WELCOME FROM THE CONFERENCE CHAIR

Dear Coastal Conference Delegate,

On behalf of SEQ Catchments Ltd. and the Queensland Coastal Conference Steering Group Committee I would like to welcome you to the second Queensland Coastal Conference – Waves of Change 2009.

The Conference theme is "Waves of Change" and how appropriate is this for the current status of coastal management in Queensland? Since the last coastal Conference in Bundaberg 2007, we have seen the amalgamation of councils in Queensland, we have a new Labour Australian Government and Prime Minister, Kevin Rudd, we have witnessed the Government officially saying "Sorry" to the Indigenous people of Australia for past actions related to the 'Stolen Generations' and in Queensland we have the first elected female Premier, Anna Bligh. With these changes come new challenges in terms of policy and implementation for coastal management in Queensland.

For natural resource management organisations and regional bodies we have experienced the closure of the Australian Government 'National Heritage Trust' program and the transition to the 'Caring for our Country Program' which has created enormous challenges and optimistic funding opportunities going to community projects Australia Wide.

Queensland's weather patterns have caused droughts in some regions with flooding and cyclonic events in others causing dramatic changes, particularly to our coastal landscape. Are these recent events examples of the impacts associated with "Climate Change" scenarios or are they just episodes of extreme weather? How are we, as a society going to adapt to what is now known as human-induced Climate Change?

Currently Australia is experiencing one of the largest economic challenges ever faced as a country. It will be interesting to see how coastal environmental management will play out under challenging economic recession.

The 2009 Conference program will feature a number of outstanding speakers, several concurrent sessions, workshops and poster presentations. This is your opportunity to extend your knowledge, renew and form partnerships with old and new colleagues and be a part of the debate to meeting the challenges of these waves of change.

I sincerely hope you enjoy the second Queensland Coastal Conference. It is your Conference, so please participate and make the most of the opportunities that this Conference will bring.

Sean Galvin
Chairperson
Queensland Coastal Conference Steering Group Committee

CONFERENCE ORGANISERS

Organising Committee

Tony Dillon	Kombumerri Gold Coast Sea/Landscape Consultants, SEQTOA
Toni Edmondson	DERM – Vice Chair
Kristina Frawley	SEQ Catchments Ltd
Sean Galvin	SEQ Catchments Ltd – Chair
John Gunn	HESROC
Lisa Hamblin	NGNRM
Anthony Hill	SEQ Catchments Ltd
Shannon Hunt	Gold Coast City Council
John Hunter	Australian Government Land and Coasts
Cheryl List	Burnett Mary Regional Group
Leonie Maddigan	NQ Dry Tropics
Steve McDermott	FNQ NRM
Natalie Mogg	Qld Water & Land Carers
Dave Patmore	Australian Government Land and Coasts
Sue Sargent	Burnett Mary Regional Group
Greg Stuart	DHI Water & Environment
Neil Tindale	University of the Sunshine Coast
Jason Vains	GBRMPA
Shane Westley	Fitzroy Basin Association

Conference Hosts

SEQ Catchments Ltd (SEQC)
SEQ Catchments is a community based business that sources and coordinates investment in activities that help South East Queensland to a sustainable future and restores natural resources for the benefit of future generations.

It is the regional body responsible for the planning and implementation of integrated Natural Resource Management (NRM) for South East Queensland and is recognised by the Australian and Queensland Governments as one of the 15 regional NRM bodies established in Queensland.

SEQ Catchments is a key partner in the delivery of the Australian Government's "Caring for our Country" Program in South East Queensland.

For further information visit **www.seqcatchments.com.au**

Conference Organisers

International Conferences & Events (ICE) Aust Pty Ltd
Level 23, 127 Creek Street, Brisbane, QLD, 4000
Tel: +61 7 3218 2147 / Fax: +61 7 3839 4649
Email: info@iceaustralia.com
Website: www.iceaustralia.com
Offices in Sydney, Melbourne, Brisbane and Perth

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REGISTRATION DESK
On arrival at Sea World Resort, Conference registration will be conducted at the Registration Desk located in the Lobby near the Ocean Room.

The registration desk will be open between the following times:

8.45am – 4.00pm	Tuesday 12 May 2009 (QCCG Forum Attendees only)
7.30am – 5.00pm	Wednesday 13 May 2009
7.30am – 1.00pm	Thursday 14 May 2009
8:30am – 2:00pm	Friday 15 May 2009

MESSAGES
Messages may be left at the Conference registration desk. All messages will be posted on the board next to the registration desk. As no responsibility can be taken to deliver messages personally, please check this board at regular intervals.

EXHIBITION
The Exhibition is located in the Lobby Lounge at Sea World Resort.

Exhibition Opening Times

10:50am – 5:00pm	Wednesday 13 May 2009
8:00am – 1:00pm	Thursday 14 May 2009
8:30am – 1:40pm	Friday 15 May 2009

CONFERENCE SESSIONS
Conference sessions will be held in the Ocean Room, Dolphin Bay Room and The Melrose. All plenary sessions will take place in the Ocean Room. Please refer to the program located on pages 18 - 22 for further details.

LUNCHES, MORNING AND AFTERNOON TEAS
All catering will be served in the Lobby Lounge around the exhibition area.

NAME BADGES
Delegates are required to wear their name badge at all times. You will not be authorised for entry into the Conference sessions, exhibition area or provided access to Morning and Afternoon Teas and Lunches without your name badge.

MOBILE PHONES
Please ensure your mobile phone is switched off or on 'silent' mode during all Conference sessions.

CONFERENCE PROCEEDINGS
Final papers for the oral and poster presentations will be available on the Queensland Coastal Conference website shortly after the Conference. Visit http://www.qldcoastalconference.org.au/information.php to view the papers.

PRIZES
Prizes will be awarded throughout the Conference for the following categories:
- Most Engaging Presentation
- Most Thought Provoking Presentation
- Most Innovative Presentation
- Best Student Poster
- Best Student Presentation

Please complete the Voting Form included in your satchel for the first three categories listed and place in the box at the Registration Desk by 1:00pm on Friday 15 May 2009.

PARKING
There are plenty of free car parking spaces available at Sea World Resort & Water Park front entrance. Reserved parking is also available for disabled guests adjacent to the main gate.

TAXI SERVICES
Regent Taxis provide an alternative to bus travel. For bookings call 131 008

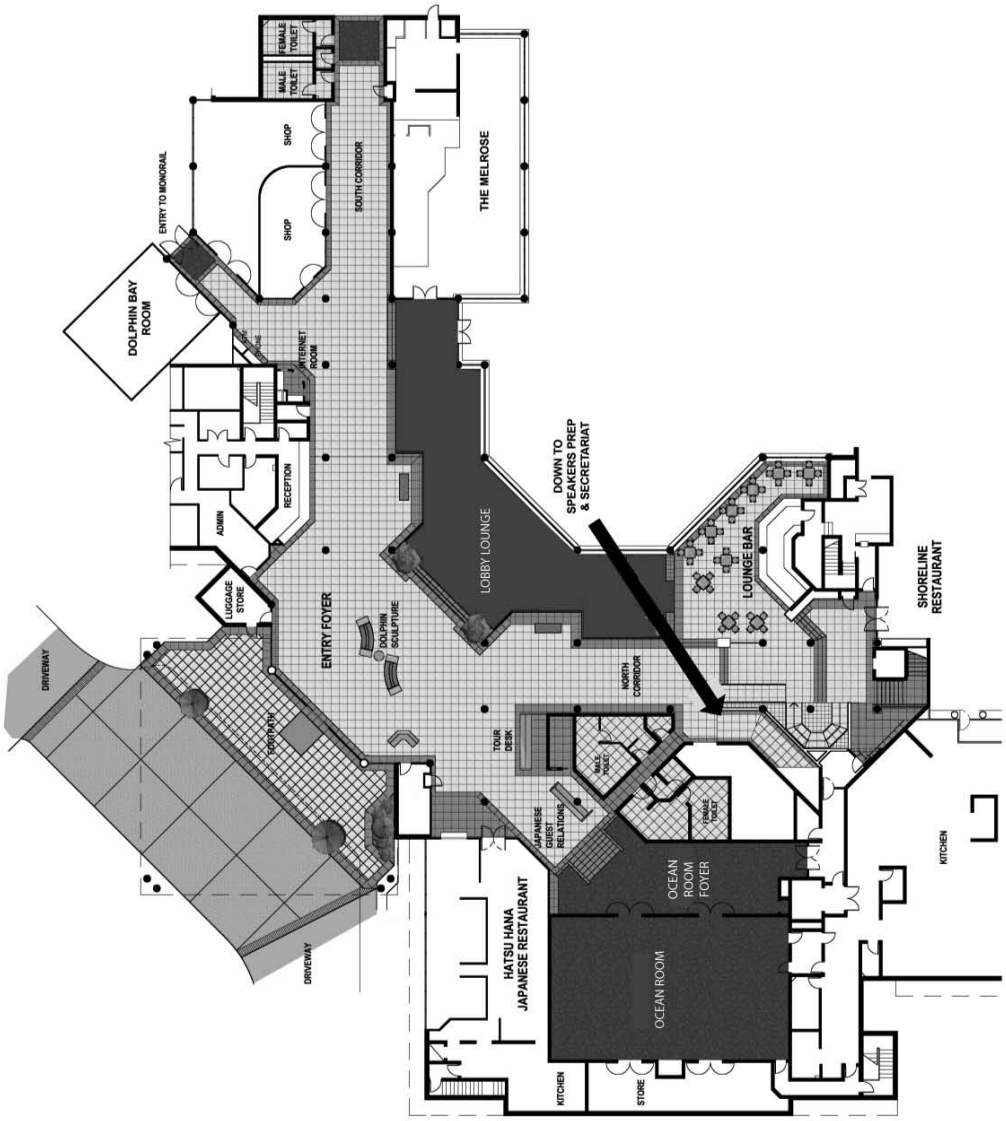
TRAIN
An excellent way to reach the Gold Coast from Brisbane is by train. It takes only one hour from Brisbane to reach the Gold Coast. For more information on routes and timetables visit the Queensland Rail website www.qr.com.au

BUS
Surfside Buslines offer unlimited travel anywhere on the Gold Coast. For more information call 07 5571 6555 or visit www.surfside.com.au

Sea World Resort offers regular shuttle services to Surfers Paradise, Pacific Fair and major theme parks returning daily. The shuttle bus departs from the main entrance of the resort. Fees apply, please speak to the concierge for a timetable.

AIRPORT TRANSFERS
Con-X-ion provides daily door to door services to and from Brisbane Airport and Gold Coast Airport. Please give 48 hours notice with your booking and have all your flight details handy. You will need to know Flight Number, flight departure/arrival times, which airline you are travelling with, which airport and how many passengers are travelling. For bookings call 07 555 69 888.

ACCOMMODATION
Sea World Resort
Sea World Drive
Main Beach, Gold Coast QLD 4217
Ph: 07 5591 0000



7TH QUEENSLAND COASTAL COUNCILS GROUP (QCCG) FORUM

Date: Tuesday 12 May 2009
Time: 9:15am – 4:00pm
Location: Dolphin Bay Room, Sea World Resort

Hosted by the Queensland Coastal Councils Group, with support from SEQ Catchments Ltd and the Queensland Coastal Conference Steering Committee

Proudly sponsored by: Aurecon, Gold Coast City Marina, DHI Water & Environment, Maritime Safety Queensland

The Qld Coastal Councils Group supports councils across Queensland who manage coastal areas. The group meets formally at the Qld Coastal Forum which is an event focusing on Local Government efforts in managing the Queensland coastal zone. The Qld Coastal Forum is an event with an open invitation to any Local Government officer, or Councillor who is involved in the management of the coastal zone (planning/engineering/maintenance activities etc). The event is particularly useful, as the issues discussed and workshopped at the Forum allow attendees to hear about new or emerging ways to manage coastlines/waterways, how issues or problems have been solved, and provides a valuable networking opportunity. While the Coastal Forum is focussed on Local Government issues, coastal managers from other sectors who interact with Local Government are encouraged to attend.

Attendance on field trips will be restricted to those who have pre-booked their tickets. Should you wish to attend any field trips and you have not registered, please see the Registration Desk. Those who have registered to attend any field trips, but can no longer attend, please hand your ticket back to the registration desk.

All Field Trips will be held on Thursday 14 May 2009. Please see below for the actual running times as these differ for each field trip.

Field Trip 1: Community Management

Time: 1:00pm - 4:00pm
Transport: Walking group - meet in Sea World Resort Foyer at 1:00pm
Location: Friends of Federation Walk
Ticket cost: Free of charge – Afternoon tea will be provided
Requirements: Attendees will need to be suitably dressed to undertake physical labour. Closed toe footwear, sun protective clothing, a hat and water bottle are required.

Program

1:00pm	Depart Sea World Resort
1:10pm	Welcome & Introductions
1:20pm	Project Objectives talk
1:30pm	Split into two groups Group 1 - Coastal Process Talk, Sand by-pass system, Weed removal activity Group 2 - Planting Activity
2:30pm	Afternoon Tea
2:50pm	Split into two groups and swap activities
3:50pm	Debrief
4:00pm	Return to Sea World Resort

Proudly sponsored by: Gold Coast City Council

Field Trip 2: Managing Competing Interests

Time: 1:00pm - 5:30pm
Transport: Coach - meet in Sea World Resort Foyer at 12:45pm
Location: Point Danger, Kirra Hill lookout, Currumbin Alley
Ticket cost: $15.00 – Afternoon tea will be provided
Requirements: Hat, sunscreen, water and comfortable walking shoes suitable for sand.

