western australian marine science institution

annual report 2007-2008

western australian
marine science institution

better science better decisions

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1. CHAIRMAN'S MESSAGE

Outstanding scientific research and an accelerated timetable that brings timely new research to decision-makers have marked this year as successful, eventful and rewarding, particularly because the Western Australian Marine Science Institution (WAMSI) is little more than two years old.

I am pleased to announce that all its project funds are now committed and that most of its 85 research projects have begun.

Research that began in July 2006 is undergoing its first year of review and a peer validation of its science quality. Projects which began more recently will be reviewed in early 2009 while WAMSI itself will undergo a mid-term program review in 2009 to ensure its progress meets its key performance indicators. WAMSI's initial funding will end at the end of 2011 so much of the focus next year will be on performance and progressing science outcomes.

During the past year the Board and WAMSI's Chief Executive Officer have supported a Kimberley-Browse research consultancy team. Drs Des Mills and Mike Wood developed a science and business case to carry out research in the Kimberley-Browse region into the next decade. It will be presented to the WAMSI Board and Governors on 20 August 2008.

It is with great pleasure that I welcome the Chemistry Centre (WA) as a new partner to our organisation. Another partner now in the process of joining is the WA Department of Planning and Infrastructure, which will take our member numbers to 16.

Much of the year's work involved establishing a lasting legacy for WA's marine and coastal data sets. In November 2007 WAMSI teamed with the Interactive Virtual Environments Centre (iVEC) and the Western Australian Satellite Technology and Applications Consortium (WASTAC) to establish a marine information management system based in a high performance computer facility. A dedicated marine information officer was employed to assist with metadata creation and data archiving in a bid to ensure that the WAMSI marine data sets can be used well into the future.

WAMSI held a well-attended two day seminar, *Marine Science in WA,* in late February. The first day, a Show and Tell series, was held in association with the WA branch of the Australian Marine Scientists' Association. The second day was a mini-symposium about WAMSI's Node 1 research projects. Both days received positive feedback from participants, delegates and organisations.

The annual marine research presentations by Node Leaders and myself were given to WAMSI Governors and the public at the Perth Convention and Exhibition Centre on 12 March. The quality of the science, the quantity of the research being undertaken, its integrated nature and the collaborative approach to the work received critical acclaim from all who attended.

In late May the second annual Ningaloo research symposium, *Discovering Ningaloo: latest findings and their implications for management*, was hosted at Murdoch University and attracted more than 100 people.

During the year WAMSI appointed a Communications Manager to assist WAMSI in getting its messages to the broader community. Communications will be critical to the work currently under way as well as to the prospects of future scientific research and development in the Kimberley.

The first peer science reviews on the quality of its research will conclude in mid-August 2008. Reviews already carried out have found the quality of the research was high. WAMSI partners are ensuring all projects deliver to their full potential and are on time. Links with policy and management agencies remains a high priority for all the WAMSI project teams.

I would like to thank the WAMSI staff members for their work and dedication.

It is with great pleasure that the Governors renewed my Chairmanship for a second year from 1 July 2008.

One of my key tasks will be to steer WAMSI to secure funding for the proposed Kimberley-Browse regional marine science activities. It will be a task I will enjoy and I thank the State Government for its ongoing commitment to WAMSI.

Dr Peter Rogers
WAMSI Chairman

2. INTRODUCTION

The *Western Australian Marine Science Institution* (WAMSI) has been granted $21 million under the Western Australian Government's Major Research Facility Program. The purpose of the Institution is to bring together marine researchers with differing disciplines and skills to build on the marine research capacity already in the State and to pursue world class marine science, technology, education and training for the economic, social and environmental benefits of the State of Western Australia. The focus is on "strategic" marine science, as required and identified through the original WAMSI Business Plan.

The Institution, an unincorporated joint-venture, was officially established on 21 March 2007 with the signing of the WAMSI legal agreements by the Premier which formally marked the coming together of organisations involved in marine research in WA from Commonwealth and State Governments, Western Australian universities and the private sector. The initiating WAMSI parties were:

- Australian Institute of Marine Science
- Bureau of Meteorology
- CSIRO – Wealth from Oceans Flagship
- Curtin University of Technology
- Department of Environment & Conservation (WA)
- Department of Fisheries (WA)
- Department of Industry and Resources (WA)
- Edith Cowan University
- Murdoch University
- The University of Western Australia – also the Centre Agent
- Western Australian Global Ocean Observing System Inc.
- Western Australian Museum

The collaborating foundation industry partners at the commencement of WAMSI are:

- Woodside Energy Limited
- BHP Billiton Petroleum Limited

An additional partner was added in 2007/08: The Chemistry Centre [WA] and the WA Department of Planning and Infrastructure had initiated efforts to become a new party of WAMSI in May 2008.

