

Coastlines

summer edition 2008



WA Coastal Awards for Excellence 2007



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Acronym list

DEC	Department of Environment and Conservation
DPI	Department for Planning and Infrastructure
WAPC	Western Australian Planning Commission

Coastlines is produced frequently and is distributed to communities all over the State. Its aim is to bring coastal planning and management groups, throughout Western Australia, closer together, by informing them about what events, activities and projects are underway or have occurred around our coast. Coastlines also provides information on the Coastwest program to interested West Australians.

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Coastwest is a State Government initiative aimed at providing opportunities for Western Australians to learn about, conserve and protect our coast.

Coastwest Web Site:
www.wapc.wa.gov.au/coastwest

"Coastwest – Helping communities
to care for the WA Coast"

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From my deckchair



A Happy New Year to you all! I hope you managed to get through the festive season and take time out to enjoy our fabulous summer and magnificent beaches!!

A lot has happened since the last edition of Coastlines. I was fortunate enough to attend the State Coastal Conference at Denmark, held in November last year. For those who attended, I hope you had as much fun and learned as much as I did. It was inspirational being around people who share a passion for the coastal and marine environment. Thanks go to all of the people of Denmark for making us so welcome.

We are already starting to think about the next State Conference to be held in 2009, and are excited about initiating the process to select the next host. This process, which will involve an expression of interest period and evaluation by a selection committee, is expected to take place in early 2008. More information is on page 3.

An exciting feature of the Denmark conference was the *WA Coastal Awards for Excellence*. Yet again it was a difficult and demanding task to judge the nominations. Congratulations are due to all the successful nominees and winners, and we are pleased to be able to recognise all their hard work and commitment. See pages 5 and 6 for a description of the winners and their work.

We hope you like the new look for 'Coastlines' that we have developed. Yet again, this issue of 'Coastlines' ranges far and wide, and covers a broad range of topics that we hope will interest, entertain and engage you.

Kandy Curran from the Roebuck Bay Working Group in Broome tells of her experience at the State Coastal Conference.

We hear about the key priorities of the Coastal Planning and Coordination Council for 2008. The Department of Environment and Conservation provide us with information on how to be involved in their Nearer to Nature marine education program. There's an update of the improvements that are happening at the Hillarys Boat Harbour and the proposals for Fremantle's main boat harbours.

Dr Belinda Cannell from Murdoch University tells us about current research on little penguins in the metropolitan area, which will help to save these very special birds. Nearby, the City of Rockingham is encouraging school students to 'adopt a beach' to assist with conservation and management of the coast.

I hope you enjoy this edition of Coastlines and remember that we welcome any ideas for items for inclusion.

Contact details are listed on this page, so please get in touch!

Christopher Lukes
State Coastwest Coordinator

Contributions

We welcome readers' contributions of stories and photos. Please try to keep stories brief, preferably no more than 650 words, as we may have to edit longer items due to space restrictions. With images, we require JPEGs of 300dpi or at the highest resolution available in your camera. This will allow good reproduction.

2007 4th State Coastal Conference



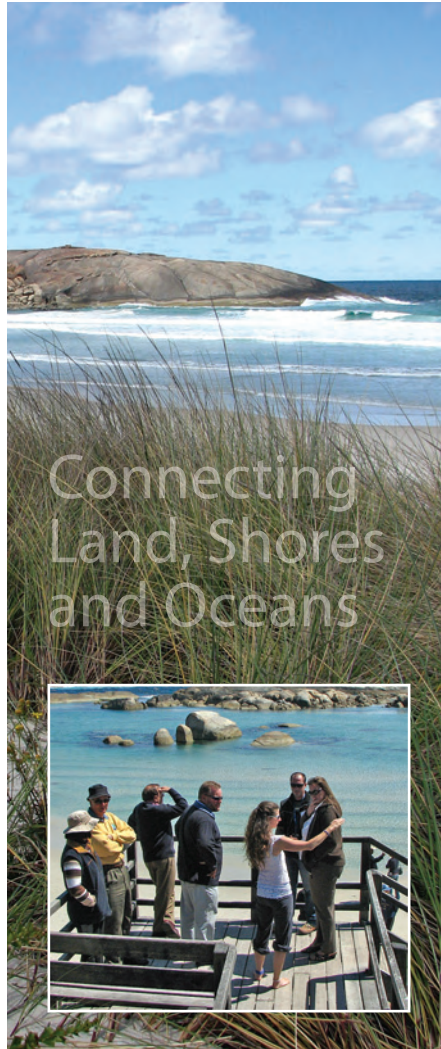
The DPI and the Coastwest program would like to thank the Shire of Denmark for hosting the 2007 State Coastal Conference and congratulate the conference organisers for convening a thoroughly enjoyable and educational event.

The theme of the conference, Connecting Land, Shores and Oceans, dealt with ideas such as climate change and coastal planning and management. The conference provided opportunities for practical learning and networking for over 250 delegates, and also included stimulating, fun and enjoyable activities.

The conference ran over four days, commencing on 30 October with a Welcome to Country including dances from a local indigenous group and a screening of *Going with the Flow*, a documentary film about the Leeuwin Current by Hans Kemps and John Totterdell.

Presentations and panel discussions throughout the conference explored the challenges of implementing integrated coastal zone management, as well as continuing to develop strong links between community, state and local government. Speakers illustrated their passion for caring for coastal areas and exchanged knowledge and shared stories of inspirational community efforts. A major theme of the conference was climate change and the potential impacts, which I'm sure moved everyone to act now to protect the future of our coastal resources.

Keynote speakers included the Planning and Infrastructure Minister Alannah MacTiernan, Professor David Wood, Martin Heller from Sinclair Knight Merz and Anthony Sutton from the Swan River Trust.



Panel discussions included contributions from Wayne Webb on indigenous occupation of south coast region, and an inspiring presentation from representatives of the community-run Roebuck Bay Working Group who had travelled from Broome.