Program

1:00pm	Depart Sea World Resort - Narrowneck and Surfers Paradise
1:45pm	Currumbin Creek Entrance
2:45pm	Point Danger
3:30pm	Kirra Point Lookout
5:00pm	The Spit, Sand pumping jetty walk

Field Trip 3: Marine Rescue

Time: 1:00pm - 4:30pm (delegates who are snorkelling)
Please note: The twelve delegates selected for snorkelling have previously been notified by email.
3:15pm - 4:30pm (delegates who are not snorkelling)
Transport: Walking group - delegates who are snorkelling should meet in Sea World Resort Foyer at 12:45pm.
Delegates who are not snorkelling should meet in Sea World Resort Foyer at 3:00pm
Location: Sea World
Ticket cost: $45.00 – Afternoon tea will not be provided
Requirements: No photography is allowed during the behind-the-scenes tours and for the safety of the animals, jewellery is not permitted to be worn.

Program

1:00pm	Tropical Reef Snorkel delegates to depart Sea World Resort
1:00pm - 3:30pm	Tropical Reef Snorkel (12 selected delegates only)
3:15pm	Remainder of attendees to depart Sea World Resort
3:30pm - 4:30pm	Group 1 - Polar Bear Shores Behind the Scenes, then Shark Bay Educational Group 2 - Shark Bay Educational, then Polar Bear Shores Behind the Scenes

SOCIAL PROGRAM

Entry to all social functions will be restricted to those who have registered their attendance. Should you wish to attend any social functions and you have not yet registered, please see the Registration Desk. Those who have registered to attend any social functions, but can no longer attend, please hand your ticket back to the registration desk.

Welcome Reception
Date: Wednesday 13 May 2009
Time: 6.00pm – 8.00pm
Venue: Waterfall Café, Sea World Resort
Dress code: Smart Casual

The Welcome Reception is an opportunity for us to welcome you to the Conference, and for you to meet and network with fellow delegates whilst enjoying drinks and canapés.

One (1) ticket is included in all full delegate registrations. If you have not yet indicated your attendance at the Welcome Reception, or would like to purchase an additional ticket, please visit the Registration Desk.
Additional tickets: $55

Conference Dinner
Date: Thursday 14 May 2009
Time: 7.00pm – 11.00pm
Venue: Paradise Room, Sea World
Dress code: Smart Casual - a prize will be awarded for the best dressed delegate

Enjoy an evening of delicious dinner and wine amidst exciting entertainment, whilst overlooking Sea World at night. This is an opportunity for you to get together with new and old friends for a fun filled evening.

Tickets are additional to the registration fee. If you have not yet booked for this event and would like to do so, please visit the Registration Desk.
Ticket cost: $90

SPONSORS

GOLD SPONSOR

Department of **Environment**
and **Resource Management**
PO Box 15155
City East QLD 4002
Email: coastal.support@epa.qld.gov.au
Website: www.derm.qld.gov.au

The Department of Environmental and Resource Management is Queensland's leading Department responsible for managing climate change, protecting the environment and ensuring natural resources are used sustainably. This includes ensuring Queensland's coastal zone is protected and managed for the benefit of the community and future generations.

Our vision is an environmentally sustainable Queensland

Our mission is to provide environmentally sustainable solutions through leadership in:
- Conserving Queensland's landscapes;
- Enabling sustainable development;
- Improving business and industry's environmental performance; and
- Building community knowledge and participation.

We do our work by:
- Innovation and proactive problem solving;
- Working in partnerships;
- Providing excellent customer service, which is efficient, responsive, transparent and integrated; and
- Creating and using knowledge to build a strong evidence base for action.

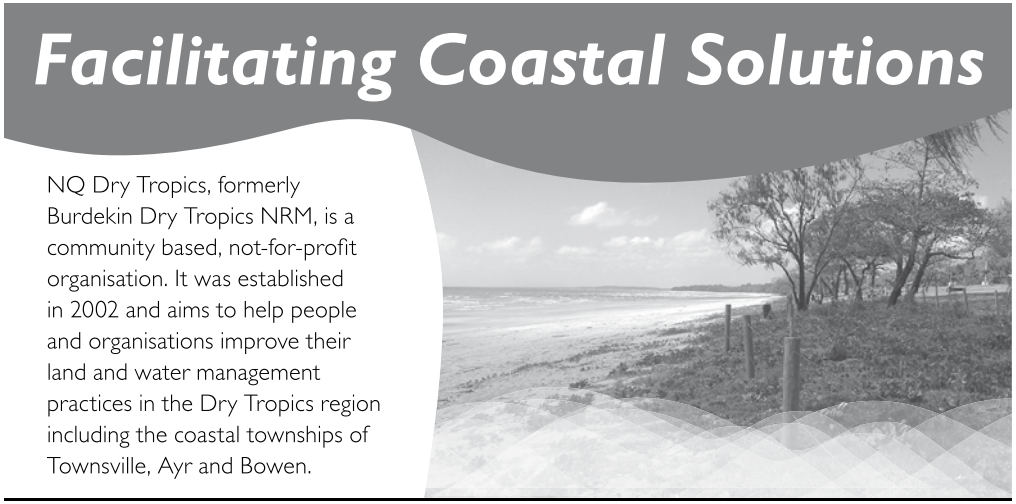
SILVER SPONSOR

NQ Dry Tropics
PO Box 1466
Townsville QLD 4810
Ph: 07 4724 3544 / Fax: 07 4724 3577
Website: www.nqdrytropics.com.au

NQ Dry Tropics represents a region of 140,000 square kilometres with about 210,000 residents. The majority of these people live in Townsville (over 160,000) and other coastal centres such as Ayr, Bowen and the world heritage listed islands, Palm Island and Magnetic Island.

The region is an area of environmental significance for all Australians due to its location adjacent to the Great Barrier Reef.

NQ Dry Tropics exists to help people and organisations improve their land and water practices to ensure a sustainable future for us all. This includes farmers, urban, rural and coastal residents, as well as organisations and community groups.



NQ Dry Tropics actively supports Coastcare groups, Traditional Owners and Reef Guardian School children in the management of their coast (visit www.nqdrytropics.com.au/coastalandmarine/camprogramme).

Queensland Government | CARING FOR OUR COUNTRY | NQ Dry Tropics LAND & WATER SOLUTIONS

QLD COASTAL COUNCILS GROUP FORUM SPONSORS

Aurecon
Locked Bay 1800
Spring Hill, Brisbane QLD 4004
Ph: 07 3135 8427 / Fax: 07 3135 8001
Website: www.aurecongroup.com

Aurecon is a leading, vibrant, global group built from the union of Africon, Connell Wagner and Ninham Shand. Aurecon's coastal group delivers specialist consultancy expertise in coastal engineering and coastal zone management

Gold Coast City Marina
Box 1, 76 – 84 Waterway Drive
Coomera QLD 4209
Ph: 07 5502 5888 / Fax: 07 5502 5877
Website: www.gccm.com.au

Situated on Australia's renowned Gold Coast and an integral part of the 250 hectare Gold Coast Marine Precinct, Gold Coast City Marina is the ideal location for all boat service, maintenance, refit, storage and berthing. Gold Coast City Marina is the largest shipyard of its kind in the Southern Hemisphere.

DHI Water & Environment
PO Box 3596
Australia Fair QLD 4215
Ph: 07 5564 0916 / Fax: 07 5564 0946
Website: www.dhigroup.com.au

DHI is a not-for-profit consulting and research organisation in coastal/marine fields focusing on the development and application of advanced technologies and software. DHI offers consulting services and software tools, which support the investigation, planning, design, operation and maintenance of coastal/marine infrastructure and environments.

Maritime Safety Queensland
GPO Box 2595
Brisbane QLD 4001
Ph: 07 3120 7462 (General enquiries) / Fax: 07 3120 7440 (Maritime Services branch)
Website: www.msq.qld.gov.au

Maritime Safety Queensland (MSQ): Acknowledging the cooperation of local coastal councils in the event of a marine oil pollution incident.

Encouraging the connection of sewage pumpout facilities to council infrastructure, in support of vessel-sourced sewage legislation and a cleaner marine environment.

SITE REHABILITATION SPONSOR

Gold Coast City Council
PO Box 5042
GCMC QLD 9729
Ph: 07 5582 8211 / Fax: 07 5596 3653
Website: www.goldcoast.qld.gov.au

The Federation Walk Coastal Reserve is a 93 hectare site situated on a Spit on the Gold Coast. Site rehabilitation has been undertaken in a collaborative effort between the community group Friends of Federation Walk Inc. and GCCC, with support from the QLD State Government and Federal labour market programs. The aim of the project is to ' preserve and enhance the Federation Walk Coastal Reserve for generations to come.'

SATCHEL SPONSOR

BMT WBM Pty Ltd
PO Box 203
Spring Hill QLD 4004
Ph: 07 3831 6744 / Fax: 07 3832 3627
Website: www.wbmpl.com.au

The Water and Environment group of BMT WBM (formerly WBM Oceanics) is one of Australia's premier environmental consultants. Based in Brisbane with branch offices in Newcastle, Sydney, Melbourne and Ballina, BMT WBM specialises in the fields of coastal management, flooding, water quality, ecology and environmental planning and management. Our projects are supported by an in-house GIS team as well as an experienced field sampling and coordination team which can be mobilised throughout Australia's coastal environments.

NAME TAG SPONSOR

Technigro Pty Ltd
PO Box 2038
Burleigh BC QLD 4220
Ph: 1800 678 611 / Fax: 1800 678 622
Website: www.technigro.com.au

Technigro are urban vegetation managers, specialising in the program management of natural areas, parks & gardens, road networks and sports turf in South East Queensland.

Backed by over 20 years experience in the vegetation management industry, Technigro's natural areas team specialise in dunal system rehabilitation, bushland restoration and environmental weed control.

COMMUNITY REGISTRATIONS SPONSOR

Queensland Water & Land Carers
PO Box 344
Fortitude Valley QLD 4006
Ph: 07 3252 7154 / Fax: 07 3252 7175
Website: www.qwalc.org.au

Queensland Water and Land Carers Inc. (QWaLC) is the peak body for the volunteer community natural resource management sector in Queensland. It is an independent, non-government, not-for-profit organisation, funded by the Department of Natural Resources and Water and established to support community volunteers in achieving sustainable resources use. The organisation supports and represents a range of community groups such as: Landcare, Coastcare, Bushcare, Waterwatch, Catchment Management, Friends of., Progress Associations, and Environmental Councils.

It currently has 320 member groups, and 70 associate members, comprising approximately 30,000 volunteers.

NOTE PAD & PEN SPONSOR

Fitzroy Basin Association
PO Box 139
Rockhampton QLD 4700
Ph: 07 4999 2800 / Fax: 07 4921 2860
Website: www.fba.org.au

The Fitzroy Basin Association Inc (FBA) supports both individual and group projects on-ground that address catchment-wide natural resource management issues. With the largest river system running to the east coast of Australia, FBA plays an essential role in reducing the impact of land uses on the Great Barrier Reef.

GIFT SPONSOR

Earth Environmental
PO Box 802
Mackay QLD 4740
Ph: 0413 019 359
Email: earth@mackay.net.au

Earth Environmental is a specialty natural resource management and sustainability consultancy that works on making a difference by nurturing systemic and collaborative arrangements to catalyse positive environmental and social transformations.

EXHIBITORS

Airtech Australia
Website: www.airtechaust.com — Exhibition Stand No: 4

Coastalwatch
Website: www.coastalwatch.com — Exhibition Stand No: 15

DHI Water & Environment
Website: www.dhigroup.com.au — Exhibition Stand No: 11

Department of Environment and Resource Management (DERM)
Website: www.epa.qld.gov.au — Exhibition Stand No: 14

Department Primary Industries & Fisheries
Website: www.dpi.qld.gov.au — Exhibition Stand No: 8

Gold Coast City Council
Website: www.goldcoast.qld.gov.au — Exhibition Stand No: 7

Marine Discovery Centre
Website: www.marinediscoverycentre.com.au — Exhibition Stand No: 1

Maritime Safety Queensland
Website: www.msq.qld.gov.au — Exhibition Stand No: 5

NQ Dry Tropics
Website: www.nqdrytropics.com.au — Exhibition Stand No: 2

Structures from Latitude27
Website: structures@latitude27.com.au — Exhibition Stand No: 12

