEADER, DR CHRIS BATTERSHILL

The Marine Biotechnology Group has this triennium focused on health, environmental and agrichemical issues relevant to the Australian tropics. It has been active in exploring new applications for biologically active natural chemicals, as well as securing collaborations that enhance Australian industry opportunity. New work in comparative molecular ecology expanded a research approach based on understanding and utilising nature's complex biochemical machinery. Importantly, AIMS has established core expertise in tropical aquaculture, marine microbiology, environmental physiology, marine biodiscovery and natural products chemistry.

This has been a year of consolidation for the Group, following the commissioning of new \$6 million laboratories, and a decision to invest \$2.5 million in molecular analysis tools such as a powerful 600 MHz Nuclear Magnetic Resonance facility. New research based on understanding the physiology of aquaculture species allowed nationwide collaboration on key projects, specifically tiger prawns, tropical rock lobsters and species suitable for biomaterial and fine chemical production. These projects engaged many relevant research providers and industries in fully integrated collaborative models. New-species aquaculture designed for remote

regions of northern Australia has involved collaboration with indigenous communities, with pilot projects progressing well.

Biodiscovery on agrichemicals has paved the way for niche screening and bioassay portfolios to include anti-infective and anti-fungal chemical targets. An agreement with the US National Cancer Institute and new collaborations with pharmaceutical partners signals a move into health-related biodiscovery and maximizes the utility of the AIMS marine extracts collection. New work in environmental physiology and chemical ecology has permitted initiatives to explore anti-ageing and cancer preventative biotechnologies, as well as putting AIMS at the forefront of developing techniques to monitor and understand our environment and the biochemical mechanisms of adaptation.

Genetics research based on corals and their symbionts, linked to research examining the process and ecology of coral bleaching, has been central to new understanding of corals' adaptability to climate change. This work is geared towards exploring functional genomics and evolutionary-scale biomolecular adaptation. As such, the research planned for the next triennium will be novel and will represent a niche for pure and applied research maximizing AIMS' capability.



BIOACTIVE COMPOUND PROSPECTS

TROPICAL AQUACULTURE

AIMS has contributed to a major collaborative project involving the Australian prawn aquaculture industry, the Fisheries Research and Development Corporation (FRDC) and other research providers. The project is aimed at removing the barriers to development of an industry based on captive-reared broodstock of *Penaeus monodon* (black tiger prawn) rather than continuing to rely on wild-caught broodstock. To date, AIMS has demonstrated the potential to select for animals with enhanced ability to survive and reproduce in captivity. Animals spawned at AIMS have grown to reproductive size in less than 12 months. The former result was based on analysis of data collected by AIMS over several generations of captive-reared broodstock. The latter is significant because the growth rate (and health status) of these prawns far exceeded the results

obtained previously at AIMS with domesticated stock in tanks, and this timeframe would allow domesticated stock to fit with industry production schedules.

AIMS research in WA points to a viable aquaculture industry based on the production of bioactive compounds. One of the chemical targets selected, Salicylihalamide from a sponge, is the basis of an aquaculture project funded by FRDC. The compound has recently demonstrated new potential as a paediatric oncology lead. AIMS, collaborators in WA (including the University of Western Australia), and the aquaculture industry will work with the US National Cancer Institute to progress Salicylihalamide through pre-clinical trials.

The Institute's involvement in the development of tropical rock lobster aquaculture has increased significantly, with a FRDC-funded project examining hormonal control of larval development, and two other projects funded by a private investor examining nutrition and the microbiology of rock lobster larval rearing.

Development of a bath sponge aquaculture industry for Aboriginal communities in northern Australia is progressing to commercial scale. Experimental fieldwork carried out in conjunction with James Cook University has demonstrated growth rates of sponges that could support a viable industry. New work has examined the feeding ecology of target species, providing additional insight into near-shore carbon flux dynamics. This initial work has developed in association with Palm Island community groups and traditional owners.

DISCOVERING USEFUL COMPOUNDS

Over the last three years, 30 marine natural product leads with herbicide potential were discovered and several provisional patent applications based on these leads were lodged. The remaining compounds are being assessed for their patentability. A US and Australian patent was awarded for the assay used to discover these compounds. Several of these leads and analogues were subjected to large-scale testing in glasshouses.

Also during this period, the AIMS-JCU spin-off company Toxitech attracted national scientific and investment attention. The IP portfolio supporting Toxitech grew by several provisional patent applications during the year, along with the development of several proprietary reagents. In addition, marine fungus producing a herbicidal extract was successfully grown in large scale, enabling the structure of the bioactive chemical to be elucidated, as well as testing of the fungal extract in pot trials.

In addition, major effort was involved in testing more than 13,000 extracts from Australian marine macro-organisms and microbes for antibiotic activity against *E. coli* and *Staphylococcus aureus*. Screening of the AIMS extract library also started against *Mycobacterium smegmatis*, a benign model for other mycobacteria such as *Mycobacterium tuberculosis* (the causative agent for TB) and *M. leprae* (the causative agent for leprosy). Mycobacteria are developing antibiotic resistance and there is a growing global demand for new antimycobacterials to treat these diseases. Mycobacteria are also a problem for the aquaculture industry as they cause ulcerative diseases of prawns and shrimps and there may be applications for new

antimycobacterials in disease management in this industry.

UNDERSTANDING NATURE'S DEFENCES

A new project began in 2002-03 examining a biochemical adaptation employed by marine bacteria in response to the extreme UV energy of the tropical sun. Far from being stressed, the bacteria increase the recycling of the antioxidant *coenzyme Q* at critical times (e.g. when the sun is strongest), thus giving their metabolism extra protection to avoid the damage that would otherwise occur. This recycling of coenzyme Q is an antioxidant function that becomes progressively deficient in human ageing. The discovery is prompting new research into cellular processes of ageing which may lead to the design of therapeutic interventions to retard the progress of degenerative diseases such as in Alzheimer's and Parkinson's. The bacterial model of biochemical adaptation may also be useful in exploiting the connection between gene regulation of cellular oxidative balance and cancer prevention.

On the Great Barrier Reef, AIMS researchers supported by CRC Reef performed a series of experiments to determine the effects of the herbicide diuron on the sensitive early life history stages of coral. The research showed that diuron did not affect fertilisation of coral eggs or the settlement of larvae at environmentally relevant concentrations. However, diuron was shown to cause severe bleaching of newly settled corals at concentrations of 30 µg/L and above. The research indicated that the health of corals could be affected by diuron at concentrations relevant to near-shore habitats. At the close of 2002-03, reef managers were using this information in a review of the use of diuron on crops adjacent to the Great Barrier Reef.



SPONGE AQUACULTURE FARMING EXPERIMENT

In Antarctica, AIMS researchers collaborating with the University of Canterbury have completed field collections and *in situ* experiments on Antarctic sponges. The project has so far concentrated on describing and identifying novel symbiotic micro-organisms and natural products associated with five sponge species. The work extrapolates research carried out on the Great Barrier Reef at a latitudinal extreme, to examine the sensitivity of symbiotic micro-organisms to pollution and environmental change. The research has yielded several hundred novel micro-organisms that have strong species-specific associations with their host sponge. Eight sites were sampled under the ice for pollutants that have accumulated in the sediments and biota for over 50 years. The sponges and bivalves have been found to accumulate heavy metals, while TBT (a highly toxic anti-foulant) was discovered for the

first time in Antarctic sediments. Research is underway to determine whether the patterns in microbiology and chemistry of filter-feeding sponges reflect the gradient of pollution around Antarctic bases. The logistics for the collections have been supported by Antarctica New Zealand.

Finally, research concluded on UV-sunscreen protection in marine organisms. AIMS has established a significant presence in the field of marine photobiology since the discovery of UV protective compounds (sunscreens) in coral reef organisms and our experimental realization of their adaptive function.

GENETICS FOR BIORESOURCE MANAGEMENT

This year AIMS scientists investigating the potential for genetics to assist bioresource management found that two of the most abundant corals on the Great Barrier Reef, the *Acropora* and *Montipora* genera, can cross-breed and do so in nature. In addition, the levels of genetic diversity in *Acropora* corals were found to be relatively high, possibly as a consequence of hybridisation. New DNA mutations accumulate in each species and are subsequently exchanged through occasional hybridisation events, increasing genomic diversity in each of the species.

This high level of genetic diversity may provide an evolutionary advantage to these corals, as it is likely to enhance their ability to respond to environmental changes. Whether this will allow *Acropora* corals to survive rising sea temperatures and coral bleaching events associated with global warming is unknown. In fact, *Acropora* corals are among the more sensitive corals to bleaching. Scientists say, however, that genetic diversity creates an enormous capacity for

adaptive evolution and that species with high diversity usually have a better chance to survive, compared to species showing signs of 'genetic erosion' (or loss of genetic diversity, usually through drops in population).

Also, for the first time, AIMS scientists this year found a relationship between the type of zooxanthellae (symbiotic algae living in their tissue) and the physiological characteristics of the coral host. This possibly allows a degree of adaptability to global climate change not previously recognised. It seems corals can adjust the relative abundance of certain types of zooxanthellae as a mechanism to respond to environmental change. In turn, the genetic identity of zooxanthellae affects the growth rate of the coral host. In other words, through the uptake of different symbionts, corals can make a trade-off between enhanced heat tolerance and growth.

RESEARCH OUTPUT AT A GLANCE

- ◆ Researchers grew broodstock from tiger prawns that were spawned in captivity at AIMS to reproductive size in less than 12 months.
- ◆ A new collaborative project to domesticate the tropical rock lobster gained funding from private enterprise (Kailis).
- ◆ Opportunities for a sponge aquaculture industry were discussed with Palm Island, Torres Strait and Arnhem Land indigenous communities.
- ◆ The AIMS-JCU spin-off company, Toxitech, attracted national scientific and investment interest, with planning underway for expansion of biosensor targets.
- ◆ Research funded by the Nufarm agrichemical company yielded 30 new lead compounds exhibiting specific C4 plant herbicidal activity.
- ◆ Scientists working at latitudinal extremes, from the Great Barrier Reef to Antarctica, demonstrated the sensitivity of Antarctic marine organisms to human-induced impacts and other environmental change.
- ◆ A relationship was discovered between the type of symbiotic algae living in coral tissue and the physiological characteristics of the coral host, possibly allowing adaptability to climate change not previously recognised.
- ◆ Scientists discovered two of the reef's most abundant corals, *Acropora* and *Montipora*, can cross-breed, resulting in high genetic diversity within the group, possibly to cope with warming seas.
- ◆ Two active anti-cancer leads were placed in pre-clinical trials, as part of a collaboration with the US National Cancer Institute. Both of these active compounds were from sponges found in Western Australian and New South Wales.
- ◆ The first Australian Marine Access and Benefit Sharing Agreement between AIMS and the Queensland Government successfully passed its first review period. The agreement is becoming a model for engagement between similar research and development agencies around the nation and internationally.

MEASURING PERFORMANCE

Performance information for AIMS is included in the Portfolio Budget Statement and in the 2000-03 Triennium Resource Agreement signed between AIMS and the Government. The Institute's outcome is derived from the official functions of the Institute (AIMS Act, Section 9), with effectiveness indicators reflecting the relevance of AIMS' products and services to Government policy and its effort to encourage innovation (see Backing Australia's Ability). The Institute's outcome underwrites the sustainability initiative of Government, captures benefit from Australia's marine resources and meets community expectations.

Government support for marine R&D is based on recognition of the importance of research to national prosperity and, in particular, the need to encourage ecologically sustainable development of marine industries, including new industries such as aquaculture for fine chemicals.

Within the three Research Groups – Conservation and Biodiversity, Coastal Processes, and Marine Biotechnology – an interdisciplinary approach is taken which creates synergies through collaborative research to provide new ideas and production efficiencies. The research program has been developed from consultation with stakeholders and clients, including industries such as agriculture, aquaculture, fisheries, mining, petroleum and tourism; the educational sector; other research

agencies; marine resource managers; government and the Australian community. In addition, the research program is underpinned by the Institute's Key Performance Goals, approved by Council. A breakdown of current research at AIMS is available at: <http://www.aims.gov.au/pages/research.html>

Performance indicators in the 2000-03 Triennium Resource Agreement are grouped into areas that reflect major objectives of government-funded research and development. Our progress towards these objectives is a measure of the effectiveness of AIMS activities during the reporting period. Below are the broad objectives, along with the measures of effectiveness agreed with the Government.

I. RESEARCH AND DEVELOPMENT

To maintain and encourage the highest level of research (both at national and international levels) that will meet the future needs of industry and other users, and ensure the effective and efficient use of resources to conduct that research.

INDICATORS

1. Shift of resources to agreed priority areas.
2. Scientific publications:
 - a. Publication level measured by number and categorised by types of publication.

- b. Retrospective citation analysis using Science Citation index (five yearly).
 - c. Number of patents held reported by the number of separate technologies.
3. Other examples: distinguished awards, major prizes, and nomination as host agency by internationally recognised researchers.

II. LIAISON AND COLLABORATION

To encourage the transfer of research output through liaison and collaboration with industry, government and other users (including scientific and general communities).

INDICATORS

4. Contribution to Australia's research future through teaching and training:
 - a. Number of postgraduate students supervised by AIMS.
 - b. Number of conjoint teaching positions undertaken with universities.
5. Coordination of research and linkages with decision-making bodies:
 - a. Number of collaborations.
 - b. Input to policy-making and provision of advice.

III. TECHNOLOGY TRANSFER AND COMMERCIALISATION

To encourage and facilitate the application of knowledge and technology developed by the agency and by industry and other users, for the maximum long-term benefit to Australia.

INDICATORS

6. External earnings for research services, consistent with the Institute's mission.
7. Adoption by Users of Practices, Instruments and Processes Developed by AIMS.
8. Joint ventures and strategic alliances.
9. Spin-off businesses.

IV. CUSTOMER SATISFACTION

To ensure a high level of customer satisfaction.

Indicators

10. Contracts successfully completed.

RESEARCH OUTPUT AND COMMUNITY OUTCOMES

Australia's Marine Jurisdiction provides a unique platform to grow our international presence in science and technology, within an increasingly competitive economic environment. AIMS remains alert on a global basis to new opportunities and emerging technologies, with projects reviewed regularly to ensure they deliver the research output and community outcomes flagged in the Institute's Research Plan. The cycle of science planning, reporting, review and adjustment underwrites the outcome of enhanced scientific knowledge supporting the protection and sustainable development of Australia's marine resources.

This section of the Annual Report gives an account of the Institute's science achievements against performance information and effectiveness indicators provided in the 2000-03 Triennium Resource Agreement and the portfolio budget statements (see previous section). For more detail on research output within the three research groups at AIMS – Conservation and Biodiversity, Coastal Processes, and Marine Biotechnology – turn to the Science Reports on pp 10-24.

RESEARCH AND DEVELOPMENT

SHIFT OF RESOURCES TO AGREED PRIORITY AREAS

Research planned for the 2000-03 funding triennium was concluded in the reporting period, with effort devoted to finalising research outputs to achieve intended outcomes. Priorities were biodiscovery, conservation of biodiversity, global climate change, water quality in the Great Barrier Reef World Heritage Area, seabed exploration in support of regional marine planning, development of new technologies, decision support for environmental managers, and a shift in focus to northern Australia.

During the reporting period, the Institute undertook extensive stakeholder consultations to validate outcomes planned in 2003-06, with a full analysis of community needs, issues and opportunities in the marine sector. It was decided to form nine new research teams, with resources to shift to:

- ◆ Biodiversity assessment in new areas;
- ◆ Climate change and impacts;

COMMUNITY OUTCOMES CONSERVATION AND BIODIVERSITY

- ◆ Environment Australia used AIMS research services to assess the status of biodiversity in several important marine jurisdictions.
- ◆ The Great Barrier Reef Marine Park Authority benefited from extensive AIMS monitoring of the GBR, with data on the World Wide Web enabling rapid reporting of changes in the status of reef biodiversity (e.g. coral health and fish population trends).
- ◆ The launch of *Status of Coral Reefs of the World: 2002*, reported slight improvement in the condition of reefs worldwide, particularly in protected areas. The author, Dr Clive Wilkinson, said there had been greater international commitment to address the generic degradation of reef systems.
- ◆ The Group provided research services to the Kingdom of Saudi Arabia to assess environmental impacts of the 1991 Gulf War.
- ◆ Resource managers benefited from new and continuing development of remote, non-destructive sampling methods, such as Baited Remote Underwater Video Stations (BRUVS), for habitats beyond the reach of research divers and for species difficult to sample (e.g. sharks).
- ◆ The Australian Academy of Science collaborated with AIMS to highlight and publicise Australian research into coral bleaching.
- ◆ A new AIMS research tool known as *Coral ID* quickly attracted the interest of researchers, divers and others needing to easily identify coral species around the world.
- ◆ Global climate change modellers and others gained improved knowledge of historical and contemporary climate variability and change, particularly in relation to tropical marine environments.
- ◆ Real-time information was made available to the research community and general public on Great Barrier Reef weather conditions through AIMS' network of Automatic Weather Stations.
- ◆ The Group provided major scientific input to the draft GBR Representative Areas Program and the Reef Water Quality Protection Plan.
- ◆ Research services to the petroleum industry in WA enhanced their ability to manage business, with respect to environmental impact risk and compliance.
- ◆ The Australian community will benefit from new multidisciplinary and multi-institutional collaboration aimed at enhancing knowledge of seabed biodiversity in Australian marine jurisdictions.
- ◆ Government and environmental managers were informed that coral bleaching on the Great Barrier Reef was likely to increase in coming years if reef waters continued to warm due to global climate change.

- ◆ Risk and recovery;
- ◆ Status and trends in the Great Barrier Reef World Heritage Area;
- ◆ Sustainable coastal development in Northern Australia;
- ◆ Water quality in the Great Barrier Reef World Heritage Area;
- ◆ Bioactive molecule discovery;
- ◆ Bio-innovation; and
- ◆ Tropical aquaculture.

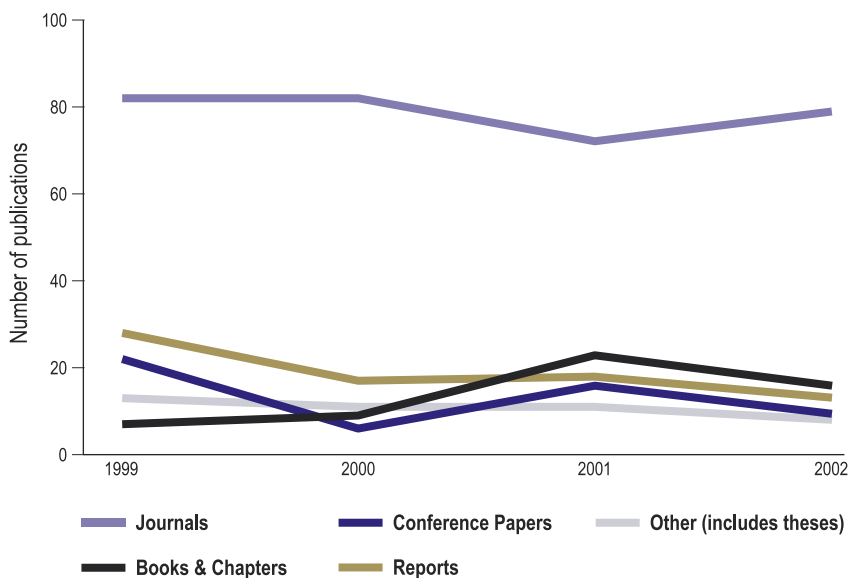
Because AIMS is the main provider of science supporting the effective management of the Great Barrier Reef, it will continue to lead on conservation and management of corals reefs. The Institute will, however, take a greater role in the sustainable development of our marine jurisdictions for the benefit of all Australians. Increasing research effort will focus on tropical seabed biodiversity (its resource value and uniqueness), minimising business risk associated with natural variability in

ecosystems, discovering useful products from Australia's marine biodiversity, and developing technologies with application to environmental management and human health.

In May, AIMS prepared its National Research Priorities Implementation Plan, highlighting how its new Research Plan will align with National Priorities. In particular, AIMS will make a major contribution to *Environmentally Sustainable Australia*, which is clearly linked to the Institute's mandate, and to *Frontier Technologies for Building and Transforming Australian Industries*. The Marine Biotechnology Group will build on commercially valuable partnerships to develop novel technologies for both *Promoting and Maintaining Good Health*, and *Safeguarding Australia*.