Each of the parties brings to the Institution an array of capacities including research personnel and funding. We estimate approximately a $84 million endeavor over the next five years including the in-kind and matching contributions. Other parties are likely to be attracted to be part of WAMSI over time with project proposals and new skill sets required. New projects have already been identified to be undertaken under the WAMSI umbrella. As outlined in the Chairman's message, we hope to make WAMSI a sustainable venture into the future beyond the first five years.

3. WAMSI STRATEGIC OBJECTIVES

To achieve its mission, WAMSI has established the following mutually supporting strategic objectives:

Strategic Objectives

- support the conservation, sustainable management and utilisation of Western Australia's unique marine endowment;
- enhance the contribution of strategic scientific and technological research and innovation to Australia's sustainable environmental, social and economic development;
- enhance the transfer of the research outputs into outcomes of economic, environmental and social benefit to Western Australia;
- establish a leading Institution with critical mass for studies and research in marine science in the Indian Ocean region;
- enhance collaboration among and between researchers and industry, and improve efficiency in the use of intellectual and other research resources;
- strengthen the coordination and capacity of marine research in Western Australia and further establish internationally recognised and integrated research groups;
- enhance the opportunities for marine graduate researchers in Western Australia.

3.1 Strategy to deliver on Strategic Objectives – Target Outcomes

WAMSI is developing the capability to undertake world class marine scientific research, technology and training, all of which will provide benefits to Western Australia. The WAMSI "value add" is in enabling the participating Parties, each with differing skills and backgrounds, to add value to each other in a number of ways so that the performance of WAMSI is greater than that of each Party performing independently. We have a clear focus on multi-disciplinary and inter-institutional research which is of a strategic nature.

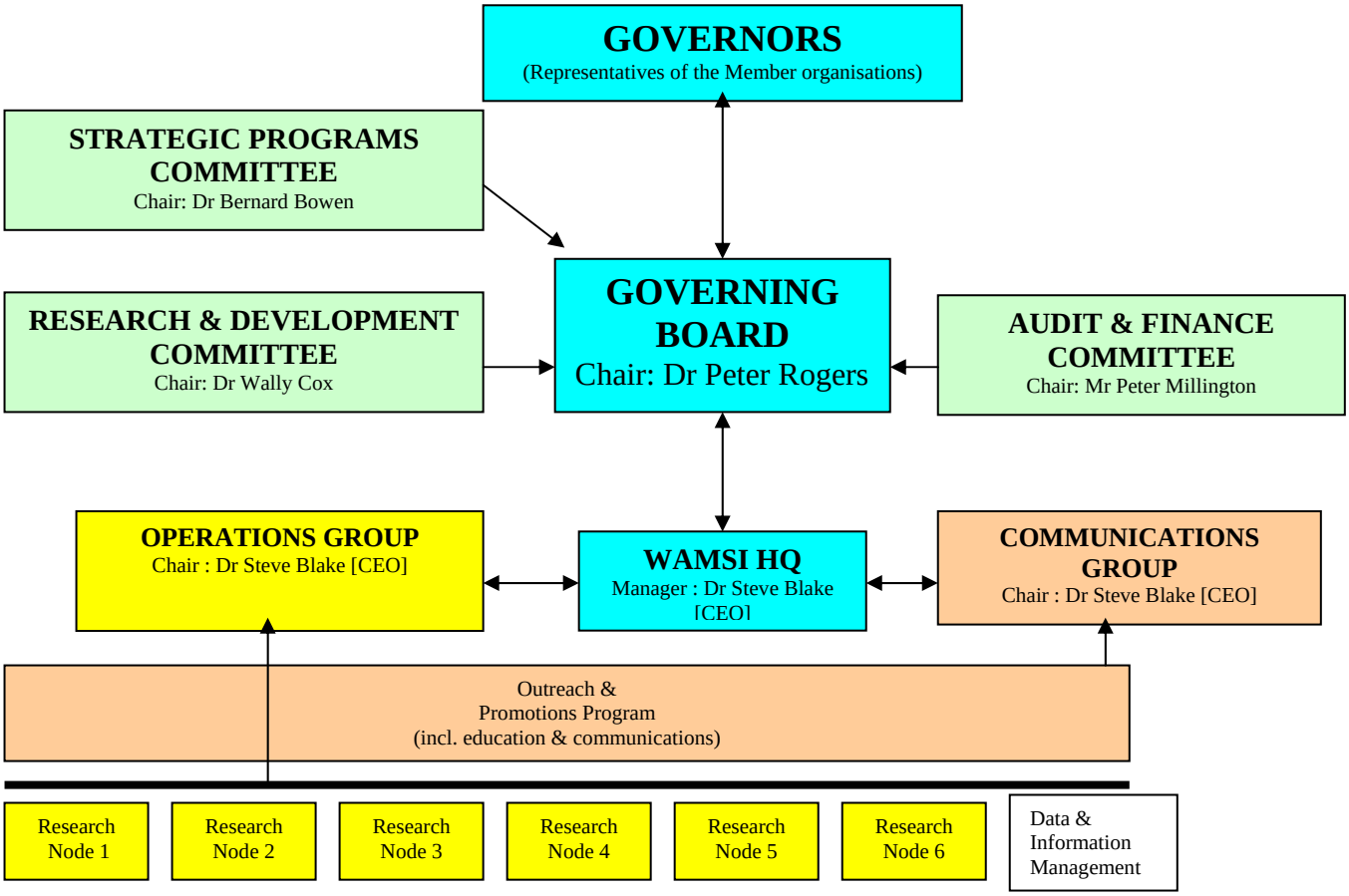
The WAMSI strategic objectives will be delivered by addressing the following target outcomes:

Target Outcomes

- improved coordination of marine science activities in Western Australia;
- improved understanding of the marine ecosystems of WA;
- enhanced predictive capacity to model both natural and anthropogenic effects;
- improved management decisions based on the outputs of the WAMSI research;
- guaranteed ongoing investment in the Institution and the value recognised by the State.

4. WAMSI GOVERNANCE

Below is the governance structure that the WAMSI Board has adopted:



A new Board Committee, the *Strategic Programs Committee*, was added in September 2007 to steer the strategic planning of the organisation and in particular the development of the Kimberley Browse Marine Science and Business Cases. The Committee is Chaired by Dr Bernard Bowen, the inaugural WAMSI Chairman.

Management of resources within research Nodes on the specific research projects approved by the Board is the responsibility of each Research Node Leader on approval of a Node Science Plan and subsequent detailed Project Plans. However, the WAMSI headquarters in association with the Audit & Finance Committee provides oversight and has established the financial and project reporting processes to ensure that capability and performance of the Research Nodes in which investment is occurring, is transparent and sound.

The release of WAMSI funding to projects within each Research Node is contingent upon approval and sign off by the WAMSI R&D Committee and WAMSI Board in terms of a viable Science Plan, detailed Project Plans and an itemised budget outlining defined project consumables, outputs and time frames. There is a clear up-front identification of the new funds, matching cash and in-kind contributions. Additionally, these are set out in Project Agreements which are signed off between the Project Lead Agency, Node Leader and Project Leader, and the Centre Agent [UWA] prior to any

research work commencing. In addition a common data & information management framework is being applied across all six Nodes of research to ensure that the data and information captured live on beyond the life of the projects themselves. This is being coordinated jointly by WAMSI, iVEC and WASTAC with one full-time employee [Mr Luke Edwards] joining WAMSI in March 2008.

Numbers of meetings for 07/08:

Governing Board: 5 meetings
Governors: 2 meetings
R&D Committee: 3 meetings
Audit & Finance Committee: 4 meetings
Strategic Programs Committee: 2 meetings
Operations Group: 3 meetings
Communications Group: 3 meetings

WAMSI SIGNIFICANT DATES 1 July 2007 – 30 June 2008

WAMSI Meetings
WAMSI Governing Board Meetings

03/2007 Thursday 23 August 07	09:00 – 17:00 WA Museum, Welshpool
04/2007 Thursday 8 November 07	09:00 – 17:00 WA Fisheries Marine Research Laboratories
01/2008 Thursday 13 March 08	09:00 - 17:00 DEC Karijini Room, Crawley WA
02/2008 Thursday 12 June 08	09:00 - 17:00 UWA Senate Room
Extraordinary Board Meeting	
14/05/2008	14:40 – 15:45 WAMSI Meeting Room

WAMSI Governors' Meetings – Strategic Planning Day

01/2007 Wednesday 22 August 07	09:00 – 17:00 Tawarri Lodge, Nedlands
01/2008 Wednesday 12 March 08	14:00 – 16:30 Perth Convention & Exhibition Centre