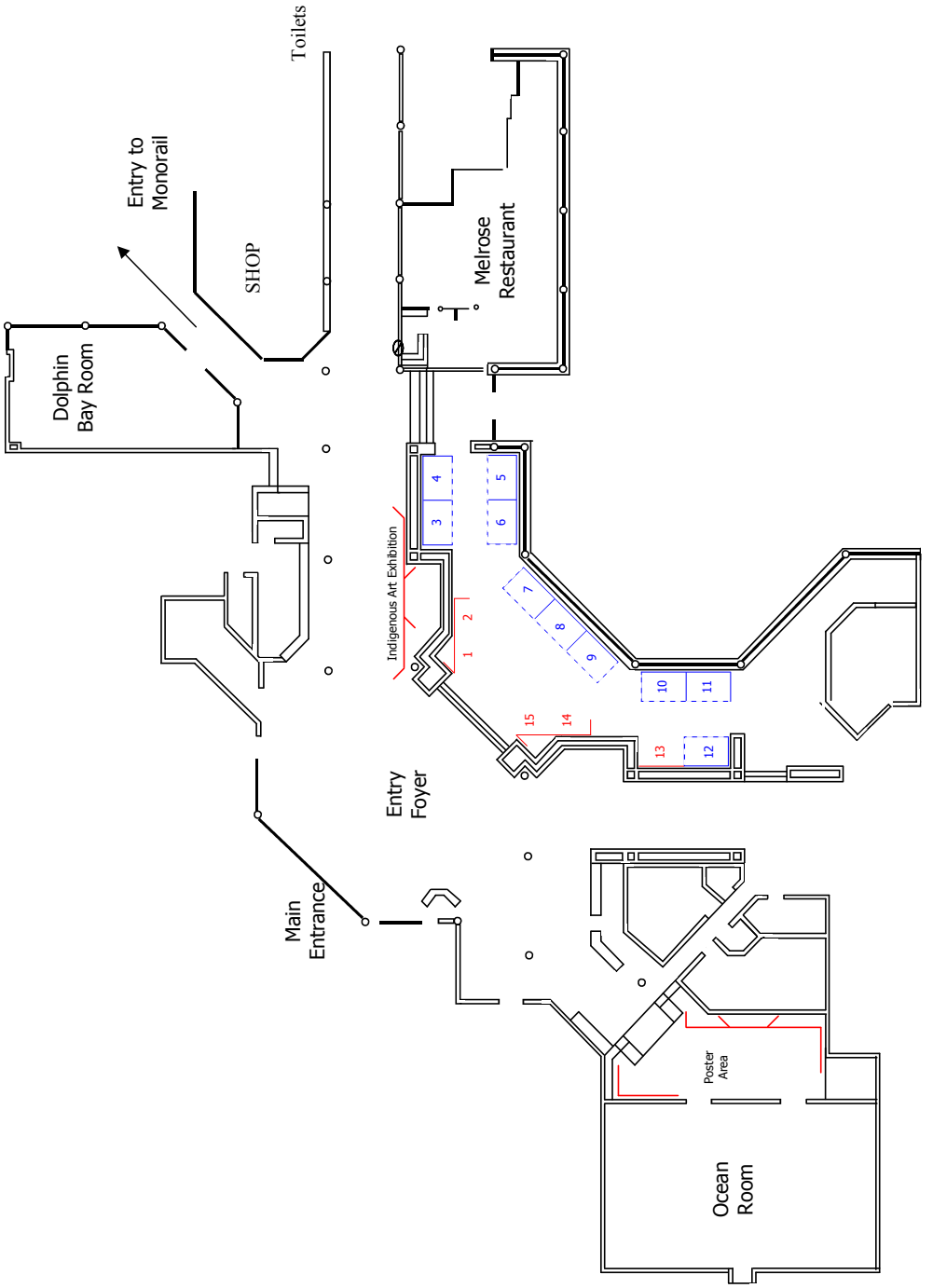
Surf Life Saving Queensland
Website: www.lifesaving.com.au — Exhibition Stand No: 9

Surveyors at Work
Email: info@surveyorsatwork.com.au — Exhibition Stand No: 6

Technigro Pty Ltd
Website: www.technigro.com.au — Exhibition Stand No: 3

V-Tol Aerospace
Website: www.v-tol.com — Exhibition Stand No: 13

Water Technology
Website: www.watech.com.au — Exhibition Stand No: 10



PROGRAM - TUESDAY 12 MAY 2009

8:45am	Registration Opens
	Queensland Coastal Councils Group (QCCG) Forum Room: Dolphin Bay Room
9:15am - 9:25am	**Welcome & Introduction** *Shannon Hunt*
9:25am - 9:55am	**Past Experiences in Gold Coast Beach Management** *Brian McGrath*
9:55am - 10:25am	**Coastal Management approaches on the Gold Coast** *John McGrath, Shannon Hunt & Rodger Tomlinson*
10:25am - 10:35am	**Gold Coast Hydrographic Survey** *Michael Walsh*
10:35 - 11:00am	Morning Tea
11:00am - 11:30am	**Gold Coast Coastal and Waterways Management (Creek Dredging; Boulderwalls; Viewing Decks; Canal Maintenance; Boat Ramps; Sandy Foreshores)** *Andy Maffey & Shane Sterry*
11:30am - 12:15pm	**QCCG Project Working Group Reports:** State Coastal Management Plan Coast Info Website IDAS Submission Development of the QCCG
12:15pm - 12:30pm	**Review of issues raised at Bundaberg Coastal Forum 2007** *Greg Stuart*
12:30pm - 1:30pm	Lunch
1:30pm - 2:00pm	**Select new QCCG projects and develop Project Working Groups** *Greg Stuart*
2:00pm - 2:30pm	**Local Government Amalgamation News** *Jamie Bunt (FCRC), Roger Chalmers (SCRC) & Paul Devine (CCRC)*
2:30pm - 2:45pm	Afternoon Tea
2:45pm - 3:15pm	**Currumbin Creek Catchment Issues** *Kris Boody*
3:15pm - 3:45pm	**Review of oil spill response actions from Sunshine Coast Regional Council**
3:45pm - 4:00pm	**Close** *Shannon Hunt*

Program correct at time of printing

PROGRAM - WEDNESDAY 13 MAY 2009

7:30am	Registration Opens		
	Conference Opening *Chair: Sean Galvin* Room: Ocean Room		
8:30am	Welcome from Conference Convenor		
8:35am	Welcome to Country		
	Plenary Session 1 *Chair: Sean Galvin* Room: Ocean Room		
8:40am - 9:00am	**Keynote Presentation & Official Opening of Conference** *The Honourable Kate Jones MP - Minister for Climate Change and Sustainability, Queensland*		
9:00am - 10:00am	**Invited Presentation: Oil Spill Recovery in South East Queensland** *Clive Cook, Chair - Natural Environment Recovery Group*		
10:00am - 10:45am	**Keynote Presentation: Biodiversity Survival - from Reserves to the Entire Landscape** *Mike Berwick, Qld Regional NRM Groups Collective and Terrain NRM*		
10:45am - 10:50am	Introduction to concurrent session themes & workshop participation process from Technical Program Chair		
10:50am - 11:20am	Morning Tea		
	Theme: Planning, Policy and Politics *Chair: Greg Stuart* Room: Ocean Room	**Theme: Coast and Marine Assets** *Chair: Neil Tindale* Room: Dolphin Bay Room	**Theme: In Action not Inaction** *Chair: Sue Sargent* Room: The Melrose
11:20am - 11:40am	**Invited Presentation: Climate Change in Queensland- From Science to Policy** *Lynne Turner, Queensland Climate Change Centre of Excellence*	**Assessing the Ecosystem Services provided by South East Queensland's Coastal Assets** *Simone Maynard, SEQ Catchments Ltd*	**The Burnett Mary - Planning Coastal & Marine Management from the ground up** *Sue Sargent, Burnett Mary Regional Group*
11:40am - 12:00pm	**Invited Presentation: Adapting to Change and Finding the Opportunities** *Di Tarte, SEQ Healthy Waterways Partnership*	**Changes to dunes caused by 4WD vehicle tracks in beach camping areas of Fraser Island** *Luke Thompson, USC*	**Federation Walk Coastal Reserve Management Partnership** *Jodie Clifford, Gold Coast City Council*
12:00pm - 12:20pm	**Invited Presentation: Preparing Coastal Communities for Long-Term Environmental Changes** *Simon Warner, SEQ Catchments Ltd*	**Caboolture Shorebird Habitat Mapping Project** *Siobhan Bland, Moreton Bay Regional Council*	**Land, Water, Waste and Community – Current best practice for Local Government motivated towards Reef protection** *Paul Groves, GBRMPA*
12:30pm - 1:30pm	Lunch		

Program correct at time of printing

PROGRAM - WEDNESDAY 13 MAY 2009

	Theme: Climate Change *Chair: Susie Chapman* Room: Ocean Room	Theme: Coast and Marine Assets *Chair: Sean Galvin* Room: Dolphin Bay Room	Theme: Relationships - People and Communities *Chair: Natalie Mogg* Room: The Melrose
1:30pm - 1:50pm	**Invited Presentation: Demonstrating 'Climate Proofing' for Coastal Local Government Authorities and Communities in the South East Queensland and Burnett-Mary Regions** *Peter Waterman, USC*	**A framework (with software) for assessing the health of, and risk to, Queensland's estuarine wetlands: examples of outputs and outcomes from the Burnett Mary NRM region** *David Scheltinga, DERM*	**Communicating Coastal Conservation - Getting the Message Through** *Leonie Maddigan, NQ Dry Tropics*
1:50pm - 2:10pm	**Invited Speaker: Climate Change and Coastal Management: Making Decisions In The Face Of Uncertainty** *Andrew Ash, CSIRO*	**Monitoring beach impacts: a case for ghost crabs as ecological indicators?** *Serena Lucrezi, USC*	**Traditional Owner Engagement - The Girringun Way** *Phil Rist, Girringun Aboriginal Corporation*
2:10pm - 2:30pm	**Coastal Vulnerability Principles for Climate Change** *Peter Helman, Griffith University*	**Mangroves as Indicators of estuarine condition: the results of aerial surveys from five NRM regions in eastern Queensland** *Norm Duke, University of Queensland*	**Enriching Relationships: Community Engagement toward Sustainable Coastal Futures** *Shannon Satherley, QUT*
2:30pm - 2:50pm	**The capacity of local government to support adaptation to climate change for coastal communities: a case study in the Great Barrier Reef region** *Anne Leitch, ARC CoE Coral Reef Studies & CSIRO*	**Numerical simulation of moored vessel movements due to passing ships within the Port of Brisbane** *Simon Mortensen, DHI Water & Environment*	**Protecting the Green Behind the Gold: Integrating Catchment Management in Gold Coast City** *Nathan Waltham & Kris Boody, Gold Coast City Council*
3:00pm - 3:30pm	Afternoon Tea		
	Workshops		
	Theme: Planning, Policy and Politics *Chair: John Gunn* Room: Ocean Room	**Theme: Coast and Marine Assets** *Chair: Toni Edmondson* Room: Dolphin Bay Room	**Theme: In Action not Inaction / Relationships - People and Communities** *Chair: Leonie Maddigan* Room: The Melrose
3:30pm - 5:00pm	**Planning for Storm Surge and Rising Sea Level** *Rodger Tomlinson, Griffith University*	**Management of Public Coastal Land in Queensland** *Lyn Wallace & Toni Edmondson, DERM*	**The use of chemical indicators to source human, animal and bird pollution of Fraser Island lakes and streams** *Daryle Sullivan, USC*
6:00pm -8:00pm	**Welcome Reception** Venue: Waterfall Café, Sea World Resort		

Program correct at time of printing

PROGRAM - THURSDAY 14 MAY 2009

7:55am - 8:45am	**Shark Bay Experience (optional)** Venue: Sea World		
	Plenary Session 2 *Chair: Sean Galvin* Room: Ocean Room		
9:00am - 9:45am	**Keynote Presentation: Climate Change and the Coastal Zone: Science, Uncertainties and Risks** *Will Steffen, ANU Climate Change Institute*		
9:45am - 10:05am	**Keynote Presentation: Torres Strait Islander Perspectives on Coastal Management and Climate Change** *Napcia Bin Tahal, Deputy Chair - Torres Strait Regional Authority*		
10:05am - 10:30am	**Caring for our Country** *Nicole Middleton, Australian Government Land and Coasts*		
10:30am - 11:00 am	Morning Tea		
	Theme: Planning, Policy and Politics *Chair: John Gunn* Room: Ocean Room	**Theme: Coast and Marine Assets** *Chair: Linda Durham* Room: Dolphin Bay Room	**Theme: In Action not Inaction / Relationships - People and Communities** *Chair: Leonie Maddigan* Room: The Melrose
11:00am - 11:20am	**Invited Presentation: Townsville City - Integrating Sustainability in the Coastal Zone, an example from Tropical Queensland** *Greg Bruce, Townsville City Council*	**Invited Presentation: Healthy Waterways-Healthy Catchments: A special partnership to secure the future of coasts, waterways and catchments in South East Queensland** *Eva Abal, SEQ Healthy Waterways Partnership*	**From Small Things, Big Things Grow** Donna-Marie Audas, *Qld Wetlands Program*
11:20am - 11:40am	**Review of the State Coastal Management Plan** *Toni Edmonson, DERM*	**The Emission, Transport and Deposition of Aeolian Ammonia From Poultry Farm to Pumicestone Passage: Use of TAPM to Estimate Annual Loading** *Aaron Wiegand, USC*	**Community and Organisation Change: The Key to Coastal Sustainability** *Sally Kirkpatrick, Griffith University*
11:40am - 12:00pm	**Can we minimize the impact of vessel moorings on coastal habitats? An inter-agency management approach in Queensland** *Kurt Derbyshire, Department of Employment, Economic Development and Innovation*	**Using observed market expenditure to estimate the value of recreational surfing to the Gold Coast, Australia** *Neil Lazarow, Griffith University*	**Management in action: addressing the impacts of instream structures on Declared Fish Habitat Areas in coastal Queensland** *Mary Lawrence, DPI&F*
12:00pm - 12:20pm	**Improving Urban Water Quality in the Dry Tropics Coastal Zone** *John Gunn, Earth Environmental For Creek To Coral*	**A review of the use of geotextile erosion protection structures in the coastal zone** *Paul O'Keefe, GHD*	**Practical Change for Queensland's Wetlands** *Cassie Price, WetlandCare Australia*
12:30pm	Lunch		
	Field Trips Field Trips		
1:00pm	**Field Trip 1 - Community Management** *Location: Friends of Federation Walk*	**Field Trip 2 – Managing Competing Interests** *Location: Point Danger, Kirra Hill Lookout, Currumbin Alley*	**Field Trip 3 – Marine Rescue** *Location: Sea World*
7:00pm - 11:00pm	**Conference Dinner** Venue: Paradise Room, Sea World		