PUBLICATIONS

In the breakdown of publications below and in the 2002 Publications List provided at Appendix 3, total published scientific output fell 12%, although there was a 8.2% increase in journal



COMMUNITY OUTCOMES COASTAL PROCESSES GROUP

- ◆ Development plans for Darwin Harbour and areas close to major rivers in the Northern Territory will benefit from new AIMS water quality research involving all regional stakeholders.
- ◆ Resource managers were informed of long-term data showing significant amounts of sediments and nutrients washing from wet and dry catchments to the Great Barrier Reef. This data allowed the development of predictive models of river flow and sediment exports from non-sampled catchments.
- ◆ A new AIMS-CRC Reef publication, *Catchments and Corals: Terrestrial Runoff to the Great Barrier Reef*, was launched as a comprehensive sourcebook for land users, government resource managers, students, researchers and anyone interested in the Great Barrier Reef.
- ◆ The Coastal Processes Group hosted a major water quality conference and contributed to the Reef Water Quality Protection Plan, as well as participating in public debates about the impact of runoff containing farm chemicals on the ecosystems of the Great Barrier Reef World Heritage Area.
- ◆ Resource managers were informed of new findings that suggest ancient mangrove deposits may be contributing nutrients to the Great Barrier Reef.
- ◆ Management agencies, government departments and others learned of new bio-indicators of environmental stress in coastal ecosystems, including indicators of toxic contaminants from intense land use.
- ◆ Water managers were given new information about the precise whereabouts and nature of wonky holes (or seabed cavities) between Herbert River and Palm Island.
- ◆ Global carbon budget scientists responsible for predicting rates of global warming and removal of atmospheric carbon dioxide caused by fossil fuels were informed by AIMS that some wet tropical continental shelves were a source of carbon to the atmosphere, not a carbon sink as previously thought.
- ◆ Models of sediment dynamics in the Cairns-Trinity Bay region were devised to inform development in the region; Similarly, predictive models were developed for the GBR to help resource managers understand links between disturbances and eco-system health, water circulation and population shifts.
- ◆ The State Department of Natural Resources and Mines used AIMS research services to review the effects on fish populations of regulating Burdekin River water flows and irrigation practices. They were told that freshwater flow from the Burdekin is critical in sustaining peaks in seafood production. Townsville weirs were also restocked with fish.
- ◆ A new understanding of food chain dynamics in the Exmouth Gulf in WA helped industries and resource managers to locate “hotspots” of biological productivity.
- ◆ The need for a multinational approach to conservation of whale sharks was reinforced by AIMS findings on their behaviour. Increased ability to forecast shark abundance will also support the ecotourism industry focused on shark viewing at Ningaloo Reef, off the WA coast.

PUBLICATIONS

	2002	2001
Journals	79	73
Books & Book Chapters	18	23
Theses	4	11
Conference Papers	9	16
Reports - Technical and Client	13	19
Multi Media	4	-
Total	127	142

articles (from 73 to 79). Part of the overall decline can be explained by the fact that the previous year saw a peak in book chapters, owing to the publication of an edited volume by Dr Eric Wolanski, to which many AIMS staff contributed articles. In all, nearly 70% of publications were authored by AIMS staff in collaboration with researchers elsewhere, many overseas. This highlights the strength of collaborations underpinning interdisciplinary science done at AIMS.

PATENTS

AIMS holds 60 individual granted patents in five patent families. Forty-five of these relate to UV blocker sunscreen technology; ten relate to WetPC/KORD technologies, three concern coral bone-substitute intellectual property and two concern a C4 herbicide. Provisional patents from the reporting period encompass inventions in herbicide discovery and testing of saxitoxin in seafood and drinking water.

PRIZES, AWARDS AND ASSOCIATIONS

In recognition of their professional standing, AIMS scientists served as editors or members of editorial boards on at least 22 international scientific journals (see table).

Individual staff were also recognised through prizes, awards and associations. The following are noteworthy:

- ◆ Dr Eric Wolanski received the Australian Centenary Medal for his contribution to society in estuarine and coastal oceanography. The Centenary Medal is awarded by the Prime Minister to recognise individuals who have helped significantly to enhance the well being of Australia, and few scientists working in the environmental field have been rewarded in this way. Dr Wolanski has pioneered the application of “computer visualisation” and multidisciplinary ecosystem modelling in marine science.
- ◆ Dr Walt Dunlap received the Japan Exchange Award provided under Backing Australia’s Ability Innovation Access Programme. He will collaborate with Dr Yorihiro Yamamoto at the University of Tokyo and Professor Masayasu Inoue at the Osaka City University Medical School on the project “Marine Biotechnology for Anti-Ageing Research”.
- ◆ Dr Mark Meekan was invited by the French Government to be an adviser for

COMMUNITY OUTCOMES MARINE BIOTECHNOLOGY

- ◆ AIMS took part in a multi-institutional and industry-linked project aimed at improving the sustainability and profitability of the Australian prawn aquaculture industry. By harnessing the R&D power of relevant stakeholders in science and industry, the final barriers to tiger prawn domestication are being overcome.
- ◆ New-species aquaculture research throughout northern Australia was initiated in collaboration with indigenous and remote communities. In particular, AIMS research suggested future opportunities for employment in a sponge aquaculture industry. Private enterprise also backed research into domestication of tropical rock lobsters and stands to benefit from development of a niche industry feeding high global demand.
- ◆ A safer global seafood industry will soon be realized through development of a novel test for saxitoxin. This is a deadly poison (often associated with algal blooms) which can contaminate shellfish and even drinking water.
- ◆ The biodiscovery of marine natural products for a variety of medicinal and industrial sectors has been strengthened by strategic national and international partnerships. Australian development and production potential is being maximized through the Institute's biomolecular expertise and resources.
- ◆ The Australian community, including industry and government agencies, gained an improved knowledge of the nation's marine biodiversity and biogeography at molecular and microbial levels. This was an additional outcome of biodiscovery research and indicates a rich and unique diversity within Australia's marine estate.
- ◆ Industry benefited from high rates of discovery of bioactive compounds facilitated by a relational bioinformatics system which draws on our understanding of the role these compounds play in nature.
- ◆ AIMS and the Queensland Government successfully completed the first review period involving signage of an Access and Benefit Sharing Agreement within a unique policy that facilitates sustainable regulated access to marine biodiversity while ensuring fair and equitable benefit share. It is a model for engagement of research providers, industry and the natural resource managers in all parts of Australia and Internationally.
- ◆ New understanding of biochemistry and chemical ecology at AIMS increased the efficacy of the global "intelligent search" for bioactive molecules, e.g. the discovery and development of cellular regulators that may be useful in anti-ageing medicine.
- ◆ Regional biodiversity management benefited from improved knowledge of the origin of biodiversity in the Indo-Pacific and its relationship to Australian marine biota.
- ◆ Information on gene flow and dispersal helped in management of marine resources and allowed assessment of the efficacy of Marine Protected Areas, particularly on the Great Barrier Reef.
- ◆ A wide range of AIMS stakeholders benefited from direct assessment of the genetic impacts on reef organisms to major agents of change such as global warming, predation and cyclones.

In recognition of their professional standing, AIMS scientists were invited to join or continue as Editorial and/or Board Members of some of the best international scientific journals.

Journal	AIMS Scientist	Role
Aquatic Conservation: Marine and Freshwater Ecosystems	Hall	Editorial Board
Continental Shelf Research	Wolanski	Editorial Board
Coral Reefs	Barnes	Biological Editor (resigned Sep 02)
Coral Reefs	Alongi	Editorial Board
Coral Reefs	Lough	Editorial Board
Coral Reefs	Done	Editorial Board
Coral Reefs	McCook	Editorial Board
Deep Sea Research	Alongi	Associate Editor
Ecosystems	Done	Editorial Board
Estuarine, Coastal and Shelf Science	Wolanski	Editor
Estuarine, Coastal and Shelf Science	Alongi	Editorial Board
Fisheries Oceanography	Doherty	Editorial Board
Fisheries Research	Hall	Editorial Board
Journal of Animal Ecology	Hall	Editorial Board
Journal of Coastal Research	Wolanski	Editorial Board
Journal of Marine Systems	Wolanski	Editorial Board
Journal of Plankton Research	Furnas	Editorial Board
Marine and Freshwater Research	Doherty	Member, Advisory Committee
Oecologia	Doherty	Editorial Board
UNESCO Encyclopedia of Life Support Systems	Wolanski	Editor
Wetlands Ecology and Management	Wolanski	Editor
Wetlands Ecology and Management	Alongi	Editorial Board

projects submitted to L'IRD (Institut de Recherche pour le Developpement, previously ORSTOM) under a new initiative to investigate ecological processes of coral reefs and the exploitation of reef resources by human populations in the Pacific region.

- ◆ Dr Charlie Veron was an adviser to the Moore Foundation, Conservation International, World Wildlife Fund and the Nature Conservancy, as well as an invited author of the Encyclopaedia of Paleoclimatology and Ancient Environments.
- ◆ Dr Kathy Burns was listed as the world's top expert in analysis of trace petroleum residues in corals by a UN Committee advising the Saudi Arabian Government.

- ◆ Dr Lyndon Llewellyn was an adviser to an International Atomic Energy Agency-United Nations development project.

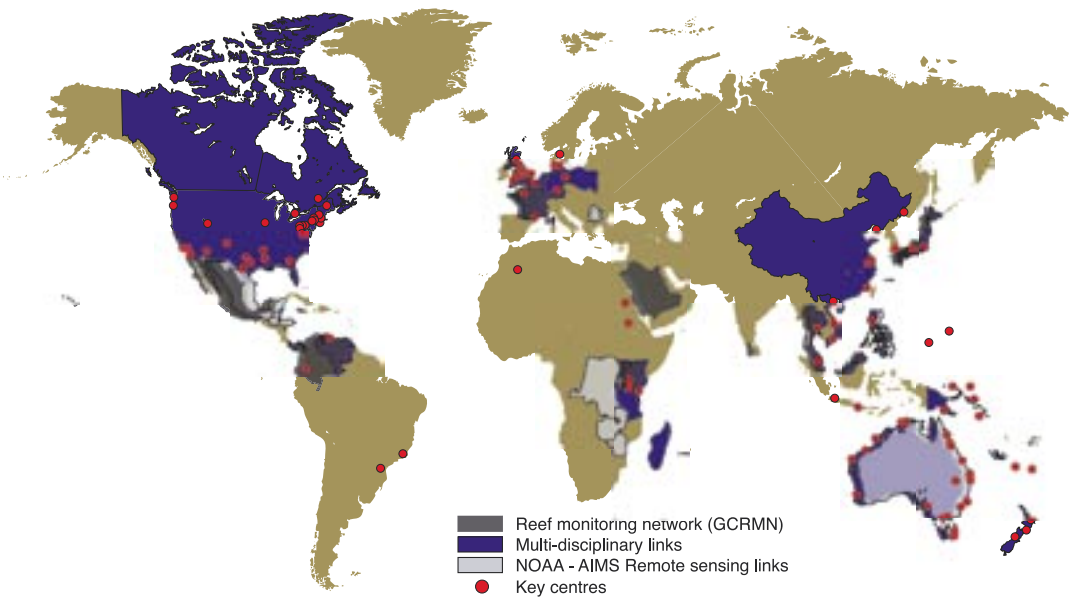
LIAISON AND COLLABORATION

CONTRIBUTION TO AUSTRALIA'S

RESEARCH FUTURE THROUGH TEACHING AND TRAINING

An extensive international network of research collaborations ensured a healthy throughput of visiting scientists. During 2002-03, 55 postgraduates were supervised by AIMS staff. In addition, graduate students regularly used Institute facilities, with more than 24 of these students spending more than 3 months at AIMS. Students are attracted from both Australian and international universities, although the majority of postdoctoral students (89%) are enrolled in Australian universities. In

NATIONS COLLABORATING WITH AIMS



addition, 15 undergraduate and high school students undertook work experience at the Institute.

The Institute operates a competitive funding award program for postgraduate students who conduct most of their research at AIMS. Three PhD students have received awards from the Institute of \$30,000 over three years for research expenses. Claire Bennett (University of Melbourne), Alison Robertson (James Cook University) and Carolyn Smith (University of Queensland) were in the final year of their program in 2002-03.

During the reporting period there were 16 conjoint/adjunct teaching appointments of AIMS scientists. Seven appointments were at James Cook University, four at the University of Queensland and the others were at Central Queensland University, Texas A&M University (US), the University of Manitoba (Canada), the University of Western Australia and Flinders University. Many other staff advised on student theses and provided special lectures when invited to do so. The Texas A&M University signed a Memorandum of Understanding with AIMS in the reporting period, securing AIMS as

COLLABORATIONS TO JUNE 30

	01/02	01/02
Countries Involved in AIMS Research	33	33
Collaborators Across AIMS Projects	164	199
Organisations Across AIMS Projects	132	162
Global Coral Reef Monitoring Network	80	80

TEACHING

Battershill, Chris	Adjunct Professor	UWA
Brunskill, Gregg	Conjoint Snr Lecturer	JCU (Dept Molecular Sci)
Brunskill, Gregg	Research Fellow	Central UQ (Dept Chemistry)
Brunskill, Gregg	Adjunct Professor	U. Manitoba, Canada (Earth Sci)
Burns, Kathy	Adjunct Senior Lecturer	JCU (Dept Molecular Sci)
Caley, Julian	Adjunct Senior Lecturer	JCU
Done, Terry	Adjunct Professor	U. Queensland
Hall, Mike	Adjunct Senior Lecturer	U. Queensland
Hall, Stephen	Professorial Fellow	Flinders University
Isdale, Peter	Adjunct Professor	Texas A & M University (US)
Klump, David	Conjoint Lecturer	JCU (Aquaculture)
Llewellyn, Lyndon	Adjunct Assoc Prof	JCU (School of Pharmacy & Molecular Sci)
van Oppen, Madeleine	Adjunct Senior Research Fellow	JCU (School of Pharmacy & Molecular Sci)
Veron, Charlie	Adjunct Professor	U. Queensland
Wilson, Kate	Adjunct Senior Lecturer	JCU
Wilson, Kate	Adjunct Senior Lecturer	U. Queensland

its Australian base for a “study abroad” program. By far the most linkages, however, were with James Cook University, where a number of schools and departments interacted with AIMS, including the School of Pharmacy and Molecular Science, the School of Tropical Biology and the School of Marine Biology and Aquaculture. One leading JCU collaborator reported great satisfaction with AIMS teaching and training contribution, commenting:

I have just completed a successful day of my Wetlands Ecology intensive subject (BZ3212/5212), which included three presentations by AIMS staff (Gregg Brunskill, Mike Cappo and Miles Furnas). These excellent contributions have been continued over several years. I have made much of the morning’s event with students, as it demonstrates links not only between land and aquatic systems, but also between researchers of varied persuasions and major institutions. The students have been impressed on all counts. I suspect there are several such low-key collaborations

that are nevertheless potentially important in helping forge a more formal relationship.

Many staff also gave public presentations to raise awareness of AIMS research and its relevance to the community. For example, climatologist Dr Janice Lough was a keynote speaker at the National Drought Forum in Brisbane in April, and Dr Kate Wilson addressed the AgBiotech Forum in Melbourne on “Developing Australia’s Marine Biotechnology Capabilities: A Case Study in Aquaculture”. Drs Miles Furnas and Katharina Fabricius addressed 130 banana industry representatives who visited AIMS in June to learn more about research into land runoff into the Great Barrier Reef World Heritage Area. Overseas, Dr Terry Done reported to several forums on the implications of climate change for coral reef management, and Professor Stephen Hall gave a keynote address on the future of the world’s continental shelves at a meeting in Zurich.

STUDENTS

AIMS staff enrolled at university	9
Occupational Trainees (overseas & Aust)	26
Students supervised by AIMS staff working at AIMS	21
Students supervised by AIMS staff working externally	28

COORDINATION OF RESEARCH AND

LINKAGES WITH DECISION-MAKING BODIES

Coordination of research through collaboration and research networks is the lifeblood of a science organisation like AIMS. The AIMS Director meets regularly with executives in other Australian and international science agencies. These forums include the Heads of Marine Agencies, the Coordination Committee on Science and Technology, and meetings with CSIRO management.

Over the years, AIMS has built on its reputation for world-class science, and grown its network of collaborative links across all Australian States and Territories, and many nations overseas. Through the Global Coral Reef Monitoring Network, AIMS has linkages with researchers and resource managers in over 80 countries across the globe. Nearly 70% of AIMS scientific publications in 2002 were co-authored with scientists from other organizations. While many of these collaborations have been developed through researcher networks, there are a growing number of collaborative arrangements between organizations. About 14% of external funding to AIMS is generated through collaborative projects with universities. Another 39% come from CRC collaborations.

A breakdown of collaboration figures is provided below, and a list of memberships in external committees and NGOs is provided at Appendix 4.

Examples of noteworthy collaborations include the following:

- ◆ Intensive collaboration, particularly between AIMS, JCU, GBRMPA, CRC Reef and NOAA ensures optimal delivery of science for management of the Great Barrier Reef World Heritage Area. In May, Australia’s Chief Scientist, Dr Robin Batterham said Townsville was a perfect example of a “super centre for research” because of the extensive collaborative arrangements that existed, particularly in marine science.
- ◆ AIMS is part of a collaborative research program on domestication of black tiger prawns that is the largest of its kind in history, involving major industry partners, CSIRO and the Queensland Department of Primary Industries. It is receiving major support from the Australian Prawn Farmers Association and aims to overcome the last barriers to domestication of this prawn species.
- ◆ Governments and research institutes in 80 countries are linked to AIMS through the Global Coral Reef Monitoring Network. This network is coordinated through AIMS and provides solutions to ensure the world’s coral reefs are managed and used in ways that are sustainable and protect ecosystem quality.

- ◆ AIMS coordinates the Australian Research Network for Algal Toxins (ARNAT), and the Australian Coral Records Research Group (AUSCORE). The former network stood at more than 120 researchers in June 2003.

POLICY INPUT

The Institute has provided major input to state, national and international forums on a range of issues, such as climate change, management of the Great Barrier Reef, and development of regulatory frameworks for access to biogenetic resources/benefit-sharing.

In terms of Great Barrier Reef policy, AIMS participated in the Science Expert Panel for the Reef Protection Task Force (a Queensland Government initiative) and provided a submission to the Productivity Commission on Water Quality Issues in the Great Barrier Reef Catchment. AIMS also had input to both the draft GBR Representative Areas Program and the joint Commonwealth-State Reef Water Quality Protection Plan, designed to safeguard the health of the GBR by improving land use practices in adjoining catchments, thereby reducing runoff of harmful sediment and nutrients.

On the biodiscovery front, AIMS' experience is useful to policy-makers because it represents a microcosm of the issues and perspectives impacting on policy-making. The Institute has the dual role of being a Commonwealth statutory authority and a biotechnology market player. The Institute's approach of separating the process of negotiating access permission from resource managers, away from that of negotiating monetary and non-monetary benefits with Governments and resource owners and providers, has been

adopted by several legislative and regulatory regimes within Australia.

Examples of linkages with regulatory decision-making bodies in 2002-03 are listed below:

- ◆ Access and Benefit Sharing Agreement between AIMS and the State of Queensland was reviewed and found to be working well.
- ◆ Coordinated with other agencies to provide input to key reviews (Higher Education Review, Oceans Policy Review), and provided feedback/input to DEST on other initiatives such as bioinformatics.
- ◆ AIMS provided expert advice to the Queensland Bioprospecting Policy Review.
- ◆ Progress was made with biodiscovery agreements and legislation through invited submissions for NT, WA, NSW and Commonwealth Governments.
- ◆ AIMS provided expert advice to the Australian National Biotechnology Strategy.
- ◆ Major input to the draft Queensland Biodiscovery Bill, was provided to allow certainty of ownership over new leads.
- ◆ Scientists contributed to the Queensland Department of Primary Industries' Biotechnology Policy Review.

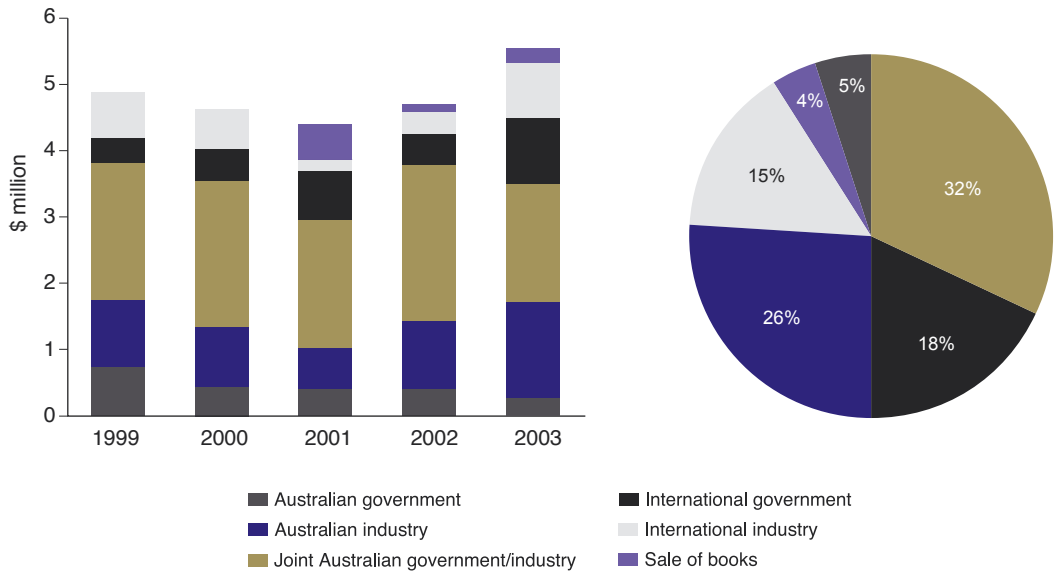
Policy input on global climate change included various briefings, i.e. to the president of the International Ocean Institute, the Queensland Government, several MPs, and to Ministers within the Education Science and Training portfolio.

