

# Marine Conservation Matters

A Newsletter about Marine Conservation in CALM

June 2001

## FOOD FOR THOUGHT

A recent article entitled *Absent Friends* by Hugh Edwards<sup>1</sup> in the local fishing paper *West Coast Fisherman* provides ample food for thought. The article (Vol 2, Issue 8) is an historical account of changes in fish populations at Rottnest Island over the past 40–50 years. According to Hugh many of the large 'resident' fish species that were abundant in the 50s and 60s were rare or absent altogether by the 70s. In the early days large cod over ~100 kg were common and a 645 kg Queensland grouper or giant cod was caught on a shark line out of Thompsons Bay after choking on a seven foot shark that had first taken the hook.

Other popular target species such as large blue groper were common in Rottnest bays, baldchin groupers were a common sight around reef lumps in Thompsons Bay and dhufish were plentiful with big schools often seen at Longreach and Dyers Island. Numerous other fish species that were once abundant at Rottnest are now rarely seen or absent altogether. The only abundant remaining large species are the ones that are not sought by fishermen, such as buff bream and dusky morwong. The other changes to the marine food web as a result of the loss of most of the large predatory fish species are completely unknown but likely to be just as significant. The reason for the demise of the large fish, according to Hugh Edwards, is obvious and was the result of '... gross over-fishing'.

The changes in the fish populations at Rottnest Island over the past four or five decades have substantially reduced the intrinsic 'value' of Rottnest waters as well as diminished their value for nature appreciation, fishing and marine tourism. Most current visitors to Rottnest would be completely unaware of these changes under the water; the island is still as beautiful as ever and the waters are still crystal clear and deep blue. However, a diver's experience would be similar to, as Dayton *et al.* (1998)<sup>2</sup> recently wrote in describing a similar demise of large fish in the giant kelp forests off California, "...studying the Serengeti after all the large grazers and carnivores were eliminated: one could still appreciate termites and other small grazers, but one's expectations of nature pale beside what it used to be".

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<sup>1</sup> Hugh Edwards is a well-known Western Australian diver and author and, in the early 60s, was involved in finding the Dutch wreck *Batavia* which was wrecked in 1629 at the Abrolhos Islands off Geraldton.

<sup>2</sup> Ecological Applications. Vol. 8, No. 2.

## Role of the MPRSAC

The Marine Parks and Reserves Scientific Advisory Committee (MPRSAC) is a statutory committee appointed by the Minister for the Environment and Heritage. The Committee has seven members including a senior scientific officer from each of CALM, Fisheries WA and the WA Museum; a scientist from a tertiary educational or research institution; a scientist not employed by the State or Commonwealth governments; and two scientists who have knowledge and experience relevant to the functions of the Committee. Dr Chris Simpson, Manager of CALM's Marine Conservation Branch is the current Chair of the Committee. The other members of the committee are Dr Iva Stejkal, formerly of Apache Energy; Dr James Penn, Director, Research Fisheries Department; Dr Paddy Berry, Director, Museum of Natural History; Dr Andrew Heyward, Scientist in Charge, Australian Institute of Marine Science; Dr Louis Evans, Associate Professor of Biomedical Sciences; Dr Jackie Alder, Department of Environmental Management, Edith Cowan University.

The functions of the Committee are:

- to provide scientific advice to the Minister, where the Minister has sought that advice, on issues relevant to the conservation of—marine and estuarine fauna, flora and environments, and marine reserves;
- to provide scientific advice to the Marine Parks and Reserves Authority—
  - (i) where the functions of the Authority may be affected by a matter being considered by the Committee;
  - (ii) on matters referred to the Committee by the Authority; and
  - (iii) on matters which, in the opinion of the Committee, should be brought to the attention of the Authority.

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## IMPORTANT NEWS IN THIS ISSUE

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## MARINE RESERVE IMPLEMENTATION

### Proposed Jurien Bay Marine Park

#### Public submissions update

The three-month statutory public submission period for the Indicative Management Plan (IMP) of the proposed Jurien Bay Marine Park closed on 5 January 2001. More than 80 written and pro-forma submissions were received and there were more than 400 'hits' on the CALM website location containing the IMP. A summary of all public submissions was compiled by the Marine Conservation Branch and forwarded to the MPRA for their consideration at their 19 April meeting. The overwhelming majority of submissions were supportive of the proposed marine park. Two stakeholder groups did not support the IMP. As expected most concern focused on the proposed zoning scheme of the park. Once the MPRA has considered the submissions, the IMP will be revised accordingly, if appropriate, and finalised. Once the IMP is finalised the process will focus on the gazettal of the park later this year.

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#### Public participation program

We all have our preferences when it comes to communication. For some, there is nothing like reading. For others, the message doesn't get through without the use of technology, while the rest of us prefer a personal chat. The communication strategy to encourage and facilitate community input into the planning process for the proposed Jurien Bay Marine Park has accommodated all of these communication preferences.