Afternoon field trips provided attendees with a snapshot of the beautiful coastline and invaluable natural resources Denmark and the surrounding areas have to offer. They allowed for valuable networking time and plenty of opportunities to get to know colleagues and other people passionate about the coastal environment.

Field trips included a practical workshop around Wilson Inlet exploring the indigenous heritage, a boat-based tour on the waters of Albany with local fishermen, a tour of the Walpole-Nornalup Inlet from a passionate and entertaining local, and surfing lessons.

Social activities provided valuable networking opportunities and a sundowner at the local surf life saving club was held on picturesque Ocean Beach.

The formal dinner at the Agricultural College on 1 November included the announcement of the winners of the WA Coastal Awards for Excellence. These awards acknowledge the hard work and achievements by community groups and local governments across the state. Congratulations to all successful nominees.

Sponsors and supporters of the conference included the Shire of Denmark, WAPC, DPI, South Coast Management Group, Green Skills Inc., and South Coast Natural Resource Management Inc. Thanks go to all of the sponsors and speakers and everyone involved in making the fourth State Coastal Conference a success.

Call for hosts for 2009 State Coastal Conference

DPI and Coastwest would like to invite interested parties to host the next State Coastal Conference in 2009. If you are interested, please email DPI for information at coastwest@dpi.wa.gov.au or call Sharon Haseldine on (08) 9264 7914.

Further information will be available shortly at www.wapc.wa.gov.au/coast



WA Coastal Awards for Excellence 2007



The WAPC and DPI congratulate all the winners of the WA Coastal Awards for Excellence 2007. The awards acknowledged individuals and groups for their commitment and hard work to protecting and managing our special coastal and marine environment. The awards provided an opportunity to highlight what local communities can achieve when working together towards a common goal.

Hon Alannah MacTiernan MLA, Minister for Planning and Infrastructure said recipients of the awards were to be congratulated on the passion and dedication they showed for the coastal environment.

"Without the fine efforts of these individuals many projects would never have got off the ground," Ms MacTiernan said.

This year's nominations came from individuals and groups stretching the state's coastline from Broome to Dunsborough. The judging panel, consisting of the State Coastwest Coordinator and representatives from the Coastal Planning and Coordination Council, coastal and marine natural resource management groups, the indigenous community and local government, were thoroughly

impressed by the high calibre of nominations received.

Successful nominees were announced during the fourth State Coastal Conference held in Denmark, at a special awards ceremony on 1 November 2007.

The WA Coastal Awards for Excellence, announced by WAPC Commissioners Margaret Smith and Professor David Wood, were awarded to:

- Outstanding Coastal Leadership – Mr Michael Norman from the Joondalup Community Coast Care Forum;
- Outstanding Community Group Effort – Roebuck Bay Working Group;
- Outstanding Partnership in Coastal Planning and/or Management – DEC Mid-West Region for the Coastal Assessment and Restoration Project; and
- Local Government Excellence in Coastal Planning and/or Management – Shire of Dandaragan for the Sandy Cape Restoration and Rehabilitation Project.

Special commendations were presented for:

- Community Group Effort to Tangaroa Blue Ocean Care Society for the South West Marine Debris Project;
- Coastal Development, Innovation and/or Design to Peet Limited for the Burns Beach Estate.

Congratulations to all winners. Thank you to all those people who took the time to nominate for an award.

Thank you to Margaret Smith for being the MC for the awards ceremony. Margaret was presented with a certificate of appreciation for her long-standing involvement in coastal planning and management.

The Coastal Awards for Excellence is a biennial event and part of the Coastwest program coordinated by DPI and WAPC.

The awards will be open again to community groups, individual, organisations, government agencies and local governments in WA in 2009.

Further information about the awards and this year's winners can be found on the WAPC website at www.wapc.wa.gov.au/coastwest

Michael Norman

Michael Norman from the Joondalup Community Coast Care Forum (JCCCF) was the winner of the Outstanding Coastal Leadership award. The judging panel particularly commended Michael on his ability to inspire and engage a high level of interest and involvement throughout the broader community. Michael has made a significant contribution to the improvement of the coastal and marine environment, provided an advocacy role and inspired and assisted others to contribute to coastal planning and management.

The JCCCF is a multifaceted community volunteer coast care organisation, active in on-ground revegetation projects and in campaigning on a broad spectrum of environmental issues in

the City of Joondalup. The group was formed in 2000 and Michael Norman was a founding member and chairman for the last four years. JCCCF has played a key role in dune stabilisation and successfully implemented the Sorrento dune rehabilitation project.

Michael has organised intensive weeding and planting projects and installed signage to inform beach users of the work in progress. He has encouraged involvement of local organisations including Sacred Heart College, Sorrento Primary School, Whitfords Rotary Club, Friends of Warwick Bushland, AQWA and Australian Conservation Volunteers. Michael has conducted site tours for the mayor of the City of Joondalup and the Federal Minister for the Environment, Senator Ian Campbell.



Michael's daughter Melanie, an environmental scientist, nominated him for the Outstanding Coastal Leadership award.

"I was thrilled to win the award and very impressed with the magnificent hand-crafted glass trophy!" Michael said.

Roebuck Bay Working Group

Roebuck Bay Working Group won the Outstanding Community Group Effort award in 2007 for their significant contribution to the improvement of the local coastal and marine environment; group effort in achieving a common goal and assisting in capacity building of participants; sense of ownership of the coast by the local community; environmental and cultural awareness; and successfully completing one or more projects and its identified objectives.

The Roebuck Bay Working Group is an active and growing community group in Broome working to achieve sustainable management of Roebuck Bay. The group, formed in 2004, is a collaboration of traditional owners and indigenous representatives, government agencies, industry groups, community organisations and local government.