EXTERNAL EARNINGS OVER LAST FIVE YEARS



EXTERNAL FUNDING SOURCES 2002/2003

Total External Funding of \$5.576m



TECHNOLOGY TRANSFER AND COMMERCIALISATION

EXTERNAL EARNINGS FOR RESEARCH SERVICES

Total external earnings for 2002-03 were \$5.576 million, which represents an increase of 18% over the figure for 2001-02. External funding sources included international industry partners and Australian business, international governments and government-backed agencies, joint government-industry contracts at both national and international level, and the sale of AIMS publications. The joint Australian Government/industry sector contributed 32% of external earnings, while Australian industry contributed 26%. See the tables and graphs on opposite page.

ADOPTION BY USERS OF PRACTICES, INSTRUMENTS AND PROCESSES

The transfer of marine science and technology takes many forms, but increasingly it occurs within a commercial paradigm. Scientists and engineering services staff frequently develop innovative tools useful beyond their original purpose. Examples of innovations in 2002-03 include:

- ◆ Handheld corers supporting contract work assessing reef damage in Saudi Arabia;
- ◆ Video-capture tools that allow quick and non-intrusive assessment of fish abundance and diversity in areas inaccessible to divers;
- ◆ Interactive computer tools that provide easy identification of corals worldwide;
- ◆ Rapid Web-reporting of monitoring data on status of biodiversity in the Great Barrier Reef World Heritage Area (attracted 30,000 hits in 2002-03);
- ◆ Tree-based data-mining tools and Bayesian methods (for attributing causality) useful in both scientific discovery and decision-support tools for environmental managers;
- ◆ Prototype models simulating reef futures that are simple to understand and keep their underlying assumptions transparent to stakeholders;
- ◆ A socio-economic manual for coral reef management, particularly useful in developing countries;
- ◆ Automatic Weather Stations that monitor weather on the Great Barrier Reef and provide high quality, real-time data to users in an accessible format on AIMS website (popular with recreational fishers);
- ◆ An 'atlas' mapping Great Barrier Reef sea-surface temperatures collected remotely via satellite (highlighting areas susceptible to coral bleaching and useful to reef managers as well as researchers);
- ◆ Baseline data on nitrogen cycling for the GBRWHA;
- ◆ A global model for recycling water in an agricultural community environment;
- ◆ A river logger system which measures levels of sedimentation and water quality;
- ◆ Tidal prediction data for improving bulk ore loading schedules;
- ◆ Web-based tools enabling access and analysis of water quality and chlorophyll data;
- ◆ New aquaculture technologies and protocols for breeding prawns;
- ◆ Tests for detecting saxitoxin in seafood and drinking water;
- ◆ Marine herbicides that target C4 weeds problematic for crop farmers;
- ◆ A sensitised real-time assay to gauge abundances of zooxanthellae belonging to different groups, living inside host tissues.

REPORT OF OPERATIONS

JOINT VENTURES AND STRATEGIC ALLIANCES

The Institute has benefited from a number of joint ventures and strategic alliances in taking forward research and biodiscoveries, and transferring the results of these efforts to industry and government.

AIMS@JCU is a joint venture whose establishment was supported with additional funding of \$2.9 million in the 2003 federal budget. This new affiliation will greatly enhance the levels of collaboration between the Institute and University, and will increase Townsville's profile as Australia's centre of excellence in tropical marine research and education.

AIMS and JCU have also formed an equity-building vehicle, ToxiTech Pty Ltd, designed to build an enterprise around algal-derived toxin testing technology (see spin-off businesses). A third joint AIMS-JCU discovery in selective herbicides made good progress in 2002-03 towards final development, through an alliance with the world's ninth largest agrichemical corporation, NuFarm Australia Limited.

Another Australian university with which AIMS has a strategic alliance is the Australian National University. The two institutions jointly conceived the Arafura-Timor Research Facility and have been granted \$3.25 million under the Major National Research Facilities Program to build the Facility in Darwin. The ATRF will focus on bringing together practitioners from the social, economic and biological sciences to deliver outcomes for Northern Australia and the region. A number of planning sessions were held in the reporting period, and construction is due to start in late 2003.

Beyond our shores, AIMS has an important strategic alliance with the US National Oceanic and Atmospheric Administration, to integrate as closely as possible the research of the two institutions. The complementary capabilities of the two organisations (for example, NOAA with its satellites and remote sensing capability and AIMS with its ability to ground-truth information cost-effectively) will enhance research in areas such as coral reef ecology, fisheries, water quality and climate change. In June, the integration plan was finalised at a series of joint meetings in Hawaii and Townsville. This partnership is facilitated by the three-year secondment of an AIMS scientist to NOAA headquarters in Washington.

In terms of commercial alliances, AIMS' underwater computing technology, licensed to WetPC Pty Ltd, is sub-licensed to manufacturers in several applications. The coral sunscreen, licensed to Sunscreen Technologies Pty Ltd, is being tested for a range of uses by industrial partners. Likewise, AIMS has entered into a collaborative research agreement with Australian and international agribusiness and investment companies (Westernhigh Pty. Ltd., Greenfields Resources Holdings and Pennington Seeds Inc.) to jointly develop environment and agriculture business opportunities in China. This strategic alliance, supported by an AusIndustry (DITR) grant, is aimed at creating a global model to deal with pollution in waterways.

Discussions were also held in 2002-03 with Faustus FC, Pharmamar and Diversa, with a view to establishing strategic alliances. AIMS supplied samples of marine macro-organism extracts to Cerylid upon request, to enable assessment of bioactive chemicals for drug development.

SPIN-OFF BUSINESS

During the reporting period, the AIMS-JCU spin-off company ToxiTech Pty Ltd grew in strength and attracted to its board several high-profile individuals from the biotechnology and seafood industries. The former CEO of PanBio, Mr Mel Bridges, became the Chairman of the Board. Toxitech also raised investment from the Commonwealth Biotechnology Innovation Fund and private investors. Provisional patents were lodged to support Toxitech's product development. Prototype rapid tests are scheduled for production in the third quarter of 2003. Several biosensor platforms have been assessed for later product development. Toxitech aims to provide economic security to the seafood industry by preventing the entry of tainted seafood to the marketplace.

CUSTOMER SATISFACTION

AIMS registered 37 contracts for scientific research services during the reporting period. A total of 55 reports were submitted on time as a result of externally funded research. Most of this work came from repeat customers. For example, Woodside Energy has sought AIMS expertise and funded collaborative research relevant to a number of locations in the North West offshore environment continuously since 1993. Most recently, this has included research into seabed biodiversity, biological oceanography, coral reef monitoring, and studies into whale shark populations visiting Ningaloo Reef.

The Institute receives excellent feedback from its customers, the comment below from Environment Australia being an example:

I am very pleased with the report. The comparison with the GBR appears to be extremely valuable ... you have tackled this well.

In terms of on-site customer service, visitors to the Institute reported a 99% satisfaction rate in a simple exit survey conducted in 2002-03. The Information Services Manager received the following comments from a representative of the Fish and Wildlife Division of the Commonwealth of Northern Mariana Islands:

I visited the AIMS facility last Friday and was able to meet with you regarding information resources available from AIMS. You graciously provided me with some quality time and I very much appreciate all the information you provided regarding AIMS publications and the IAMS LIC. The AIMS appears to be a very professional organization and one that I was truly impressed with, in part due to the time provided to me by staff.



RESEARCH SERVICES

BUSINESS SERVICES

With the departure of Business Director Dr Peter Isdale in February 2003, the Institute contracted Julian Clark Consulting Pty Ltd to undertake a review of AIMS Business Services Section. Dr Clark's report, delivered in June 2003, presented a series of options for organising the way business services might be provided at AIMS, along with the strategic implications associated with each. These alternatives are now under consideration.

VESSEL MANAGEMENT

The Institute's Vessel Management Contract was renewed for a further three years in September 2002 to Riverside Marine Pty Ltd.

During the reporting year the *RV Lady Basten* was used on 29 research expeditions in the Great Barrier Reef region. The vessel spent 292 days at sea, and steamed for a total of 26,103 nautical miles.

Scientists conducted 22 research expeditions using the *RV Cape Ferguson*, which spent 275 days at sea. From February 2002 to July 2003 it stayed in Northern Australian waters, starting the period in the Gulf of Papua, then working in the Timor Sea, at Scott Reef and the Rowley Shoals, and then in Exmouth Gulf in Western Australia. The vessel steamed for a total of 24,399 nautical miles.



LEAVING THE *RV CAPE FERGUSON*

DIVING

The Institute approved a total of 107 Dive Plans during the reporting period, with no incidents reported. The Institute's diving procedures are conducted in accordance with Australian/New Zealand Scientific Diving Standards AS2299.2. A detailed report, based on six years of safe dive profiles, is being finalised for presentation at a proposed South Pacific Underwater Medicine Society Workshop to review current Diving Standards.

REPORT OF OPERATIONS

IT DEVELOPMENTS

In 2002-03, the Information Technology Service Group bedded in new telephone and network systems, and finished their roll-out. Both AIMS Darwin and AIMS Fremantle now have high-speed secure links to AIMS. The IT helpdesk was also redeveloped to make it more responsive and technically advanced. These changes were reflected in a good response to the annual user survey.

Other IT developments included the installation of:

- ◆ more disk storage;
- ◆ a dedicated server on the *RV Cape Ferguson*;
- ◆ a remote services gateway to allow access to internal systems from anywhere in the world; and
- ◆ a new firewall to improve security.

System reliability was excellent with zero downtime for the main Sun servers and only one outage for the Windows servers. Although the number of security attacks increased, they were successfully repelled and no breaches recorded for either the external website or the internal systems.

DATA CENTRE

In the AIMS Data Centre, work started on development of a programming framework for dealing with scientific data. This will include a set of interfaces to allow simple table and graphics access to data, along with more sophisticated GIS web-mapping capabilities.

In addition, the Data Centre collaborated with individual scientists on several projects, including development of a user interface for a

sea-surface temperature atlas (important to researchers studying coral bleaching), and web-based tools enabling access and analysis of water quality and chlorophyll data (showing river runoff to the Great Barrier Reef). External funding was obtained to extend this project and to develop a pilot *Coral Geographic* site – a tool for identifying corals worldwide.

MORE JOURNALS ONLINE

The Information Service Group comprises the Institute's library, mail registry and archives. Demand for inter-library loans remained high in 2002-03, with over 700 requests from researchers and 135 requests from external sources. A management system upgrade gave staff increased ability to monitor books on loan. Access to electronic journals improved, with more than 1100 titles now available through the AIMS library. In accordance with the Senate's *Orders for documents*, registry files were listed on the AIMS external website and 149 records lodged with National Archives of Australia, complying with the *Archives Act (1983)*. Amalgamation of registry and library offices, and their refurbishment, has helped to improve services, e.g. information flows.

MEDIA COVERAGE OVER \$1M

The Science Communication Service Group reported increasing use of its services in 2002-03, particularly media liaison, videographic support, graphic design, desktop publishing, coordination of tours, book sales, and website assistance. AIMS research during 2002-03 attracted more than \$1.2 million worth of media coverage, six times the value of coverage in 2000-01. While Queensland coverage remained strong, AIMS steadily raised its profile in national media. The Media Monitors company put the value of our capital city coverage at \$881,000. International



AIMS VOLUNTEER TOUR GUIDE WITH STUDENTS

media also picked up many AIMS stories. The release of a sea-surface temperature atlas in July, confirming rising water temperatures on the Great Barrier Reef, attracted phenomenal interest. Reuters, CNN and BBC Worldwide covered the story and many other news services picked it up, both in Australia and overseas. An AIMS news release in September about coral disease on the GBR attracted similar interest.

By far the most prolific newsmaker at AIMS in 2002-03 was Dr Mark Meekan, a scientist based in Darwin. In one month alone (January 2003) Dr Meekan's research on how fish communicate to each other attracted 47 broadcast items and seven press items. It was shown on three national television networks and syndicated overseas. In May, his research on whale sharks migrating to Ningaloo Reef, off the north coast of Western Australia, attracted 29 broadcast items and six press items.

In terms of community debate, the news issue of 2002-03 was river runoff into the Great Barrier Reef World Heritage Area. In May, the SBS documentary *Muddy Waters: Life and Death on the Great Barrier Reef* featured the work of AIMS scientist Dr Katharina Fabricius and canvassed growing concern about the effects of farm chemicals on near-shore reefs. This documentary resulted in reviews, feature articles, columns and letters in metropolitan newspapers such as the *Age* and *Sydney Morning Herald*. Likewise, the AIMS book *Catchments and Corals: Terrestrial Runoff to the Great Barrier Reef* by Dr Miles Furnas also attracted considerable press, including articles in *Australasian Science* and the *Canberra Times*. Overall, more than one-third of all media coverage of AIMS in 2002-03 related to the Great Barrier Reef.

TOURS AND WEBSITE

There were 61 public tours conducted in 2002-03 at the Cape Ferguson complex – five less than for the previous year. The content and format of the tour program was revitalized in the latter half of the reporting period, and new volunteer guides appointed. More than a quarter of a million visitors have toured the Institute over the past decade.

The number of visitors to the AIMS website increased by 27% over the course of the year, although the News and Media pages attracted a stronger growth rate of 38%. Traffic on *ProjectNET for Schools* went up by 19%. The overall number of AIMS home-page visitors increased from 534,560 in July 2002 to 680,600 in June 2003. The AIMS website is used increasingly by teachers, students and journalists as a common point of reference on marine issues.

STRONG DEMAND FOR RESEARCH TOOLS

In 2002-03, AIMS Engineering Services experienced high demand for underwater video cameras, corers, and weather stations. Overall more than 150 jobs were completed. The design and fabrication of a third-generation algal counter proved to be the most complex task undertaken, but the most intriguing was continued development of BRUVS – Baited Remote Underwater Video Systems. These non-intrusive research tools allow scientists to observe marine life at depths previously out of reach to research divers.

The tools are versatile, too. For example, a motor-driven cable and winch system enables scientists to use the video system either for drop cameras or while a research vessel is moving. Five stereo units and 18 single camera units were developed for a range of observations and measurements. A macro-video camera was also deployed to record plankton activity.

In addition, a deep-water trap using light emitting diodes was deployed, and a small corer built to enable a wider range of sediment-coring tasks. A hand-held coral corer was completed on short order for an AIMS team doing fieldwork in Saudi Arabia.

Weather station maintenance required about three months of labour, with five field trips completed successfully. A five-year plan to upgrade weather stations is now being implemented. On the Davies Reef equipment tower, an electronics control unit is being developed to replace units installed in 1991.

INFRASTRUCTURE UPGRADE

The Institute completed its Infrastructure Refurbishment Program (IRP) during 2002-03. The Minister for Science, the Hon Peter McGauran MP, officially opened the new and refurbished facilities at Cape Ferguson in November 2002.

The opening marked the end of a two-year program that saw the commissioning of the new South Wing in 2001, and the refurbishment of all laboratories, reception and meeting areas at a total cost of about \$12.5 million. The IRP was designed and managed by North Queensland firms, and has greatly enhanced the Institute's research capabilities, cementing Cape Ferguson as an ideal location for marine research.

CORPORATE OVERVIEW

Role, Legislation and Minister

Organisation and Staffing

Outcome and Output Structure

Corporate Governance

Public Accountability

Key Management Events



ROLE, LEGISLATION AND MINISTER

The Australian Institute of Marine Science (AIMS) is a Commonwealth statutory authority established by the Australian Institute of Marine Science Act (1972). Its primary role is to carry out research and development in relation to marine science and technology, and to encourage and facilitate the application and use of the results of marine research and development. (See Appendix 1 to

learn more about the Institute's legislative foundation, functions and powers.)

In 2002, significant amendments were made to the AIMS statute, in the form of the Research Agencies Legislation Amendment Bill. These amendments have strengthened the Institute's ability to commercialise its research.



GEOGRAPHIC RANGE OF CRUISES BY AIMS VESSELS

REPORT OF OPERATIONS



Since the main laboratories opened in 1977, AIMS researchers have built international reputations in three broad areas of science – marine conservation and biodiversity, coastal processes, and marine biotechnology.

The Institute falls within the Department of Education Science and Training, and reports to the Minister for Science, the Hon Peter McGauran MP.

THE MINISTER FOR SCIENCE, THE HON PETER McGAURAN VISITS AIMS

LOCATION

The Institute's main facility is at Cape Ferguson, 50 kilometres from Townsville. This location puts AIMS near the geographic centre of Australia's most treasured marine resource, the Great Barrier Reef. In 2001-02, the Institute established new bases in Darwin and Fremantle to support research in the northwest and north of Australia, and supplement research undertaken at Cape Ferguson.

ORGANISATION AND STAFFING

The AIMS science base operates in three capability-focused Research Groups, with a restructure in 2002-03 removing the role of Research Director. The Leaders of the three Research Groups and the Director now cover this role. The restructure resulted in a flatter structure, with increased benefits in decision-making, communication and delegation.

The Research Group continued in 2002-03 as the fundamental unit for science strategy development, co-ordination of science delivery and identification and support of new initiatives. Eighteen interdisciplinary projects conducted research across the three Groups. These teams were responsible for progress against agreed milestones, identifying and attracting resources, managing relationships with clients, and building partnerships to achieve stated outcomes.

To assist them in day-to-day operations and the delivery of science outputs, research projects received input from a variety of professionally skilled staff in Research Service Groups. They included the Data Centre, Engineering Services, Field Operations, Information Technology, Information Services and Science Communication. These customer-focused

groups were underpinned by Corporate Services delivering Financial, Human Resources and Supply and Property requirements. The Senior Management Group of the Institute comprises the Director, the General Manager, Research Group Leaders for Conservation and Biodiversity, Coastal Processes and Marine Biotechnology, the Chief Finance Officer and the Human Resources Manager.

The total staff employed by AIMS during 2002-03 reporting period was an equivalent full-time value (ie staff years) of 151.9 which includes casuals. Compared with 150.4 for 2001-02, this represents a marginal increase in staff numbers.

All members of staff are employed under the Australian Institute of Marine Science Act 1972 (amended 2002). In addition to those paid from appropriation funding received from the Federal Government, the Institute employs staff periodically on projects funded by external sources such as industry.

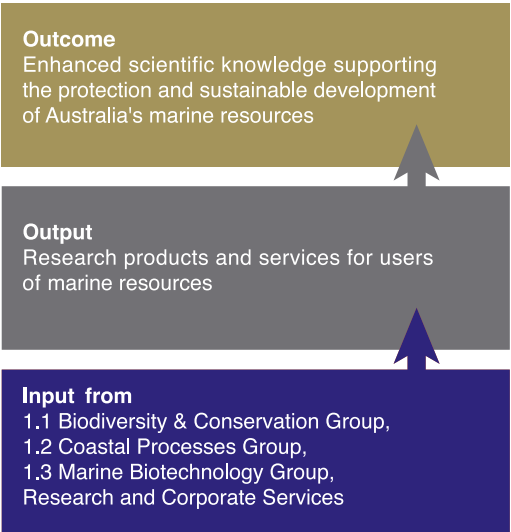
The chart on the next page provides a breakdown of staff numbers.