For the readers, the Indicative Management Plan and summary brochure were distributed throughout the State

along with articles and notices in newspapers and specialist magazines. In addition, notices were posted in local shop windows and other public areas, while letters were sent to local community organisations and State peak bodies.

A web site with submission facilities together with audiovisual presentations and radio interviews provided a technological component and meetings, school presentations, open office days in central west coast towns and numerous one-on-one discussions provided the personal touch.

The statutory three-month public submission period closed on 5 January and a summary of public response to this communication effort will be provided in the next issue of Marine Conservation Matters.

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Eye catching local children's posters were used to encourage public comment on the proposed Jurien Bay marine park.

#### Cervantes School children help public submissions

The work of local artists and students at Cervantes Primary School has been used by CALM in posters about the proposed marine park. Kylie Brown, Jesse Chandler-Cox and both Hayley and Ashley Paulinski created underwater scenes and pictures of boats and fishing to encourage members of the community to prepare written submissions in relation to the draft management plan.

Children's art is always bright and eye-catching and the work we received from these four students was excellent—congratulations. The children's involvement in this project emphasises that the whole community has a part to play in planning the proposed marine park.

Contact: Dr Sue Osborne, Community Liaison Officer, Marine Conservation Branch  
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Lauren Monks (left) and Dr Sue Osborne were two of the CALM staff involved in the Central West Coast open office days.



## Proposed Pilbara marine conservation reserves

### Dampier Archipelago/Cape Preston proposal

The Advisory Committee for the Dampier Archipelago/Cape Preston area met for the second time in November 2000. One of the major issues discussed at the meeting was whether the Port of Dampier should be included in the reserve. As the Dampier Port Area is currently vested in the Dampier Port Authority, the legalities of the same area being vested in the MPRA as a CALM Act marine conservation reserve were questioned. Legal advice has been subsequently sought from the Crown Solicitors Office (CSO). Representatives from Woodside, Hamersley Iron and Dampier Salt gave presentations to the Committee on the value of the area for industry and possible future industrial developments relevant to the marine planning process.

The Pilbara Native Title Service and a representative from the Kurrama Group gave a presentation to the Committee on the issues of interest to indigenous people in the area. The Committee is keen to obtain more input from other indigenous groups in the area so that they have a better understanding of all the issues relevant to the indigenous community.

At the third meeting of the Committee during February 2001, CSO advice with regard to the inclusion of the Port of Dampier was presented to the Committee. The advice was that a CALM Act marine conservation reserve could not be created over the Dampier Port Area. As such, this area will be excluded from the marine conservation reserve proposal. Further to this advice, discussions are ongoing with the Dampier Port Authority regarding the current port boundary and possible excision of areas of high conservation value areas from the port area. The Committee also considered draft management objectives for the social values of the proposed marine conservation reserve.

At their last meeting the Committee expressed a desire to have more community involvement in the development of this reserve proposal. If you would like more information about this reserve proposal or would like to become involved please contact Liesl Jonker, Marine Conservation Branch (9432 5119) or Fran Stanley, CALM Karratha (9143 1488).

This project is partly funded by the Commonwealth Government's Natural Heritage Trust Marine Protected Areas Program.

**Contact:** Andrew Hill, Senior Marine Planner, Marine Conservation Branch or Fran Stanley, Reserves Management Officer, Pilbara Region, Karratha  
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*Training course participants at Dandaragan Shire Offices in Jurien Bay.*

### Staff training for Jurien public submission period

One of the main objectives of involving the public in marine reserve planning and management is to engender a sense of community ownership and stewardship. To encourage and facilitate local community involvement in the statutory public submission phase for the proposed Jurien Bay Marine Park, a short training course was delivered to CALM staff and staff from the Dandaragan Shire in early November 2000. Sue Osborne, Chris Simpson and Nigel Sercombe provided a general background about the proposed Jurien Bay Marine Park and planning process and explained the development of the Indicative Management Plan. The course prepared staff for public enquires about the marine park proposal and provided them with the necessary information to assist members of the community with the preparation of their submissions.