Program correct at time of printing

PROGRAM - FRIDAY 15 MAY 2009

	Theme: Coast and Marine Assets *Chair: John Gunn* Room: Ocean Room	Theme: Planning, Policy and Politics *Chair: Simon Brown* Room: Dolphin Bay Room	Theme: Coast and Marine Assets *Chair: Shane Westley* Room: The Melrose
9:00am - 9:20am	**Towards Understanding the Ecological Health and Character of Moreton Bay** *John Bennett, Qld DERM & Greg Fisk, BMT WBM*	**Shoreline Erosion Management Planning - Using numerical models to help guide coastal management decisions** *Greg Stuart, DHI Water & Environment*	**Evaluating our coastal plans and policies: what's in a framework?** *Michelle Walker, Michelle Walker & Associates*
9:20am - 9:40am	**What happens when it rains in the Logan-Albert Catchment?** *Joanne Burton, SEQ Healthy Waterways Partnership*	**Coastal safety and risk management - an imperative for Queensland** *George Hill, Surf Life Saving Queensland*	**Invited Speaker:** **Coastinfo – a one start shop for coastal planners and managers** *Adam Callinan, DERM*
9:40am - 10:00am	**Sustainable Planning for Aquaculture in the Great Sandy Region** *Samantha Miller, DPI&F*	**Assessment of Coastal Hazards – CoastSAFE Alive Australia** *Darrell Strauss, Griffith University*	**Presentation:** *Marine Expert, Sea World*
10:10am - 10:40am	Morning Tea		
	Plenary Session 4 *Chair: Greg Stuart* Room: Ocean Room		
10:40am - 11:10am	**Invited Presentation: Go West Young Man** *Simon Baltais, Queensland Conservation Council*		
11:10am - 11:40am	**Riding the Waves of Change: Towards a joined up planning approach for coastal management** *Darryl Low Choy, Griffith University*		
11:40am - 12:10pm	**Keynote Presentation: Promoting a Queensland chapter of the Australian Coastal Society (ACS)** *Bruce Thom, Australian Coastal Society*		
12:10pm - 12:40pm	**Background & Introduction: Need for a coastal management authority in Queensland (from 2007 Qld Coastal Conference)**		
12:40pm - 1:40pm	Lunch		
1:40pm - 3:00pm	**Workshop** *Chair: Sean Galvin* Room: Ocean Room		
	Need for a coastal management authority in Queensland (from 2007 Qld Coastal Conference)		
3:00pm - 3:30pm	**Conference Closing** *Chair: Sean Galvin* **Room: Ocean Room**		

Program correct at time of printing

THE HONOURABLE KATE JONES MP

Minister for Climate Change and Sustainability
Queensland Government

At age 29, the Honourable Kate Jones was sworn in as Minister for Climate Change and Sustainability on 26 March 2009.

As the youngest ever female cabinet member in Queensland and the first Gen Y Minister, Kate is passionate about reducing the impacts of climate change and improving the long-term sustainability of the environment.

Her priorities are:
- Implementing policies to reduce the carbon footprint of every household in Queensland;
- Reducing harmful run-off from reaching the iconic Great Barrier Reef by 50%;
- Increasing the National Parks and other estates and expanding the Great Walks program, especially the development of a Cape York Greatest Walk;
- Development of more comprehensive and effective waste management systems.

Before being elevated to the ministry, Kate was Deputy Whip and served on several parliamentary committees.

Kate grew up in her electorate of Ashgrove, attended the Kelvin Grove State High School and worked at The Gap Family Markets while completing a Bachelor of Arts in Journalism and Politics at Queensland University of Technology. She is currently completing a Masters in Environmental Law through the Australian National University.

Before running for State Parliament, Kate was a Senior Media Advisor to the Queensland Minister for Public Works, Housing and Racing, Robert Schwarten and had also worked as a Media Advisor to the Queensland Treasurer David Hamill.

Kate is a member of a number of Ashgrove electorate community groups, including the Ashgrove Historical Society, The Gap Community Association, Ashgrove Meals on Wheels, Ashgrove Climate Change Action Group and environmental group Save Our Waterways Now. She is also Patron of The Gap State High School P&C Committee, The Gap Little Athletics and the Everton Wolves AFL Club.

Kate firmly believes in education for all as the driver of a strong economy. She also has a strong interest in environmental and housing policy.

Kate is a member of Amnesty International, The Fred Hollows Foundation and World Vision.

MIKE BERWICK AM

Mike was Mayor of the Douglas Shire previous to the amalgamation with Cairns City Council in March 2008. He is known for this advocacy and actions to promote suitable development in the shire and elsewhere.

He is involved in a wide range of local, state and national land management groups including Queensland's representative on the National NRM Working Group, Chair of Terrain Natural Resource Management Board, Chair of Regional Groups Collective, Chair of the Cape York Peninsula Regional Advisory Committee and Chair of the Tropical Landscape Joint Venture.

Mike has been chair of the Coastal CRC National Stakeholder Advisory Committee, North Queensland Afforestation, and the Local Authority Waste Management Advisory Group.

He is a former member of the Rainforest CRC Board, the Queensland Vegetation Advisory Committee, the Sugar Industry Guidance Group, the National Biodiversity Advisory Committee, the National Sea Change Task Force executive and the Daintree Planning Co-ordination Group. Mike is also the author of the National Local Government Biodiversity Strategy.

In the recent Queens Birthday Honours Mike was awarded the Order of Australia for Service to conservation and the environment through initiatives supporting the preservation of the Daintree Rainforest and far north Queensland, to local government, and to the community of Douglas Shire.

MS NAPCIA BIN TAHAL

Deputy Chairperson
Board of the Torres Strait Regional Authority

Ms Napcia Bin Tahal is the Torres Strait Regional Authority (TSRA) Member for Horn and Prince of Wales Islands, and is the TSRA Deputy Chairperson. Ms Bin Tahal also carries portfolio responsibility for Housing and Infrastructure with the TSRA. In addition to this, Ms Bin Tahal is the Deputy Mayor for the Torres Shire Council.

Ms Bin Tahal aims for long-term economic sustainability in the Torres Strait through the development of local businesses that can operate independently of Government assistance.

Torres Strait's natural resources form a significant foundation from which the region can base economic development and Ms Bin Tahal recognizes that climate change can affect the economic future of the Torres Strait. Ms Bin Tahal is an advocate for education and the sharing of information on climate change, and believes a whole of government approach, scientific research, combined with traditional knowledge is needed to maintain her peoples' island way of life and Torres Strait's economic future.

PROF WILL STEFFEN

Executive Director
Climate Change Institute, ANU

Professor Will Steffen is Executive Director of the ANU Climate Change Institute at the Australian National University (ANU), Canberra, and is also Science Adviser, Department of Climate Change, Australian Government. From 1998 to mid-2004, he served as Executive Director of the International Geosphere-Biosphere Programme, based in Stockholm, Sweden. His research interests span a broad range within the field of Earth System science, with a special emphasis on terrestrial ecosystem interactions with global change; the global carbon cycle; incorporation of human processes in Earth System modelling and analysis; and sustainability, climate change and the Earth System.

BRUCE G THOM BA (Hons), PhD, FIAG, FTSE

Formerly Vice-Chancellor University of New England (1994-1996), Professor Thom has held positions such as Foundation Professor of Geography, Royal Military College, Duntroon (University of New South Wales, 1977-1984); Professor of Geography University of Sydney (1985-1993); and Pro-Vice-Chancellor Research, University of Sydney (1990-1993). He holds the title of Emeritus Professor from University of Sydney. Professor Thom served as Chair of the Australian State of Environment Committee 1998-2002, and as Chair of the Coastal Council of New South Wales (1999-2004). He was Visiting Professor in the Faculty of Built Environment at the University of NSW. He served as the Visiting Professor for Coastal Management and Planning at the Department of Infrastructure, Planning and Natural Resources in Sydney. He also formerly held the position of Visiting Professor in the NSW Department of Planning. Professor Thom is a member of the Wentworth Group of Concerned Scientists and is President of the Australian Coastal Society.

DR EVA ABAL

Dr. Eva Abal's major scientific expertise and research interests include scientific management and coordination of multidisciplinary projects, ecophysiology of marine communities, with emphasis on their use as biological indicators of various impacts on ecosystems, effective science communication, strategic research planning and facilitating linkages between scientists and managers/stakeholders. Eva oversees the management of scientific activities of the South East Queensland Healthy Waterways Partnership (SEQHWP), including quality assurance of scientific activities and information, research plan/design development, and dissemination of information to stakeholders. Eva coordinates the SEQHWP's Scientific Expert Panel, a consortium of experts, which oversees the strategic research direction to achieve the Healthy Waterways vision. Eva's passion is in the synthesis and effective communication of scientific information, making science relevant and useful to stakeholders and managers.

DR ANDREW ASH

Dr Andrew Ash is the Director of the CSIRO Climate Adaptation National Research Flagship. The Flagship's goal is to equip Australia with practical and effective adaptation options to climate change and variability and in doing so create $3 billion per annum in net benefits by 2030.

Current activities

The Climate Adaptation Flagship brings together experts from across CSIRO, and builds partnerships with research and industry groups around Australia and overseas to tackle the complex challenges involved in adapting to life in a changing climate.

As Flagship Director, Andrew is responsible for deciding research priorities, overseeing a large portfolio of research projects and managing the Flagship's many partnerships and collaborations.

Dr Ash gives regular talks and presentations to raise awareness among government agencies, businesses and communities of the need to adapt to unavoidable climate change. As part of his role he seeks to inform stakeholders about the methods, options and approaches available to reduce the negative impacts of climate change and identify any emerging opportunities.

Background

Prior to leading the Flagship, Andrew had over 20 years experience in understanding how climate, grazing and fire influence the productivity and health of agriculture and ecosystems in northern Australia.

MR SIMON BALTAIS

Simon Baltais is the State President of the Wildlife Preservation Society of Queensland, Secretary for the Queensland Conservation Council and Vice President for Sustainable Population Australia SEQ Branch. He is a participant on many state planning committees, a member of the Coastal Protection Advisory Committee and one of the authors for the State Government's 'State of the Region Report.' He is a strong advocate for developing ecologically sustainable communities.

MR GREG BRUCE

Greg Bruce is Executive Manager of Sustainability in Townsville City Council where he has has worked for fourteen years specialising in integrated coastal-water cycle management establishing "Creek to Coral" partnership with Council engineers, and working with Ergon Energy and consortium members to develop the Townsville: Queensland Solar City, and especially the Citisolar: community capacity building program and other innovative partnerships including the Townsville Network Demand Managment Pilot.

MR ADAM CALLINAN

Adam Callinan is the Manager of the Environmental Protection Agency's Multimedia Services Unit. The unit encompasses the Online Services Team who are responsible for the development, management and strategic direction of the EPA's multiple online environments.

Adam has over twenty years experience in various departments of the Government; Adam has more than a decade's experience in the area of online environment and has led many innovative campaigns that have enhanced the online capabilities of the agency's official portal and internal multimedia operating systems. His inputs have been vital during the developmental stages of CoastInfo especially in the area of website-architecture and functional features.

Adam's current focus is on the implementation of the EPA's new Web Content Management System that will move the EPA into the new era of online service and information delivery. CoastInfo will be launched on EPA's new content management system platform.

MR CLIVE COOK

Clive has worked for just under 30 years in a number of protected areas, including Tasmania, New Zealand, Kakadu National Park, the Great Barrier Reef Marine Park and is currently the Senior Director for Conservation Strategy and Planning within the Parks Division of the Department of Environment and Natural Resource Management. He holds a degree in Urban and Regional Planning and majored in Natural Resource Management and Environmental law. Clive is the Chair of the Queensland Government's Natural Environment Recovery Group set up following the Pacific Adventurer oil spill.

MS DIANE TARTE

Diane Tarte is the Project Director of the South East Queensland Healthy Waterways Partnership and oversees the delivery of the Partnership's regional work program. She has a background in coastal and marine ecosystem-based management, policy development and implementation, with a particular emphasis on collaborative government and non-government arrangements in natural resource management.

MS LYNNE TURNER

Lynne Turner is the Director of the Queensland Climate Change Centre of Excellence (QCCCE), within the EPA's Office of Climate Change. Lynne was actively involved in the establishment and first stage of the Cooperative Research Centre for Coastal Zone, Estuary and Waterway Management (1998-2002) and was the principal investigator for the National Land and Water Resources Audit's National Estuary Assessment in 2000. Lynne has a strong interest in sustainability issues and has lead State of Environment Reporting initiatives in Queensland (2002-2007). Lynne is passionate about ensuring sound science is used to inform effective public policy.

MR SIMON WARNER

Simon Warner is Chief Executive Officer of SEQ Catchments Ltd. He is an experienced corporate manager with significant experience in a wide range of senior executive roles including Chief Operating Officer, and General Manager Logistics and Human Resources with Grainco Australia. Simon has also held Director positions with the Port of Brisbane Corporation, Bulk Terminals Australia, Australian Bulk Alliance, and Grainco Australia Limited Subsidiary Companies. He was Chairman of the National Grower Register.

A/PROF PETER WATERMAN

Associate Professor Peter Waterman RFD is an environmental planner with nearly 40 years professional experience working for governmental and private sector clients. Commencing work as an environmental planning consultant in 1970, Peter has carried out a large number of land use planning and environmental impact and risk assessments in all Australian States and Territories as well as overseas. Through this work Peter has become an acknowledged leader in developing integrated and holistic approaches to the sustainable environmental management of natural systems, industrial facilities and built infrastructure. Over much of his professional career his work has had a geographic focus on the coastal zone.

Currently, Peter is the Coordinator Climate Change Coasts and Catchments in the Faculty of Science, Health and Education at the University of the Sunshine Coast. In this capacity he is responsible for the delivery of nested articulated postgraduate professional development programs in Climate Change Adaptation, Integrated Coastal Zone Management and Environmental Change Management. Additionally, he undertakes applied research project with a particular emphasis on coastal vulnerability risk and adaptation assessment, regional 'climate proofing' and integrated coastal and catchment management.