STAFFING OVERVIEW AT 30 JUNE 2003

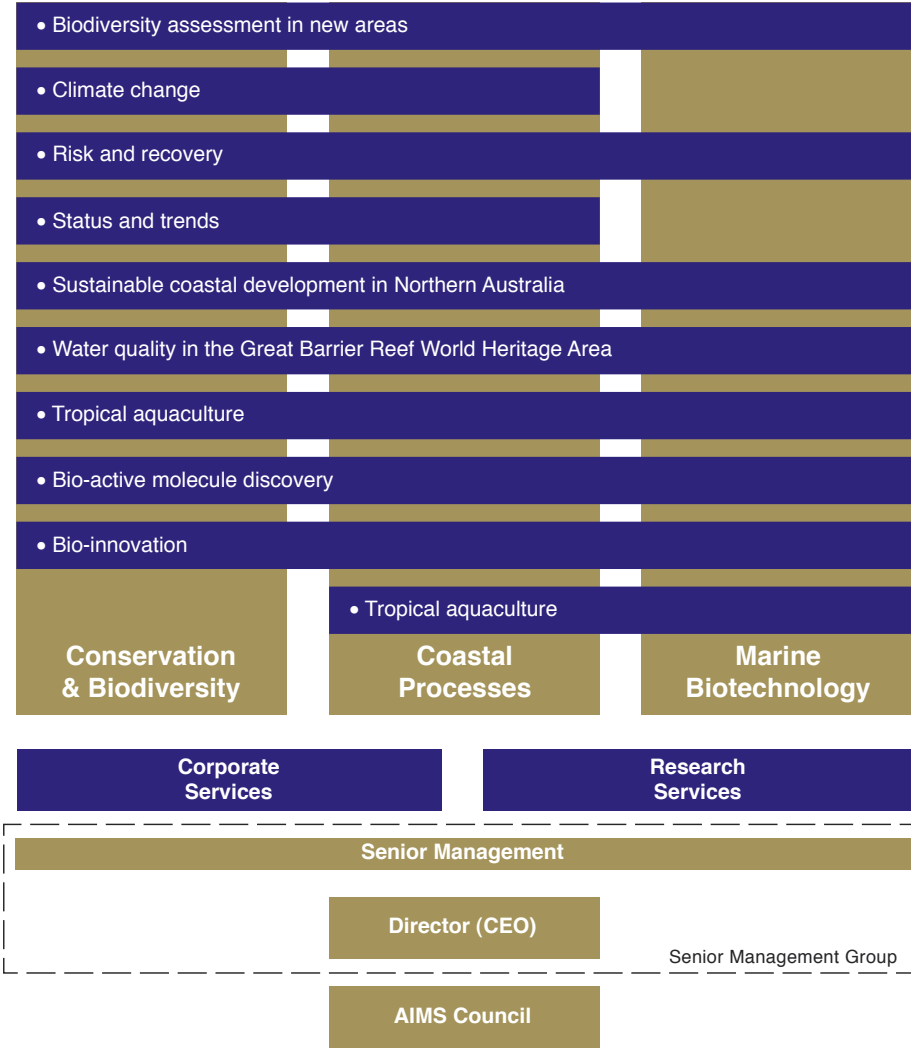
	Female	Male	Total
Science	28.7	69.9	98.6
Corporate	12.4	7.7	20.1
Services	6.8	26.4	33.2
Total Staff	47.9	104	151.9

Aboriginal & Torres Strait Islander	0.65%
Non English speaking Background	7.7%
Staff with Disability	6.45%
Women	32.9%

OUTCOME AND OUTPUT STRUCTURE



ORGANISATIONAL UNITS AT 30 JUNE 2003



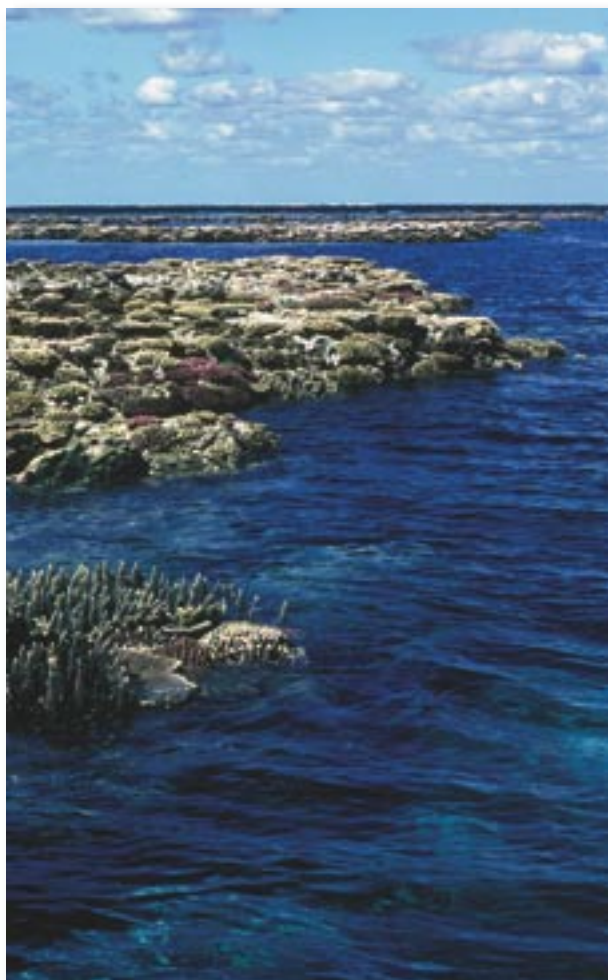
ORGANISATIONAL LEADERS

Council: Dr Wendy Craik; Dr Ian Gould; Mr Brian Guthrie; Professor Stephen Hall; Mr Norbury Rogers A.O. (Chairman); and Dr Marilyn Sleigh.

Director and Chief Executive Officer: Professor Stephen Hall.

Senior Management Group: Dr Chris Battershill; Dr Julian Caley; Professor Stephen Hall; Mr Frank Tirendi; Mr Peter Willers; Mr Vic Bayer; and Ms Leone Gregory.

Group Leaders: Dr Chris Battershill (Marine Biotechnology Group); Dr Julian Caley (Conservation and Biodiversity Group); and Mr Frank Tirendi (Coastal Processes Group).



CORPORATE GOVERNANCE

The corporate governance of AIMS is the primary framework underpinning the organisation's structures and processes.

Through this governance framework, the Institute meets its responsibilities to the Minister for Science, the Hon Peter McGauran MP and to the Government and people of Australia, ensuring that it develops knowledge for the management of Australia's coastal and marine resources. Over 2002-03, the Institute continued to focus on improved implementation of corporate governance principles through its Organisational Improvement Plan. This effort has been designed to promote better performance, accountability, transparency and behaviour. It has involved the AIMS Council, management and staff, who are committed to fulfilling the Commonwealth's policy of caring for Australia's ocean territory and assisting stakeholders to use marine resources wisely.

COUNCIL

AIMS is a Commonwealth Statutory Authority formed by the Australian Institute of Marine Science Act 1972. Its strategic priorities are determined by the AIMS Council and by Government policies and decisions. As well as setting policy, the Council provides review, advice and direction to management. It undertakes a formal review of its own performance each year, with each Councillor providing an independent evaluation on a range of criteria. Council Members are Mr Norbury Rogers A.O. (Chairman), Dr Wendy Craik, Dr Ian

Gould, Mr Brian Guthrie, Dr Marilyn Sleight and AIMS Director and CEO, Professor Stephen Hall. Non-voting observers at meetings include General Manager Mr Peter Willers. The Council meets four times a year.

MEMBERS

Mr Norbury Rogers A.O. (Chairman) BCom, AAUQ, FCA, FAICD

Term 30/7/98 to 31/12/04

Mr Norbury Rogers A.O. is a Chartered Accountant and Company Director and is a Senior Consultant to Ernst and Young. He spent many years as Managing Partner and Senior Partner in Ernst and Young (and its predecessors). Mr Rogers holds a number of directorships. He is Chairman of Golden Casket Lottery Corporation Limited and UniQuest Pty Limited, and is a member of the Board of Business Management Limited. He has just completed a five year term as a member of the CSIRO Board. He has been a long-standing, active member and office bearer of the Institute of Chartered Accountants in Australia and is also a member of the Senate of The University of Queensland and many associated committees.

Dr Wendy Craik BSc (Hons), PhD, Grad Dip M'ment, FTSE, FAICD

Term 1/7/97 - 30/6/04

Dr Wendy Craik brings to AIMS experience in public policy, environmental planning, executive management and research. She is Chair of the Australian Fisheries Management Authority and

REPORT OF OPERATIONS

a part-time consultant to ACIL Tasman.

Previous roles have included Chief Executive Officer of Earth Sanctuaries Ltd (a publicly listed company specialising in conservation and ecotourism) and Chief Executive Officer of the National Farmers' Federation for five years. A fisheries biologist, she worked at the Great Barrier Reef Marine Park Authority for 17 years to 1995, the last three as the Executive Officer. Currently, she is a councillor on the National Competition Council, Chairperson of the National Rural Advisory Council and a board member of the Foundation for Rural and Regional Renewal.

Dr Ian Gould Bsc (Hons), PhD

Term 8/8/02 – 7/8/07

Dr Ian Gould brings to AIMS high-level business, research and policy expertise, as well as familiarity with environmental issues. He has over 35 years experience in the mining industry, including the appointments of Managing Director of Normandy Mining, Rio Tinto-Australia and Comalco Mineral Products, and Group Executive of CRA. Currently, he is Chairman of the AJ Parker Cooperative Research Centre for Hydrometallurgy, the Australian Centre for Mining Environment Research, and the Australian Biological Resources Study Advisory Committee. He was also a long-term Chairman of the Minerals Council of Australia's Environment Committee and a Commissioner of the Australian Heritage Commission. Minister for Science, the Hon Peter McGauran MP welcomed Dr Gould's appointment in August 2002, saying his industry experience and broad understanding of environmental issues would assist AIMS as it collaborates with stakeholders throughout Australia to better meet their research requirements.

Mr Brian Guthrie BEng, BEcon, MEng

Term 30/7/98 - 30/6/04

Mr Brian Guthrie brings to AIMS many years of experience in executive management in both the public and private sectors. He started his career at the Townsville City Council as an assistant engineer and gained experience in all facets of local government engineering. His last 10 years with the City Council were spent as Works Engineer. Mr Guthrie then moved to private enterprise with a major subsidiary of Brambles Pty Ltd and held the position of National Manager for Government Services. He returned to the public sector as General Manager of the Townsville Thuringowa Water Supply Board, a position he held until taking up the appointment of Deputy Town Clerk and Director, Corporate Services with the Townsville City Council. For the past nine years Mr Guthrie has been the Townsville City Council's Chief Executive Officer.

Dr Marilyn Sleigh BSc(Hons), PhD, Dip Corp

M'ment, FTSE, FAICD

Term 30/7/88 – 30/6/05

Dr Marilyn Sleigh is Managing Director of the start-up biotechnology company, EvoGenix Pty Limited. Since joining EvoGenix shortly after its establishment in August 2001, Dr Sleigh has been engaged in business and strategic planning, marketing and fundraising for the company, as well as directing the establishment of its technology platform, which focuses on the development of biopharmaceuticals. Currently Dr Sleigh is a member of the Board of Australian Biotechnology and Healthcare Fund No 3 and a scientific adviser to investment group SciCapital. She is Deputy Chair of the Panel responsible for awarding \$45 million under the Australian Government's biotechnology Centre of Excellence scheme.

Previously she held board positions with two CRCs, Unisearch Limited, and Food Science Australia. Prior to joining EvoGenix, Dr Sleight was Dean of the Faculty of Life Sciences at the University of New South Wales.

Professor Stephen Hall BSc, PhD, GAICD

(Director and CEO)

Term 14/11/00 – 13/11/05

Professor Hall was Head of Fish Biology at the Scottish Office Agriculture, Environment and Fisheries Dept Marine Laboratory in Aberdeen, before taking up a position as Professor of Marine Biology at Flinders University of South Australia and Director of the Lincoln Marine Science Centre. In 2000 he took up his current position as Director and CEO of AIMS. He has published extensively on the structure and functioning of marine ecological systems, focusing on the effects of natural and human disturbance. This work culminated recently in a book on the global effects of fishing on marine communities and ecosystems. Professor Hall is a member of the US National Research Council Panel on the Effects of Trawling. Previously, he was chairman of the International Council for the Exploration of the Seas (ICES) Working Group on the Ecosystem Effects of Fishing

Activities. This group provides advice on fishing effects and other aspects of coastal zone management. Professor Hall has also acted as a consultant to the United Arab Emirates and the European Commission, and is a recent recipient of a Pew Fellowship in Marine Conservation.

CONFLICTS OF INTEREST

Members of the Council disclose their connections to other commercial entities such as boards and adhere to a policy of declaring actual or potential conflicts of interest as part of Council operations. This policy is consistent with the CAC Act (Section 21). In keeping with this Act and Institute policy, a Council member who considers that he or she has a material personal interest (direct pecuniary or indirect pecuniary) in a matter to be discussed by the Council, must declare the existence and nature of the interest, and then Council decides appropriate action. Likewise, the Senior Management Group is obliged to declare actual or potential conflicts of interest in its deliberations.

COUNCIL ATTENDANCE

	10 September 2002 Townsville	14 November 2002 Townsville	10 March 2003 Townsville	16 June 2003 Townsville
Mr Norbury Rogers AO	✓	✓	✓	✓
Mr Brian Guthrie	✓	✗	✓	✓
Mr Ian Gould	✓	✓	✓	✓
Dr Wendy Craik	✓	✓	✓	✓
Prof Marilyn Sleight	✓	✓	✓	✓
Prof Stephen Hall	✓	✓	✓	✓

AUDIT COMMITTEE

The primary function of the Institute’s Audit Committee is to:

- ◆ Improve the quality of financial reporting;
- ◆ Ensure the Council makes informed decisions regarding accounting policies, practices and disclosure; and
- ◆ Review the scope and outcome of internal and external audits.

During the year the Audit Committee undertook the following:

- ◆ Reviewed the annual operating and capital budgets;
- ◆ Reviewed monthly and annual financial statements;
- ◆ Implemented strategies for internal and external audits;
- ◆ Monitored revaluation of assets;
- ◆ Reviewed asset management manual; and
- ◆ Appointed internal auditors for 2003–07; and
- ◆ Reviewed Risk Management Framework.

The Audit Committee comprises of two Council members and one independent member. Members of the committee are Mr Brian Guthrie (chairman), Mr Norbury Rogers A.O., and Mr Rober Tardiani (CE Smith & Co, Townsville). The Institute’s Chief Finance Officer, Mr Vic Bayer, is secretary to the Audit Committee. The Institute’s General Manager, Mr Peter Willers, and John Zabala from Pickard Associates attend as non-voting observers.

INTERNAL AUDIT

Pickard Associates performed four internal audits during the year. Their role is to monitor the adherence to procedures implemented by management. The chartered firm was reappointed as the Institute’s internal auditors for four years to 30 June 2007. The internal auditors report direct to the Audit Committee.

EXTERNAL AUDIT

The Institute is subject to the *Commonwealth Authorities and Companies Act 1997*, whereby the Auditor-General is responsible for the audit of the Institute’s financial statements. The Auditor-General reports to the Minister and Parliament. The audit fieldwork has been sub-contracted to Ernst & Young.

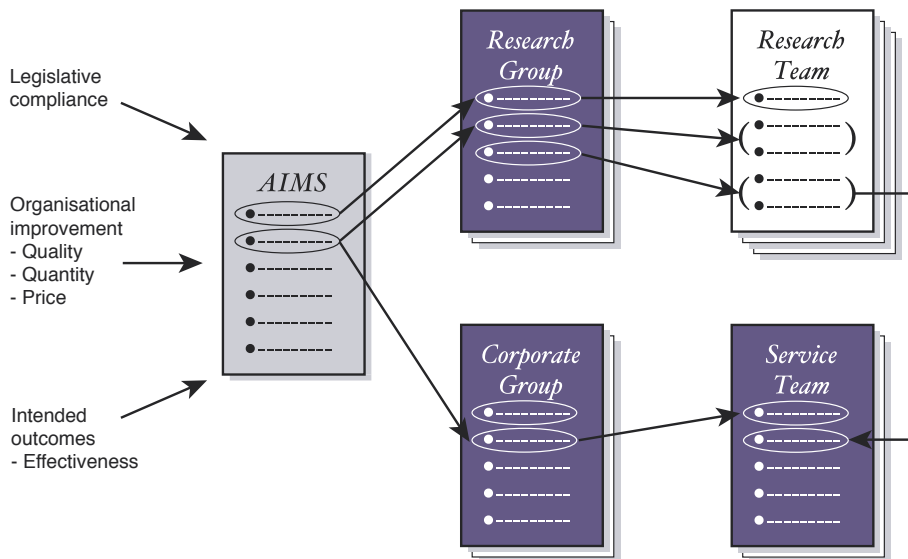
CORPORATE FRAMEWORK

The Institute implemented a new goal-setting, reporting and evaluation system in June 2003 that refines performance measures and improves

AUDIT COMMITTEE ATTENDANCE

	3 September 2002	4 March 2003	10 June 2003
Mr. Brian Guthrie	✓	x	✓
Mr Norbury Rogers	✓	✓	✓
Mr Robert Tardiani	✓	✓	✓

AIMS GOAL SETTING AND REPORTING FRAMEWORK



AIMS Key Performance Goals cascade down to other levels within the organisation and, at each level, additional goals are identified that also cascade down and contribute to overall organisational performance.

the alignment of corporate objects with those of operational units. Performance measures and targets set by the Government and AIMS Council form the AIMS Key Performance Goals and Indicators that then cascade down to operational milestones and targets (See Figure above). Performance against the Key Performance Goals are reviewed monthly by the AIMS Senior Management Group and reported quarterly to the AIMS Council.

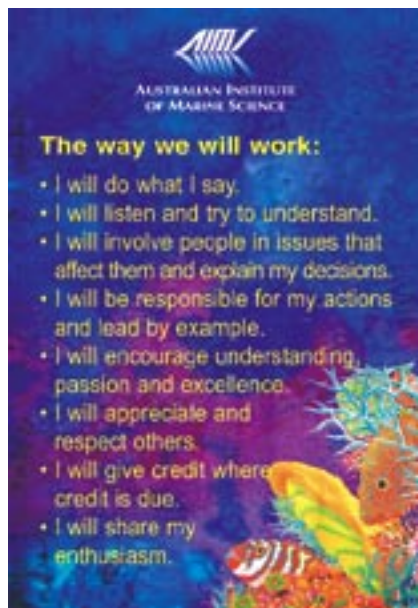
Ongoing programs of evaluation at AIMS include:

- ◆ The assessment and reporting of performance against performance indicators;
- ◆ The regular submission of research findings to external review by scientific peers;

- ◆ The critical assessment of patent applications; and
- ◆ The annual review cycle of staff performance.

In 2002-03, a team of staff volunteers also addressed how 'Managing People and Performance' could be improved at AIMS. It was tasked with developing a Position Classification System. This work is ongoing.

Operating within the Commonwealth's Outcomes and Outputs framework, the Institute is also required to report performance to Parliament against measures agreed as part of the triennium funding process and described in the Portfolio Budget Statement. See "Research Output and Community Outcomes".



'WAY WE WILL WORK' CARD

RISK MANAGEMENT

The Audit Committee of Council has responsibility for overseeing an integrated risk management framework. It takes into consideration: strategic/commercial risk and operational/compliance risk. A risk-reporting mechanism is being developed, to align with business and personnel planning and performance processes.

FRAUD CONTROL

The Institute has a comprehensive fraud control plan that complies with the Fraud Control Policy of the Commonwealth – Best Practice Guide for Fraud Control. This plan is integrated into the Institute's management system and internal audit process. It is reviewed and updated annually by the Audit Committee to ensure it remains relevant to the Institute's business.

INDEMNITIES AND INSURANCE PREMIUMS FOR OFFICERS

There were no known liabilities to any current or former officers. During the reporting period, no premium was paid (or was agreed to be paid) against a current or former officer's liability for legal costs. AIMS paid premiums for the Directors and Officers Insurances required under the CAC Act.

BEHAVIOUR

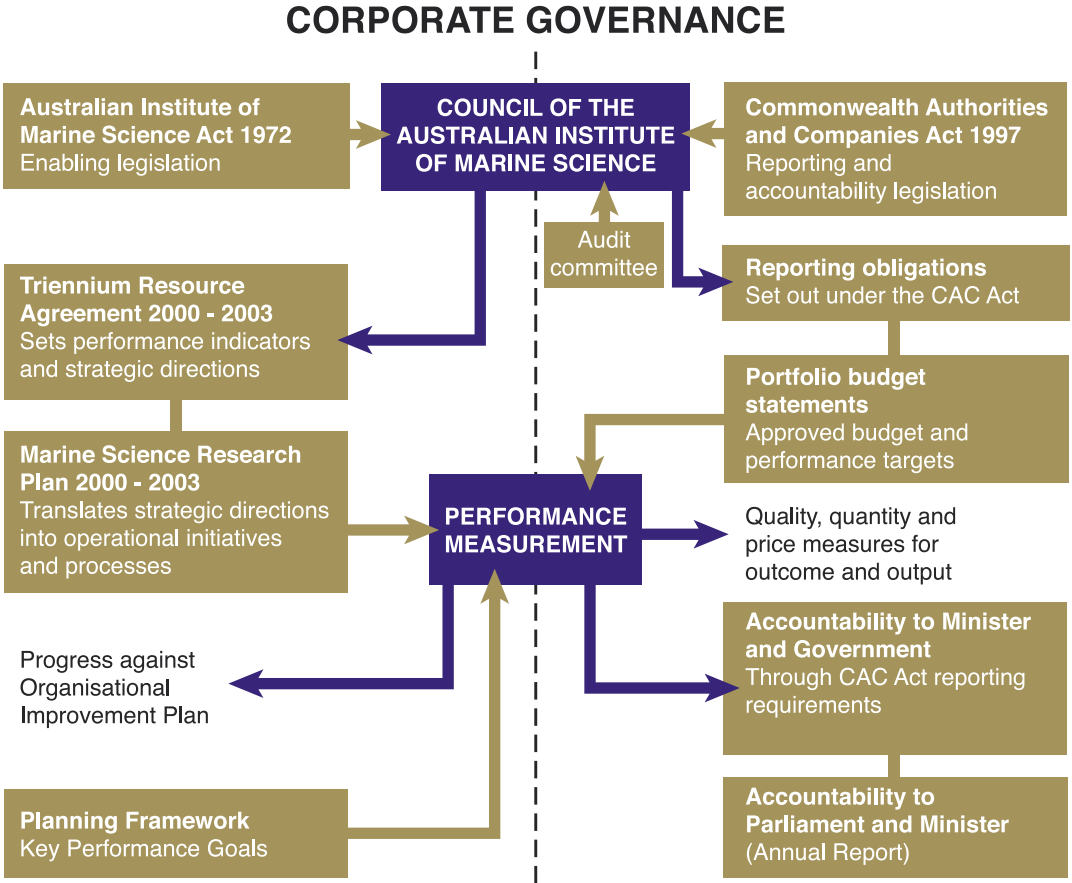
Upon starting work at AIMS, employees are informed of workplace behaviour considered acceptable and unacceptable. A 'blue card' outlining eight "Way We Will Work" principles is provided during induction training. These principles outline how employees are expected to conduct themselves and relate to co-workers.

Ongoing training was provided to the AIMS Workplace Harassment Contact Officers in 2002-03, with harassment awareness forming part of the induction process for new staff.

In 2002-03 the Institute had no reported cases of harassment, although Harassment Contact Officers gave advice on several occasions. The counselling from the AIMS Employee Assistance Service was utilised, along with accredited mediation services.