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## FOOD FOR THOUGHT

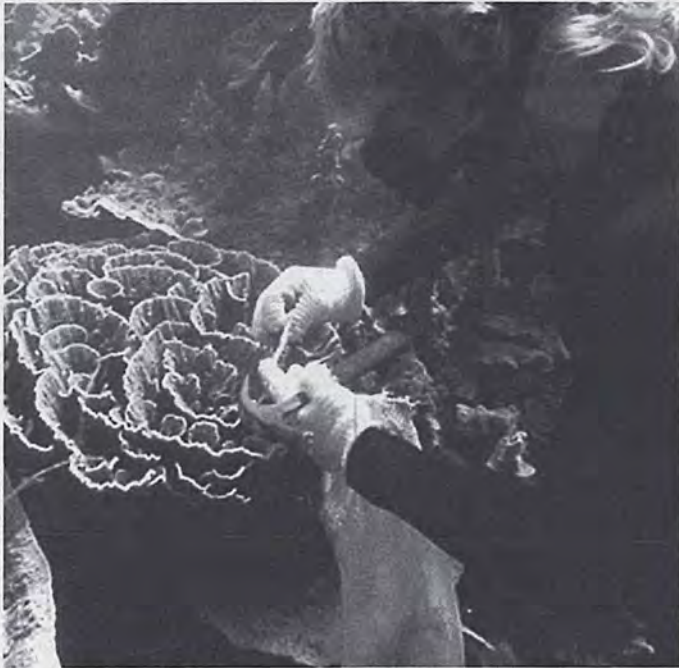
*Continued from page 1*

Conservation of marine biodiversity is a popular topic these days and people support the idea of maintaining the diversity and abundance of our marine life. How do we achieve this if we have no idea what the 'natural state' is or should be? The absence of baseline data or benchmarks makes it difficult to detect, before it is too late, all but the most obvious undesirable human-induced changes. **A system of statewide marine scientific reference sites is needed, as a matter of priority, in representative 'undisturbed' locations along our coastline to provide the essential data.** Hopefully, then, future generations will also have the opportunity to see the full range of marine biodiversity of places like Rottnest in the 1960s.





## Proposed Pilbara marine conservation reserves



*A diver surveying coral communities in Ningaloo Marine Park.*

### AIMS coral larval dispersion study

The Australian Institute of Marine Science (AIMS) will continue to develop a fine-scale computer modelling capability for the prediction of intricate flow patterns within the proposed Dampier Archipelago/Cape Preston marine conservation reserve study area. Current meters and coral larval settlement plates were deployed around the archipelago for the coral spawning period in March/April 2001 and the data will be used to fine-tune computer models of these currents and coral recruitment processes. CALM is providing operational and scientific support where possible.

These studies will continue to contribute to the development of a technical information base that will be useful in both the planning and ongoing management of the proposed marine reserve. For example, the identification of major coral larvae source and sink reefs will provide valuable information in regard to the location of potential sanctuary zones in the proposed marine conservation reserve. This work follows on from the detailed oceanographic study undertaken by AIMS in the northern section of Ningaloo Marine Park.

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### Montebellos/Barrow Island proposal

The Montebellos/Barrow Island Advisory Committee met for the second time in December 2000 and again in March 2001. Pressures on the ecological values were identified and draft management targets were developed for each value. Management objectives and strategies for social and ecological values of the area have been considered with on-going input from the sector reference groups.

The Committee also discussed various options for the most appropriate category of marine conservation reserve (i.e. marine management area, marine park or marine nature reserve) and possible zoning options. These issues will be discussed further at the August meeting. CALM will continue to liaise with sector reference groups in the meantime.

This project is partly funded by the Commonwealth Government's Natural Heritage Trust Marine Protected Areas Program.

**Contact:** Andrew Hill, Senior Marine Planner, Marine Conservation Branch or Fran Stanley, Reserves Management Officer, Pilbara Region, Karratha  
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### Rowley Shoals Marine Park management plans

The draft management plan for the Rowley Shoals Marine Park (RSMP) and the Indicative Management Plan for the extensions to the RSMP are almost finalised. A meeting was held recently with Fisheries WA to clarify a few remaining issues. The plans will be forwarded shortly to the Minister for the Environment and Heritage and then to the Minister for Fisheries and the Minister for Mines seeking their concurrence to issue a Notice of Intent to release the plans for the three-month public submission period.

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## Proposed Geographe Bay/Leeuwin -Naturaliste/Hardy Inlet marine conservation reserve

The resource assessment phase of the planning process for a proposed marine conservation reserve in the Geographe Bay/Leeuwin-Naturaliste/Hardy Inlet region is near completion. A comprehensive information framework for the biological and social values of the area has been developed to assist this process. Information has been gathered by CALM in liaison with other agencies, such as Fisheries WA, and community groups to ensure there is adequate background information to support the planning process.

A visit to the area in January by Kylie Ryan provided further opportunities for community consultation with key user groups to fill gaps in knowledge about the human use of the area. Aerial surveillance data gathered by CALM Officer Steve Ward during the Easter periods of 1999 and 2000 has been used to assess the range and level of recreational activities. Work has also commenced on the preparation of a report on the distribution of marine wildlife in the area.