Plenary Session 1
9:00am – 10:00am

Clive Cook
Chair – Natural Environment Recovery Group

Oil Spill Recovery in South East Queensland

In the early hours of the 11th March 2009 the 185 metre container ship pacific Adventurer lost part of its cargo of containers containing ammonium nitrate. Thirty One containers were lost overboard some of which punctured the fuel bunkers on the ship leading to an oil spill which subsequently impacted southern Queensland shorelines. Maritime Safety Queensland (MSQ) activated the National Plan to Combat Pollution of the Sea by Oil and other Noxious and Hazardous Substances and the specific oil spill response for Queensland, Queensland Coastal Contingency Action Plan was activated MSQ took lead agency role in incident control.

This presentation will describe the way in which the transition from clean up to recovery has been dealt with and how the wider community have been engaged in planning and implementing the recovery plans, programs and activities.

The establishment of an Oil Spill Recovery Task Force, Recovery Working Groups, Industry Working Groups and stakeholder meetings are cited as standard practice in recovery operations based upon the triple bottom line outcomes of Economic, Social and Environmental to achieve a strategic recovery plan to ensure the recovery from the incident is effective and successful.

Plenary Session 1
10:00am – 10:45am

Mike Berwick
Qld Regional NRM Groups Collective and Terrain NRM

Biodiversity Survival – from Reserves to the Entire Landscape

As the environmental debate becomes ever more urgent and complex the focus of strategic action and the debate about who pays has to change. While we spend more and more on the environment and most agree on saving it, the decline in key environmental indicators advances at an increasing rate. The agendas around climate change, pollution, vegetation, landcare, water use etc are founded on the primacy of conserving biodiversity. When I became a conservation activist, the focus was on national parks, conservation reserves and icons, but for all our battles we have only managed to get 6% of Qld locked away from development and resource exploitation. My message today is that the focus has shifted from the reserve system to the entire landscape and most of that is primarily used for food production, 70 per cent of Australia. If we are to conserve our biodiversity and it is to survive climate change, then islands of biodiversity won't work. We certainly need a comprehensive and representative reserve system but it needs to be linked by a network of corridors across the entire landscape. A reserve system target of ten or twenty percent is similarly inadequate for what is left of our relatively intact landscapes, like Northern Australia. A more realistic target for those landscapes would be no further net loss as well as the repair and management of what is left. The means to achieve that whole of landscape approach is to engage and partner with the land manager, the farmer, recognizing the need for food security for the planet's 6 billion inhabitants and biodiversity security for the other 10 billion species which co-inhabit the earth with people.

Planning, Policy and Politics
11:20am – 12:20pm

Lynne Turner
Queensland Climate Change Centre of Excellence

Climate Change in Queensland- From Science to Policy

The Queensland Climate Change Centre of Excellence is part of a specialist whole-of government work unit, the Office of Climate Change. The Office of Climate Change leads the development of a whole-of-government policy framework to address the challenges that climate change presents. The role of the QCCCE is to provide access to the latest science on climate change in Queensland to inform Queensland Government policies, programs and initiatives. This presentation will provide information on climate variability and change in Queensland generally and in relation to coastal processes specifically. Coastal processes in Queensland are strongly influenced by climate variability on year-to-year and decade-to-decade time-scales and, in turn, by global phenomena such as the El Niño-Southern Oscillation and the Inter-decadal Pacific Oscillation. This presentation includes an overview of the Queensland Government's policy response to climate change.

Planning, Policy and Politics
11:20am – 12:20pm

Di Tarte
SEQ Healthy Waterways Partnership

Adapting to Change and Finding the Opportunities

Change is part of our everyday lives. Change stimulates our interest, our enthusiasm and often our creative talents. So when is change a challenge in coastal ecosystems which have evolved in very dynamic circumstances? Is it when we don't understand what is happening? When it is too fast, or requiring too great a response from individuals or communities? Based on 35 years experience working for greater recognition of the value of our coastal ecosystems and better approaches to their management, Diane will explore some lessons learnt and ideas for the future in seeking solutions to the "wicked" challenges of integrated coastal zone management now made more complex by accelerating climate change.

Simon Warner
SEQ Catchments Ltd.

Preparing Coastal Communities for Long-Term Environmental Changes

Queensland's natural environment and coastal lifestyle are the envy of Australia; however both are under increasing pressure from both population growth and climate change. Coastal communities are vulnerable to a range of natural and human-induced factors, and these communities need the capacity to prepare for extreme events such as storms and flooding, as well as long-term environmental changes. In this talk Simon Warner will explore the role of SEQ Catchments Ltd in raising awareness of issues affecting our coast line and in engaging coastal populations and state and local policy makers in addressing some of these issues. He will discuss the importance of planning and sustainable development, particularly with regard to coastal development. He will also outline progress with coordinated natural resource management input to the review of the SEQ Regional Plan.

Coast and Marine Assets
11:20am – 12:20pm

Simone Maynard
SEQ Catchments Ltd.

Assessing the Ecosystem Services provided by South East Queensland's Coastal Assets

South East Queensland (SEQ) is Australia's fastest growing region with the fastest growing centres occurring along the eastern coastal corridor. One of the fundamental challenges to achieving sustainable development in SEQ is how to accommodate the population growth and associated development pressures without degrading the region's capacity to support the SEQ community. 'Ecosystem services' is the term given to the goods and services provided by natural (and semi-natural) ecosystems that benefit, sustain and support the well-being of people. The SEQ
Ecosystem Services Project aims to identify, measure, value and incorporate ecosystem services into decision making and natural resource management in SEQ.

The focus of the Project is to develop an agreed framework for ecosystem services across SEQ; namely the SEQ Ecosystem Services Framework. The SEQ Framework aims to provide the tools to enable government, industry, business, researchers, non-government organisations and land managers to apply the concept of ecosystem services in their management and planning practices.
The development of the Framework represents the commitment and intellectual input from over 140 individuals from a wide range of disciplines and organisations.

The SEQ Framework consists of descriptions and definitions of four main components: Ecosystem
Reporting Categories (ERCs), Ecosystem Functions, Ecosystem Services and Human Well-being; a semi-quantitative description of the relationships between these in the form of matrices; and a series of maps identifying spatially where ecosystem services are being provided in SEQ.

The concept of ecosystem services can potentially be applied in a number of policy, planning and management contexts; for example, education, incentives, payment for the provision of services, climate change mitigation strategies, corporate sustainability reporting, statutory or strategic planning and regulation. Failing to understand or adequately value the significance of ecosystem services to the SEQ community and its economy can result in serious adverse impacts on the sustainability of the region. The maintenance of ecosystem services in SEQ is vital for sustainable development and the well-being of its residents.

Coast and Marine Assets
11:20am – 12:20pm

Luke Thompson
University of the Sunshine Coast

Changes to dunes caused by 4WD vehicle tracks in beach camping areas of Fraser Island

Although dunes are known to have very low tolerance to human disturbance and provide irreplaceable ecosystem services (e.g. erosion control, critical habitat and nesting sites), in SE-Qld dunes serve as campsites for large numbers of people (~ 90,000 p.a.) on the ocean-exposed shores of Fraser Island, Australia. On the island, camp sites are located in the established dunes and can only be accessed with 4WD vehicles along tracks cut directly from the beach through the foredunes. We quantified the extent of physical damage to foredunes caused by this practice, and tested whether human-induced physical changes t o foredunes translate into biological effects. Of the 124 km of ocean-exposed, east-facing beaches, 122 km (98%) are open to vehicles, and camping zones cover 28.7 km or 23% of the dunes. A total of 235 vehicle tracks are cut across the foredunes at an average density of 8 tracks per km of beach. These tracks have effectively destroyed one-fifth (20.2%) of the dune front within the camping zones, deeply incising the dune-beach interface. There is evidence of accelerated erosion and shoreline retreat centred around vehicle tracks, resulting in a "scalloping" of the shoreline. No dune vegetation remains in the tracks and the abundance of ghost crabs (Ocypode spp.) is significantly reduced compared with the abutting dunes. Because current levels of environmental change caused by dune camping may not be compatible with the sustainable use of coastal resources and conservation obligations for the island (listed as a World Heritage Area and gazetted as a National Park), restoration and mitigation interventions are critical; these will require prioritisation of effort, and we present a multi-criteria ranking method to objectively target rehabilitation and conservation measures. Ultimately, coastal management needs to develop and implement strategies that reconcile demands for human recreation, including beach camping, with the conservation of dune ecosystems in the region.

Coast and Marine Assets
11:20am – 12:20pm

Siobhan Bland
Moreton Bay Regional Council

Caboolture Shorebird Habitat Mapping Project

Moreton Bay supports up 40,000 shorebirds that feed in coastal intertidal wetlands during the summer. Moreton Bay forms part of the East Asian/Australasian flyway through which shorebirds travel twice a year on migration. About 2 million shorebirds migrate to Australia every year, travelling up to 25,000 km.

Internationally significant numbers of eight species of migratory shorebirds spend their non-breeding season in Moreton Bay, which contributed to the bay being listed as a Ramsar Wetland in 1996. The Caboolture district has extensive coastal wetlands that support up to 40% of the shorebird population in Moreton Bay.

Shorebirds are an important indicator of the health of Moreton Bay. Conserving shorebirds involves protection of their habitat across multi-jurisdictional boundaries. They feed predominantly within the Moreton Bay Marine Park and roost above the highest astronomical tide, which falls outside the Marine Park boundaries.

In late 2007, the former Caboolture Shire Council (now Moreton Bay Regional Council) contracted the Queensland Wader Study Group (QWSG) and Jill Dening, a local shorebird consultant, to map high tide roost boundaries and characteristics to inform Council's statutory planning instruments. Council sought endorsement of the project outputs from the relevant State and Commonwealth Agencies.

The project aimed to provide improved habitat protection and planning outcomes for shorebirds. It resulted in twenty-four roost sites being mapped in the Caboolture district, five of which are available on higher king tides.

The final report from the project constitutes one of several background studies that will inform Council's Local Nature Conservation Strategy. Ultimately the mapping will inform future amendments to Council's planning scheme. The QWSG are keen to ensure shorebird habitat is mapped across the entire Moreton Bay Ramsar Wetland. This project provides a good model upon which to base such a project.

In Action Not Inaction
11:20am – 12:20pm

Sue Sargent
Burnett Mary Regional Group for NRM Inc.

The Burnett Mary - planning Coastal & Marine Management from the ground up

In 1997, the Natural Heritage Trust (the Trust or NHT) was set up by the Australian Government to help restore and conserve Australia's environment and natural resources. Thousands of community groups and organisations took action along our coasts, rivers, bush and land – caring for our natural assets.

In 2001, after four years of on-ground action, the Australian Government opted for a more strategic approach to Natural Resource Management under the NHT. NHT2 was supposed to build on the National Action Plan for Salinity and Water Quality (NAPWQ) and through 'regional arrangements' move towards a more strategic and sustainable model of NRM.

All over Australia, different approaches were utilized to establish Regional Bodies and Catchment Management Authorities. In Queensland, regional arrangements were not always fully embraced by State Government where a 'radical' non-government, not for profit group approach was taken.

Under this paper we will examine how under regional arrangements in the Burnett Mary, a Coastal & Marine Management Action Program (Plan) was built from the ground up, the challenges and successes of implementation between 2005 and 2008 and examines the future and implications for Coastal & Marine Management under a new Australian Government model – Caring for our Country (NHT3).

In Action Not Inaction
11:20am – 12:20pm

Jodie Clifford
Gold Coast City Council

Federation Walk Coastal Reserve Management Partnership

Federation Walk Coastal Reserve is a 92 hectare reserve located on The Spit, Gold Coast. Federation Walk is a unique site that is owned by the QLD State Government and managed by Gold Coast City Council (GCCC). Community ownerhip is illustrated in the development of the group Friends of Federation Walk inc (FOFW). This abstract outlines the development of a management partnership between the stakeholders involved with the Federation Walk Coastal Reserve.

The Spit site was sand-mined in the mid – seventies and the construction of the seaway wall on the northern end of the Spit and the Sand by-pass system saw a minimal diversity of plant species installed. Developers have sought the site for a range of uses but action from the Main Beach Progress Association (MBPA) and then FOFW saw funding secured to assist in the construction of a 3.2 km pathway through the site with the objectives in developing the area as a recreational reserve, and preserving and enhancing the site for future generations to enjoy.

Federation Walk was named upon the receipt of funding throughout the centenary of Federation celebrations and lobbying from FOFW and GCCC saw the QLD state government gazette the site as the Federation Walk Coastal Reserve in 2003. FOFW developed a management plan for Federation Walk and have facilitated monthly community activity days for the last seven years. GCCC and he QLD government has supported the project and 2007 saw the employment of a ranger to co-ordinate the operational and capital programs for the reserve. The Spit Community Advisory Committee was formed in 2006 with members from community, local and state government representatives to provide a planning and reporting mechanism for Federation Walk.

The Federation Walk Coastal Reserve is an example of the community, local and state governments working together for the development of a unique site into a premier coastal reserve.

SPEAKER ABSTRACTS - *Wednesday*

In Action Not Inaction
11:20am – 12:20pm

Paul Groves
Great Barrier Reef Marine Park Authority

Land, Water, Waste and Community – Current best practice for Local Government motivated towards Reef protection

This presentation focuses on current best practices that can be undertaken by Local Government in the Great Barrier Reef catchment that can help improve water quality within the catchment, and ultimately the Great Barrier Reef. Current best practice in this context can be defined as a practice that improves water quality and community capacity, improves the way Local Government conducts land and water management and recognising that current best practice should and will change as we improve our knowledge and understanding of the outcomes of these practices.