The judging panel congratulate the Roebuck Bay Working Group for their considerable progress in achieving their goals of building local capacity to care for the natural and cultural heritage of Roebuck Bay in Broome. The panel

recognises the strong commitment to community involvement and especially indigenous engagement.



Tangaroa Blue Ocean Care Society

Tangaroa Blue Ocean Care Society representative, Wally Smith, was proud to attend the fourth State Coastal Conference and awards night in Denmark.

"During the coastal forum and conference the dedication, commitment and achievements of all coast care groups became very evident," Wally said.

"To be able to accept the special commendation award for Outstanding

Community Group Effort on behalf of our group was very encouraging and helped fuel some further intense networking which has already generated some important benefits."

The judging panel were impressed by Tangaroa Blue Ocean Care Society's South West Marine Debris Project, targeting marine debris along the cape-to-cape coastline. Although site specific, this program has far-reaching influences even outside Australia.

For more than four years this non-profit marine conservation organisation has worked on ways of reducing the amount of marine debris in our oceans.

"In the last year we have been supported by hundreds of volunteers, government agencies, industry and through funding from Coastwest, Keep Australia Beautiful Council and the South West Catchments Council."

Since 2004 more than 600 volunteers have removed more than 130 000 pieces of marine debris from the south-west coastline.



Department of Environment and Conservation - Midwest Region

DEC – Mid-West region received the Outstanding Partnership in Coastal Planning and/or Management award for coordinating the coastal assessment and restoration project.

"This award recognises the work, commitment and dedication of all project partners in realising the achievements of this important project," Brad Rushforth, Operations Officer said.

"Many areas of our Western Australian coast require urgent attention due to the effects of erosion and other population pressures, and it is important to continue projects such as this to help protect this significant

resource for generations to come," Brad said.

The coastal assessment and restoration project began in 2006. The project focuses on 400 kilometres of coast between Guilderton and Kalbarri and is a collaborative effort with the federal Government, the Northern Agricultural Catchment Council (NACC) and Curtin University of Technology.

"Many partnerships have been developed through this project as it is designed to occur over all tenures.

"Project staff would like to thank for their support and input: the local indigenous community – the Yued



people; NACC; Conservation Volunteers Australia; the shires of the Mid-West; Cervantes Chamber of Commerce and the South-West Aboriginal Land and Sea Council."

The judging panel recognised the valuable work of the DEC in addressing a large problem in the Mid-West region and congratulate the department for establishing and maintaining well-defined partnerships with the community and broad stakeholder groups.

Shire of Dandaragan

The Shire of Dandaragan was awarded the Local Government Excellence Award in Coastal Planning and/or Management for the Sandy Cape restoration and rehabilitation project.

President of the Shire of Dandaragan, Mr Shane Love, accepted the award.

"I was pleased to accept this award on behalf of the people in our region. The community of our shire and beyond who know and love this special place – Sandy Cape – have contributed so much of their time and energy," Mr Love said.

The shire has successfully planned to make the Sandy Cape area, located 15

kilometres north of Jurien Bay, more sustainable and environmentally friendly, as well as better suited for recreational activities. The aim of this project is to establish low key, and appropriately accessed and managed recreation sites.

"I would like to recognise the efforts of former shire ranger, Mr Barry Keys and the members of the Perth Landrover Club, Members of Herbarium Group in Jurien Bay, students of the Jurien Bay District High School, members of the West Midland Natural Resource Management Group, the Yued Peoples NRM advisory group, Murdoch University volunteers, the Jurien Bay Progress and Tourism Association and the many other community members



who have been responsible both for tonight's recognition but more importantly, the fantastic progress of rehabilitation of the former squatter shack site.

"The work is ongoing and the Jurien Bay Progress and Tourism Association have recently received an Envirofund grant from the Australian government to continue rehabilitation."

Peet Limited

Peet Limited's Burns Beach Estate won the award for Outstanding Coastal Development, Innovation and/or Design.

Peet Limited Managing Director, Brendan Gore, said the special commendation award was great recognition of the excellent work being undertaken at Burns Beach Estate.

"At Burns Beach we've invested heavily in balancing the needs of the community with the need to protect

the foreshore environmental and landscape values," Mr Gore said.

The Burns Beach foreshore management plan established by Peet Limited in consultation with the City of Joondalup and local coast care groups, has worked to protect and maintain the integrity and biological diversity of the estate's foreshore reserve. The project also includes extensive weed control, dune stabilisation and revegetation with locally occurring plant species along the foreshore. The plan is being implemented in stages to coincide with

the residential subdivision, with stage two works currently underway.

The judging panel commended Peet Limited for the design of the estate, protection of the natural environment and proposed provision of coastal infrastructure for community recreational use.



Feature Article by Kandy Curran, Roebuck Bay Working Group

In the months leading up to the fourth State Coastal Conference my workload became a tsunami, which it is oft to do, working seven hours a week as secretariat for a large group of stakeholders, undertaking the ambitious task of management planning for Broome's Roebuck Bay.

Two urgent tasks were to submit an entry from the Roebuck Bay Working Group for the Community Group Effort award and to source funds for traditional owner Neil McKenzie and myself to attend the conference.

Fortunately the WAPC responded generously and Neil and I left our beautiful tidal peninsula for a much greener and cooler coastal landscape with rust coloured estuaries, tall trees and boulder strewn beaches.

While the information being presented by the keynote speakers on Western Australia's most pressing coastal issues was incredibly interesting and well orated, it was pretty horrifying, and at times, disempowering. Projections about the effects of sea level rises – that include inundations of much of Australia's magnificent coastline – and lamentations by Allan Tranter about society crashing down around our ears as a result of Australians' hell-bent preoccupation with consuming and doing less and less for their communities as they move up to four times in a lifetime, were pretty ominous. It's not to say, of course, that the information was by any means disputable, uninteresting, or unnecessary, it was just a bitter pill to swallow for a conference participant with a great love and appreciation of community and Australia's natural coastal environment.