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*The picturesque Leeuwin Naturaliste coastline in our State's south.*

## MARINE RESERVE MANAGEMENT



*Ningaloo Marine Park has some of WA's most beautiful scenery and is enjoyed by a wide variety of recreational users.*

## Ningaloo Marine Park

### Report on human use

A report entitled *Human Usage of the Ningaloo Marine Park* was finalised in March 2001. The report outlines spatial and temporal patterns of human usage in the marine park and has been compiled by the Marine Conservation Branch and CALM's Exmouth District to assist in the review of the Ningaloo Marine Park management plan. Human usage information included in the report includes adjoining land tenure, urban and tourism development, maritime infrastructure, commercial and recreational fishing, camping, surfing and dive sites, shipping activity and marine tourism operations to name a few. All data have been entered on the Marine Conservation Branch GIS.

Although the data presented in the report are undoubtedly incomplete, they provide a useful contribution to gathering these types of data and, importantly, a framework that can be used to include further data as they become available. Information on the spatial and temporal patterns of human usage not only assists in day-to-day management of marine conservation reserves but provides the basis to design appropriate research and monitoring programs.

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## Macroalgae habitats surveyed

The Marine Conservation Branch and CALM's Exmouth District recently conducted a field survey of macroalgae habitats in Ningaloo Marine Park (NMP). The objective of this survey was to provide an indication of the accuracy of the classification of this habitat in the NMP habitat map that has been prepared to assist in the management of NMP and the review of the NMP management plan. More than 150 sites classified as macroalgae habitat were visited during the survey.

Large macrophytes are generally not abundant in undisturbed tropical coral reef systems due to intense grazing by fish and other herbivores. The establishment of permanent long-term monitoring sites along the entire length of Ningaloo Marine Park over the past three years has provided a broader perspective on the extent of the macroalgae communities within the Park. These communities are far more extensive than previously thought and are clearly an important component of the primary producers of this ecosystem. More abundant during summer, these communities 'die-off' considerably during the cooler winter months.

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## Temperature monitoring network

Monitoring water temperatures during summer and autumn provides an important check on the health of our tropical marine parks. Coral communities are susceptible to 'bleaching' by naturally elevated sea temperatures—this issue becomes even more critical when ocean temperatures are rising as a result of global warming. The world was alerted to the severe effects of elevated sea temperatures on corals during the catastrophic bleaching event in early 1998. Significant coral mortalities (up to 95 per cent in some areas) occurred at many Indo-Pacific locations such as the Maldives, Seychelles, Scott Reef (off north-west Australia), Indonesia, Philippines, Japan and the Great Barrier Reef.

A NOAA<sup>1</sup> HOTSPOTS website reports on satellite-derived sea-surface temperatures from all of the world's coral reefs at spatial resolutions of about 50 km, to help predict potential coral bleaching events. The usefulness of these data at scales of 10 km or less within complex reef systems is unclear. To address this issue the Marine Conservation Branch, in collaboration with CALM's Broome and Exmouth District offices and help from local tourism operators, have recently deployed temperature loggers in Ningaloo and Rowley Shoals marine parks.

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<sup>1</sup> USA National Oceanic and Atmospheric Administration



*The prawning trawler Quobba ran aground on a reef in the northern part of the Ningaloo Marine Park.*

## Trawler runs aground in Ningaloo Marine Park

The prawning trawler Quobba ran aground on a reef in the northern part of Ningaloo Marine Park on 20 February 2001. The trawler, which was en route to Port Samson, remained on the reef for five days and was finally towed from the reef on the 25 February. The stricken vessel had 20,000 litres of diesel on board as well as various chemicals used in the cleaning of pearl shells. Environmental concerns related to the impact of a potential fuel spill on the mangrove communities within the Mangrove Sanctuary Zone. These communities were directly downwind of the stranded trawler. Oil booms were deployed around the mangroves as a precautionary measure by CALM, Department of Transport and other Government agencies involved in combating oil spills at sea. Local defence force personnel and the State Emergency Service also provided assistance. Fortunately, the salvage operation was successful and no fuel was spilt while the vessel was stranded or during the salvage operation.

The offshore waters of the marine park are part of the international shipping routes between southern Australia and Asia and, as such, many hundreds of large ships pass through the waters of the park every year. This level of shipping represents a real risk to the park. The stranding of the Quobba was the second time in six months that a trawler has run aground on the outer reef of Ningaloo Marine Park. The Quobba incident provided a real-life opportunity to test oil spill response capabilities within the Park; one that was passed with flying colours. Congratulations to all involved. A survey of the reef to assess the impact of the grounding will be undertaken. Several permanent long-term monitoring sites are located in the vicinity of the grounding and these sites may be useful in assessing the impacts on the benthic communities at the grounding site.