A report has been compiled by the Great Barrier Reef Marine Park Authority that aims to identify actions, programs and strategies that may be considered as current best practice for achieving improvements in water quality within the Great Barrier Reef catchment based on observations from practices from around the world. The information is provided as a decision support tool to assist Local Government in implementing strategies or actions to address water quality management issues. Where available, templates and frameworks have also been provided to support these actions.

The Great Barrier Reef catchment covers approximately 22 per cent of Queensland's land area (425 964 square kilometres) and is home to twenty per cent of Queensland's population. Habitats range from mountainous wet tropics rainforests to dry tropical savannahs and floodplains. Subsequently not all actions identified apply to all Local Government areas. What may be current best practice in Townsville may not necessarily be best practice for Cairns. For example, connection of all households to a sewage treatment plant may seem like best practice, but if the community is quite small, widely spaced and well away from any major centre, then on-site treatment systems would more likely be current best practice, in the context of triple bottom line decisions, for that area.

The main focus of this presentation is predominantly on urban areas within the Great Barrier Reef catchment, and the actions Local Government can implement to improve water quality. It is envisaged that the identification of current best practice actions will become an ongoing process and the results made available, along with the abovementioned report, through Great Barrier Reef Marine Park programs.

Climate Change
1:30pm – 2:50pm

Peter Waterman
University of the Sunshine Coast

Demonstrating 'Climate Proofing' for Coastal Local Government Authorities and Communities in the South East Queensland and Burnett-Mary Regions

Adapting to climate change is a critical issue for the coastal catchment regions of Australia and is one that has inter-locking physical, biological, social and economic dimensions. **Climate Proofing Regions** is seen a proactive approach to raising governmental, industry and community awareness and initiating 'no-regrets' actions to meet the challenges of climatic variability and change. 'Climate Proofing' has been adopted by internationals bodies such as the Asian Development Bank, the World Bank and other organisations as the term used to describe the suite of actions needed to assess and adapt to climatically induced changes.

As a holistic approach, '**Climate Proofing**' encompasses risk and vulnerability assessment and the mainstreaming of policy and practice to address climatic variability, extreme weather events and climatic and associated environmental changes (eg sea level rise and coastal erosion and inundation). Operationally, it includes ways to: introduce mitigation measures needed to reduce greenhouse gas emissions at local community and household scales; address the known and potential physical, biological, social, economic and cultural impacts and implications of climatic variability and change by mainstreaming responses in policy, plans and on-the-ground actions; and formulate and implement strategies and actions for mobilising and securing the long term support of regional and local stakeholders and communities of space and interest.

'Climate Proofing' is being promoted by SEQ Catchments and the Burnett Mary Regional Group in collaboration with Climate Change, Coasts and Catchments, at the Faculty of Science, Health and Education at the University of the Sunshine Coast. This is being done through the **SEQ 'Climate Proofing' Demonstration Project** as a practical response to the growing concerns of governments and communities over the vulnerability of coastal regions to the projected impacts of climate and associated environmental changes. Initiating a '**Climate Proofing' Demonstration Project** in SEQ has had the dual aims of: strengthening the essential links between community perspectives and governmental policy on climate change adaptation and the available tools and techniques for reducing risks and impacts at local and regional scales; and demonstrating how environmental planners and natural resources managers as well as primary producers and other industry sectors in the coastal regions (especially those of South East Queensland) can be readily equipped to meet the challenges of climatic variability and extreme weather conditions.

This paper has dual purposes. The first is to outline the work undertaken and success of the contrasting approaches to '**climate proofing**' being followed by SEQ **Catchments and the Burnett Mary Regional Group. Second, to indicate how the** project work to date, within the two regions, can be built on and rolled-out to other coastal communities and Local Government Authorities in Australia.

Climate Change
1:30pm – 2:50pm

Andrew Ash
CSIRO

Climate Change and Coastal Management: Making Decisions In The Face Of Uncertainty

Climate change will have significant impacts on coasts and coastal communities, particularly through the combined effects of sea level rise, extreme weather events and coastal inundation. In assessing the impact of climate change on coastal areas, and developing strategies for adaptation a systems approach is required, taking into account the interactions between a range of biophysical, social and economic drivers and impacts. Decisions on coastal planning that have ramifications for decades need to be made now and they need to factor in climate change. While it is important that science help inform these decision-making processes by narrowing the uncertainties associated with sea level rise projections and being able to better predict the impacts of extreme rainfall and storm surge events and associated inundation, decision-making can't wait for predictive science to improve. Awareness of the issues needs to be raised and adaptive capacity at the level of individuals, communities, institutions and government has to be increased to lay the foundations for appropriate climate adaptation strategies. Risk management approaches and tools need to be put in place now to inform decision making in the areas of urban planning and development, flood management, infrastructure and disaster management.

Climate Change
1:30pm – 2:50pm

Peter Helman
Griffith Centre for Coastal Management, Griffith University

Coastal Vulnerability Principles for Climate Change

The coast, as the interface between land and ocean, has dynamic geomorphic and ecological features. At any time, the geographic position of these features is governed by relative sea level. On the tectonically stable east coast of Australia, the coastline migrated up to 100km inland, across the continental shelf, when sea level rose 120m at the end of the last Ice Age 17 000 years ago.

For the last 6 500 years, sea level has been relatively stable forming the coastal features we see today. Recent tide gauge records coupled with a trend derived from records dating back to 1840, show the beginning of a slowly accelerating sea level rise consistent with climate models. The projections made by IPCC (2007) suggest a slowly accelerating sea level rise over the next 100 years. If the projected maximum rise occurs, the most vulnerable sections of the Australian east coast will be inundated.

The management of dynamic geomorphic and ecological coastal systems presents many problems that can be identified using vulnerability assessment. Vulnerability assessment methodology is demonstrated in a coastal survey of the Burnett Mary coast; an area experiencing rapid population growth, with many coastal holiday destinations and valuable property. Sections of the coast are vulnerable to sea level rise and are likely to move inland.

The principles of vulnerability assessment developed in the Burnett Mary study are outlined. An immediate implication is that past coastal planning decisions have transgressed the principles.

Climate Change
1:30pm – 2:50pm

Anne Leitch
ARC CoE Coral Reef Studies & CSIRO

The capacity of local government to support adaptation to climate change for coastal communities: a case study in the Great Barrier Reef region

Human communities along the coast of the Great Barrier Reef (GBR) will be highly affected by global environmental change due to altered average climatic conditions, increased extreme weather events such as cyclones, and elevated sea levels. These changes will have a significant impact on the social ecological systems on which these communities depend. As the level of governance closest to the people, local government will play an important role is supporting their community's resilience to climate change through facilitating community involvement with policy and planning processes and co-ordinating action between different partners.

While planning is a central function of local government, climate change presents new challenges for planners in particular in terms of perceptions of risk and uncertainty. Risk management is regarded as a core characteristic of community resilience and so is emerging as a key strategy for local government response.

This paper reports on a Queensland case study of a local government area on the coast of the Great Barrier Reef. We outline why climate change is a difficult issue for planners. We will discuss the concepts of risk and uncertainty in terms of local government planning for climate change.

Coast and Marine Assets
1:30pm – 2:50pm

David Scheltinga
Department of Environment and Resource Management

A framework (with software) for assessing the health of, and risk to, Queensland's estuarine wetlands: examples of outputs and outcomes from the Burnett Mary NRM region

An estuarine assessment framework has been developed by the Qld EPA and trialled in the Burnett Mary NRM region through a collaborative project with the Burnett Mary Regional Body. The framework assists in the effective management of estuaries by monitoring indicators of human activities and management practices, estuarine vulnerability, physical-chemical state and biological impacts via a stressor framework. In short, it assesses 'cause and effect' by monitoring the current pressures, vulnerability and condition of estuaries. The major benefit of this framework is that the link between human activity and estuarine health is clearly identified, thus helping managers establish appropriate management actions and priorities. The framework also allows manager to relatively easily and inexpensively examine the risk to a specific area from the local pressures and therefore determine what condition indicators (if any) should be monitored in that particular estuary – making indicators locally relevant and cost effective.

To assist in applying the framework we have developed a user-friendly computer package which enables the user to easily determine the data required for the assessment and calculate all the relevant 'scores' and confidence/dependability results to be reported for an individual estuary. The software is currently undergoing testing through a partnership with Qld EPA, NT NRETA and SA DEH. The package produces a colour coded and numeric report card which is designed to be easily understood and interpreted by users from a variety of backgrounds.

Report cards for the 18 estuaries included in the Burnett Mary trial have been published and specific management actions identified to reduce the risk of human activities impacting a particular estuary. The outputs and outcomes of this project are discussed.

SPEAKER ABSTRACTS - *Wednesday*

Coast and Marine Assets
1:30pm – 2:50pm

Serena Lucrezi
University of the Sunshine Coast

Monitoring beach impacts: a case for ghost crabs as ecological indicators?

Sandy beaches are under pressure from expanding coastal populations, ribbon development in the costal strip and increasing recreational use of beaches. In Queensland and elsewhere beaches are the prime sites for human recreation and their ecosystems are being extensively modified by development and direct human use. Yet, the ecological consequences of this process, especially for urban and para-urban beaches, are poorly understood and criteria to measure the ecological health of beaches are not developed. We therefore tested the applicability of ghost crabs (Genus Ocypode) as ecological indicators on beaches. Ghost crabs offer practical advantages in that they are abundant and widespread and densities can be estimated by counting burrow openings. Because the crabs are the apex predators on beaches, their responses should also be ecologically meaningful. Densities of ghost crabs declined in areas subjected to habitat modification (i.e. seawall replacing dunes) and continuous trampling, suggesting predictable biological responses to human stressors. Crab numbers did, however, also change in response to natural variations in wave and wind regimes. This would confound the detection of impacts from human causes unless careful spatial and temporal replication is built into monitoring programs. A key feature of ghost crabs are their extensive, deep and complex burrows. Changes in burrow size, architecture and complexity thus offer the potential for a novel indicator that operates at the sublethal level via modifications to the crab's behaviour. Thus, ghost crabs can be an indicator of beach health that combines population responses that reflect mortality and emigration as well as sublethal effects manifested by changes in burrow biometrics.

Norm Duke
University of Queensland

Mangroves as Indicators of estuarine condition: the results of aerial surveys from five NRM regions in eastern Queensland

During September 2008, around 77 estuaries from 6 Natural Resource Management regions in eastern Queensland were assessed from aerial surveys. This presentation will summarise the results and benefits gained from such a broad scale assessment. In several cases, unreported instances of extensive mangrove dieback were identified, and others were investigated. We speculate on the causes of these instances and many others using our newly developed evaluation protocols and methodologies. Such a strategy is proposed as a basis for a National evaluation methodology for tidal wetland (mangrove, saltmarsh and saltpan) ecosystems, as a critical and integral component of assessments of estuarine and catchment condition.

Coast and Marine Assets
1:30pm – 2:50pm

Simon Mortensen
DHI Water & Environment

Numerical simulation of moored vessel movements due to passing ships within the Port of Brisbane

In 2004 a series of physical model tests were carried out by the DHI Water and Environment to investigate moored vessel movements due to passing ships within the Port of Brisbane. Field measurements were also made of actual vessel motions to provide validation data for the physical modelling. These studies, whilst providing the most effective means of assessing vessel motions at the time, were time consuming and expensive.
A numerical modelling approach using a coupling of the hydrodynamic model Mike21 FM and the vessel response model WAMSIM has been recently developed by DHI in Australia. This new approach has been calibrated against the previous physical modelling test data and verified against the field measurements.

It was found that the numerical models were capable of accurately reproducing the vessel motions measured in both the physical model tests and in the field. This numerical modelling approach provides a time efficient and cost effective platform for carrying out detailed investigations of moored vessel motions.

Relationships – People and Communities
1:30pm – 2:50pm

Leonie Maddigan
NQ Dry Tropics

Communicating Coastal Conservation - Getting the Message Through

Communication is a critical tool for successful coastal and marine conservation. The success of on-ground works, policy change, enforcement and awareness raising activities all depend on communicating key messages. Various communication methods have been released by multiple stakeholders within the Burdekin Dry Tropics region with little or no evaluation into the effectiveness of the message in achieving behaviour change.

NQ Dry Tropics commissioned a study by TYTO Consulting to undertake a review of all existing interpretive and educational material on coastal and marine key messages. The aims of the “Coastal and Marine Communications Review” were to develop a product inventory summarising the common forms of communication to identify where duplication and gaps exist, and what key messages our community are receiving. Recommendations for the development of future key messages were suggested based on consultation with stakeholders.

Stakeholder feedback identified gaps in Coastal Management information including resource information (what is it?), management roles (who does what?) and clear guidelines (what should I do?). Recommendations included the production of a Coastal and Marine Communication Strategy, education ‘packages’ for targeted audiences and partnerships for delivery. A number of new initiatives have been implemented by NQ Dry Tropics based on these results: a draft Communications Strategy, the production of new print material with distribution strategies, use of television (community service announcements), formation of new partnerships for delivery of key campaigns and redevelopment of the website.

Communication is a critical component of any conservation campaign targeting a behavioural change outcome. Communication needs to be planned, targeted at specific audiences and be coordinated with efforts of other organisations with similar aims. NQ Dry Tropics is committed to no longer producing stand alone products but working on campaigns that link to and build on select key messages that can be evaluated for their effectiveness.

Relationships – People and Communities
1:30pm – 2:50pm

Philip Rist
Girringun Aboriginal Corporation

Traditional Owner Engagement - The Girringun Way

Established in 1996, Girringun Aboriginal Corporation represents the cultural interests of nine Traditional Owner groups in the southern Wet Tropics, in the Natural Resource Management process. Girringun's primary focus is to ensure involvement and engagement of Traditional Owners to fulfil their responsibility of caring for our country.