WAMSI Strategic Programs Committee Meetings

01/2008 Friday 15 February 08	08:30 – 10:30 WAMSI Meeting Room
02/2008 Wednesday 21 May 08	09:00 – 10:30 WAMSI Meeting Room

WAMSI Research & Development Committee Meetings

03/2007 Thursday 9 August 07	09:00 – 17:00 WAMSI Meeting Room
04/2007 Monday 29 October 07	09:00 – 17:00 WAMSI Meeting Room
01/2008 Thursday 21 February 08	09:00 – 17:00 WAMSI Meeting Room

WAMSI Audit & Finance Committee Meetings

03/2008 Friday 24 August 07	15:00 – 17:00 WAMSI Meeting Room
04/2008 Tuesday 30 October 07	15:00 – 17:00 WAMSI Meeting Room
01/2008 Thursday 28 February 08	15:00 – 17:00 WAMSI Meeting Room
02/2008 Thursday 29 May 08	15:00 – 17:00 WAMSI Meeting Room

WAMSI Operations Group Meetings

03/2007 Friday 29 June 07	09:00 – 12:00 WAMSI Meeting Room
04/2007 Friday 9 November 07	09:00 – 12:00 WAMSI Meeting Room
01/2008 Tuesday 1 April 08	09:00 – 12:00 WAMSI Meeting Room

WAMSI Communications Group Meetings

03/2008 Friday 20 July 07	09:00 – 12:00 WAMSI Meeting Room
04/2007 Friday 26 November 07	09:00 – 12:00 WAMSI Meeting Room
01/2008 Friday 30 May 08	09:00 – 12:00 WAMSI Meeting Room

WAMSI Kimberley Browse Stakeholder Reference Group (SRG) Meetings

01/2008 Friday 15 February 08	08:30 – 10:30 WAMSI Meeting Room
02/2008 Tuesday 24 June 08	08:30 – 11:30 WAMSI Meeting Room

WAMSI SIGNIFICANT EVENTS 2008

1. WAMSI & AMSA (WA) Marine Science Public Seminar
Show & Tell
Tuesday 26 February 2008 09:00 – 18:00 WA Maritime Museum NWS Shipping Theatre
Southern Surveyor Cruise – Presentation of Preliminary Findings (Node 1)
Wednesday 27 February 2008 09:00 – 17:00 CSIRO Auditorium, Underwood Ave, Floreat

2. WAMSI Kimberley-Browse Marine Science Summit
Tuesday 11 March 2008 09:00 – 17:00 University Club of Western Australia, UWA

3. Node Leader Presentations – Public Seminar
Wednesday 12 March 2008 09:00 – 13:00 PCEC, River View 4 Seminar Room, Level 2

4. WAMSI Kimberley-Browse Marine Science Case Workshop for Node Leaders/Experts (Review draft report, Kimberley Browse Marine science Case & Business Case)
Friday 03 June 2008 08:30 – 15:00 WAMSI Meeting Room

5. WAMSI Kimberley Expeditionary Cruises 2008:

Trip 1	Thursday 5 June – Wednesday 11 June 08
Trip 2	Wednesday 25 June – Thursday 03 July 08

6. Ningaloo Symposium. 28 & 29 May 2008. Murdoch University

Membership of all Committees and Groups, their terms of reference and KPI's are detailed on the WAMSI web site: www.wamsi.org.au

5. WAMSI OPERATIONS

Whilst WAMSI became fully operational on 1 July 2006, the signing of the WAMSI legal agreements on 21 March 2007 was the formal commencement date with the guarantee of flow of funds for the next five years. The aim is still to have WAMSI 1 completed by end-December 2011 based on the above dates.

Science Planning and Project Planning has now concluded with the final funding allocations being awarded by the Board in March 2008. The remaining Board discretionary funds [approx $200K] have been spent on the generation of the Kimberley Browse coupled Marine Science/Business Case to try and secure WAMSI's future.

The WAMSI headquarters, based out of UWA, oversights all the financial and science planning aspects of the WAMSI Program as well as providing full secretariat services for the WAMSI Board, the Strategic Programs Committee, the Research & Development Committee, the Audit & Finance Committee, as well as the Operations and Communications Groups. The headquarters has a staff of four people, a full time Chief Executive Officer, an Executive Officer, a Personal Assistant to the CEO and a part time Communications Manager (3 days per week) all of whom are employed by UWA.

6. WAMSI RESEARCH ACTIVITIES

WAMSI's research is being undertaken through 6 related Nodes of activity. A table of Node projects is attached to this report.