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## Tropical fish spawning sites report

Mark Westera and Dr Glynn Hyndes, from Edith Cowan University, recently completed a report on *Factors influencing spawning sites of tropical fish species*. The report was commissioned by the Marine Conservation Branch to assist in the review of the Ningaloo Marine Park management plan and in the planning of the two proposed Pilbara marine conservation reserves. As there are limited scientific data on the location of fish spawning sites in the tropical coastal areas of Western Australia, the study reviewed Australian and overseas literature relating to spawning aggregations of tropical reef fish with the objective of deriving a simple 'rule of thumb' to locate potential fish spawning sites.

The report will assist in assessing the adequacy of existing sanctuary zones in Ningaloo Marine Park in relation to potential fish spawning sites and in maximizing the benefit of potential sanctuary zones in the Pilbara marine conservation reserves by including potential fish spawning sites where possible. The inclusion of fish spawning sites in sanctuary zones of marine conservation reserves not only has benefits for marine biodiversity conservation but, should also help recreational and commercial fisheries management as well.

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## Review of the oceanography

A comprehensive review of the oceanography of Ningaloo Marine Park has now been prepared as a draft report by the Marine Conservation Branch, bringing together the current state of knowledge on this subject in preparation for the review of the park's management plan. Oceanographers Associate Professor Charitha Pattiaratchi from UWA and Alan Pearce from CSIRO have assisted by reviewing the draft report.

The lagoonal regions within the park have their internal circulation patterns driven primarily by water that is pumped over the barrier reef by swell waves. The main escape route for lagoonal waters is through the gaps in the 300 km long reef. Although less prominent than the effect of waves, tides and winds provide important modulating influences on flushing. Once out into the ocean, the lagoonal waters become involved in one of two main circulation patterns. First, some of the water is driven back into the lagoons by wave-pumping over the adjacent reef top. Second, some of the water is entrained into the north-south flowing currents adjacent to the reef (in spring/summer it is the northward Ningaloo Current and in autumn/winter it is the southward flowing Leeuwin Current). These flow patterns transport propagules and larvae and assist in understanding the natural ecological characteristics of the region. An improved understanding of currents also

assists CALM in combating the potential impacts of oil spills in the park from shipping accidents such as the trawler Quobba (see article in this issue).

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## Metropolitan reserves

### Management targets for wastewater

About 50 scientists and managers, including several CALM staff, attended a workshop held by the Water Corporation of Western Australia to discuss the development of management targets in relation to the treated wastewater discharges into Marmion Marine Park (MMP). Several members of the Marine Parks and Reserves Authority (MPRA) and the Marine Parks and Reserves Scientific Advisory Committee also attended the workshop which was chaired by the Chairman of the Environmental Protection Authority (EPA).

As the MMP is vested in the MPRA the setting of management targets is a matter of keen interest to the Authority. However the EPA is developing a statewide coastal waters Environmental Protection Policy which includes the waters of MMP. Furthermore wastewater discharge limits into the MMP are set by pollution control regulations administered by the Department of Environmental Protection (DEP). This means that the management targets that the MPRA set must be reconciled with the requirements of the EPA and the DEP and vice versa.

The MPRA have discussed this issue at several meetings over the past two years and have provided preliminary advice to the DEP and the Water Corporation in regard to management targets for MMP. The MPRA position is that the wastewater discharges should not have any impact on the ecological or social values of the park apart from a designated zone immediately around the outfalls. The precise area and the levels of acceptable change inside this zone require further consideration. The MPRA indicated that the EPA document Perth's Coastal Waters: Environmental Values and Objectives provides a good indication of their position on these issues. Once the management targets are clearly defined the Water Corporation's monitoring program will be revised to specifically address compliance with these targets.

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### Funding for Swan Estuary Marine Park

Alfred Cove, along with Milyu and Pelican Point, forms the Swan Estuary Marine Park and Adjacent Nature Reserves. These three areas provide the only significant feeding and resting areas for both local and migratory shore birds on the Swan Estuary. Alfred Cove is the most important of these areas because it provides the largest area of mudflats and shallows for foraging, the largest offshore sand bars for roosting and it has the best fringing vegetation, including sedges and samphire marsh, remaining on the lower Swan Estuary.

CALM's Marine and Coastal District has received \$31,000 from the first round of the Department's Wetland Conservation Project grants, to fence the tidal wetlands and fringing vegetation of Alfred Cove. An off-lead dog exercise area is located next to the Marine Park and dogs can currently run freely from the dog exercise area out onto the mudflats. Once constructed, this fence will prevent dogs from running out and disturbing the foraging birds.

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*The Swan Estuary marine park is home to both local and migratory shore birds such as this red necked stint.*

### Written cautions

Compliance with regulations, notices and zoning plans is a critical strategy in managing marine conservation reserves to ensure their conservation, protection of visitor rights and continuing community support. Community education and public participation in reserve management provide the most effective way to ensure the majority of visitors understand and comply with the regulations governing our marine reserves. However, there are always a few park visitors who have little or no regard for either the environment or for other user's rights. These visitors require a different approach.