The dearth of bad news was offset by coastal excursions each afternoon with traditional owners and members of the Denmark community, in and around



their picturesque coastline. Particularly inspiring was the award-winning Parry Beach Voluntary Management Group whose work includes looking after the camping area and adjacent beach for the local shire. These elderly conservationists were role models extraordinaire, with a list achievements that include restoration of the local town hall, installation of fish composting bins on their beach and in between all of their on-ground coastal conservation work, the ability to cook up a fete of delicious cakes for conference participants. With Broome attracting a large migration of elderly people during the dry season each year, it seems that a dedicated program needs to be initiated to encourage volunteers to get involved in looking after our ecologically and culturally unique peninsula, that is coming under growing pressure as the old pearling town's population and industry base expands.

Also accessible were the concurrent sessions, as participants could interact easily with speakers and each other to apply new knowledge to their own coastal area. With plastic litter frequently seen along Roebuck Bay's shoreline, it was both illuminating and

disturbing to hear Wally Smith (Tangaroa Blue Ocean Care Society) talk about the long-term effects on the food chain from highly edible microscopic plastic debris.

Neil and I also enjoyed the opportunity to talk about the Roebuck Bay Working Group's work to management plan for Broome's Roebuck Bay. The audience reaction to our on-ground stories, about how a community of volunteers with traditional owner guidance have come together to undertake a large number of management planning activities to preserve and restore Roebuck Bay, was incredibly encouraging and uplifting. Little did we know that even more encouragement was on the way, with the Roebuck Bay Working Group being announced winner of the Outstanding Community Group Effort Award in the WA Coastal Awards for Excellence 2007.

So the tsunami of work to get to the conference was well worth enduring, particularly the opportunity to meet so many wonderful civic-minded people, who continue to inspire me to continue working with my fantastic community of volunteers to manage one of the world's most beautiful wetlands.





Go Beach with Nearer to Marine Nature

Making the most of 2008; International Year of the Reef and Planet Earth

Marine Program Officer, Nearer to Nature - Department for Environment and Conservation (DEC)

"Have you ever wanted to hold a sea star without getting totally wet? Have you ever wondered why a sea-cucumber is named after a salad item? Or how a sea-shell is made and who makes it? Have you ever wanted to discover marine delights submerged in our seas? Now you can, no SCUBA required, just join Nearer to Nature for one of our marine activities on Perth beaches this summer..."

Every summer for the past five years, Nearer to Nature has brought the marine environment closer to the lives of community groups and school children across Perth through fun, interactive, beach-based activities. The highlight of their marine activities is a touch pool, where participants are given the opportunity to touch, feel and learn about a variety of amazing sea creatures and algae that are normally hidden in rock pools or submerged reefs.

Nearer to Nature, an initiative of the DEC, has the objective of providing opportunities for the community to enjoy the natural environment while learning more about the how to protect Perth's beautiful ecosystems.

This summer, with the aid of their new full-time Marine Programs Officer Zarin Salter, Nearer to Nature is expanding their program on many fronts. On top of their eight existing activities, Zarin is

developing a few new activities, one of which is about marine mammals. Nearer to Nature's existing marine activities include; rocky shoreline ramble, beachcombing, shell stories, sea birds, fossil fever, sandy beaches, and eco games. Activities generally last for one hour and are always conducted by a fully trained Nearer to Nature guide.

"All of our guides have a background in environmental or marine science, and although we don't take kids into the water, at least one guide at every activity will have their surf rescue and senior first aid qualifications", Zarin explained.

Nearer to Nature's marine program now operates from four locations on the Perth coastline; Trigg and Mullaloo beaches, Cape Peron, and Woodman Point.

"By expanding to Mullaloo Beach and Woodman Point we hope to make these unique activities accessible to people right across Perth," said Zarin.

Most people in Perth enjoy a coastal lifestyle, and whether out for a SCUBA dive, swim, snorkel or simple walk along the beach, many of us wonder about the strange-looking creatures that live there and how they have adapted to survive in such a harsh changeable environment. A lot of people are also

unaware of the impact that our daily behaviour can have on these marine creatures and their environment.

Nearer to Nature's marine activities not only reveal some of the ocean's secrets, they always convey a strong message of conservation and active environmental citizenship among all participants. Marine activities can cater for community groups of all ages with fun, interpretive activities as well as providing curriculum-linked activities for use by school groups, years PP-7. If you are looking for a unique activity for your group then Nearer to Nature could be just what you are looking for!

For further information about Nearer to Nature activities, visit www.naturebase.net/
To arrange bookings, call 9295 2244
or email: n2n@dec.wa.gov.au.



"Adopt-A-Beach" at Rockingham

David Mort, Horticultural Technical Officer - City of Rockingham

The City of Rockingham has recently instigated a program to encourage local residents and students from local schools to join in coastal rehabilitation activities that promote ownership of the coastline within Rockingham. This program is appropriately called adopt-a-beach.

With more than 45 kilometres of coast to manage, the shire has plenty of coastline to adopt out to its residents. So far the response has been encouraging, especially from local schools.

The project has been strengthened through the involvement of Craig Wilson, the Swan Catchment Council's Southern Metropolitan Coastcare Officer. Craig's role has been vitally important in disseminating information relating to coastal issues to the school groups during class times, giving them the background information to their adopted site and developing education-based outcomes for the students.

A component of the program involves site works, which are coordinated through the City of Rockingham Parks and Engineering Department. The shire assists with plant purchasing, fencing requirements and any other aspects that require contractor involvement. The Swan Catchment Council also provides its Coastcare trailer that assists in the distribution of plants and equipment to each adopt-a-beach site.

Two schools in particular, Singleton Primary School and Maranatha Christian College, have taken to the adopt-a-beach ethos with much fervour and have made significant in-roads on important coastal

issues such as erosion, accessibility and weed control.