Node 1: Strategic Research on Western Australian Marine Ecosystems

Australia's marine ecosystems are subject to unprecedented and rapidly growing pressures, arising from a set of major drivers: rapid coastal population growth and development, catchment degradation, marine industries, climate change and extreme events. Stakeholders and managers at all levels of government recognise that they lack the information systems and predictive/planning tools needed to responsibly manage coastal and marine development for economic and social benefit, while maintaining high quality public good environmental assets, and a high quality of life.

Node 1 is addressing this lack of information by pursuing science that is of significance nationally and carried out in the context of clearly identified needs in Western Australia. Both Node 1 projects commenced on 1 July 2006 and the third milestone reports for both projects have been received.

Node 2: Climate Processes, Predictability and Impacts in a Warming Ocean

The region of interest is the Indian Ocean and the sub-Antarctic Southern Ocean, upwind from Western Australia in the westerly air-streams. The research is also identifying links between large scale anomalies in oceanic structure and impacts on the marine environment off Western Australia.

Node 2 is putting into place oceanographic research relevant to the climate of Western Australia. It is focusing on identifying ocean-processes that feedback to the atmosphere and give persistence and predictability to climate anomalies. Project 2 commenced on 1 July 2006 and all projects have delivered milestone reports.

Node 3: Managing and Conserving Western Australia's Marine Environment

Western Australia has an outstanding and in many parts a unique marine natural heritage. Conserving Western Australia's biodiversity and unique natural marine heritage in the face of mounting multiple-use pressures requires a sound scientific underpinning.

Node 3 focuses on an improved scientific knowledge base to support the development and implementation of environment and conservation policies and to support decision-making for marine environmental protection, conservation and ecotourism. A particular early focus for Node 3 is on supporting biodiversity conservation and research relevant to managing Western Australia's system of marine reserves especially the Ningaloo Marine Park. One project, 3.3, was not approved by the WAMSI Board and did not proceed. Projects 3.7 & 3.8 have external funding and Project 3.9 is Student Funding. All other projects are underway and producing milestone reports.

Node 4: Sustainable Marine Ecosystems

Management of fisheries must be ecosystem-based because, whilst the maintenance of the target stocks has long been the primary management goal for fisheries agencies, there is now recognition that non-target stocks and the broader ecosystem are also not affected to unacceptable levels.

Node 4 is developing methods and is generating the information needed to assist with the management of the marine ecosystems of Western Australia to meet the principles of Ecologically Sustainable Development. This is termed Ecosystem-based Fisheries Management. The Project Agreements for Projects 4.2 & 4.4 have recently been finalized. All other projects are underway and producing milestone reports.

Node 5: Marine Biotechnology, Biodiversity & Aquaculture

Western Australia's unique marine biodiversity is well recognised as one of the world's mega-diverse environments and provides an opportunity for a biotechnology industry. Drugs derived from bioactive compounds in Western Australian marine organisms are the ultimate goal of a marine biotechnology industry. Node 5 will develop in phase with that of Western Australia's emerging biotechnology industry. The public stakeholder engagement Science Planning workshop has been successfully completed. The Project Agreements for Projects 5.1 & 5.2 are currently being finalised. 5.3 is currently on hold while Project 5.4 is underway and has produced its first Milestone Report.

Node 6: Ocean Science for Offshore and Coastal Engineering

The waters off the North West coast of Western Australia are of national strategic significance as well as being home to the offshore oil and gas industry, one of the most significant components of the Western Australian economy.

Node 6 is focusing on developing an improved understanding of the physical oceanography of the NW Shelf region, aimed at better safety, reliability and economy in the design and operation of offshore oil and gas platforms and pipelines. Node 6 is also exploring the likely impacts of climate change on the WA coastline. The Project Agreements for Projects 6.1 and 6.3 have recently been finalised. Project 6.2 is underway and has produced its first Milestone Report.