CALM's Marine and Coastal District has recently introduced a system of caution notices that apply to a range of recreational and commercial activities in the metropolitan marine parks. Each notice has multiple copies so that a person who receives a verbal caution also receives a notice as a record of the infringement. A copy is retained by CALM, with the details of the person and the offence committed subsequently entered into a database for future reference. The caution system will be integrated with a more formal infringement system to be developed by CALM once the integrated CALM Act regulations are in place.

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## MARINE AND COASTAL MANAGEMENT

### Strategic Research Fund

#### Marine Environment (SRFME)—update

Recent activities have concentrated on the State representatives of the Interim Technical Advisory Committee working with CSIRO Marine Research (CMR) Program Leaders to further develop a range of potential activities to assist CMR to identify the range of expertise needed in Western Australia. Once this is done CSIRO staff will be transferred to the CSIRO laboratory at Marmion. Any shortfalls in the required expertise will be filled through the normal recruiting processes.

The process where other research providers (e.g. university researchers) can seek funding from SRFME is still being developed. A significant allocation of SRFME funds will also be set aside for post-graduate scholarships.

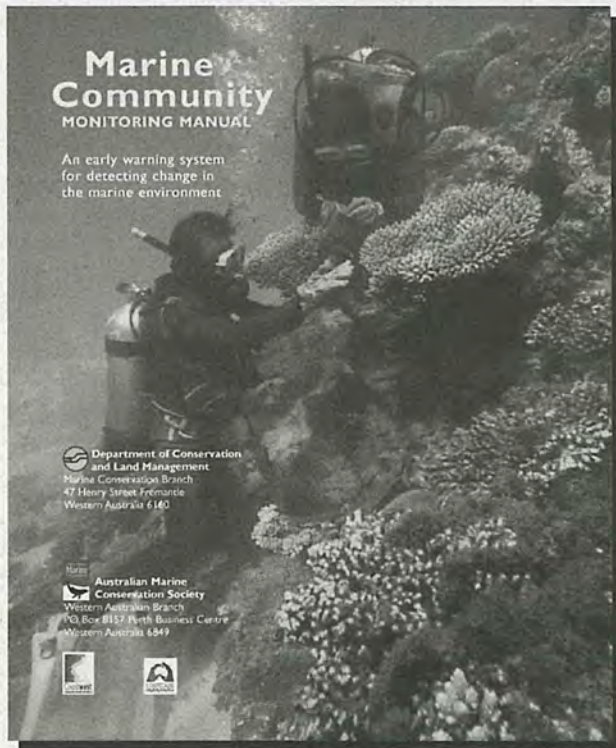
Interviews for the Research Director position were conducted in February. The successful applicant, Dr John Keesing, started work in May.

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## Award for the Marine Community Monitoring Manual



At the Coastwest Coastcare Celebration on 8 December 2000 the Marine Community Monitoring Manual received a special commendation in the Outstanding Coastcare Project category. The Manual was prepared by CALM and the Australian Marine Conservation Society WA. Congratulations to all those people who have been involved in the development of the Manual, especially the two project officers Tim Grubba and Julie Murdoch and the many community groups around Western Australia. This Manual is Phase 2 in the development of the three-part Marine Community Monitoring Program. Phase 1 is an easy-to-use CD Rom that is a guide to identifying over 400 of the most common marine flora and fauna from WA's coastal waters. This CD Rom won the Educational/Resource Science/ Technology Multimedia Award presented by the Australian Teachers of Media Association (ATOM). Phase 3, the training component of the program, will commence soon.

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## Great Barrier Reef Research Foundation

The Great Barrier Reef Research Foundation (GBRRF) has recently been established as a philanthropic organisation to promote research on coral reefs. The aims of the GBRRF is to utilise the 'pristine' nature of Australia's coral reefs as a living laboratory to better understand the functioning of coral reefs and to use this information to promote the conservation and sustainable use of coral reefs worldwide. Dr Russell Reichelt, former Director of AIMS and now the Chair of the GBRRF Scientific Advisory Committee, recently visited Western Australia to outline the aims of the Foundation to State Government departments, local Universities and industry. Some initial ideas on potential projects that the Foundation could support in Western Australia were also discussed.

A number of projects were identified including one put forward by CALM for the establishment of a tropical marine research facility at Exmouth as part of the national network of tropical research stations. Currently these are all located on the east coast of Australia.

The Foundation is hoping to raise several hundred millions dollars over the next five or so years. Hopefully this initiative will also contribute to a better understanding of Western Australian coral reefs which, when compared to the Great Barrier Reef, have been poorly studied to date.

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## CALM Gascoyne District name change

The CALM Gascoyne District, which is part of the Midwest Region, has recently had a name and boundary change - it is now Shark Bay District. This new name more accurately reflects the geographical location of the District that is a recognised icon area for conservation, tourism, fishing and World Heritage values. The administrative headquarters for the Shark Bay District will remain in Denham.