ETHICAL CONDUCT

The Institute also has a Code of Conduct to which the Council, management and staff are required to adhere. The Code complies with Division 4 of the CAC Act and includes relevant sections of the Terms and Conditions of Service. New Council members and staff are briefed on the Code during induction. Council members also abide by the code of conduct for directors published by the Australian Institute of Company Directors.



REPORT OF OPERATIONS

STAFF CONSULTATION

The AIMS Certified Agreement 2003–05 was negotiated during six months of the reporting period between staff and management representatives. Staff consultation occurred through a range of fora. The Joint Consultative Committee met six times in 2002-03. This committee provided a forum for discussion and consultation between management and staff representatives. Some staff also participated in teams helping to drive organisational improvement.

CONSULTANCY ADVICE

The main procedure by which Council members can seek independent professional advice at the Institute's expense, in order to carry out their duties, is through the use of consultants and sub-contractors. During 2002-03, the Council consulted with

- ◆ Julian Clark Consulting Pty Ltd, which undertook a review of the Institute's business services;
- ◆ Pickard Associates (see Internal Audit above).

SUB-CONTRACTORS

The Institute sometimes engages sub-contractors to provide a service or product that it needs to deliver agreed output. Sub-contractors are selected on quality, value for money, and availability. When the purchase exceeds \$30,000, tenders are invited. The Tender Board must approve exemptions from public tendering in writing. Consistent with Section 21 of the CAC Act, Council members and staff cannot be involved in decision-making about subcontractors connected to them or an immediate family member.

PUBLIC ACCOUNTABILITY

MINISTERIAL DIRECTIONS

There were no Ministerial Directions during the reporting period. In October, the Minister for Education Science and Training, the Honourable Dr Brendan Nelson MP advised AIMS of the release of the Commonwealth Fraud Control Guidelines. The guidelines apply to agencies governed by the Commonwealth Authorities and Companies Act 1997 (the CAC Act), where they receive at least 50% or more of their revenue as administered funds or grants from the Commonwealth.

In exercising his powers under section 28 of the CAC Act, the Minister consulted with the directors of AIMS and invited them to consider the application of the guidelines to the organisation. Subsequently, AIMS advised his department that it would comply with the guidelines.

JUDICIAL DECISIONS AND REVIEWS BY OUTSIDE BODIES

The Australian Institute of Marine Science was selected in 2002-03 to take part in the survey of intellectual property management practice conducted by the Australian National Audit Office. The survey was designed to enable the Audit Office to assess the “state of affairs” in IP management across a sample of Commonwealth agencies, to identify and benchmark current practices in the management of IP, and to document best practices and the lessons learned by each agency. The results of the

survey will be tabled in Parliament in early 2004. Comcare also conducted a review in June 2003 of the investigations into AIMS Occupational Health and Safety systems.

No judicial decisions had a significant impact on the operations of AIMS in 2002-03.

OMBUDSMAN

No issues relating to AIMS were referred to the Commonwealth Ombudsman.

INVESTING AND FINANCING ACTIVITIES

The Institute invests its funds in commercial bank bills in accordance with Treasury guidelines.

OCCUPATIONAL HEALTH AND SAFETY

The Institute continues to address the recommendations made by Comcare’s Scheduled Investigation into Occupational Health and Safety (OH&S) management systems. This planned response progressed well in 2002-03 and addressed all areas of safety at AIMS, including plant safety, contractor controls and the agreement of Key Performance Goals for OH&S. The goal in this case was to bring OH&S management systems in line with the SafetyMAP audit tool used by Comcare.

The Institute also launched its Occupational Health and Safety Policy Statement, with copies issued to all staff. New staff members receive the policy as part of their induction to AIMS.

REPORT OF OPERATIONS

Significant progress was made on the production of three short safety films. Two of the films were shot on location at the Cape Ferguson headquarters, with staff being generous in giving time to illustrate their safety control measures. Filming took place over five days and the results were at an advanced editing stage at the end of 2002-03. When completed, the films will form the core of general, laboratory and fieldwork safety inductions for new staff, contractors and visitors to the Institute.

In addition, the Institute's Health and Safety Representatives attended accredited training during 2002-03 to help them fulfill their role of staff involvement in OHS matters. The course was popular, with other staff attending to inform themselves of the issues. The training assisted the Institute's aim of developing a safety culture at all levels.

In all, 22 workplace incidents were reported during the year, with seven resulting in time lost from AIMS and five resulting in compensation claims accepted by Comcare.

There were no formal reactive investigations conducted by Comcare under Section 29 of the OHS Act. No Provisional Improvement Notices were issued by the Health and Safety Representatives; nor were any notices issued by Comcare under Section 45, 46 or 47 of the OH&S Act.

OH&S TRAINING

A total of 182 Institute safety inductions were completed during the year for staff, contractors and visitors. A further 103 staff and visitors attended OHS training in first aid, CPR/oxygen resuscitation, dive rescue, radiation safety and fire safety.

RADIATION SAFETY

The Institute completed an amendment to its source licence with the Australian Radiation Protection and Nuclear Safety Agency. The licence now includes the facility for an X-Ray machine aboard AIMS vessels, expanding research capabilities.

GENE TECHNOLOGY

At the annual Institute Biosafety Committee meeting, required by the Office of the Gene Technology Regulator (OGTR), research projects proposed by AIMS science teams were assessed and all were deemed to fall under the 'exempt' category.

AIMS has received its Instrument of Accreditation from the OGTR for the Physical Containment Level 2 Facility. The Institute has also received a positive report from officers of the OGTR who further inspected the facility and its activities.

ENVIRONMENT

Environment Australia continued to advise the Institute on the implementation of its Environment Management Plan (EMP) and development of its Environment Management System. The AIMS Environment Committee, made up of both research and support staff, is overseeing the implementation of the EMP, advising regarding capital expenditure on liquid fuel stores and waste strategies. The committee was also tasked with the development of an Environmental Policy, which guides AIMS activities in minimising our environmental footprint while conducting research.

In 2002-03 Ergon was requested to conduct an energy audit of the Institute at its Cape Ferguson headquarters and was due to report on its findings at the end of 2002-03. It is hoped that

the audit will further inform the Institute on increasing efficiencies in its use of electricity, thus reducing non-renewable energy consumption.

Finally, AIMS used a number of substances declared under the National Pollution Inventory of the National Environment Protection Measures Act, in quantities below the current declared threshold levels, and met all reporting requirements.

EEO AND WORKPLACE DIVERSITY

The Institute has a policy of Equal Employment Opportunity, currently under review. Staff are recruited and promoted on a merit-based system. The statistics in Organisation and Staffing show a breakdown by gender. Diversity is valued, with work practices accommodating the full range of employment options, nationality and ethnic groups, and people with disability. The Institute also has a Visitor program that attracted collaborating scientists and students from about 30 countries during the reporting period.

DISABILITY STRATEGY

The Institute is committed to widening the opportunities for independence, access and full participation enjoyed by people with disabilities. Progress continues to be made in implementing the Commonwealth Disability Strategy, particularly in improving communication, and consultation mechanisms, staff recruitment and development and management protocols.

In recruitment, the focus is on the person's ability to carry out activities fulfilling the inherent requirements of the vacant position. All vacancies placed in the print media and on the World Wide Web clearly state that AIMS is an equal opportunity employer. Contact points are advertised for people wanting more information

and selection material. This information is provided to cater to diverse communication needs.

The physical resources of AIMS continue to be upgraded to meet access needs for people with disabilities, with further works planned in capital budgeting.

EMPLOYEE ASSISTANCE PROGRAM

Employee Assistance Services of North Queensland (EASNQ) provide the Institute with its employee assistance program. About 9% of staff accessed the counselling service during 2002-03, with steady use of the service recorded over the last three years. EASNQ were also asked to provide the employee assistance program to the AIMS Freemantle office, through its OSA Group parent company, as well as providing Harassment Contact Officer training during the year.

FREEDOM OF INFORMATION

No requests were received in 2002-03 under the provisions of the Freedom of Information (FOI) Act 1982. The statement required under Section 8 of the FOI Act, setting out documents available for inspection, is at Appendix 2.

ADVERTISING AND MARKET RESEARCH

The Institute undertook targeted display advertising in the vicinity of \$20,000 in 2002-03. Advertisements related to the promotion of AIMS biotechnology capability and opportunities for co-investment, the opening of the Institute's refurbished facilities at Cape Ferguson, and the public tour program.

CUSTOMER SERVICE CHARTER

The AIMS Service Charter for dealing with clients is posted to our website, along with a feedback form, and can be viewed at: www.aims.gov.au/pages/about/corporate/csc-01.html



KEY MANAGEMENT EVENTS

ORGANISATIONAL CHANGE

SCOPING PROCESSES

- ◆ A second Culture Benchmarking Survey was completed by 98% of staff in April 2003. A group of nine staff volunteered to develop the issues and questions in the survey. Results from the survey were presented to all staff in May 2003. The Senior Management Group and the staff group made Action Recommendations to continue to improve the organisation.
- ◆ The Organisational Improvement Plan was updated by the Senior Management Group in July 2003.

Progress on the Organisational Improvement Plan is as follows:

ORGANISATIONAL GOALS

- ◆ The AIMS Council and the Senior Management Group developed Key Performance Goals for the Institute for the 2002-03 research year. The goals were tracked throughout the year by the Senior Management Group.

ORGANISATIONAL STRATEGY

- ◆ The Research Groups finalised the nine Research Teams for the 2003–06 Research Plan by May 2003.
- ◆ The National Research Priorities Implementation Plan was submitted to

the Commonwealth Government by the 16 May 2003 deadline.

- ◆ Interviews and discussions were held with key stakeholders in January and February 2003. The preferred research outcomes identified in this process along with the National Research Priorities were cornerstones for the finalisation of the 2003–06 Research Plan.

ORGANISATIONAL STRUCTURE

- ◆ The Senior Management Group was restructured in November 2003 to include the Director/CEO, the General Manager, the Research Group Leaders, the Human Resources Manager and the Finance Manager.

SYSTEMS

PEOPLE

- ◆ Workplace Harassment Policy and Procedures were completed and distributed to all staff.
- ◆ Two teams were formed to address how Managing People and Performance can be improved at AIMS. Staff volunteered to join the teams. The teams are to 1) develop a Position Classification System and 2) develop a Performance Management System. The teams have made progress throughout the 2002-03 year.

REPORT OF OPERATIONS

- ◆ Occupational Health and Safety Policy and Procedures were revised and positive performance indicators were drafted and included in the 2003-04 Key Performance Goals. A desktop review by ComCare was scheduled and completed.

BUSINESS

- ◆ Based on the Julian Clark Consulting 'Review of Commercialisation at AIMS' in May 2002 a Commercialisation Officer commenced in February 2003.
- ◆ Julian Clark Consulting completed an "Assessment of Commercialisation and Marketing Needs: Roles, Responsibilities and Structure" in June 2003.

FINANCIAL STATEMENTS

- ◆ Statement by Directors
- ◆ Independent Audit Report
- ◆ Statement of Financial Performance for the year ended 30 June 2003
- ◆ Statement of Financial Position as at 30 June 2003
- ◆ Statement of Cash Flows for the year ended 30 June 2003
- ◆ Schedule of Commitments as at 30 June 2003
- ◆ Schedule of Contingencies as at 30 June 2003
- ◆ Notes to and Forming Part of the Financial Statements
- ◆ Supplementary Financial Information (unaudited) for the year ended 30 June 2003

STATEMENT BY DIRECTORS (MEMBERS OF COUNCIL)

In our opinion, the attached financial statements for the year ended 30 June 2003 give a true and fair view of the matters required by the Finance Minister's Orders made under the Commonwealth Authorities and Companies Act 1997.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Institute will be able to pay its debts as and when they become due and payable.

Signed in accordance with a resolution of the Council of the Australian Institute of Marine Science.



A E de N Rogers A.O,
Chairman of Council
8 September 2003



Professor S Hall
Director and Member of Council
8 September 2003



INDEPENDENT AUDIT REPORT

To the Minister for Education, Science and Training

Scope

I have audited the financial statements of the Australian Institute of Marine Science for the year ended 30 June 2003. The financial statements comprise:

- Statement by Directors;
- Statements of Financial Performance, Financial Position and Cash Flows;
- Schedules of Commitments and Contingencies; and
- Notes to and forming part of the Financial Statements.

The directors of the Institute are responsible for the preparation and presentation of the financial statements and the information they contain. I have conducted an independent audit of the financial statements in order to express an opinion on them to you.

The audit has been conducted in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards, to provide reasonable assurance as to whether the financial statements are free of material misstatement. Audit procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the financial statements and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the financial statements are presented fairly in accordance with Accounting Standards and other mandatory professional reporting requirements in Australia and statutory requirements so as to present a view which is consistent with my understanding of the Institute's financial position, its financial performance and its cash flows.

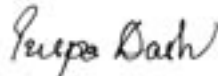
The audit opinion expressed in this report has been formed on the above basis.

Audit Opinion

In my opinion the financial statements:

- (i) have been prepared in accordance with Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*; and
- (ii) give a true and fair view, in accordance with applicable Accounting Standards and other mandatory professional reporting requirements in Australia and the Finance Minister's Orders, of the financial position of the Australian Institute of Marine Science as at 30 June 2003, and its financial performance and cash flows for the year then ended.

Australian National Audit Office



Puspa Dash
Senior Director

Delegate of the Auditor-General

Canberra
9 September 2003

STATEMENT OF FINANCIAL PERFORMANCE

for the year ended 30 June 2003

	Notes	2003 \$000	2002 \$000
REVENUE			
Revenues from ordinary activities			
Revenues from Government	5A	26,094	24,537
Goods and Services	5B	5,576	4,707
Interest	5C	674	629
Revenue from sale of assets	5D	183	181
Reversals of previous asset writedowns	5E	163	-
Other	5F	318	161
Total revenues from ordinary activities		33,008	30,215
EXPENSE			
Expenses from ordinary activities			
Employees	6A	12,582	11,653
Suppliers	6B	10,015	8,858
Depreciation	6C	4,123	3,063
Grants	6D	155	157
Value of assets sold	5D	510	343
Write-down of assets	6E	-	514
Total expenses from ordinary activities		27,385	24,588
Net operating surplus from ordinary activities		5,623	5,627
Net surplus		5,623	5,627
Net credit to revaluation reserve	10A	2,806	487
Decrease in accumulated results on application of transitional provisions due to change in accounting standard AASB 1028			
<i>Employee Benefits</i>		(77)	-
Total revenues, expenses and valuation adjustments attributable to the Commonwealth and recognised directly in equity		2,729	487
Total changes in equity other than those resulting from transactions with owners as owners		8,352	6,114

The above statements should be read in conjunction with the accompanying notes.

STATEMENT OF FINANCIAL POSITION

as at 30 June 2003

	Notes	2003 \$000	2002 \$000
ASSETS			
Financial assets			
Cash	7A	192	67
Investments	7B	11,047	8,161
Receivables	7C	1,878	1,516
Total financial assets		13,117	9,744
Non-financial assets			
Land and buildings	8A	30,017	30,638
Plant and equipment	8B	16,275	11,967
Inventories	8E	250	225
Intangibles	8C	76	31
Other	8F	516	310
Total non-financial assets		47,134	43,171
Total assets		60,251	52,915
LIABILITIES			
Provisions			
Employees	9A	5,726	5,174
Capital use charge	9B	-	71
Total provisions		5,726	5,245
Payables			
Suppliers	9C	1,151	1,284
Consultancies and grants	9D	1,315	948
Total Payables		2,466	2,232
Total liabilities		8,192	7,477
NET ASSETS		52,059	45,438
EQUITY			
Contributed equity	10A	31,607	28,187
Reserves	10A	17,677	14,871
Accumulated surplus	10A	2,775	2,380
Total equity interest		52,059	45,438
Total equity		52,059	45,438
Current liabilities		4,226	3,788
Non-current liabilities		3,966	3,689
Current assets		13,109	6,079
Non-current assets		47,142	46,836

The above statements should be read in conjunction with the accompanying notes.

STATEMENT OF CASH FLOWS

for the year ended 30 June 2003

	Notes	2003 \$000	2002 \$000
OPERATING ACTIVITIES			
Cash received			
Appropriations		26,094	24,537
Goods and Services		6,122	5,041
Interest		698	1,049
GST recovered		1,145	1,263
Other		319	160
Total cash received		34,378	32,050
Cash used			
Grants		155	158
Employees		12,106	11,351
Suppliers		12,502	10,515
Total cash used		24,763	22,024
Net cash from operating activities	11A	9,615	10,026
INVESTING ACTIVITIES			
Cash received			
Proceeds from sale of property, plant and equipment		183	181
Total cash received		183	181
Cash used			
Purchase of property, plant and equipment		5,056	8,832
Total cash used		5,056	8,832
Net cash used by investing activities		(4,873)	(8,651)
FINANCING ACTIVITIES			
Cash received			
Appropriations-Contributed equity		3,420	2,811
Total cash received		3,420	2,811
Cash used			
Capital use charge paid		5,151	4,982
Total cash used		5,151	4,982
Net cash used by financing activities		(1,731)	(2,171)
Net increase/(decrease) in cash held		3,011	(796)
Cash at beginning of the reporting period		8,228	9,024
Cash at the end of the reporting period	11B	11,239	8,228

The above statements should be read in conjunction with the accompanying notes.

SCHEDULE OF COMMITMENTS

as at 30 June 2003

	2003 \$000	2002 \$000
By Type		
Capital Commitments		
Buildings ¹	25	2,303
Plant and equipment ²	738	631
Total capital commitments	763	2,934
Other Commitments		
Operating leases ³	432	443
CRC Reef	6,914	9,832
Contracts ⁴	5,707	1,801
Other ⁵	1,801	2,177
Total other commitments	14,854	14,253
Commitments receivable	(1,382)	(1,605)
Net commitments	14,235	15,582
By Maturity		
Capital commitments		
One year or less	694	2,667
From one to five years	-	-
Net commitments	694	2,667
Other commitments		
One year or less	6,004	4,714
From one to five years	7,144	7,798
Net commitments - other	13,148	12,512
Operating lease commitments		
One year or less	243	243
From one to five years	150	160
Net operating lease commitments	393	403

Commitments are GST inclusive where relevant

¹ Outstanding contractual payments for building under refurbishment.² Include outstanding purchase orders for plant and equipment.³ Operating leases included are effectively non-cancellable and comprise:

Nature of lease	General description of leasing arrangement
Motor Vehicles	Leases are for a period of 24 months or 60,000 kilometres No contingent rentals exist
Telephone system	Leases are for a period of 36 months and cover the cost of installation and annual maintenance

⁴ Contracts, include site maintenance, management of vessels and rent on offices in Perth and Darwin, rent period is for a further three years as at 30 June 2003.⁵ As at 30 June 2003 other commitments comprise amounts payable under grants agreements in respect of which the recipient is yet to perform the services required.

The above schedule should be read in conjunction with the accompanying notes.

SCHEDULE OF CONTINGENCIES

as at 30 June 2003

UNQUANTIFIABLE CONTINGENCIES

At 30 June 2003, the Institute had a legal claim against it for damages. The Institute has denied liability and is defending the claim. It is not possible to estimate the outcome of this claim.

The above schedule should be read in conjunction with the accompanying notes.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

Note	Description
1	Summary of Significant Accounting Policies
2	Reporting by Segments and Outcomes
3	Economic Dependency
4	Subsequent Events
5	Operating Revenue
6	Operating Expenses
7	Financial Assets
8	Non-Financial Assets
9	Provisions and Payables
10	Equity
11	Cash Flow Reconciliation
12	External Financing Arrangements
13	Remuneration of Directors
14	Related Party Disclosures
15	Remuneration of Officers
16	Remuneration of Auditors
17	Financial Instruments
18	Employee Equivalent
19	Reporting of Outcomes

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

NOTE 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

1.1 Basis of Accounting

The financial statements are required by clause 1(b) of Schedule 1 to the *Commonwealth Authorities and Companies Act 1997* and are a general-purpose financial report.

The statements have been prepared in accordance with:

- ☐ Finance Minister's Orders (being the Commonwealth Authorities and Companies (Financial Statements for reporting periods ending on or after 30 June 2003) Orders);
- ☐ Australian Accounting Standards and Accounting Interpretations issued by the Australian Accounting Standards Board; and
- ☐ Consensus Views of the Urgent Issues Group.

The Statements of Financial Performance and Financial Position have been prepared having regard to:

- ☐ The Explanatory Notes to Schedule 1 issued by the Department of Finance and Administration; and
- ☐ Finance Briefs issued by the Department of Finance and Administration.

The Institute's Statement of Financial Performance and Financial Position have been prepared on an accrual basis and are in accordance with historical cost convention, except for certain assets, which as noted, are at valuation. Except where stated, no allowance is made for the effects of changing prices on the results of the financial position.

Assets and liabilities are recognised in the Institute's Statement of Financial Position when and only when it is probable that future economic benefits will flow and the amounts of the assets or liabilities can be reliably measured. Assets and liabilities arising under agreements equally proportionately unperformed are however not recognised unless required by an Accounting Standard. Liabilities and assets which are unrecognised are reported in the Schedule of Commitments and the Schedule of Contingencies.