Singleton Primary School has created its own dedicated coastal nursery within school grounds. Children propagate seeds collected and supplied by the City of Rockingham, and then plant these back into their adopted zone on the Singleton foreshore on Rockingham's southern border. The school holds an annual beach assembly to celebrate previous planting days and to thank volunteers and parents who are assisting with the program. The support from the Singleton community has been invaluable.

As part of Maranatha Christian College's adopt-a-beach project, students were asked to develop a works program based on coastal issues identified through on-site meetings and during class time. These issues included tackling problems such as dune erosion, loss of native plants and animals, stormwater pollution, weeds and control of human access to sensitive areas. These issues were successfully dealt with over a 12-month period and the children have turned a degraded dune system into a highly valued and diverse coastal region.



Maranatha Christian College recently wound up their adopt-a-beach site activities by transforming a City of Rockingham coastal toilet facility into a stunning work of art depicting coastal flora and fauna, local dive wrecks and offshore islands.

If your school is interested in adopting a section of the Rockingham coast please contact the City of Rockingham's Horticultural Technical Officer, David Mort. email: dmort@rockingham.wa.gov.au.



Conservation of Little Penguins in the Perth Metropolitan Region

Dr Belinda Cannell, Murdoch University

Penguin Island, near Rockingham, is home for a very special colony of little penguins. It is not only the largest colony in WA but it also has the highest conservation status of all major colonies in Australia. In addition, there are no little penguin colonies further west in the world. In the Perth region, a smaller colony is also found on Garden Island, and given their close proximity, and thus increased chance of mixing between the colonies, they can be regarded as one "metapopulation". This metapopulation of little penguins is the most northern in WA and the two colonies are the subject of a project undertaken by researchers at Murdoch University and the University of NSW.

The aim of this project is to develop a model that can be used to predict not only the growth rate or likelihood of extinction of the little penguin population in the Perth metropolitan region, but also how different threats are likely to affect the stability of the colony. This model can then be used to help develop management strategies that will protect this important population.

So how do we work out what threats the penguins are exposed to, whether they are likely to affect the colony as a whole, or individuals, and what level of risk they pose?

It is like putting pieces of a puzzle together and we need to have information on many population parameters. These include:

- the breeding habits of the penguins;
- their body condition and how it changes throughout the year;
- where they travel and feed and what they feed on;

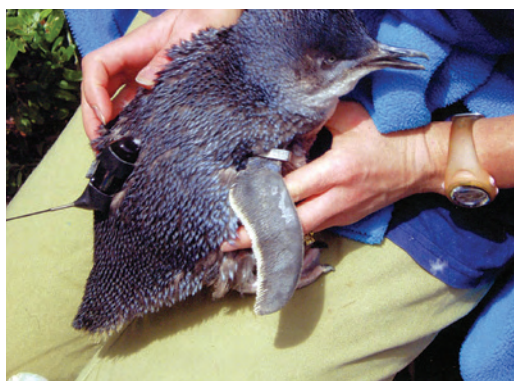


Chick in a nestbox.
Photo courtesy
of Dr Gary Miller

- causes of death and rate of mortality;
- the size of the population and;
- the rate of immigration and emigration between colonies.

Knowing when the penguins generally breed, whether they successfully raise chicks and their general body condition, can help us identify both differences in any one year and potentially what underlies these differences. To work out the breeding habits and body condition of the penguins, nest sites are monitored on the islands, checking for the presence of adult penguins, eggs and chicks. On Penguin Island there are over 140 nestboxes that are regularly checked, as well as many natural nests. The beauty

of the nestboxes is that we can easily observe the penguins, eggs and chicks, and easily access both the adults and chicks. This means the penguins can be weighed as well as marked, which is necessary for identifying individuals. To mark the penguins, we previously placed metal bands with engraved numbers on the flipper of both adults and chicks that have grown their adult feathers, ie fledged. We now insert microchips just under the penguins' skin. These microchips are about the size of a grain of rice, are the same type as those used in pets, and we can easily scan the penguins to see if they are marked. So by monitoring the nests with known individuals, we get information on when the penguins are breeding, how successful they are at raising chicks, how much weight the



Adult penguin with satellite tag.
Photo courtesy of Dr Belinda Cannell



Scanning penguin for presence of a microchip.
Photo courtesy of Dr Gary Miller

adults gain or lose across the breeding season, and how well the chicks are growing.

As we have been collecting this information for almost 20 years on Penguin Island and six years on Garden Island, we can work out differences between years. For instance, a late start to breeding, coupled with a lower than average body weight or poor breeding success, is likely to indicate that fish abundance is lower than normal. We would then try to identify whether human-driven or natural factors are affecting fish abundance and determine if any management strategies could effectively change the situation.

Apart from finding out what the penguins are doing on land, we can also determine what they do when they are at sea. Previously we have attached radio-tracking tags to penguins from Penguin Island, and found they travelled and fed in Warnbro Sound and Comet Bay. In this project, we are currently attaching satellite tags to penguins from both islands when they are guarding chicks 1-2 weeks old. So far, the penguins from Penguin Island are using the same areas we had previously tracked them in. We haven't tracked penguins from Garden Island before and the satellite tagging has shown that they travel and feed in Cockburn Sound. We don't only rely on satellite tags to help us determine the areas the penguins use as we also gather information from people who observe penguins at sea, for instance, while boating, or who find injured or dead penguins on land. These penguins

will not only give us some information on areas used, but by examining injuries or performing autopsies, we can gather information on the possible causes of injury or death. We can also determine levels of pollutants such as heavy metals and chemicals in the dead penguins. By finding out where the penguins travel and feed, and causes of injury or death, we can then identify the threats the penguins are potentially exposed to in these areas.