7. WAMSI NODE PROJECTS

Node 1	Project Title	Project Leader
1.1	**Southwest Australian Coastal Biochemistry** 1.1.1 Downscaled hydrodynamic models to explore influences on benthic habitat, and the cross-shore and longshore exchange of water, nutrients and particles between the lagoon and shelf regions 1.1.2 Coupled hydrodynamic and biogeochemical models and a quantitative nutrient budget for coastal waters at shelf and lagoon scales 1.1.3 Improved descriptions and conceptual biogeochemical models for shelf and lagoon waters incorporating seasonal and inter-annual variability and improved representation of benthic primary production and bentho-pelagic coupling 1.1.4 Develop simple models for assessing and predicting impacts of physical forcing factors, primarily nutrients, on key benthic functional groups/habitats informed by experiments and observations conducted across a range of naturally varying and anthropogenically altered gradients related to nutrient enrichment	John Keesing CSIRO
1.2	**Coastal ecosystem characterisation, benthic ecology, connectivity and client delivery modules** 1.2.1 An assessment of the importance of physical forcing and ecological interactions among key functional groups in determining patterns of spatial mosaics in benthic habitats 1.2.2 An assessment of key ecosystem processes with particular relevance to contrasting fished and non-fished areas 1.2.3 An assessment of likely dispersal patterns for marine organisms based on hydrodynamic and population genetic models 1.2.4 Electronic delivery of data and models to management agencies, building on the development of the Data Interrogation and Visualisation Environment (DIVE)	John Keesing CSIRO

Node 2	Project Title	Project Leader
2.1	**Dynamics and predictability of the Indo-Pacific Ocean as a global condition on marine climate impacts in WA** 2.1.1 Assessment of the skill of POAMA for prediction and simulation of large-scale variations of the Indian and Pacific Oceans and their relationship with the Leeuwin Current 2.1.2 Assessment and improved understanding of the limits of predictability of large-scale variations of the Indo-Pacific that drive variability of the Western Australian marine environment 2.1.3 Understanding the impact of an imperfect ocean observing system in the Indian Ocean basin for predictability and representation of the large-scale Indian Ocean circulation 2.1.4 Understanding of the impact of the role of intra-seasonal variability for prediction and evolution of large-scale circulation in Indian Ocean 2.1.5 Delivery of experimental seasonal forecasting products tailored to the WA marine environment available on the web	Harry Hendon BUREAU OF METEOROLOGY
2.2	**Dynamics and impacts of the Leeuwin Current on the marine environment of WA** 2.2.1 An understanding of the mechanism of warming in the tropical eastern Indian Ocean 2.2.2 An understanding of the multi-decadal trends in the Leeuwin Current 2.2.3 An improved understanding of the response of the Leeuwin Current system to inter-annual climate variability by using BLUELink model simulations 2.2.4 An understanding of the role of the Leeuwin Current eddies in cross-shelf transport. 2.2.5 Projected future changes in the Leeuwin Current system 2.2.6 Model-data archive and report on downscaled, regional (10 km) climate change scenario of the marine environment	Ming Feng CSIRO
2.3	**Oceanic conditions at Ningaloo Reef – analysis of downscaling ocean climate into the Ningaloo Reef Tract** 2.3.1 A robust model of the circulation within the Ningaloo Marine Tract (NRT)	Richard Brinkman AIMS

	2.3.2 Understanding of the interaction of the circulation in the NRT and the Leeuwin Current system under present and project future climate conditions 2.3.3 Report on the impacts of projected climate change scenarios downscaled from ocean basin to spatial scales relevant to the Ningaloo Reef ecosystems	

Node 3	Project Title	Project Leader
3.1	**Biodiversity assessment and development of cost-effective monitoring protocols.** 3.1.1 Deepwater Communities at Ningaloo Reef 3.1.2 Methods for Monitoring the Health of Benthic Communities 3.1.3 Stock Assessment of Target Invertebrates at Ningaloo Reef 3.1.4 Local and Regional Migratory Patterns of Whale Sharks 3.1.5 Habitat and biodiversity surveys in the deep waters of the Ningaloo Marine Park 3.1.6 Physical oceanography of the Ningaloo Marine Park	Andrew Heywood AIMS
3.2	**Biodiversity assessment, ecosystem impacts of human usage and management strategy evaluation.** 3.2.1 Diversity, abundance and habitat utilisation of sharks and rays 3.2.2 Ecosystem impacts of human usage and the effectiveness of zoning for biodiversity conservation 3.2.3 Management Strategy Evaluation 3.2.4 Impacts of human usage, oceanography and management strategy evaluation	Russ Babcock CSIRO
3.3	Not approved	
3.4	**Characterisation of geomorphology and surficial sediments.**	Lindsay Collins CURTIN UNIVERSITY OF TECHNOLOGY
3.5	**Characterisation and modelling of oceanographic processes and biodiversity assessment.** 3.5.1 Characterisation and modelling of oceanic processes 3.5.2 Spatial and temporal variation in habitat use by demersal tropical fish [PhD topic]	Charitha Pattiaratchi UWA