Revenues and expenses are recognised in the Institute's Statement of Financial Performance when and only when the flow or consumption or loss of economic benefits has occurred and can be reliably measured.

1.2 Changes in Accounting Policy

The accounting policies used in the preparation of these financial statements are consistent with those used in 2001-02, except in respect of:

- ☐ measurement of certain employee benefits at nominal amounts (refer to Note 1.5)
- ☐ the initial revaluation of property plant and equipment on a fair value basis (refer to Note 1.10); and
- ☐ the imposition of an impairment test for non-current assets carried at cost (refer to Note 1.10).

1.3 Revenue

The revenues described in this Note are revenues relating to the core operating activities of the Institute.

Revenue from the sale of goods is recognised upon the delivery of goods to customers.

Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets.

Revenue from disposal of non-current assets is recognised when control of the asset has passed to the buyer.

Revenue from the rendering of a service is recognised by reference to the stage of completion of contracts. The stage of completion is determined according to the proportion that costs incurred to date bear to the estimated total costs of the transaction.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

Revenues from Government – Output Appropriations

The full amount of the appropriation for departmental outputs for the year is recognised as revenue.

Resources Received Free of Charge

Services received free of charge are recognised as revenue when and only when a fair value can be reliably determined and the services would have been purchased if they had not been donated. Use of those resources is recognised as an expense.

Contributions of assets at no cost of acquisition or for nominal consideration are recognised at their fair value when the asset qualifies for recognition.

1.4 Transactions by the Government as Owner

Equity Injections

Amounts appropriated by the Parliament as equity injections are recognised as 'contributed equity' in accordance with the Finance Ministers Orders.

Capital Use Charge

A Capital Use Charge is imposed by the Government on the net assets of the Institute. The Charge is accounted for as a dividend to Government.

In accordance with the recommendations of a review of Budget Estimates and Framework, the Government has decided that the Charge will not operate after 30 June 2003. Therefore, the amount of the charge payable in respect of 2003 is the amount appropriated (2002: 11% of adjusted net assets).

1.5 Employee Benefits

Benefits

Liabilities for services rendered by employees are recognised at the reporting date to the extent that they have not been settled.

Liabilities for wages and salaries (including non-monetary benefits), annual leave, sick leave are measured at their nominal amounts. Other employee benefits expected to be settled within 12 months of their reporting date are also measured at their nominal amounts.

The nominal amount is calculated with regard to the rates expected to be paid on settlement of the liability. This is a change in accounting policy from last year required by initial application of a revised Accounting Standard AASB 1028 from 1 July 2002.

All other employee benefit liabilities are measured as the present value of the estimated future cash outflows to be made in respect of services provided by employees up to the reporting date.

Leave

The liability for employee benefits includes provision for annual leave and long service leave. No provision has been made for sick leave as all sick leave is non-vesting and the average sick leave taken in future years by employees of the Institute is estimated to be less than the annual entitlement for sick leave.

The leave liabilities are calculated on the basis of employees' remuneration, including the Institute's employer superannuation contribution rates to the extent that the leave is likely to be taken during service rather than paid out on termination.

The non current portion of the liability for long service leave is recognised and measured at the present value of the estimated future cash flows to be made in respect of all employees at 30 June 2003. The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

Superannuation

Employees are members of the Commonwealth Superannuation Scheme and the Public Sector Superannuation Scheme. The liability for their superannuation benefits is recognised in the financial statements of the Commonwealth and is settled by the Commonwealth in due course.

The Institute makes employer contributions to the Commonwealth at rates determined by the actuary to be sufficient to meet the cost to the Commonwealth of the superannuation entitlements of the Institute's employees.

The liability for superannuation recognised as at 30 June represents outstanding contributions for the final fortnight of the year.

1.6 Leases

The Institute only has operating leases. The operating lease payments are expensed on a basis which is representative of the pattern of benefits derived from the leased assets.

1.7 Cash

Cash means notes and coins held and any deposits held at call with a bank or financial institution.

1.8 Financial Instruments

Accounting policies for financial instruments are stated at Note 17.

1.9 Acquisition of Assets

Assets are recorded at cost on acquisition except as stated below. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken.

1.10 Property (Buildings), Plant and Equipment

Asset Recognition Threshold

Purchases of property, plant and equipment are recognised initially at cost in the Statement of Financial Position, except for purchases costing less than \$2,000, which are expensed in the year of acquisition (other than where they form part of a group of similar items which are significant in total).

Revaluations

Buildings, infrastructure, plant and equipment are carried at valuation. Revaluations undertaken up to 30 June 2002 were done on a deprival basis; the revaluation of assets conducted as at 31 December 2002 was at fair value. This change in accounting policy is required by Australian Accounting Standard AASB 1041 *Revaluation of Non-Current Assets*.

Under both deprival and fair value, assets which are surplus to requirement are measured at their net realisable value. At 30 June 2003 The Institute held no surplus assets. (30 June 2002: \$0)

Total financial effect was to a net credit to the asset revaluation reserve of \$2,805,564.49 and a credit to accumulated results of \$2,968,622.49. The difference of \$163,058 represents a reversal of a previous asset write-down.

Accounting Standard AAS 6 *Accounting Policies* requires, where practicable, presentation of the information that would have been disclosed in the 2001-02 Statements had the new accounting policy always been applied. It is impracticable to present this information.

Frequency

All assets were revalued as at 31 December 2002.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

Conduct

All valuations were conducted by an independent qualified valuer, the Australian Pacific Valuers, Pty Ltd.

Recoverable Amount Test

From 1 July 2002, Schedule 1 no longer requires the application of the recoverable amount test in AAS 10 *Recoverable Amount of Non-Current Assets* to the assets of authorities when the primary purpose of the asset is not the generation of net cash inflows.

No property plant and equipment assets have been written to recoverable amount per AAS 10. Accordingly the change in policy has had no financial effect.

Depreciation

Depreciable property plant and equipment assets are written-off to their estimated residual values over their estimated useful lives to the Institute using, in all cases, the straight-line method of depreciation.

Depreciation rates (useful lives) and methods are reviewed at each balance date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate. Residual values are re-estimated for a change in prices only when assets are revalued.

Depreciation rates applying to each class of depreciable asset are based on the following useful lives:

	2002-03	2001-02
Buildings and improvements	10 to 40 years	10 to 40 years
Plant and equipment	3 to 20 years	3 to 20 years

The aggregate amount of depreciation allocated for each class of asset during the reporting period is disclosed in Note 6C.

1.11 Inventories

Inventories held for resale are valued at the lower of cost and net realisable value.

Inventories not held for resale are valued at cost, unless they are no longer required, in which case they are valued at net realisable value.

Costs incurred in bringing each item of inventory to its present location and condition is assigned on a first-in-first out basis.

1.12 Taxation

The Institute is exempt from all forms of taxation except fringe benefits tax and the goods and services tax (GST).

Revenues, expenses and assets are recognised net of GST:

- ☐ except where the amount of GST incurred is not recoverable from the Australian Taxation Office; and
- ☐ except for receivables and payables.

1.13 Foreign Currency

Transactions denominated in a foreign currency are converted at the exchange rate at the date of the transaction.

Foreign currency receivables and payables are translated at the exchange rates current as at balance date.

Associated currency gains and losses are not material.

1.14 Insurance

The Institute has insured for risks through the Government's insurable risk managed fund, called 'Comcover' with the exception of two vessels. The vessels are insured with a commercial insurer. Workers compensation is insured through Comcare Australia.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

1.15 Investments

The Australian Institute of Marine Science (AIMS) is a member Institute of AMRAD Corporation Ltd (AMRAD). Under an "Institute Agreement" between AMRAD, the Victorian Medical Consortium Pty Ltd (VMC) and AIMS, AMRAD had allocated to VMC 666,668 fully paid one dollar shares to be held on trust for AIMS. The agreement allowed AIMS to require VMC to transfer to it all or part of the shares and any bonus shares, or to sell such shares and pay the proceeds to AIMS. The agreement was subject to AIMS still being a party to the Institute Agreement upon the first ninth anniversary of the date of execution of the Agreement (29 October 1993).

AIMS executed the option and the shares were transferred to AIMS on 31 October 2002. On 30 June 2003 the shares were revalued in line with the market share price (\$0.60 per share) and the change was recognised as revenue in determining net profit for the year.

AIMS has a 50% ownership of Toxitech of 100 shares @ \$1 each in ToxiTech Pty Ltd. This is not a controlling ownership and so does not require consolidation of Toxitech. For equity accounting the investment has been written off as ToxiTech Pty Ltd declared a loss for the year ended 30 June 2003.

1.16 Reporting of Administered Activities

The Institute has no administered activities.

1.17 Bad and Doubtful Debts

Bad debts are expensed during the year in which they are identified, to the extent they have not previously been provided for. A provision is raised for doubtful debts based on a review of all outstanding receivables at year end.

1.18 Comparative Figures

Where necessary, comparative figures have been adjusted to conform to changes in presentation in these financial statements.

1.19 Research, development and Intellectual Property

Costs associated with research and development, intellectual property, patents and trade marks are expensed as incurred unless it can be established that they are recoverable beyond reasonable doubt.

1.20 Contract Research

The Institute has entered into various agreements with external parties for the research and development of technologies and scientific knowledge. Details of the ownership of intellectual property vary from agreement to agreement. These arrangements do not involve sharing in common of liabilities and interest in assets, other than assets represented by intellectual property to which the Institute does not attribute any value in the accounts.

1.21 Consultancies and Grants

Various consultancies and grants have been made to the Institute for specific research projects, seminar, workshops and employment assistance. Monies are paid either in advance or arrears and the difference at 30 June is reflected as either creditors or receivables respectively.

1.22 Rounding

Amounts are rounded to the nearest \$1,000 except in relation to:

- ☐ remuneration of directors (members of council);
- ☐ remuneration of officers; and
- ☐ remuneration of auditors

**NOTES TO AND FORMING PART OF THE
FINANCIAL STATEMENTS**

for the year ended 30 June 2003

NOTE 2. REPORTING BY SEGMENTS AND OUTCOMES

The Institute only has one outcome and the net cost of outcome delivery for the Institute is presented in Note 19.

NOTE 3. ECONOMIC DEPENDENCY

The Australian Institute of Marine Science was established by an Act of Parliament, *The Australian Institute of Marine Science Act 1972* and is controlled by the Commonwealth of Australia.

The Institute is dependent on appropriations from the Parliament of the Commonwealth for its continued existence and ability to carry out its normal activities.

NOTE 4. SUBSEQUENT EVENTS

The Institute is not aware of any material events that have occurred subsequent to balance date.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
Note 5. OPERATING REVENUE		
5A Revenues from Government		
Appropriation operating	17,202	16,797
Appropriation asset replacement	3,636	2,775
Appropriation capital use charge	5,256	4,965
Total revenues from government	26,094	24,537
5B Sales of Goods and Services		
Goods	224	114
Services	5,352	4,593
Total sales of goods and services	5,576	4,707
Provision of goods to:		
Related entities	-	-
External entities	224	114
Total sales of goods	224	114
Rendering of services to:		
Related entities	336	680
External entities	5,016	3,913
Total rendering of services	5,352	4,593
Cost of sales of goods	180	30
5C Interest Revenue		
Term deposits	674	629

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

Note 5. OPERATING REVENUE (CONTINUED)

5D	Net Gain from Sales of Assets		
	Plant and equipment:		
	Proceeds from disposal	183	181
	Net book value of assets disposed	(163)	(164)
	Net gain from disposal of plant and equipment	20	17
	Write-offs	(347)	(179)
	Net loss on disposal of plant and equipment	(327)	(162)
	Total proceeds from disposals	183	181
	Total value of assets disposed	(510)	(343)
	Total net loss from disposal of assets	(327)	(162)
5E	Reversal of previous asset write-downs		
	Asset revaluation increment - computers	163	-
5F	Other Revenue		
	Insurance claims	163	127
	Unrealised gain on investment	140	-
	Other	15	34
	Total contributions revenue	318	161

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 6. OPERATING EXPENSES		
6A Employee Expenses		
Wages and salaries	9,542	8,717
Superannuation	1,357	1,426
Annual recreation leave	1,099	902
Long service leave	308	366
Fringe benefits tax	217	199
Total employee benefits expenses	12,523	11,610
Workers compensation insurance	59	43
Total employee expenses	12,582	11,653

The Institute contributes to the Commonwealth Superannuation (CSS) and Public Sector Superannuation (PSS) schemes which provide retirement, death and disability benefits to employees. Contributions to the schemes are at rates calculated to cover existing and emerging obligations. Current contribution rates are 23.2% of salary (CSS) and 10.6% of salary (PSS). An additional 3% is contributed for employee productivity benefits.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 6. OPERATING EXPENSES (CONTINUED)		
6B Supplier Expenses		
Operating lease rentals	270	303
Supply of goods and services		
Appointment expenses	46	65
Equipment and software purchases	266	165
Catering subsidy	81	71
Chemical supplies	42	66
Cleaning and ground maintenance	202	193
Communications, telephone, postage	391	341
Consultancies	1,119	1,299
Consumables	754	618
Electricity	494	282
Field costs	55	47
Freight	204	119
Fuel, oil, distillates	417	366
Hire of equipment	130	193
Insurances	299	168
Laboratory expenses	189	155
Legal expenses	91	88
Licences and fees	215	147
Patents and trade marks	104	79
Publications, journals, subscriptions	467	373
Rent	128	25
Repairs and maintenance	1,016	856
Security	146	144
Stationery	92	79
Training, seminars and conferences	104	106
Travel and accommodations	993	857
Vessels management and staffing	1,546	1,508
Victuals	64	57
Water	90	88
Total supplier expenses	10,015	8,858
Goods from related entities	-	-
Goods from external entities	2,718	2,257
Services from related entities	485	602
Services from external parties	6,542	5,696
Operating lease rentals	270	303
Total supplier expenses	10,015	8,858

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 6. OPERATING EXPENSES (CONTINUED)		
6C Depreciation		
Depreciation property, plant and equipment	<u>4,123</u>	<u>3,063</u>
The aggregate amounts of depreciation expensed during the reporting period for each class of depreciable asset are as follows:		
Building and improvements	1,265	1,038
Computer equipment	872	587
Library	177	204
Office equipment	43	31
Plant and equipment	1,224	661
Ships, launches and vessels	378	434
Vehicles	164	108
Total depreciation	<u>4,123</u>	<u>3,063</u>
<hr/>		
6D Grants		
Non-profit institutions	<u>155</u>	<u>157</u>
The Institute provides grants to various organisations for the purpose of marine science research.		
<hr/>		
6E Write-Down of Assets		
Building - writedown for disposal of renovations	<u>-</u>	<u>514</u>
<hr/>		

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 7. FINANCIAL ASSETS		
7A Cash		
Cash on hand	5	5
Cash at bank	137	12
Deposits at call	50	50
Total cash	192	67
7B Investments		
Term Deposits	10,647	8,161
Shares in listed company	400	-
Total investments	11,047	8,161
Investments are categorised as follows:		
Current	10,647	3,961
Non-current	400	4,200
Total investments	11,047	8,161
7C Receivables		
Goods and services	758	702
Less : Provision for doubtful debts	(3)	(5)
	755	697
Loan	374	-
GST receivable	9	79
Other receivables	740	740
Total receivables (net)	1,878	1,516
Receivables (gross) are aged as follows :		
Not Overdue	1,758	1,296
Overdue by:		
Less than 30 days	1	74
30 to 60 days	111	41
60 to 90 days	8	110
More than 90 days	3	-
	123	225
Total receivables (gross)	1,881	1,521
The provision for doubtful debts is aged as follows:		
Not Overdue	-	-
Overdue by:		
Less than 30 days	-	-
30 to 60 days	-	-
60 to 90 days	-	-
More than 90 days	3	5
Total provision for doubtful debts	3	5
Receivables are categorised as follows:		
Current	1,504	1,516
Non-current	374	-
Total receivables	1,878	1,516

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 8. NON-FINANCIAL ASSETS		
8A Buildings and improvements		
Buildings and improvements at directors valuation 30 June 2001	-	21,512
independent valuation 31 December 2002	30,443	-
Accumulated depreciation	(659)	(2,256)
	<u>29,784</u>	<u>19,256</u>
 Buildings and improvements at cost	 236	 7,077
Accumulated depreciation	(3)	(221)
	<u>233</u>	<u>6,856</u>
 Capital work in progress	 -	 4,526
Total buildings and improvements	30,017	30,638
8B Plant and equipment and other		
Plant and equipment at independent valuation 31 December 2002 (fair value)	6,690	-
Accumulated depreciation	(652)	-
	<u>6,038</u>	<u>-</u>
 Plant and equipment at directors valuation 30 June 2002	 -	 400
Accumulated depreciation	-	(26)
	<u>-</u>	<u>374</u>
 Plant and equipment at independent valuation 30 June 1999	 -	 2,634
Accumulated depreciation	-	(1,212)
	<u>-</u>	<u>1,422</u>
 Plant and equipment at cost	 677	 1,887
Accumulated depreciation	(19)	(342)
	<u>658</u>	<u>1,545</u>
 Work in progress-at cost	 239	 46
Total plant and equipment	6,935	3,387

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 8. NON-FINANCIAL ASSETS (CONTINUED)		
8B. Plant and equipment and other (continued)		
Computer equipment at independent valuation 31 December 2002 (fair value)	1,984	-
Accumulated depreciation	(406)	-
	<u>1,578</u>	<u>-</u>
Computer equipment at independent valuation 30 June 1999	-	677
Accumulated depreciation	-	(426)
	<u>-</u>	<u>251</u>
Computer equipment at cost	105	1,648
Accumulated depreciation	(9)	(650)
	<u>96</u>	<u>998</u>
Total computer equipment	1,674	1,249
Vehicles at independent valuation 31 December 2002 (fair value)	738	-
Accumulated depreciation	(76)	-
	<u>662</u>	<u>-</u>
Vehicles at independent valuation 30 June 1999	-	86
Accumulated depreciation	-	(44)
	<u>-</u>	<u>42</u>
Vehicles at cost	133	493
Accumulated depreciation	(11)	(98)
	<u>122</u>	<u>395</u>
Total vehicles	784	437
Office equipment at independent valuation 31 December 2002 (fair value)	180	-
Accumulated depreciation	(18)	-
	<u>162</u>	<u>-</u>
Office equipment at independent valuation 30 June 1999	-	135
Accumulated depreciation	-	(68)
	<u>-</u>	<u>67</u>
Office equipment at cost	13	93
Accumulated depreciation	-	(10)
	<u>13</u>	<u>83</u>
Total office equipment	175	150

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 8. NON-FINANCIAL ASSETS (CONTINUED)		
8B. Plant and equipment and other (continued)		
Ships, launches and vessels at independent valuation 31 December 2002 (fair value)	4,201	-
Accumulated depreciation	(141)	-
	<u>4,060</u>	<u>-</u>
Ships, launches and vessels at independent valuation 30 June 1999	-	1,144
Accumulated depreciation	-	(478)
	<u>-</u>	<u>666</u>
Ships, launches and vessels at cost	59	3,928
Accumulated depreciation	(2)	(281)
	<u>57</u>	<u>3,647</u>
Work in progress at cost	<u>8</u>	<u>-</u>
Total ships, launches and vessels	4,125	4,313
Library books at independent valuation 31 December 2002 (fair value)	2,694	-
Accumulated depreciation	(112)	-
	<u>2,582</u>	<u>-</u>
Library books at independent valuation 1 July 1998	-	3,245
Accumulated depreciation	-	(814)
	<u>-</u>	<u>2,431</u>
Total library books	2,582	2,431
Total plant and equipment and other	16,275	11,967

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

2003	2002
\$'000	\$'000

NOTE 8. NON-FINANCIAL ASSETS (CONTINUED)

8B. Plant and equipment and other (continued)

Revaluations are either independent or at Directors valuation in accordance with the revaluation policy stated at Note 1. In 2002, the revaluations were conducted by an independent valuer Australian Pacific Valuers.