Girringun facilitates Traditional Owner engagement in the NRM process through representation on land management committees, planning, on ground initiatives and recognition of agreed protocols for liaison with Traditional Owner Elders. Looking after our country from a culturally and environmentally responsible viewpoint is fundamental to securing the emotional and spiritual wellbeing of our people.

Some of Girringun's major achievements include: the Cardwell Indigenous Rangers Unit (CIRU) now called Girringun Aboriginal Rangers Unit (GARU) which commenced approximately five years ago when Girringun approached QPWS and GBRMPA to develop a vehicle for Traditional Owners to deliver traditional owner management aspirations including: cultural heritage monitoring and mapping; traditional knowledge recording; sea grass bed monitoring; legislative enforcement (white man law); and TUMRA and cultural enforcement (black man law).

Girringun's TUMRA, representing six Traditional Owner groups with saltwater estates in the adjacent Great Barrier Reef Marine Park has involved a two year planning process between Girringun and various government organisations (GBRMPA, QPWS, EPA, CQLC) and was accredited in December 2005.

The Agreement has implemented a voluntary Traditional Owner management regime regarding turtle and dugong hunting and acknowledges traditional and contemporary law and custom of the six saltwater groups.

The Hinchinbrook Seafood Industry have acknowledged Girringun's authority as the traditional custodians of this area and have begun to negotiate with the Traditional Owners regarding the sustainable harvest of wild barramundi. This is an ongoing process.

SPEAKER ABSTRACTS - *Wednesday*

Relationships – People and Communities
1:30pm – 2:50pm

Shannon Satherley
QUT

Enriching Relationships: Community Engagement toward Sustainable Coastal Futures

Coastal communities face the social, cultural and environmental challenges of managing rapid urban and industrial development, expanding tourism, and sensitive ecological environments. Enriching relationships between communities and universities through a structured engagement process can deliver integrated options towards sustainable coastal futures. This process draws on the embedded knowledge and values of all participants in the relationship, and offers a wide and affordable range of options for the future. This paper reviews lessons learnt from two projects with coastal communities, and discusses their application in a third.

Queensland University of Technology has formed collaborative partnerships with industry in Queensland's Wide Bay-Burnett region to undertake a series of planning and design projects with community engagement as a central process. Senior students worked with community and produced design and planning drawings and reports outlining future options for project areas. A reflective approach has been adopted by the authors to assess the engagement process and outcomes of each project to learn lessons to apply in the next. Methods include surveying community and student participants regarding the value they place on process and outcomes respectively in planning for a sustainable future.

All project participants surveyed have placed high importance on the process of engagement, emphasising the value of developing relationships between all project partners. The quality of these relationships is central to planning for sustainable futures, and while the outcomes the students deliver are valued, it is as much for their catalytic role as for their contents.

Design and planning projects through community engagement have been found to develop innovative responses to the challenges faced by coastal communities seeking direction toward sustainable futures. The enrichment of engagement relationships and processes has an important influence on the quality of these design and planning responses.

Relationships – People and Communities
1:30pm – 2:50pm

Nathan Waltham & Kris Boody
Gold Coast City Council

Protecting the Green Behind the Gold: Integrating Catchment Management in Gold Coast City

The Gold Coast has experienced rapid increases in human population in the past few decades and managers are concerned this has placed considerable pressure on waterway health and threatens the livelihood and lifestyle of residents and tourists. In response, Gold Coast City Council has combined scientific investigations with community consultation to establish a vision and a modified set of water quality objectives (WQOs) for each catchment in the City. An outcome of these assessments is a detailed and focused management action plan. What has been most innovative with this process is the use of predictive computer models to represent existing urbanised areas and the use of a simplistic receiving water quality model to identify opportunities to reduce diffuse pollutant loadings in order to meet identified WQOs. Evidence from the modelling shows that with current land use, sediment and nutrient loads far exceed that which is sustainable for local waterways. As such, the “business as usual” option of land use management is not sustainable. Major reductions in pollutant loads are further required in all natural and constructed waterway catchment areas to ultimately achieve community expectations and visions for the Gold Coast environment. To capitalise on this shortfall, a range of restoration programs are underway in an attempt to improve degraded and protect those healthy catchments and waterways. These works include a blend of in-stream protection and habitat creation, retrofitting urban stormwater infrastructure, weed and riparian restoration, foreshore erosion and protection, and community education and capacity building. The overall success of this program lies in the ability to form close working partnerships with key catchment stakeholders and to coordinate on ground works programs. The applicability of this process of integrated catchment management in other coastal local government areas is envisaged.

Planning, Policy and Politics
3:30pm – 5:00pm

Rodger Tomlinson
Griffith Centre for Coastal Management, Griffith University

Planning for Storm Surge and Rising Sea Level

Background
Sea level rise is projected to continue for several centuries even with effective greenhouse abatement. This.due to time lags in the ocean-atmosphere system and the slow warming process of deep ocean basins This rise is initially experienced as ‘storm surge’ when a number of factors result in temporary elevated sea levels during severe storms.

Discussion
In the short term, vulnerable sections of the coastline are first inundated by storm surge during extreme storm events. In SE Queensland, the highest observed storm surge is 2m in Moreton Bay.

Wave run up contributes to a higher surge on the ocean coast with the possibility of a surge up to 6m. In Far North Queensland, the highest surge known since European settlement was 15m during the Bathurst Bay Hurricane in 1899 (estimated to be Cat 5 Tropical Cyclone).

In the longer term rising sea level, possibly at an accelerating rate, will result in the coastline moving inland. During the last 180 years the moving coastline has breached seaward meander bends of coastal rivers and waterbodies, resulting in permanent openings and the formation of new barrier islands.

Legislative and common law is an organised system suitable for long period issues such as sea level rise. However, it is presently not in a position to provide a coherent framework for long term policy implementation on the issue due to conflicting interests, such as the rights of landholders.

Questions
What type of institutional system should we be considering to adequately deal with long term inundation of coastal land?

How would such a system be integrated with present legislation, common law, planning, real estate markets, property security (mortgages) and insurance?

Coast and Marine Assets
3:30pm – 5:00pm

Lyn Wallace & Toni Edmondson
Department of Environment and Resource Management

Management of Public Coastal Land in Queensland

Much of the 22000 parcels of public use land available for public recreational pursuits in Queensland fringe our beautiful coastline. The diversity of habitats, trusteeship arrangements and organisations involved in policy development and implementation and on-ground management roles coupled with the increasing demand for recreational use makes effective planning and management of these areas extremely difficult. Further complicating management and rehabilitation efforts are the natural phenomena of shoreline erosion. With a collaborative planning, protection and management approach between the different levels of government and community organisations, iconic coastal recreational activities will remain available for future generations to enjoy.

In Action Not Inaction/Relationships – People and Communities
3:30pm – 5:00pm

Daryle Sullivan
University of the Sunshine Coast

The use of chemical indicators to source human, animal and bird pollution of Fraser Island lakes and streams

Introduction:
The research investigated whether tourist visitation of relatively pristine Fraser Island lakes is polluting the fresh water ecosystems. Objectives included:

- Seeking to quantify and distinguish pollution inputs from human and natural sources.
- Identify lakes and creeks on Fraser Island that are impacted by human visitation.

Methods:
Samples of surface waters and lake floor sediments were collected from Fraser Island during two field sampling trips. Samples were returned to USC and processed prior to analysis by GC-MS. The analytical technique is based on using faecal sterols as chemical indicators of faecal pollution. Sterols in the diet are biohydrogenated by anaerobic bacterial to a mixture of stanols. The unique ratios of sterols and stanols in faeces, arising through diet and metabolism in each animal species, can be used to track the source of faecal contamination.

Results and Conclusions:
Data showed that the sterols were very low to low in the lake sediments and undetectable in the surface water samples. Ratios of sterols, cholestanol (C27) to sitosterol (C29), C27/C29 and that of 5β/5α stanols, indicated that water fowl are the likely predominate faecal source. Human input appeared to be negligible compared to natural sources. In contrast, samples and data from the North Maroochy river gave higher levels of stanols and indicated that human septic emissions were probably contributing to the elevated levels and ratios.

Plenary Session 2
9:00am – 9:45am

Will Steffen
ANU Climate Change Institute

Climate Change and the Coastal Zone: Science, Uncertainties and Risks

Australia's coastal zone is arguably one of the most vulnerable sectors to the impacts of climate change. What does the latest climate science say about the risks that our coasts may face from climate change this century and beyond? The IPCC Fourth Assessment Report, published last year, provides an authoritative account of the state of climate change science. This science is advancing rapidly, however, and there have been important developments since the IPCC report, many of them of direct relevance for the coastal zone. For example, global mean temperature and sea-level rise are tracking at or near the upper limits of the IPCC projections, as are the emissions of carbon dioxide from human activities. Recent research also points to possible instabilities in the large polar ice sheets in Greenland and Antarctica, which could increase the rate at which sea level rises the rest of the this century and beyond. A sea-level rise of between 0.5 and 1.0 m by 2100 is now within the realm of possibility. There is also evidence that the natural carbon sinks – the uptake of carbon dioxide from the atmosphere by oceans and land – can no longer keep pace with the increasing human emissions, leaving a larger fraction of our emissions in the atmosphere. Although the reality of climate change and its human causes are no longer questioned within the credible scientific community, many uncertainties remain about the magnitude and rate of climate change that we will experience in the coming decades. Nearly all of these uncertainties lie at the upper end of the projections, suggesting that we have underestimated how severe climate change will be. The latest scientific research, even with the considerable uncertainties surrounding it, emphasises the risks that Australian, and global, society faces if rapid and effective mitigation is not undertaken.

SPEAKER ABSTRACTS - *Thursday*

Plenary Session 2
9:45am – 10:05am

Napcia Bin Tahal
Torres Strait Regional Authority

Torres Strait Islander Perspectives on Coastal Management and Climate Change

The Torres Strait is a geographically, culturally and ecologically unique region extending from the south western tip of Papua New Guinea to the northern tip of Cape York Peninsula. The area is home to a culturally distinct society comprised of over 18 different communities. Torres Strait Islander and Aboriginal people have strong and abiding connections with their land and sea country.

The ecologically sustainable and culturally appropriate management of the area poses a huge challenge, with many unique aspects, whilst the prospect of rising sea level and other impacts of climate change cast a cloud over the region which requires comprehensive action both locally and globally.

This presentation will cover the land and sea management strategy for Torres Strait, highlighting the issues across the region, some of the work undertaken to date and a few thoughts specifically about climate change and what is needed to address potential impacts in the region.

Plenary Session 2
10:05am – 10:30am

Nicole Middleton
Australian Government Land and Coasts

Caring for our Country

Introduction
Reef Rescue is a key component of Caring for our Country. The Australian Government has committed $200 million over five years through Reef Rescue to address the impacts of declining water quality and ultimately improve the Reef's capacity to deal with climate change.

Reef Rescue's objective is to improve the water quality of the Great Barrier Reef lagoon by changing land management practices to reduce nutrient, pesticide and sediment run-off from agricultural land.

Methods
Reef Rescue is comprised of five integrated components to achieve its objective:
- Water Quality Grants
- Reef Partnerships
- Land and Sea Country Indigenous Partnerships
- Reef Water Quality Research and Development
- Water Quality Monitoring and Reporting, including the publication of an annual Great Barrier Reef Water Quality Report Card.

Reef Rescue investment will be strategic, risk-based and targeted towards high risk/ priority areas in Great Barrier Reef catchments, based on best available knowledge. Adaptive management will be used to update priorities over the course of Reef Rescue.

Partnerships between traditional owners, Queensland Government, industry, regional bodies and communities will also be supported by Reef Rescue to deliver outcomes for the reef.

Results
Results from earlier projects indicate that establishing and maintaining buffer zones, improving fertiliser efficiency, strategic fencing and repairing riverbanks and wetlands reduces nutrient, sediment and chemical run-off from the land. These practices and other on-ground works to improve the water quality of the Reef Lagoon are priorities for funding.

Conclusion
Reducing the amount of nutrients, sediment and chemicals that flow onto the reef gives the reef a chance to regain its natural resilience and ability to cope with impacts of climate change. This presentation will provide an update on progress and achievements in implementing Reef Rescue.

Planning, Policy and Politics
11:00am – 12:20pm

Greg Bruce
Townsville City Council

Townsville City - Integrating Sustainability in the Coastal Zone, an example from Tropical Queensland

Townsville City Council (TCC) has developed a leading range of integrated coastal zone management (ICZM) initiatives and practices. These innovative initiatives and practices include integrated programs in energy, water, waste and urban nature. Council's Integrated Sustainability Department is responsible for facilitating and fostering these Council wide and community-based (business, industry, government, research, education, NGOs, and residents) environmental partnerships and collaborations. Townsville City has developed the "Creek to Coral" initiative which includes a comprehensive Community-Based Education & Involvement (CBE&I) program as well as sophisticated responses to wastewater recycling on Magnetic Island in the Great Barrier Reef World Heritage Area. Energy management initiatives include working in partnership with Ergon Energy and others on both the Townsville: Queensland Solar City program and the 20 MW Townsville Network Demand Management Pilot. More recently TCC has collaborated with local business and enterprise to form a Carbon Townsville cluster and associated Sustainable Townsville Ltd company to address climate change and carbon management. Importantly all these initiatives are glued together via the trialling of and community-wide participation in a range of leading edge sustainable behaviour management and applied change communication technologies (such as Community Based Social Marketing; Thematic Communication/Education and Collective Social Learning).

Planning, Policy and Politics
11:00am – 12:20pm

Toni Edmondson
Department of Environment and Resource Management

Review of the State Coastal Management Plan

A statutory review of The State Coastal Management Plan – Queensland's Coastal Policy (the SCMP) has recently been completed. Results of the review have indicated the need for significant changes to coastal planning and management policies and associated legislative provisions. This is to ensure they effectively address coastal planning and management challenges and align with contemporary land use governance arrangements.