3.6	**Biodiversity conservation, education and communication.** 3.6.1 Biodiversity assessment of subterranean aquatic fauna 3.6.2 Assessment of the nature and levels of human usage 3.6.3 Assessment of the effectiveness of large marine fauna monitoring programs 3.6.4 Communications program 3.6.5 Post-graduate seed funding program	Chris Simpson DEC
3.7	**SRFME Carryover projects – Jurien Bay** 3.7.1 Ecological interactions in coastal marine ecosystems: trophodynamics 3.7.2 Ecological interactions in coastal marine ecosystems: rock lobster 3.7.3 Ecophysiology of benthic primary producers 3.7.4 Biodiversity of marine fauna on the central west coast 3.7.5 Communities and main fish populations of the Jurien Bay marine park 3.7.6 Consequences of reduced light availability in seagrass meadows	Chris Simpson DEC
3.8	**North West Marine Research Inventory** Project funded by National Ocean Office, State Departments and Industry	Mr Timothy Skewes CSIRO
3.9	**Post Graduate Seed Funding Program** 3.9.1 Characterisation of geomorphology and surficial sediments 3.9.2 The policy relevant of Choice Modelling	Chris Simpson DEC
3.10	**Biodiversity Assessment of Subterranean Aquatic Fauna and Groundwater**	Chris Simpson DEC

Node 4	Project Title	Project Leader
4.1	**Applying the EBFM Framework** 4.1.1 Conceptual framework for Ecosystem Based Fisheries Management [EBFM] 4.1.2 EBFM linkages 4.1.3 Node Level Project Administration Activities	Dan Gaughan WA FISHERIES
4.2	**Assessment of Community structure, biodiversity, habitat and climate change and the impact of anthropogenic influences** 4.2.1 Development of bioregional level assessments of the status of community structure based on fishery dependent and/or fishery independent data 4.2.2 Establishment of Indicator regions for long term monitoring and assessment 4.2.3 Establishment of fishery-dependent indicators of climate change 4.2.4. Cost effective ongoing, general biodiversity and habitat monitoring methods	Jessica Meuwig UWA
4.3	**Trophic interactions and ecosystem modelling** 4.3.1 Trophic interactions 4.3.2 Ecosystem modelling	Lynda Bellchambers MURDOCH UNIVERSITY
4.4	**Captured species assessments** 4.4.1 Assessment and monitoring methods for by-catch species composition and abundance 4.4.2 Implications of mobility and stock structure of species for management approaches 4.4.3 Development of cost-effective methods for monitoring the catch of the non-commercial sector	Richard Campbell WA FISHERIES
4.5	**Socio-economic implications** 4.5.1 A review of the methods for completing social and economic assessments for use in EBFM 4.5.2 Modelling Recreational Fishing Behaviour 4.5.3 Pilot study to develop a socio-economic assessment of fisheries (commercial and recreational) in the West Coast Bioregion	Malcolm Tull MURDOCH UNIVERSITY

Node 5	Project Title	Project Leader
5.1	**Marine biodiscovery and biotechnology – Western Australia marine bioresources library** 5.1.1 Marine Bioresources Policy Advice 5.1.2 Marine Bioresources Library Development	Libby Evans-Illidge AIMS & Jane Fromont WA Museum
5.2	**BioMolecular diversity and partnered biodiscovery** 5.2.1 Anti-tumour Discovery WAIMR *5.2.2 Biopharmica (NH & MRC) – no funding requested and not in Project Agreement* 5.2.3 *Changed to 5.4*	Peter Leedman UWA - WA Institute of Medical Research
5.3	**Bioproduction** 5.3.1 In-sea Aquacultured Bioproducts 5.3.2 Aquaculture Bioproduct Target Review	M Borowitzka MURDOCH UNIVERSITY C Battershill AIMS Project on Hold
5.4	**Quorum Sensing**	David Sutton UWA
5.5	**Production of Bioactive Metabolites by Bacteria**	David Sutton UWA

Node 6	Project Title	Project Leader
6.1	**Offshore and coastal engineering and the effects of climate change**	Charitha Pattiaratchi UWA
6.2	**Impact of internal waves on offshore engineering** 6.2.1 Understand the evolution of internal waves as they propagate from the Shelf Break to NRA 6.2.2 The dissipation of internal waves in shallow waters near NRA 6.2.3 The mechanism of internal wave generation at Shelf Break, North Rankin 6.2.4 The mechanism of internal wave generation in Browse Basin 6.2.5 Internal wave generation in Browse Basin 6.2.6 Internal wave dynamics and ocean climatology in Browse Basin	Greg Ivey UWA
6.3	**Western Australian Integrated Marine Observation System**	Charitha Pattiaratchi UWA

8. OTHER SIGNIFICANT EVENTS/ PRODUCTS

Kimberley Browse Summit. This event was held on 11 March 2008 at the University Club of WA and was attended by over 44 delegates representing all stakeholder groups in the Kimberley region with The event was highly successful and representation was at the Director-General and CEO level. This activity informed the development of the Kimberley Browse Marine Science Case/ Plan.