Movement in Asset Revaluation Reserve

decrement for buildings	(1,748)	-
increment for computers	629	-
increment for motor vehicles	13	-
increment for office equipment	100	-
increment for plant and equipment	3,369	-
increment ships, launches and vessels	114	-
increment library	329	-
	<u>2,806</u>	<u>-</u>

increment for computer equipment reversed and recognised as revenue (Note 5F)	163	-
--	-----	---

8C

Intangibles

Computer software		
Externally purchased	99	36
Accumulated amortisation	(23)	(5)
Total intangibles	<u>76</u>	<u>31</u>

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

Note 8D Analysis of Property, Plant and Equipment and Intangibles

TABLE A - Reconciliation of the opening and closing balances of property, plant and equipment and Intangibles

Item	Buildings	Plant & Equipment	Computers	Vehicles	Office Equipment	Ships & Vessels	Library	Computer Software	TOTAL
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
As at 1 July 2002									
Gross book value	28,590	4,920	2,326	579	228	5,072	3,245	36	44,996
Accumulated depreciation/amortisation	(2,477)	(1,580)	(1,077)	(142)	(78)	(759)	(814)	(5)	(6,932)
Net book value	26,113	3,340	1,249	437	150	4,313	2,431	31	38,064
Additions									
by purchases	7,452	1,557	531	640	20	90	-	62	10,352
Net revaluation increment/decrement	(1,748)	3,369	792	13	100	114	328	-	2,968
Depreciation/amortisation expense	(1,263)	(1,224)	(857)	(164)	(43)	(378)	(177)	(17)	(4,123)
Disposals									
Other disposals	(537)	(107)	(41)	(142)	(52)	(14)	-	-	(893)
As at 30 June 2003									
Gross book value	30,679	7,606	2,089	871	193	4,268	2,694	99	48,499
Accumulated depreciation/amortisation	(662)	(671)	(415)	(87)	(18)	(143)	(112)	(23)	(2,131)
Net book value	30,017	6,935	1,674	784	175	4,125	2,582	76	46,368

NOTES TO AND FORMING PART OF THE
FINANCIAL STATEMENTS
for the year ended 30 June 2003

Note 8D Analysis of Property, Plant and Equipment and Intangibles

TABLE B - Assets at valuation

Item	Buildings \$'000	Plant & Equipment \$'000	Computers \$'000	Vehicles \$'000	Office Equipment \$'000	Ships & Vessels \$'000	Library \$'000	Computer Software \$'000	TOTAL \$'000
As at 30 June 2003									
Gross value	30,443	6,690	1,984	738	180	4,201	2,694	-	46,930
Accumulated depreciation/amortisation	(659)	(652)	(406)	(76)	(18)	(141)	(112)	-	(2,064)
Net book value	29,784	6,038	1,578	662	162	4,060	2,582	-	44,866
As at 30 June 2002									
Gross value	21,512	3,034	677	86	135	1,144	3,245	-	29,833
Accumulated depreciation/amortisation	(2,256)	(1,239)	(426)	(44)	(68)	(478)	(814)	-	(5,325)
Net book value	19,256	1,795	251	42	67	666	2,431	-	24,508

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003	2002
	<u>\$'000</u>	<u>\$'000</u>
NOTE 8. NON FINANCIAL ASSETS (CONTINUED)		
8E Inventories		
All inventories are current assets		
Inventories held for sale	49	51
Stores inventories not held for sale (cost)	<u>201</u>	<u>174</u>
Total inventories	<u>250</u>	<u>225</u>
8F Other Non-Financial Assets		
Workshop jobs in progress	277	88
Prepayments	<u>239</u>	<u>222</u>
Total other non-financial assets	<u>516</u>	<u>310</u>

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 9. PROVISIONS AND PAYABLES		
9A Employee Provisions		
Salaries and wages	397	347
Annual leave	2,257	1,969
Long service leave	3,002	2,790
Fringe benefit tax	53	52
Superannuation	9	13
Aggregate employee entitlement liability	5,718	5,171
Workers compensation	8	3
Aggregate employee benefit liability and related on costs	5,726	5,174
Current	1,760	1,485
Non-Current	3,966	3,689
	5,726	5,174
9B Capital Use Charge Provision		
Capital Use Charge	-	71
Balance owing 1 July	71	17
Capital Use Charge provided for during the period	5,256	5,019
Capital Use Charge paid	(5,221)	(4,965)
Capital Use Charge provision reversal	(71)	-
Capital Use Charge refund received	(35)	-
Balance owing 30 June	-	71
The Capital Use Charge provision is a current liability		
9C Supplier Payables		
Trade creditors	1,151	1,284
Total supplier payables	1,151	1,284
All supplier payables are current		
9D Consultancies and Grants		
Non-profit institutions	1,042	915
Profit institutions	273	33
Total consultancies and grants	1,315	948
All grants payable are current		

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

NOTE 10. EQUITY

10A Analysis of Equity

Item	Accumulated Results		Asset revaluation reserve		Total Contributed Equity		TOTAL EQUITY	
	2003 \$000	2002 \$000	2003 \$000	2002 \$000	2003 \$000	2002 \$000	2003 \$000	2002 \$000
Opening balance as at 1 July	2,380	1,789	14,871	14,384	28,187	25,376	45,438	41,549
Net surplus/(deficit)	5,623	5,627	-	-	-	-	5,623	5,627
Net revaluation increment/(decrement)	-	-	2,806	487	-	-	2,806	487
Increase in accumulated results on application of AASB 1028								
Employee Benefits	(77)	-	-	-	-	-	(77)	-
Transactions with owner:								
Distributions to owner:								
Returns on Capital								
Capital Use Charge	(5,257)	(5,036)	-	-	-	-	(5,257)	(5,036)
Capital Use Charge refund/provision reversal	106	-	-	-	-	-	106	-
Contributions by owner:								
Appropriations (equity injections)	-	-	-	-	3,420	2,811	3,420	2,811
Closing balance as at 30 June	2,775	2,380	17,677	14,871	31,607	28,187	52,059	45,438
Total equity attributable to the Commonwealth	2,775	2,380	17,677	14,871	31,607	28,187	52,059	45,438

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	2003 \$'000	2002 \$'000
NOTE 11. CASH FLOW RECONCILIATION		
11A Reconciliation of Operating Surplus to Net Cash from Operating Activities:		
Reconciliation of operating surplus to net cash provided by operating activities		
Operating surplus	5,623	5,627
Non-Cash Items		
Depreciation and amortisation	4,123	3,063
Loss on disposal of non-current assets	345	693
Gain on disposal of non-current assets	(183)	(17)
Changes in Assets and Liabilities		
(Increase)/Decrease in receivables	125	(375)
(Increase)/Decrease in accrued revenue	(495)	409
(Increase)/Decrease in inventory	(25)	28
(Increase)/Decrease in other assets	(207)	(95)
Increase/(Decrease) in employees provisions	425	202
Increase/(Decrease) in investments	(400)	-
Increase/(Decrease) in supplier payables	(124)	80
Increase/(Decrease) in other payables	408	411
Net cash from operating activities	9,615	10,026
11B Reconciliation of Cash		
Cash balance comprises:		
Cash	192	67
Investments	11,047	8,161
Total cash	11,239	8,228

NOTE 12. EXTERNAL FINANCING ARRANGEMENTS

The Institute has finance facilities with the Commonwealth Bank of Australia as follows:

Total facilities	1,429	1,429
Amount of facility used as at 30 June	(6)	(79)
Facility available	<u>1,423</u>	<u>1,350</u>

The facilities do not appear on the Statement of Financial Performance.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

	Number	
	2003	2002
NOTE 13. REMUNERATION OF DIRECTORS (MEMBERS OF COUNCIL)		
The number of directors of the Institute included in these figures are shown below in the relevant remuneration bands.		
\$10,000 - \$19,999	3	4
\$20,000 - \$29,999	1	1
\$30,000 - \$39,999	1	-
\$200,000 - \$210,000	-	1
\$230,000 - \$240,000	1	-
	<u>6</u>	<u>6</u>
	\$	\$
Total remuneration received or due and receivable by Directors of the Institute	<u>336,604</u>	<u>291,288</u>

The Directors (members of council) of the Australian Institute of Marine Science are appointed by the Governor General. The Director (CEO) is appointed by the Governor General on the recommendation of the Board of Directors (members of council).

NOTE 14. RELATED PARTY DISCLOSURES

Directors of the Institute

The Directors (members of council) of the Institute during the year were:

Mr A E de N Rogers A.O. (Chairman)

Dr W Craik

Mr B Guthrie

Dr M Sleigh

Dr I Gould

Professor S Hall (Chief Executive Officer)

The aggregate remuneration of Directors is disclosed in Note 13.

Loans to Directors and Director related entities

There were no loans made to any Director or Director related entities during the period.

Other Transactions with Directors or Director related entities

There were no other transactions with Directors or Director related entities during the period.

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

NOTE 15. REMUNERATION OF OFFICERS

The number of officers who received or were due to receive total remuneration of \$100,000 or more:

	Number	
	2003	2002
\$100,000 - \$110,000	2	-
\$110,000 - \$120,000	2	-
\$140,000 - \$150,000	1	3
\$150,000 - \$160,000	1	-
	<u>6</u>	<u>3</u>
	\$	\$
The aggregate amount of total remuneration of officers shown above.	<u>771,704</u>	<u>427,573</u>

The Officer remuneration includes all officers concerned with or taking part in the management of the Institute during 2002-03 except the Chief Executive Officer. Details in relation to the Chief Executive Officer have been incorporated into Note 13 - *Remuneration of Directors*.

NOTE 16. REMUNERATION OF AUDITORS

Remuneration to the Auditor-General for auditing the financial statements for the reporting period.

	2003	2002
	\$	\$
	<u>42,000</u>	<u>42,000</u>

The Auditor-General received no remuneration for other services during the reporting period.

**NOTES TO AND FORMING PART OF THE
FINANCIAL STATEMENTS**
for the year ended 30 June 2003

NOTE 17. FINANCIAL INSTRUMENTS

Table A. Terms, Conditions and Accounting Policies

Financial Instrument	Notes	Accounting Policies and Methods (including recognition criteria and measurement basis)	Nature of Underlying Instrument (Including significant terms and conditions affecting the amount, timing and certainty of cash flows)
<i>Financial Assets</i>			
	7	Financial assets are recognised when control over future economic benefits is established and the amount of the benefit can be reliably measured.	
Deposits at call (cash)	7A	Deposits are recognised at their nominal value Interest is credited as it accrues.	Temporarily surplus funds, mainly from monthly drawdowns of appropriation, are placed on deposit at call with the Institute's banker. Interest is earned on the daily balance at the prevailing daily rate for money on call and is paid at month end.
Receivables for goods and services	7C	These receivables are recognised at the nominal amounts due less any provisions for bad and doubtful debts. Provisions are made when collection of the debt is judged to be less rather than more likely.	Credit terms are 30 days (2001-02 30 days)
Term deposit	7B	The deposit is recognised at cost. Interest is accrued as it is earned	Various term deposits are with the Institute's banks, with a maximum maturity of eleven months from June 30 2003. The term deposits earned an average annual interest rate of 5.12%
Shares in listed companies	7B	Shares are recognised at the net market value as at the reporting date	Shares were deemed to the Institute (refer note 1.15), the net market value of the deemed shares was included as revenue, the revaluation of the shares as at 30 June is unrealised revenue (refer Note 5F).
<i>Financial Liabilities</i>			
Trade creditors		Financial liabilities are recognised when a present obligation to another party is entered into and the amount of the liability can be reliably measured. Creditors and accruals are recognised at their nominal amounts, being the amounts at which the liabilities will be settled. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).	Settlement is usually made based on the settlement period established for individual trade creditors, being 7, 14 or 30 days.
Capital Use Charge payable		The amount payable at 30 June 2003 is nil. Department of Finance and Administration has required settlement of the charge for 2003 to be made before 30 June in the amount of funding received for this charge.	The charge is a return on capital required under the Budget Framework in place since 1 July 1999. In prior years, the charge has been calculated as a percentage of adjusted net assets. (2003 11%, 2002 11%). The charge is being discontinued after 30 June 2003.
Grants payable		This payable is recognised as the value of the work outstanding on grants where money received in advance.	Grants range in maturity from a few weeks to three years. Amounts recognised are reduced as the work is undertaken by the Institute in accordance with the contract.

**NOTES TO AND FORMING PART OF THE
FINANCIAL STATEMENTS**
for the year ended 30 June 2003

Note 17. FINANCIAL INSTRUMENTS (CONTINUED)

Table B Interest Rate Risk

Financial Instrument	Notes	Floating Interest		Fixed Interest Rate Maturing In				Non - Interest Bearing		Total		Weighted Average Effective Interest Rate	
		2003 \$000	2002 \$000	1 Year or less 2003 \$000	1 to 5 Years 2003 \$000	2002 \$000	2002 \$000	2003 \$000	2002 \$000	2003 \$000	2002 \$000	2003 %	2002 %
Financial Assets (Recognised)													
Cash at bank	7A	137	12	-	-	-	-	-	-	137	12	2.74	2.70
Cash on hand	7A	-	-	-	-	-	-	5	5	5	5	n/a	n/a
Deposits at call	7A	50	50	-	-	-	-	-	-	50	50	4.42	3.07
Receivables for goods and services and accrued income	7C	-	-	-	-	-	-	1,504	1,516	1,504	1,516	n/a	n/a
Term deposit	7B	-	-	10,647	-	3,961	4,200	-	-	10,647	8,161	5.12	6.05
Shares (not associates)	7B	-	-	-	-	-	-	400	-	400	-	n/a	n/a
Long term loan	7C	-	-	-	374	-	-	-	-	374	-	5.01	-
Total Financial Assets (Recognised)		187	62	10,647	374	3,961	4,200	1,909	1,521	13,117	9,744		
Total Assets										52,059	45,438		
Financial Liabilities (Recognised)													
Trade creditors	9C	-	-	-	-	-	-	1,151	1,284	1,151	1,284	n/a	n/a
Consultancies and grants	9D	-	-	-	-	-	-	1,315	948	1,315	948		
Capital Use Charge	9B	-	-	-	-	-	-	-	71	-	71		
Total Financial Liabilities (Recognised)		-	-	-	-	-	-	2,466	2,303	2,466	2,303		
Total Liabilities										8,192	7,477		

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

NOTE 17. FINANCIAL INSTRUMENTS (CONTINUED)

TABLE C Net Fair Values of Financial Assets and Liabilities

		2003		2002	
		Total Carrying Amount	Aggregate Net Fair Value	Total Carrying Amount	Aggregate Net Fair Value
	Note	\$'000	\$'000	\$'000	\$'000
Financial Assets					
Cash at bank	7A	137	137	12	12
Cash on hand	7A	5	5	5	5
Deposits at call	7A	50	50	50	50
Receivables for goods and services	7C	1,878	1,878	1,521	1,521
Term deposits	7B	10,647	10,647	8,161	8,161
Shares in listed company	7B	400	400	-	-
Total Financial Assets		13,117	13,117	9,749	9,749
Financial Liabilities (Recognised)					
Trade creditors	9C	1,151	1,151	1,284	1,284
Consultancies and grants	9D	1,315	1,315	948	948
Capital Use Charge	9B	-	-	71	71
Total Financial Liabilities		2,466	2,466	2,303	2,303

Financial Assets

The net fair values of cash, deposits on call and non-interest bearing monetary financial assets approximate their carrying amounts.

The net fair value of term deposits are based on discounted cash flows using current interest rates for assets with similar risk profiles.

Shares in listed company are based on the net market price as at 30 June 2003.

Financial Liabilities

The net fair values for trade creditors, capital use charge, and consultancies and grants, which are short term in nature, approximate their carrying amounts.

Credit Risk Exposure

The Institute's maximum exposure to credit risk at the reporting date in relation to each class of recognised financial asset is the carrying amount of those assets as indicated in the Statement of Financial Position.

The Institute has no significant exposure to any concentrations of credit risk. All figures for credit risk referred to do not take into account the value of any collateral or other security.

NOTES TO AND FORMING PART OF THE
FINANCIAL STATEMENTS

for the year ended 30 June 2003

	Number	
	2003	2002
NOTE 18. EMPLOYEE EQUIVALENTS		
The number of full-time equivalents employed for the year	152	150

NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

for the year ended 30 June 2003

NOTE 19. REPORTING OF OUTCOMES

19A Outcome of the Institute

The Institute is structured to meet one outcome -

“Enhanced scientific knowledge supporting the protection and sustainable development of Australia’s marine resources”.

Only one Output is identified for the one Outcome.

19B Net Cost of Outcome Delivery of Outcome 1

	2003 \$'000	2002 \$'000
Operating expenses	27,462	24,588
Total expenses	27,462	24,588
Cost recovered from provision of goods and services to the non-government sector		
Goods and services	5,576	4,707
Total cost recovered	5,576	4,707
Other external revenues		
Interest	674	629
Sale of assets	183	181
Reversal of previous asset write down	163	-
Other	318	161
Total other external revenues	1,338	971
Net cost/(contribution) of outcome	20,548	18,910

19C Institute Revenues and Expenses by Outcome

Operating expenses		
Employees	12,659	11,653
Suppliers	10,015	8,858
Depreciation	4,123	3,063
Grants	155	157
Value of assets sold	510	343
Write-down of assets	-	514
Total operating expenses	27,462	24,588
Funded by:		
Revenues from Government	26,094	24,537
Goods and services	5,576	4,707
Interest	674	629
Sale of assets	183	181
Reversal of previous assets write off	163	-
Other	318	161
Total operating revenue	33,008	30,215

SUPPLEMENTARY FINANCIAL INFORMATION (UNAUDITED)

for the year ended 30 June 2003

REVENUE COMPARISON

	1999	2000	2001	2002	2003
	\$000	\$000	\$000	\$000	\$000
Non-Government revenue					
External earnings	4,889	4,623	4,401	4,707	5,576
Interest	498	626	860	629	674
Other revenue	70	91	179	161	318
Total Non-Government revenue	5,457	5,340	5,440	5,497	6,568
Appropriations					
Operating	16,506	16,703	16,788	16,797	17,202
Asset replacement	-	1,439	1,148	2,775	3,636
Capital and infrastructure	1,996	2,994	3,486	2,811	3,420
Capital Use Charge	-	3,817	4,635	4,965	5,256
Total appropriation revenue	18,502	24,953	26,057	27,348	29,514
Total revenue	23,959	30,293	31,497	32,845	36,082
External earnings ratio %	23%	20%	20%	19%	21%

External earnings includes consultancies, grants and contract collaborations.

External earnings ratio is total external earnings in relation to external earnings plus operating and asset replacement appropriations.

SUPPLEMENTARY FINANCIAL INFORMATION (UNAUDITED)

for the year ended 30 June 2003

SOURCE OF EXTERNAL EARNINGS BY INDUSTRY

	1999	2000	2001	2002	2003
	\$000	\$000	\$000	\$000	\$000
Australian government	759	458	427	430	278
Australian joint government/industry	2,069	2,200	1,925	2,350	2,065
International governments	378	489	744	476	986
Australian industry	992	895	612	1,009	1,195
International industry	691	581	155	328	828
Publications	-	-	538	114	224
	4,889	4,623	4,401	4,707	5,576

COOPERATIVE RESEARCH CENTRE (CRC)

The Institute has agreements with two Cooperative Research Centres, Ecologically Sustainable Development in the Great Barrier Reef (known as CRC Reef Centre) and CRC Aquaculture. Comparison contributions with respective CRCs are:-

	1999	2000	2001	2002	2003
	\$000	\$000	\$000	\$000	\$000
AIMS contribution in kind to the two CRCs were					
CRC Reef	1,605	2,147	2,885	2,765	2,881
CRC Aquaculture	511	499	141	-	-
Research income received from CRCs were -					
CRC Reef	981	1,090	1,189	1,790	1,458
CRC Aquaculture	313	336	74	30	13

EMPLOYEE STAFF YEARS

	1999	2000	2001	2002	2003
	No.	No.	No.	No.	No.
Science research staff	103.7	98.1	92.6	92.8	98.6
Research services	58.7	61.6	63.1	57.6	53.3
	162.4	159.7	155.7	150.4	151.9

SUPPLEMENTARY FINANCIAL INFORMATION (UNAUDITED)

for the year ended 30 June 2003

COST OF OUTPUT BY RESEARCH GROUPS

				2002-03	2001-02
	Variable	Salaries	Fixed	Overheads	Total
	\$'000	\$'000	\$'000	\$'000	\$'000
The Coastal Processes Group					
Appropriation	683	2,543	2,016	2,922	8,164
External	374	190	439	219	1,222
	1,057	2,733	2,455	3,141	9,386
The Conservation and Biodiversity Group					
Appropriation	561	2,465	1,644	2,833	7,503
External	1,040	657	887	754	3,338
	1,601	3,122	2,531	3,587	10,841
The Marine Biotechnology Group					
Appropriation	362	1,873	1,158	2,152	5,545
External	362	356	562	410	1,690
	724	2,229	1,720	2,562	7,235
Total Summary					
Appropriation	1,606	6,881	4,818	7,907	21,212
External	1,776	1,203	1,888	1,383	6,250
Total	3,382	8,084	6,706	9,290	27,462

APPENDICES

- Appendix 1 Legislative Foundation and Ministerial Powers
- Appendix 2 Freedom of Information Statement
- Appendix 3 Science Publications List 2002
- Appendix 4 Membership of External Committees and NGOs
- Appendix 5 Web Addresses

LEGISLATIVE FOUNDATION AND MINISTERIAL POWERS

ENABLING LEGISLATION

The Australian Institute of Marine Science is a Statutory Authority established on 9 June 1972 by the *Australian Institute of Marine Science Act 1972* (AIMS Act).

The Institute falls within the Department of Education Science and Training, and reports to the Minister for Science, the Hon Peter McGauran MP.

FUNCTIONS

The functions of AIMS, as defined in Section 9 of the AIMS Act, are to:

- (a) Carry out research and development in relation to marine science and marine science technology;
- (b) Encourage and facilitate the application and use of the results of research and development of that kind;
- (c) Arrange for carrying out research and development of that kind;
- (d) Co-operate with other institutions and persons in carrying out research and development of that kind;
- (e) Provide any other institution or person with facilities for carrying out research and development of that kind;
- (f) Collect and disseminate information relating to marine science and marine technology and, in particular, to publish reports and other papers;
- (g) Provide and sell goods (whether produced by the Institute or purchased or otherwise acquired by the Institute) and services in connection with matters related to its research and development activities in marine science and marine technology;
- (h) Make available to others, on a commercial basis, the knowledge, expertise, equipment and facilities of the Institute;
- (i) Do anything incidental or conducive to the performance of any of the functions in paragraphs (a) to (h).