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## STAFF NEWS

### Lauren Monks

Lauren Monks, Newsletter Co-ordinator, has been with the Marine Conservation Branch since March 1999 in the role of Community Liaison officer and is now moving on to South Australia as her husband, an Officer in the Australian Army, has been posted. We wish her all the best for the future.

### Mike Meinema

Mike has recently commenced in his new role as Marine and Coastal District Manager in the Perth area and is responsible for managing the three metropolitan marine parks. Mike was trained through the CALM cadetship program and has gained experience from a variety of Districts including Busselton, Walpole, Perth and Geraldton, as well as Yanchep National Park. Mike is looking forward to the challenges of his new position.

### Judy Davidson

We welcome Judy Davidson who has begun a period of full time work with the Marine Conservation Branch following the completion of her degree in a Bachelor of Marine Science and Environmental Science at Murdoch University.

### Mathew Cork

Mathew Cork has commenced work at the Marine Conservation Branch primarily to undertake a review of the Ningaloo Marine Park Management Plan. Mat has worked for a number of Queensland environmental agencies before moving to Perth last year to take up a position with the Ministry for Planning developing a State Coastal Policy. We welcome Mat to the Branch.



companies having infrastructure on Barrow, Varanus, Thevenard and Airlie islands and undertaking systematic biological surveys and monitoring programs on the islands.

Fran has recently become involved in the planning process for the proposed marine conservation reserves of the Dampier Archipelago/Cape Preston and Montebellos/Barrow Island regions. She is looking forward to meeting the challenges that these extra duties will present. Fran is married and has a two-year-old son.



## OTHER NEWS

### Scientific workshops discuss sustainability indicators

The Department of Environmental Protection and the Environmental Protection Authority conducted three scientific workshops in February where invited local, interstate and overseas marine scientists discussed sustainability criteria in relation to sediments, water quality and biota. The workshops are part of the process to develop a statewide coastal Environmental Protection Policy by the EPA that will provide the framework to manage the cumulative impacts of waste discharges to our waters. CALM staff attended all three workshops as the issues under discussion are very relevant to both the management of our existing marine conservation reserves and the planning of new reserves.

## STAFF PROFILE

### Fran Stanley

Fran Stanley grew up in Perth and has a Bachelor of Science with first class Honours from Murdoch University. She is currently completing a PhD. Fran has been based in CALM's Pilbara Regional office in Karratha for the past six years. Her main responsibility is to manage more than 200 island conservation reserves in the Pilbara. Issues include recreational shack management, liaising with oil and gas



These workshops again highlighted the relatively poor state of our knowledge and understanding of the marine environment in Western Australia. In particular, the absence of information to benchmark the 'natural state' was identified (once again) as the major barrier in implementing management frameworks to ensure human activities in the marine environment are ecologically sustainable (see Food For Thought in this issue). Fortunately one of the major 'themes' of the SRFME is the issue of natural variability.

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## MARINE CONSERVATION SEMINAR SERIES

The Marine Conservation Seminar Series is directed primarily at CALM staff and provides opportunities for staff to keep abreast of important marine research, provide professional development for staff and an opportunity for younger staff members to expand their professional networks.

Since the October issue of Marine Conservation Matters, five lunchtime seminars have been held at the CALM Fremantle office. These were:

- **Sedimentation of the east arm of the lower Ord River following dam emplacement**  
Dr Eric Wolanski, Australian Institute of Marine Science.
- **Preliminary results from marine biological surveys of the Dampier Archipelago, Western Australia: The Western Australian Museum Woodside Survey**  
Dr Di Jones, Western Australian Museum.
- **Remote sensing technologies for marine environments**  
Graeme Behn, CSIRO Marmion Marine Laboratories.
- **Monitoring in environmental management**  
Dr Charles Jacoby, Commonwealth Scientific & Industrial Research Organisation.
- **Aboriginal perspective and values of marine and coastal areas**  
Maxine Chi, Department of Conservation and Land Management.

## Bali coral reef symposium

Chris Simpson and Tim Grubba attended the 9th International Coral Reef Symposium in Bali, Indonesia during 23–27 October 2000. The symposium was attended by about 1,500 delegates from more than 70 countries. The Vice-President of Indonesia, Megawati Sukarnoputri, addressed the symposium and outlined the challenges Indonesia is facing in managing its natural resources in the current economic and political climate. Plenary papers were presented each morning and immediately after lunch each day. Another 1048 papers were presented in 14 concurrent mini-symposia covering topics such as State of Knowledge, Assessment, Monitoring and Rehabilitation and The Future of Coral Reefs. The symposium, which is held every four years, is run under the auspices of the International Society for Reef Studies (ISRS). Dr Terry Done, the brother of CALM's Regional Manager in the Kimberley, Chris Done, is the current president of the ISRS.