WAMSI Strategic Planning 2007-12. The WAMSI Board, Governors, Node Leaders and HQ staff attended WAMSI's first strategic planning initiative on 22 August 2007. This was heralded a great success by the Director-General of DoIR and other attendees. WAMSI now monitors progress against the strategic plan at each Board meeting and also at the annual strategic planning meeting with Governors and Board members.

WA Marine Science Show-and-Tell event. This event was held jointly with Australian Marine Science Association [AMSA-WA] on 26 February 2008 with approximately 200 people attending. The feedback received was again very positive and it is hoped that this event will be run annually in conjunction with the WA branch of AMSA-WA.

WAMSI PhD Top-Up Scholarships. 16 PhD top-up Scholarships have now been awarded as part of the WAMSI Education Program. We have an overall target of 20 PhD scholarships over the life of WAMSI. Several post-doctoral appointments have also been made as part of the Project Agreements.

Kimberley Browse Stakeholder Reference Group. This Group was established as a result of the Kimberley Browse Summit. Chaired by Dr Barry Carbon, the Group has assisted with guiding the drafting of the Kimberley Browse Science and Business Case.

Presentation to Australian Marine Science Association. The CEO gave a presentation to the AMSA Conference in Melbourne 10 – 13 July 2007.

Presentation at WA Science meets Parliament Day. 14 August 2007 at the request of the WA Chief Scientist.

Presentation to Commonwealth Government agencies. The CEO presented on WAMSI to the three Commonwealth Government partners in WAMSI: CSIRO [Cleveland & Hobart], AIMS [Townsville] and BoM [Melbourne] in late November 2007.

9. MAJOR ACHIEVEMENTS TO DATE

1. ***WAMSI Program underway*****.** Whilst a highly ambitious and unique venture, the Parties have worked well together to bring the early collaborative vision for WAMSI to fruition.

2. ***Research well underway***. Eighty five sub-projects underway. First projects delivering science outputs. All Nodes active. Over 200 scientists working on WAMSI projects.

3. ***Joint Venture parties have been very generous with their matching and in-kind contributions***. At least $63 million has been contributed by the Parties to supplement the WAMSI Program MRF funds. This up-front investment now needs to be fully capitalised on.

4. ***Internal business processes in place***. All WAMSI business processes have been approved, in place and are fully operational. The independent Audit Report for 07/08 by *Stantons International* indicated the same giving the operational and financial aspects of WAMSI a clean bill of health.

5. ***Governance operating well***. All Committees and Groups active and notes of meeting captured and reviewed. WAMSI Board highly effective and self-assessment review being undertaken. Committee reviews completed. Dr Peter Rogers took over from Dr Bernard Bowen as Independent Chairman on the Governing Board on 1 July 2007. WAMSI Governance model widely held up as "best-practice".

6. ***Communications underway***. With the finalization of the WAMSI Communications Plan and the appointment of a Communications Manager in June 2008, WAMSI is now better able to deliver the research messages. Individual Node Communications plans are under development to specifically communicate the outputs from each Node of activity.

7. ***Linkages with other State/ national bodies***. WAMSI is already partnering with organisations outside the initial membership eg. National Oceans Office, Australian National University, Geoscience Australia, Western Australian Energy Research Alliance, Western Australian Institute for Medical Research, Department of Planning & Infrastructure, Integrated Marine Observing Systems. etc.

8. ***Ongoing close linkages with Minister for Science, relevant State Govt Ministers and WA Chief Scientist***. Regular contact with Premiers Science and Innovation Council.

9. ***Closer linkages made with key industry stakeholders***. Working with industry to grow the WAMSI business, in particular the oil and gas sector. INPEX and Chevron sponsored the NW Inventory project and BHP awarded two full WAMSI scholarships in the F/Y.

10. LIST OF PUBLICATIONS & PRESENTATIONS FROM WAMSI NODES.

Node 1 & 2

IN PRESS - 2007/2008

Alory, G. and Meyers, G. (2007): Warming of the upper equatorial Indian Ocean and changes in the heat budget (1960-2000). Manuscript submitted to Journal of Climate.

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