POWERS OF THE INSTITUTE

Subject to the AIMS Act, the Institute is empowered under Section 10 of the Act to do all things necessary or convenient to be done for, or in connection with, the performance of its functions, including power to:

- (a) Enter into contracts;
- (b) Acquire, hold and dispose of personal property;
 - (ba) to take on hire, or to accept

APPENDICES

- on loan, equipment (including vessels) or other goods needed for the purposes of the Institute;
- (bb) to lend or to hire out equipment (including vessels) or other goods that are the property of the Institute;
- (c) Purchase or take on lease land or buildings, and to erect buildings, necessary for the purposes of the Institute;
- (d) Dispose of, or grant leases of, land or buildings vested in the Institute;
- (e) Occupy, use and control any land or building owned or held under lease by the Commonwealth and made available for the purposes of the Institute;
- (f) Participate in partnerships, trusts, unincorporated joint ventures and other arrangements for sharing profits;
- (g) Subscribe for and to purchase shares in, and debentures and other securities of, companies;
- (h) Form, and to participate in the formation of, companies; and
- (i) Appoint agents and attorneys, and to act as agents for other persons;
- (j) Accept anything given or transmitted to the Institute whether on trust or otherwise, and to act as trustee of money or other property vested in the Institute on trust;
- (k) Arrange for displaying material and giving lectures, to the public or otherwise, in respect of matters relating to marine science and marine technology.

MINISTERIAL POWERS OF DIRECTION

Under Section 10 (1) of the *Australian Institute of Marine Science Act*, the Minister has power

to direct the Institute in matters of a general or specific nature. These powers pertain particularly to the following:

1. Granting leave of absence to Council members (Section 13, 16(b));
2. Appointing (and terminating such appointment) a person to act as Chairperson (Section 17(1) and (3));
3. Appointing (and terminating such appointment) a person to act as a member of Council (Section 17(2) and (3));
4. Convening a meeting of Council (Section 20(2));
5. Determining terms and conditions of Director's leave of absence (Section 25(2));
6. Approving the Director to undertake paid employment outside the duties of his or her office (Section 29(1) and (2));
7. Appointing a person to act as Director and determining his or her terms and conditions of appointment (Section 30);
8. Approving the appointment of staff who are not Australian citizens (Section 33(2));
9. Approving the Institute to enter into a contract involving the payment of Institute funds of an amount exceeding \$100,000 (Section 42);
10. Appointing a Committee to assist Council and approving the terms and conditions of members (Section 45);
11. Approving the Institute to make available any discovery, invention or improvement in lieu of payment of fees or royalties (Section 48);
12. Approving the payment of bonuses for discoveries and inventions by officers and employees (Section 49).

FREEDOM OF INFORMATION STATEMENT

The *Freedom of Information Act 1982* (FOI Act) requires each Commonwealth Government agency to publish a statement setting out its role, structure and functions, the documents available for public inspection, and access to such documents. Section 8 of the FOI Act requires each agency to publish information on the way it is organised, its powers, decisions made and arrangements for public involvement in its work.

This statement, in conjunction with information contained in this annual report, is intended to meet the requirements of Section 8 of the FOI Act.

ROLE, STRUCTURE AND FUNCTIONS

The Institute's role, structure and functions are described in this annual report, particularly in the section About the Australian Institute of Marine Science (pp. 1-6) and in the Report of Operations: Part C – Institute Structure and Governance (pp. 37-48).

DOCUMENTS AVAILABLE FOR INSPECTION

Copies of the Institute's publications and reports are available on request (see table below), generally free of charge except for final project reports. Some other information may be subject to assessment of access for such matters as commercial confidentiality or personal privacy.

Facilities for reviewing documents are provided at AIMS. The Institute's publications are on display for the public and may be purchased through the AIMS Bookshop. General inquiries concerning access to documents, or other matters relating to FOI, should be directed to:

Human Resources Manager
Australian Institute of Marine Science
PMB No 3, Townsville Mail Centre Qld 4810
Telephone: (07) 4753 4319
Facsimile: (07) 4772 5852

Strategic Directions	Files, publication*
Research Plan	Files, publication*
Annual Operational Plan	Files, unpublished document
Project details	Database, files
Final project reports	Publications
Non-technical summaries of final project reports	Publications*
R&D funding applications	Files, Annual Report file, publications*
Administration	Files, unpublished document
Mailing lists	Database

*These documents are also available on the Institute's website (www.aims.gov.au).

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AIMS SCIENTISTS' MEMBERSHIP OF EXTERNAL COMMITTEES AND NGOs

INTERNATIONAL FORUMS

ATSEF (Arafura Timor Seas Expert Forum
– Steering Committee

Biodiversity Convention Scientific Committee
(Australian Marine Representative)

Continental Margin Task Team (JGOFS, LOICZ)

Coral Reef Degradation in the Indian Ocean
(CORDIO) Project, Steering Committee

Coral Reef Research Advisory Committee, RIS
Japan

Diversitas – Scientific Steering committee

GIWA Advisory Committee

Great Barrier Reef Research Foundation
– International Scientific Advisory Committee
(GBRRF – ISAC)

International Atomic Energy Agency (Expert
Consultant to United Nations Development
Project 'Transfer of Receptor Binding Assay for
Harmful Algal Toxins')

International Coral Reef Initiative - Co-ordination
and Planning Committee

International Coral Reef Action Network
– Steering Committee

International Society for Reef Studies
(Executive)

Marine Bioprocess International Workshops
Steering Committee

Palau International Coral Reef Centre Scientific
Advisory Committee

UNESCO Ecohydrology program: estuarine
group (Chairman)

World Bank Coral Reef Restoration and
Remediation Working Group

DOMESTIC FORUMS

Australian Marine Sciences Association (NT)
- Committee

Australian Marine Sciences Association -
National Committee

Australian Academy of Sciences, CLIVAR sub-
committee

Australian Academy of Technological Sciences
and Engineering (CAETS 2005: Organising
Committee):

Australian Academy of Technological Sciences
and Engineering (Councillor)

Australian National Sportfishing Association
(ANSA), Scientific Research Foundation

Australian Ocean Colour Working Group

Australian Research Council – Expert Review
Committee

Burdekin River Water Allocation Management
Plan Technical Advisory Panel (TAP)

Cleveland Bay Consortium

Commonwealth Marine Protected Areas
committee

Commonwealth State of the Environment
Report, Peer Review Panel

CRC Reef Board

CRC Reef Scientific Advisory Committee

CRC Reef Task Review Committee

Darwin Harbour Advisory Committee

APPENDICES

Environment Australia Biodiversity, Access and Benefit Sharing, Review Committee

Expert Scientific Committee – GBR Reef Protection IDC

Dampier Archipelago/Cape Preston Advisory Committee

FRDC Prawn Domestication Steering Committee

GBRMPA Fisheries Research Advisory Committee

GBRMPA Representative Areas Program (working group)

GBRMPA Water Quality and Coastal Research Advisory Committee

Milner Bay Marine Environmental Advisory Group

International Ocean Institute (Australia) Coordination Centre for Asia Pacific – Member of the Board

National Centre for Tropical Wetlands Management

National Facilities - Ship Scientific Advisory Committee

National Oceans Office – SE Bioregionalisation Working Group

National Oceans Office – National Bioregionalisation Working Group

National Low Level Nutrient Collaborative Trial Committee

QDNRM Water Allocation Management Plan, Technical Advisory Panel

Queensland Fisheries Service – HarvestMac

Queensland Fisheries Service – ReefMac

Regional Consultative Group for the Wet Tropics Region Coastal Management Plan

Standards Australia Committee EV-008 – Examination of waters

Task Force for Marine Protected Areas

Technical Advisory Group – CRC for Catchment Hydrology

Torres Strait Fisheries Research Advisory Committee

Twin Cities Fish Stocking Society – Scientific Advisor

WA Department of Environmental Protection - NW Shelf Environmental Management Project (Technical Advisory Committee)

WA Department of Environmental Protection-CSIRO Marine, NWS JEMS Technical Advisory Committee

WA Marine Parks and Reserves Scientific Advisory Committee

WA Physical Oceanographic Coordinating Group (WAPOCG)

WEB ADDRESSES

About AIMS
www.aims.gov.au/about-aims

AIMS Facilities
www.aims.gov.au/aims-facilities

AIMS Mariner's Journal
www.aims.gov.au/mariners-journal

AIMS News and Media Releases
www.aims.gov.au/news

AIMS ProjectNET for Schools
www.aims.gov.au/projectnet

AIMS Reef Monitoring Database
www.aims.gov.au/reef-monitoring

AIMS Remote Weather Stations
www.aims.gov.au/weather-stations

AIMS Research
www.aims.gov.au/aims-research

AIMS Staff Publications Database
<http://www2.aims.gov.au/staff-publications>

Australian Academy of Technological Sciences
and Engineering
www.atse.org.au/international/caets.htm

Australian Coastal Atlas
www.ea.gov.au/coasts/atlas

Australia Coral Records Research Group
(AUSCORE)
www.aims.gov.au/auscore

Australian Coral Reef Society
www.australiancoralreefsociety.org/

Australian Fisheries Habitat Research
www.aims.gov.au/pages/research/afhr/afhr-00.html

Australian Hydrographic Service
www.hydro.gov.au

Australian Journals Online
www.nla.gov.au/ajol

Australian Marine Sciences Association
www.uq.edu.au/amsa/

Australian Research Network for Algal Toxins
(ARNAT)
www.aims.gov.au/arnat

CRC Reef Research Centre
www.reef.crc.org.au

CSIRO Marine Research
www.marine.csiro.au/

Australian Maritime Safety Authority
www.amsa.gov.au

Bureau of Meteorology – Australia
www.bom.gov.au

Department of Agriculture, Fisheries and
Forestry – Australia
www.affa.gov.au

Department of Education, Science and Training
– Australia
www.dest.gov.au/

Department of Education, Science and Training
(Marine Science)
www.dest.gov.au/science/marine/

Environment Australia
www.ea.gov.au

Fisheries Research and Development
Corporation
www.frdc.com.au

Foundation of Environmental Conservation
www.icef.eawag.ch

Geoscience Australia
www.ga.gov.au

APPENDICES

Global Coral Reef Monitoring Network
www.gcrmn.org

Great Barrier Reef Marine Park Authority
www.gbrmpa.gov.au

Intergovernmental Oceanographic Commission
<http://ioc.unesco.org/iocweb/>

International Union for Biological Sciences
www.iubs.org/

James Cook University of North Queensland
www.jcu.edu.au

National Library of Australia, Pandora Archive
(index page)
<http://pandora.nla.gov.au/index.html>

National Library of Australia, Pandora Archive,
Mariner's Journal
<http://pandora.nla.gov.au/tep/25496>

National Oceanic and Atmospheric
Administration
www.noaa.gov/

National Oceans Office
www.oceans.gov.au

Queensland Department of Innovation and
Information Economy
www.iie.qld.gov.au/

Queensland Department of Primary Industries
www.dpi.qld.gov.au

Queensland Department of State Development
www.sd.qld.gov.au

Reefs at Risk
www.aims.gov.au/reefs-at-risk

Science Portal
www.science.gov.au/

The National Land and Water Resources Audit
[www.affa.gov.au/docs/1_nrm/nht_landcare/nht/
audit-summary.html](http://www.affa.gov.au/docs/1_nrm/nht_landcare/nht/audit-summary.html)

United Nations Educational, Scientific and
Cultural Organisation
www.unesco.org/

World Climate Research Program
www.wmo.ch/web/wcrp/wcrp-home.html

World Fish Center
www.worldfishcenter.org

GLOSSARY

ACRONYMS

AAUQ

Associate Accountant of the University of Queensland

AIMS

Australian Institute of Marine Science

ANU

Australian National University

AO

Officer in the Order of Australia

APFA

Australian Prawn Farmers Association

ATRF

Arafura Timor Research Facility

BRUVs

Baited Remote Underwater Videos

FAICD

Fellow of the Australian Institute of Company Directors

FCA

Fellow of Chartered Accountants

FIEAust

Fellow of the Institution of Engineers, Australia

FOI

Freedom of Information

FRDC

Fisheries Research and Development Corporation

FTSE

Fellow of the Academy of Technological Sciences and Engineering

CALM

Conservation and Land Management (WA Department)

COTS

Crown-of-thorns starfish

CRC

Cooperative Research Centre

CRC Reef

CRC for the Great Barrier Reef World Heritage Area, operating as CRC Reef Research Centre Ltd

CSIRO

Commonwealth Scientific and Industrial Research Organisation

DEST

Department of Education Science and Training (Commonwealth)

DITR

Department of Industry Tourism and Resources (Commonwealth)

EA

Environment Australia

EEO

Equal Employment Opportunity

GBR

Great Barrier Reef

GBRMPA

Great Barrier Reef Marine Park Authority

GCRMN

Global Coral Reef Monitoring Network

JCU

James Cook University

MPAs

Marine Protected Areas

NGO

Non Government Organisation

NOAA

National Oceanic and Atmospheric Administration (United States)

OHS

Occupational Health and Safety

UNESCO

United Nations Educational, Scientific and Cultural Organisation

WA

Western Australia

TERMS

Agrichemical

Artificially produced chemical used in intensive agriculture systems.

Bioactive

Biochemical isolated from an organism with useful activity (e.g. anti-tumor, anti-viral or herbicidal activity).

Biodiscovery

The collection and analysis of organic samples for bioactive compounds.

Biodiversity

The variety of all life forms, including plants, animals and microorganisms, the genes they contain, and the ecosystems they form.

Bioindicators

Biological indicators that can be used to assess environmental quality or physiological stress.

Biotechnology

Technological applications that use biological systems, living organisms or derivatives.

Broodstock

Mature spawners producing juveniles for aquaculture.

Ecosystem

Biological communities and their non-living environment interacting as a functional unit.

Ex situ

Not in the original location.

External earnings

Income made by AIMS from the sale of goods and services, i.e. science publications, contracted research.

Greenhouse (effect)

The trapping of the sun's warmth in the lower atmosphere of the earth by an increase in pollutants such as carbon dioxide and methane.

Holothurians

Sea cucumbers; also referred to as trepang or *beche de mer*.

In situ

In the original location.

Modelling

Numerical techniques and computer technology used to develop a description of a system or phenomenon that accounts for its known properties and can be used for further study of its characteristics.

Outcomes

The results, impacts or consequences of actions by AIMS on the Australian community.

Output

The goods or services produced by AIMS for external organisations or individuals. Output includes goods and services produced for other areas of the Commonwealth public sector.

Primary productivity

The formation of organic matter from inorganic constituents, usually through photosynthesis.

Spin-off

A new company purposely formed to take AIMS and its partners' research products and services through development to market.

Upwelling

The rise to the surface of cold nutrient-rich water from ocean depths.

COMPLIANCE INDEX

Advertising and market research **65**

Audit committee **58**

Auditor-General's report on financial statements **71**

Certification (inc. Letter of Transmission) **iv, 71**

Consultancy services **62**

Contact officer **60, 65**

Corporate governance **55**

Council members (directors) **pp 55-57, 114**

Customer service charter **65**

Developments since June **7**

Disability strategy **65**

EEO and workplace diversity **65**

Enabling legislation and responsible Minister **49, 113**

Environmental management and protection **15, 64**

Factors, events or trends influencing performance **6, 11, 25, 113**

Financial statements **69**

Freedom of Information **65, 115**

Functions **113**

Gene technology **64**

Indemnities and insurance premiums for officers **60**

Investing and financing activities **63**

Judicial decisions and reviews by outside bodies **63**

Ministerial directions **63**

Occupational health and safety **64, 131**

Organisational structure **53**

Performance indicators **6, 59, 67**

Powers of the Institute **113**

Principal outputs and outcomes **pp 27-41**

Radiation safety **64**

Report of operations **pp 1-68**

Review of Operations and Future Prospects **pp 3-8**

Significant events referred to in s.15 of CAC Act **pp 3-8**

Staffing overview **51**

ALPHABETICAL INDEX

A

Agrichemicals **19**
AIMS Act **25, 113**
AIMS@JCU **vii, 7**
AIMS Council **55, 59, 67**
Algal Toxins **37, 127, 129**
Antarctica **22, 118**
Antioxidant **21**
Aquaculture **4, 19, 20, 21, 24, 25, 29, 32, 39, 132**
Arafura Timor Research Facility **7, 131**
Audit Committee **58, 60**
Australian National University **7, 40, 131**
Australian Prawn Farmers Association **36, 131**

B

Baited Remote Underwater Video **12, 28, 46, 131**
Banda Islands **126**
Biodiscovery **19, 37, 132**
Biodiversity **3, 11, 27, 28, 29, 32, 39, 41, 50, 121, 126**
Biological productivity **17, 30**
Biomarkers **119**
Bleaching — see Coral Bleaching

C

Catchments and Corals **vii, 3, 4, 15, 18, 30, 45**
Certification **2, 133**
Chairman's Review **3**
China **17, 18, 40, 119**
Cleveland Bay **127**
Clients **25, 51, 65**
Climate change **13, 19, 23, 24, 27, 28, 35, 37, 40**

Coenzyme Q — see Antioxidant
Collaboration **iii, v, 7, 11, 17, 19, 26, 28, 31, 36, 40, 126**
Commercialisation **68**
Conservation and Land Management **131**
Consultancy Advice **62**
Coral bleaching **13, 14, 19, 22, 28, 39, 44, 117, 121, 125, 126**
Coral Records **37, 129**
Corporate Governance **47**
CRC Reef **21, 36, 127, 129, 131**
Crown-of-thorns starfish **10, 12, 13, 126, 131**
CSIRO **11, 36, 55, 128, 129, 131**
Culture Benchmarking Survey **67**
Currents **13, 17**
Customer Satisfaction **41**

D

Daly River **17**
Darwin **7, 15, 17, 18, 30, 40, 44, 45, 50, 127**
Department of Education, Science and Training **129**
Disability Strategy **65**
Diving Standards **43**

E

Environment Australia **28, 41, 64, 126, 128, 129, 131**
Equal Employment Opportunity **65, 131**
External committees and NGOs **36**
External earnings **6, 39**

ALPHABETICAL INDEX

F

Financial statements **58, 133**
Fisheries Research and Development
 Corporation **20, 129**
Freedom of Information **65, 111, 115, 131, 133**
Functions of AIMS **113**

G

GBRMPA **4, 36, 128, 131**
Genetics **19, 22**
Great Barrier Reef Marine Park Authority **3, 13,**
 56, 126, 130, 131
Greenhouse effect/gases **132**

H

Herbicides **39, 40**
Highlights **vii**

I

Infrastructure **17, 46**
Investing and Financing Activities **63**

J

James Cook University **4, 7, 34, 35, 124, 130,**
 131
Joint ventures and strategic alliances **26, 40**

M

Management Events **47**
Mangroves **15, 18**
Marine biotechnology **4, 50**
Marine protected areas **11, 32**
Media coverage **44**
Minister **iv, 6, 31, 37, 46, 47, 50, 55, 56, 58, 113,**
 114, 133
Ministerial Directions **63**
Ministerial Powers of Direction **114**
Mission, Vision and Values **v**
Modelling **17, 31**
Monitoring **11, 12, 39, 41, 117, 121, 126, 129**

N

National Oceanic and Atmospheric
 Administration **40, 130, 131**
Nature Conservancy **14, 33, 126**
Nufarm **24**

O

Occupational Health and Safety **63, 68, 131**
Ord River **18**
Organisational Improvement Plan **55, 67**
Organisational Structure **67**
Output — see Research Output
Output and Outcome Structure **52**

P

Papua New Guinea **17, 123**
Partnerships **7, 29, 32, 51, 114**
Patents **26, 31, 41**
Performance indicators **6, 59, 68**
Policy input **37**
Prawn Domestication **128**
Prizes, awards and associations **31**
Productivity — see Biological Productivity

Q

Queensland Department of Primary Industries
 36, 37, 130

R

Regional marine planning **27**
Remote sensing **13, 40, 117, 118**
Representative Areas Program **11, 28, 37, 128**
Research Groups
 Conservation and Biodiversity **11**
 Coastal Processes **15**
 Marine Biotechnology **19**
Research Output **24, 27, 29, 31, 33, 35, 37, 39,**
 41
Research plan **19**
Runoff **15, 30, 35, 37, 44, 45, 120**
RV Cape Ferguson **43, 44**
RV Lady Basten **43**

S

Sea cucumbers **132**

Seabed biodiversity **vii, 29, 41, 126**

Sea surface temperatures **13, 14**

Sediment **17, 30, 37, 46, 123, 126**

Senior Management Group **6, 51, 57, 59, 67**

Sponges **8, 20, 22, 125**

Stakeholders **iii, 4, 6, 7, 11, 17, 25, 30, 39, 55, 56, 67**

Strategic directions **116**

Sunscreen Technologies Pty Ltd **40**

Sustainable development **iii, 17, 25, 27, 29, 123**

T

Teaching and training **26, 33, 35**

Technology transfer **39**

Tours **44, 45**

ToxiTech Pty Ltd **40, 41**

Triennium Resource Agreement **25, 27**

U

United Nations Educational, Scientific and
Cultural Organisation **131**

University of Canterbury **22**

Upwelling **132**

W

Way We Will Work card **60**

WetPC Pty Ltd **40**

Woodside Energy **41, 126**

Workplace Diversity **65**