As well as working out possible threats, it is important to determine if the threats are going to affect the ability of the colony to survive. The stability of the population is dependent on the size of the population, but we currently do not know how many penguins are in the Penguin Island colony. One way to estimate population size is to count the number of active nests in a colony. This is very difficult to do at Penguin Island as the penguins here do not dig burrows because the sand is soft and the burrows merely collapse. Rather, they nest under vegetation in the nestboxes and sometimes in caves. There are many, many bushes to nest under and it is impossible to walk across the entire island to count nests. One way we can estimate the population is to mark the penguins, release them, and see how many times we recapture them. Penguins will often reuse the same nest site from year to year, so the information we gather from monitoring the nest sites will give us some information on a select group of penguins. To increase the numbers of penguins that we mark and potentially recapture, we also capture penguins several times a year as they come

ashore in the evening. We set up a temporary fence at a beach site that we know the penguins use for arriving back at the colony. As they come ashore, we corral them, determine if they are marked or not, mark them if they are unmarked, weigh them, and release them. We will be using the data, from both the monitoring of the nests as well as the beach captures, to estimate the numbers of penguins visiting the island annually and how this changes over the three years. We will also use genetic information from the colonies in Perth, and some in the south-west region, to work out the rate of immigration and emigration between colonies and to help validate the estimates of the size of the population.

In Perth, the little penguins are found in one of the most rapidly growing regions in WA, and with this we expect increasing human pressure on the coast and on the resources in the marine environment. It is also likely that competition between penguins and humans for the same resources will increase. It is imperative that we develop strategies that can be used to effectively manage the population of little penguins. This project, funded by the Australian Research Council Linkage Scheme, Department of Environment and Conservation, Fremantle Ports, Department of Defence and Tiwest, will help ensure that we develop management options that incorporate the latest information on penguin ecology, and so have the best chance of successfully maintaining this iconic species.



Weighing penguin.

Photo courtesy of Dr Gary Miller



Temporary fence and corral to capture penguins as they come ashore at a major arrival point.

Photo courtesy of Dr Gary Miller

We are always looking for more volunteers to walk the foreshores of Cockburn Sound, Warnbro Sound and Comet Bay. If you would like to be involved or you have information on locations of penguins at sea, please contact Dr Belinda Cannell at Murdoch University on 0405 397 913.

Managing the day-to-day operations of the State's two busiest boat harbours, at the same time as implementing large-scale improvements for one and planning the 30 year development of another, made for a very busy end to 2007 for the team in Coastal Facilities at DPI.

In October 2007 development options for Fremantle's three main boat harbours were unveiled as part of an ongoing public consultation process, which will ultimately provide a blueprint for the expansion of Success and Challenger boat harbours and Fishing Boat Harbour.

The aim of these options is to provide a long-term plan to ensure the boat harbour precinct is developed to its full potential and the future needs of the growing variety of users are met. At the same time, it is critical to retain the working elements of the fishing boat harbour. Recent public comment has highlighted the need to protect Fremantle's unique fishing heritage.

Features common to all three options include:

- retaining the existing fishing, marine and commercial industry in Fremantle Fishing Boat Harbour on Mews Road;
- development of a boat launching facility on the southern boundary of Success Boat Harbour;
- creating a central area for marine and commercial industry;
- retaining Bathers Beach and reinforcing its heritage significance;
- retaining South Beach as a popular local recreation beach;
- expansion of mooring facilities catering for between 1200 and 1700 vessels and provision of dry boat storage for up to 1000 vessels;
- improved vehicle and pedestrian access; and,
- mooring facilities for super yachts enhancing visitor appeal.

Busy time for metropolitan boat harbours

The preparation of the options has involved extensive community and stakeholder consultation. The project has recently undergone public comment. All feedback is recorded and analysed for inclusion in a final summary report to be presented to the City of Fremantle for review, following the closure of the public comment period on 1 February 2008. Further information and background papers can be viewed on the project website: www.dpi.wa.gov.au/fremantleharbour.

The release of the Fremantle Harbour development options coincided with the completion of the largest project in

the \$9 million enhancement of Hillarys Boat Harbour which is also being implemented by Coastal Facilities. This includes a \$1.5 million landscaping project to upgrade Hillarys Boat Harbour's northern beach area making it a more family-friendly picnic area.

Both projects are significant in the ongoing operations and future prosperity of each facility.

Aspects of the transformation of the northern beach area at Hillarys were introduced in response to community comment and the work has seen pathways rebuilt and the introduction



Artist Impression - Street level view of the Mediterranean style mixed use residential buildings in the new harbour, including charter boat berthing facilities, Mediterranean moorings for visiting vessels and cafe/alfresco dining.



Artist Impression - Eye-level view from the north-north-west of Bathers Beach showing boating activity in the new harbour and the pedestrian boardwalk and grassed promenade.



of gently sloped grassed areas, BBQs, shaded picnic spots and beach showers to create a more welcoming environment for families.

A feature of the work is a maritime trail incorporating tiles decorated by local school children. There is also a 5.8 metre high public artwork.

The landscape is part of the overall enhancement program for the harbour, which will see \$9 million spent on the facility.

The enhancement program has included improvements to the southern car park, the extension of the western breakwater, the construction of the northern access path (Stage 1) and the replacement of E-Jetty.

Ongoing stages of the enhancement program will include a comprehensive upgrade and expansion of toilet facilities at the harbour and the replacement of D-Jetty.

Brendon McMullen,
Project Officer, Coastal Facilities,
Department for Planning and Infrastructure

For further details about the Hillarys Boat Harbour Enhancement Program visit www.dpi.wa.gov.au/imagine or contact Brendon McMullen at DPI on (08) 9216 8295.

CPCC - an important role in guiding government policy on coastal development

The Coastal Planning and Coordination Council (CPCC) is a statutory sub-committee of the WAPC. It provides advice to the government on high-level strategic and integrated sustainable planning and management of Western Australia's 27 000 kilometres of coast.