Perhaps the most startling information to emerge from the symposium was the state of Indonesia's coral reefs. Indonesia contains 14 per cent of the world's coral reefs and currently 40 per cent of these are classified as 'severely degraded'. The remaining reefs are being similarly degraded by an estimated 3–6 per cent per annum. Much of this degradation is occurring simply in the pursuit of food by coastal communities. The global coral bleaching event that was caused by unusually high sea temperatures in the first half of 1998 resulted in extensive mortality of coral reefs throughout the Indonesian archipelago further exacerbating the human impacts on these reefs.

The scenario unfolding on Indonesian and many other coral reefs around the world increases the importance of protecting Australian coral reefs. Our reefs are amongst the most pristine coral reefs anywhere in the world and, as such, will continue to provide the living laboratory to study and hopefully better understand how coral reefs function. This knowledge will, hopefully, contribute to some of the new management approaches that will be needed to solve the problems currently besetting coral reefs in countries like Indonesia.

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## Scientific Consensus Statement

### Marine Reserves and Marine Protected Areas

At the 1997 Annual Meeting of the American Association for the Advancement of Science (AAAS), a symposium on marine protected areas reviewed the state of the oceans, raised a number of unresolved critical scientific issues and identified research priorities. In response, an international team of scientists was convened at the National Center for Ecological Analysis and Synthesis (NCEAS) and charged with developing better scientific understanding of marine protected areas and marine reserves. Conclusions from the two-and-a-half-year efforts of this working group are in press in a special issue of the journal *Ecological Applications*. This Scientific Consensus Statement is based upon those results and other research already published elsewhere. The Statement is a joint effort of the NCEAS scientists and the academic scientists participating in a meeting on marine reserves convened by COMPASS (Communication Partnership for Science and Sea). This statement was drafted in response to repeated requests by many fishermen, marine resource managers, governmental officials, conservation activists and interested citizens for a succinct, non-technical, but scientifically accurate, summary of the current scientific knowledge about marine reserves. Additional information on the history of this Statement, NCEAS and COMPASS appears after the Statement.

The release of Scientific Consensus Statements is designed to short-circuit the inevitable technical debates that arise when 'new' or non-traditional approaches are proposed. The public confusion that often follows these technical debates generally undermines public confidence in the idea and often results in the status quo being maintained. Shrewd opponents of new approaches understand the link between a lack of technical consensus and public acceptance of new ideas and often exploit this for their own purposes. The debates over the Greenhouse Effect and effects of smoking are good examples. Scientific Consensus Statements are an extremely useful tool to help remove the barriers to new approaches and, as such, are likely to be used increasingly in the future.

An electronic version of this statement is available on:  
<http://www.nceas.ucsb.edu/Consensus>

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## LIST OF RECENT PUBLICATIONS OF INTEREST

The following list provides an update on recent publications obtained by the Marine Conservation Branch that are relevant to marine protected areas and marine conservation in general.

- Crosby, M.P., Geenen, K.S. & Bohne, R. (2000). *Alternative Access Management Strategies for Marine and Coastal Protected Areas. A Reference Manual for their Development and Assessment.* United States Man and the Biosphere Program.
- Day, J.C. & Roff, J.C. (2000). *Planning for Representative Marine Protected Areas. A Framework for Canada's Oceans.* World Wide Fund for Nature.
- Day, J. et al. (2001). *The Representative Areas Program—Protecting the Biodiversity of the Great Barrier Reef World Heritage Area.*
- Hockings, M., Stolton, S. & Dudley, N. (2000). *Evaluating Effectiveness. A Framework for Assessing the Management of Protected Areas.* Best Practice Protected Guidelines Series No. 6. IUCN—The World Conservation Union.
- Pattiaratchi, C. & Woo, M. (2000). *Risk of Tsunami Impact at the Port of Dampier.* Centre for Water Research. The University of Western Australia. Ref WP 1520 CP.
- Ward, T.J., Heinemann, D. & Evans, N. (2000). *The Role of Marine Reserves as Fisheries Management Tools. A Review of Concepts, Evidence and International Experience.* Bureau of Rural Sciences, Australia.
- Westera, M. & Hyndes, G. (2001). *Factors influencing spawning sites of tropical fish species. A Report to the Department of Conservation and Land Management - Marine Conservation Branch.* Edith Cowan University, Perth, Western Australia.



*Marine Conservation Matters* is produced by the Marine Conservation Branch of CALM, to broadcast up-to-date information about marine conservation activities in CALM. If you have any queries regarding our newsletter please contact Sue Osborne at the Marine Conservation Branch of CALM. Ph: (08) 9432 5100, Fax: (08) 9430 5408 or email: [sueo@calm.wa.gov.au](mailto:sueo@calm.wa.gov.au)