This is primarily achieved through the development of coastal policies and strategies at State and regional levels.

Coastal development is a controversial matter and the State Government recognised the need for better integrated decision-making and greater community involvement.

Legislating to create the CPCC was a key recommendation of the ministerial taskforce established in 2002, to advise on how there could be better coastal planning.

Dr David Wood, head of the Department of Urban and Regional Planning at Curtin University, chairs the council with many years experience in coastal planning. Dr Wood is also a member of the WAPC to ensure an advocate for the coastline has direct input into WAPC development decisions.

The CPCC consists of members representing community, local government and State Government including the Department of Industry and Resources, DEC and DPI.

The council uses community expectation to guide State Government policy especially in regard to the location, scale and density of developments appropriate for our coastline.

One of the significant tasks undertaken by the council has been to develop a metropolitan coastal policy to deal with the growing development pressures being applied to the metropolitan coastline. Subsequently the draft Perth coastal planning strategy is currently being developed.

The CPCC has also been overseeing the preparation of a planning bulletin to support the State Planning Policy 2.6 State Coastal Planning. It is expected that this will be released early in 2008. Another priority of the CPCC in 2008 is the subsequent work to review the policy, particularly in regard to the guidelines for establishing an appropriate physical processes setback.

For further information about the CPCC see: www.wapc.wa.gov.au

Augusta-Walpole Coastal Strategy

Chris Longley, Senior Environmental Planner, Department for Planning and Infrastructure

The south coast of Western Australia from east Augusta to Walpole is significant for its environmental, landscape, heritage, recreation and wilderness values. The region, particularly the coastal strip, has long been considered remote and largely inaccessible and this has provided some protection until now.

The draft Augusta-Walpole Coastal Strategy sets out the State Government's board planning policies and strategies for the Augusta-Walpole coast and provides a decision-making framework for coastal planning and management and sustainable use of the coast. It also provides a tool for the management of growth and change along the coastline between Augusta and Walpole.

The WAPC and the DPI have worked with the community, state and local government to develop the draft strategy.

The strategy recommends a number of actions through strategic land use regional planning. Based on extensive community and stakeholder consultation, it aims to achieve protection of the highly valued environment and biodiversity of the coast while providing opportunities for sustainable tourism and recreation.

The strategy recommends various ways in which the significant environmental values of the coast can be protected and enhanced, and identifies new locations where suitable public coastal access can be provided, as well as a range of recommendations relating to land tenure arrangements, land zoning, required infrastructure and guidance to ensure future subdivision and development is environmentally acceptable.

The strategy promotes coordinated land use planning across property boundaries and provides guidance for updating local planning schemes to ensure that subdivision and development does not threaten environmental and landscape values.

The draft document was released for public comment late in 2007 and a number of submissions were received. Following analysis of the submissions and further refinement, the strategy will be finalised in mid to late 2008.

For more information please contact
Chris Longley on (08) 9264 7577 or
chris.longley@dpi.wa.gov.au.

State Wetlands Database

Catherine Prideaux,
Acting Wetlands Conservation Coordinator,
Department of Environment and Conservation (DEC)

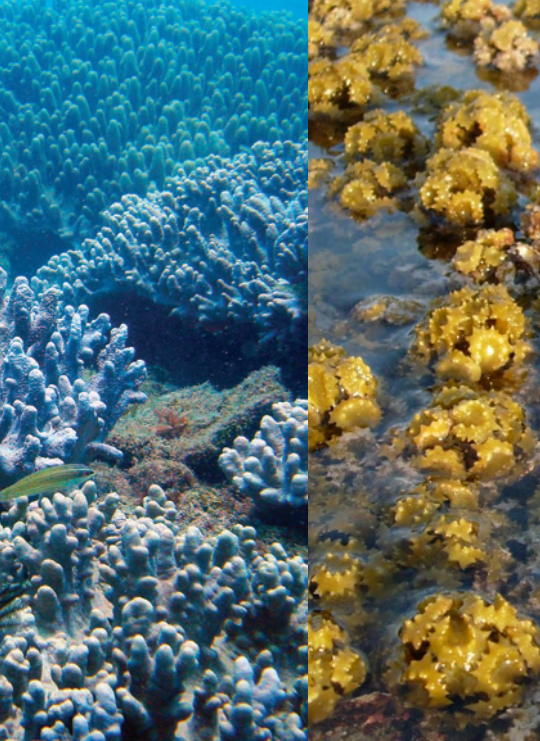
WetlandBase, the statewide wetlands database, has recently been updated to provide additional significant information about the environmental and cultural values of Western Australia's coastal areas.

The database was developed in 2005 by DEC with assistance from Natural Heritage Trust Funding. The public has been able to access WetlandBase via the DEC website Naturebase since the beginning of 2006. The 2005 Coastwest-funded project to include coastal areas was completed in August 2007 with a major update consisting of:

- new spatial datasets associated with coastal areas;
- additional biophysical datasets; and
- an improved wetland report format with reference to Aboriginal heritage sites and WA Museum fauna records.

To view the database visit:
www.naturebase.net>Nature & Biodiversity > Wetlands > Wetlandbase. The Naturebase web pages have also been updated to provide further information on how to view the maps, where the data has come from and further information sources.





The coastal map datasets new to WetlandBase include:

- Marine Benthic Habitat (DEC). There is a 'footprint' showing the areas that have been mapped on the main map view of the State. Only when you zoom in closer to one of these areas will you see the different classes. There are 18 classes ranging from mudflat and coral reef to filter feeders and mangals.
- Aquaculture (Department of Fisheries). The locations of aquaculture sites for pearl farms, mussels and scallops, for example, are shown when you zoom into an offshore area. Hover over the site with the cursor to see additional site type, species and location information.
- Marine Conservation Reserves (DEC). The boundaries of marine parks and other reserves are shown. Hovering over the area will show the reserve's name. You may need to turn the layer off to view Marine Benthic Habitat information.
- Bathymetry (DPI). Marine contours have been added to show areas of up to >5000 metres depth.

Biophysical datasets

Monitoring data from three wetland sampling projects undertaken in the South-West region has also been added to WetlandBase bringing the total number of biophysical datasets to nine. After clicking on one of the wetlands sampling sites displayed on the map viewer, either a general wetland report or a subsite sample report will show. The report aggregates water chemistry, waterbirds and aquatic invertebrate data.

The additional datasets now available are:

- Annual waterfowl counts in South-West WA. Waterbird data collected by CALM (now DEC) during the period 1988-1992.
- Waterbirds in nature reserves of South-West WA. A project conducted by RAOU (now Birds Australia) from 1981-85.
- South coast regional wetland monitoring program. Aquatic invertebrate sampling undertaken between 1999-2005 by Green Skills, in collaboration with Department of Environment (now Department of Water).

Improved wetland report format

Two extra themes are now available in the general wetland report. These are generated automatically from a number of datasets and provide tenure, hydrology and geomorphology information, along with associated threatened fauna and flora and threatened ecological communities within one kilometre of the selected wetland feature.

The report has been updated and now also shows:

- A list of Aboriginal sites found in the vicinity of the wetland. The Aboriginal Heritage Enquiry System should be referred to for

the latest updates and a link is provided for this.

- The number of WA Museum fauna records that have been identified within five kilometres of the wetland feature. A complete list of these records can be obtained by clicking on the WA Museum Faunabase link.

Assistance was received from DEC's Aboriginal Heritage Unit, the Kimberley Land Council and other local Aboriginal community members to help identify the type of information that is appropriate for the database to allow the incorporation of cultural values.

Further assistance and support was provided by WWF-Australia, the community group involved with the project, along with the Department of Agriculture and Food who provided the web-interface for WetlandBase.

Future plans

DEC has secured Natural Resource Management Shared Land Information Platform funding to update the database in 2008 and to collate new datasets from various sources that are suitable for inclusion. Cooperation with custodians will ensure that wetland sampling data is recorded in a way that can be easily imported into WetlandBase.

The WetlandBase improvements that were funded through Coastwest provide natural resource managers, decision-makers and project managers with further information on coastal areas and their environmental and cultural values.

With every annual update of the database, DEC aims to ensure more scientific data reaches the public domain so that the values of our wetlands and coastal environments and how they are changing, can be better understood and used to make decisions on how they are managed.

For more information please contact Catherine Prideaux on (08) 9334 0442 or catherine.prideaux@dec.wa.gov.au



You are invited to the 2008 Coast-to-Coast Conference - Darwin

Coast-to-Coast Collaboration: Crossing Boundaries

The city of Darwin is delighted to extend an invitation to you to participate in the Coast-to-Coast 2008 Conference, to be held at the new Darwin Convention Centre in August 2008.

This will be the first time Darwin has hosted the national Coast-to-Coast Conference – made possible by the opening of the world-class Darwin Convention Centre in mid-2008.

Running from 18-22 August 2008, the conference will include a welcome function and other stimulating and social functions, including a poster session and official dinner.

Themes of the conference will include:

- planning for coastal climate change and disasters, such as cyclones and tsunamis;
- coastal planning for population change;
- coastal-marine biodiversity and conservation planning;
- planning for coastal mining and offshore oil-gas developments;
- coastal ecosystems, people and planning within the Arafura Timor Seas;
- monitoring, mitigation and management of land and marine-based pollution;
- community engagement, capacity-building and training; and
- approaches to integrated, multiple-use, coastal management.



Several workshops are proposed, including:

- tropical rivers and coastal wetlands;
- a coastal and marine natural resource management workshop;
- indigenous coastal and sea country planning and management; and
- management of coastal, estuarine and marine information and reporting.

Professor Nicole Gurran from the Urban and Regional Planning Program, Faculty of Architecture, University of Sydney has been confirmed as a plenary speaker, with other presenters to be announced closer to the date.

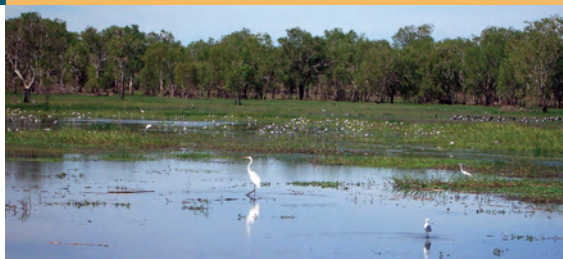


About Darwin

The Northern Territory and the tropical harbour city of Darwin, is a stepping stone to some of the world's iconic natural wonders such as Kakadu National Park and Uluru/Ayers Rock.

The weather is warm all year round and there's plenty to do to take advantage of the warm days and balmy nights. Outdoor living, with open-air cinemas, restaurants, bars, markets and festivals, is common in Darwin and fishing and cruising on the harbour is a great way to appreciate the natural beauty.

The completion of the Darwin Convention Centre, expected in mid-2008, will allow the city to accommodate large groups, conferences and events such as the National Coastal Conference.



A wide selection of restaurants, accommodation from five-star to under the stars, and a range of attractions and activities are available. There are numerous unique activities, from sunset harbour cruises, cocktails with crocodiles and the famous Mindil Beach Sunset Markets.

"Its relaxed, waterfront location and ambience – and proximity to the stunning coastal wetlands and diverse marine life of Darwin Harbour – will ensure that Coast-to-Coast 2008 will be an outstanding success"

Conference organisers

Online registrations for the conference will open 18 February 2008.

You can register your interest on the website www.coast2coast.org.au or if you would like more information email the conference organiser at admin@coast2coast.org.au

Accommodation will fill up quickly so start planning ahead if you are interested in attending the conference. Accommodation details can be found on the conference website www.coast2coast.org.au