In accordance with Statutory review requirements, the Minister for Climate Change and Sustainability has considered the results of the review and subsequently asked DERM to prepare a new Queensland Coastal Plan. Results of the review have been used to set the following strategic directions to guide drafting of the new Queensland Coastal Plan:

- Greater policy certainty
- Greater certainty in relation to coastal hazards
- Integration with existing management regimes
- Removal of duplication and overlap
- Alignment with planning and development decision making processes under the Integrated Planning Act 1997

Reflecting on the results of the review and ongoing changes to the development and planning regime in Queensland, the new draft Queensland Coastal Plan (new Plan) is likely to be significantly different to the existing SCMP.

This paper outlines the review process and summarises significant policy issues identified during the review of the SCMP.

SPEAKER ABSTRACTS - *Thursday*

Planning, Policy and Politics
11:00am – 12:20pm

Kurt Derbyshire
Department of Employment, Economic Development and Innovation

Can we minimize the impact of vessel moorings on coastal habitats? An inter-agency management approach in Queensland

Recent and increasing inter-agency cooperation in the management of vessel moorings is leading to better outcomes for Queensland's coastal zone. There are approximately 5000 buoy moorings in coastal Queensland. Many of these are located in and on important inshore coastal habitats such as seagrass. Cumulatively the moorings, chains and vessels account for a sizeable disturbance area. Maritime Safety Queensland (MSQ) has the primary role in moorings management through its statutory role to maintain navigational safety, and issue authorities for all buoy moorings. Buoy moorings proposed in declared Fish Habitat Areas or involving disturbance of marine plants require authorization from the Department of Primary Industries and Fisheries (DPI&F), while Queensland Parks and Wildlife Service (QPWS) / Great Barrier Reef Marine Park Authority (GBRMPA) have key roles when buoy moorings are proposed in a Marine Park. Previously, buoy mooring management has suffered from a lack of coordination between agencies, resulting in unnecessary impacts on coastal environments. The Moreton Bay Marine Park rezoning provided the framework to initiate the development and use of Designated Mooring Areas in Moreton Bay, which were determined through agreement between MSQ, QPWS and DPI&F. Importantly, new buoy mooring applicants in these areas will benefit from a streamlined approval process. The agencies are also preparing an 'environmentally-friendly' mooring trial in Moreton Bay in partnership with SEQ Catchments, as use of these will form a key component of improved buoy mooring management with flow-on benefits for coastal habitats. In addition, the agencies are cooperating on buoy mooring management in other locations and assisting with establishment of a 'National Moorings Network' of mooring managers across Australia.

Planning, Policy and Politics
11:00am – 12:20pm

John Gunn
Earth Environmental For Creek To Coral

Improving Urban Water Quality in the Dry Tropics Coastal Zone

Introduction
People are increasingly drawn to the Queensland coast to live, work and play with this continuing influx of people increasing the pressure on the environment along the Queensland coastline. One of the main focus areas for addressing environmental pressures, albeit with less waves, is the catchment of the Great Barrier Reef (GBR).

The Coastal Catchments Initiative (CCI) is an Australian Government funded program aimed at achieving targeted reductions in pollution discharges to coastal water quality 'hot spots'. The receiving waters of the Great Barrier Reef lagoon are considered to be one such hot spot.

Methods
The CCI supports the development and implementation of Water Quality Improvement Plans (WQIP) based on the National Water Quality Management Strategy and the National Principles for the Provision of Water for Ecosystems.

WQIPs will identify the most cost-effective and timely projects to improve water quality outcomes.

Results
Creek to Coral, Townsville City Council's healthy waterways program, is the manager of the CCI project for the Black and Ross River Basins and is responsible for the preparation of a Water Quality Improvement Plan (WQIP) for the coastal Dry Tropics area between Crystal Creek and Cape Cleveland. The Black Ross WQIP is the first 'urban' based WQIP being developed in the GBR catchment. The draft WQIP will be ready for further stakeholder consultation by the end 0f 2008.

Conclusions
The WQIP for the urban environment is a different proposition to the WQIPs for the rural catchments, although there are similarities that are often overlooked. While the land use is obviously different the management principles for improving water quality are essentially the same. We show the similarities and differences between urban diffuse water quality issues and rural diffuse water quality issues. We discuss the importance of addressing urban diffuse water quality issues in both developed and developing catchments.

Coast and Marine Assets
11:00am – 12:20pm

Eva Abal
SEQ Healthy Waterways Partnership

Healthy Waterways-Healthy Catchments: A special partnership to secure the future of coasts, waterways and catchments in South East Queensland

The coasts and waterways of South East Queensland, Australia, represent unique and complex ecosystems that have a high conservation value, support major recreational activities and contribute significantly to the region's economy. However, the human footprint has led to significant changes in catchment hydrology and sediment delivery, declining water quality and loss of aquatic biodiversity. Predicted population increases in the region are likely to further impact on the ecological and economic health of its waterways and catchments. This growing urban population, industry and agricultural activities are heavily reliant on good quality water supplies. The South East Queensland Healthy Waterways Partnership (HWP), a whole-of-government, whole-of-community approach to understanding and managing the region's waterways, focuses on the implementation of management actions by assisting partners to prioritise their investments and address emerging issues. The HWP provides an oversight of a regional work program that includes monitoring, reporting, marketing and communication, development of decision support tools, research that is directed to problem solving, and maintaining extensive consultative and engagement arrangements. The Partnership framework illustrates a unique integrated approach to water management whereby scientific research, development of decision support tools, community participation, and strategy development are done in parallel with each other to achieve the Healthy Waterways vision. This paper provides an overview of some of the key factors that have contributed to the success of the approach.

Coast and Marine Assets
11:00am – 12:20pm

Aaron Wiegand
University of The Sunshine Coast

The Emission, Transport and Deposition of Aeolian Ammonia From Poultry Farm to Pumicestone Passage: Use of TAPM to Estimate Annual Loading

The Air Pollution Model (TAPM) was used to investigate the transport of ammonia across the Sunshine Coast region, following its emission to the atmosphere from 41 poultry farms in the district. Both the dry and wet deposition of ammonia, directly into the Pumicestone Passage water body and also onto the surrounding catchment, were simulated for each hour over the entirety of 2005. The simulations indicate that most of the ammonia is deposited within a relatively short distance from the farms, although the annual loading into the water body is not insignificant and may contribute to the formation of algal blooms.

Neil Lazarow
Griffith University

Using observed market expenditure to estimate the value of recreational surfing to the Gold Coast, Australia

This paper comments briefly on the origins of surfing and its growth through the Twentieth Century, discusses the growth of participation in surfing and then presents the results of a market expenditure based study to estimated the value of recreational surfing to the Gold Coast, a city of approximately 500,000 people on the east coast of Australia.

The findings demonstrate the significant economic, social and cultural importance of surfing amenity for both local residents and visitors to the region, the need to clearly articulate and measure changes in recreational amenity and the need to consider any negative impacts on surf breaks and the natural environment that may occur as a result of development, coastal planning and protection works.

SPEAKER ABSTRACTS - *Thursday*

Coast and Marine Assets
11:00am – 12:20pm

Paul O'Keefe
GHD Pty Ltd

A review of the use of geotextile erosion protection structures in the coastal zone

In the last decade, there has been an increasing use of the use of sand-filled geotextile units to build erosion protection structures in the coastal zone, in lieu of traditional construction methods using rock. Typical structures include seawalls and groynes subjected to both tidal currents in estuaries and waves on the open coast. Early structures using geotextile material often suffered from degradation due to exposure to sunlight and vandalism but the availability of UV and vandal resistant materials has made the use of this material more attractive.

This paper will review the development in the use of geotextile materials in the coastal zone, examining their inherent advantages and disadvantages. Recent examples from opposite sides of the country at Maroochydore in Queensland and Busselton in Western Australia will be used to illustrate the design, construction, and maintenance features of this type of structure.

In Action Not Inaction/Relationships – People and Communities
11:00am – 12:20pm

Donna-Marie Audas
Queensland Wetlands Program

From Small Things, Big Things Grow

Wetlands are often seen as swampy undesirable places, best suited for clearing and filling for urban development. This is particularly true of Queensland's coastal wetlands. How do you raise awareness and understanding of the important role wetlands play in our coastal environment?

The Queensland Wetlands Programme has approached this problem by developing education tools for primary school students that encourage an early understanding of what is a wetland, how it works, its values, the threats and what can be done to protect it. The Programme's education resources include a wetland interactive tool, a virtual wetland assessment tool and curriculum, a 10-week intensive school programme and a wetland story-thread. The intensive school programme was implemented in three schools in 2008.

The intensive school unit saw students spend 10 weeks visiting local wetlands. It was a combination of classroom learning and field work that allowed students to touch and feel wetlands, reinforcing their lessons about the natural, cultural, economic and social values of wetlands. Through partnerships with landholders, government and wetland experts these students were exposed to the importance of managing wetlands.

The schools involved in this project have continued to raise awareness about wetlands with their peers. Two of the schools showcased their learnings at an international conference.

As the saying goes from small things big things grow…

SPEAKER ABSTRACTS - *Thursday*

In Action Not Inaction/Relationships – People and Communities
11:00am – 12:20pm

Sally Kirkpatrick
Griffith Centre for Coastal Management, Griffith University

Community and Organisation Change: The Key to Coastal Sustainability

BeachCare is a coastal community engagement program that undertakes dune regeneration activities on select Gold Coast beaches and foreshores; it is run through the Griffith University's Centre for Coastal Management with the support of the Gold Coast City Council. The BeachCare program has been in operation since 2005, it has targeted a few sites on the Gold Coast that have been degraded due to vandalism, weed invasion, erosion or the lack of native dune vegetation. The involvement of the local community in dune planting and maintenance and a well managed program is vital to the success of the program.

The volunteer numbers have been slightly increasing each year; however these are still marginal results. As volunteers and their motivations are varied this paper looks at the barriers that are created within the organisation, and the bridges that can be crossed to overcome these to encourage more community involvement on a regular basis. Change is the key solution; change within the community and within the organisation of BeachCare. Changing the way an entire community perceives things is a large task; however it is achievable to change actions within the BeachCare program to influence and encourage more volunteer participation.

These tools aim to help not only BeachCare, but also other community based groups to attract and keep more community members as volunteers. If successful the results will be a step towards achieving environmental sustainability, particularly along our vulnerable Gold Coast coastline, for now and for the future.

In Action Not Inaction/Relationships – People and Communities
11:00am – 12:20pm

Mary Lawrence
Department of Primary Industries and Fisheries

Management in action: addressing the impacts of instream structures on Declared Fish Habitat Areas in coastal Queensland

Connectivity between fish habitats is critical for fish and other aquatic organisms to complete their life cycles. Fish habitats throughout Queensland are under increasing pressures from the installation of instream structures such as road crossings, weirs, floodgates, jetties, pontoons, revetment walls and other private and public infrastructure. These structures can impact fish habitats by modifying flow regimes, causing physical disturbance resulting in direct habitat loss or by forming barriers to the migration and movement of fish and other aquatic animals. This leads to population declines, reduced distributions of species and degraded fish habitats, with detrimental impacts on commercial, recreational and indigenous fisheries.

These pressures and impacts also exist within the declared Fish Habitat Area (FHA) Network and are of greater concern. In response, the Queensland Department of Primary Industries and Fisheries has developed a framework for conducting a physical inventory and data storage to identify and plot structures within declared FHAs and to assess the impacts of structures on fish habitats. Trial inventories were undertaken within two declared FHAs in north Queensland: Trinity Inlet (7 212 ha) and Hinchinbrook (12 268 ha). Data was collected using Arcpad and the fish barrier menu system uploaded onto a personal digital assistant (PDA).

Guidelines have been developed that provide both government (e.g. State agencies, Councils) and non-government (e.g. Natural Resource Management bodies) organisations with the capacity to undertake inventory projects throughout Queensland. The Guidelines consist of two user-friendly parts: an inventory protocol that describes the inventory process; and a response protocol, including a Decision Support System, to facilitate prioritisation of problem structures for management responses. Through establishing a systematic and integrated approach to addressing the impacts of instream structures on fish habitats, the framework and guidelines will contribute significantly to the protection and management of fish habitats within Queensland's declared FHA network.

SPEAKER ABSTRACTS - *Thursday*

In Action Not Inaction/Relationships – People and Communities
11:00am – 12:20pm

Cassie Price
WetlandCare Australia

Practical Change for Queensland's Wetlands

Wetlands are a key part of healthy coastal catchments. They filter sediment and nutrients, capture flood waters and provide homes, food and breeding grounds for many fish, birds and frogs. They are an integral part of first-class biodiversity and water quality for the river catchments, all the way to the reefs of coastal Queensland.

WetlandCare Australia with the support of the Commonwealth and Queensland Governments, Queensland Wetlands Programme, Burdekin Dry Tropics Natural Resource Management (BDTNRM), Burnett Mary Regional Group (BMRG), Bureau of Sugar Experimental Sciences (BSES) and many others, have been working towards practical change in wetland management.

Before change can occur, knowledge is required. WetlandCare Australia and partners have been working toward helping those managing wetlands to 'do the right things' for their wetlands. This information is being delivered to farmers, Councils and extension officers to ensure a wide and growing audience is reached. Knowledge, awareness and action are being driven by the use of some key tools; practical guides, landholder extension officers, planning and by seeking funding for works. This allows wetland managers to have information and support on-hand, over the phone and in the paddock.

This blend of resources has resulted in a change in practical wetland management and broader land practices to the benefit of the environment and often, also for a production benefit. Changes have included; integrated weed and feral animal control, farm planning including wetland outcomes, improved riparian zones and corridors, better on-farm water, nutrient and pesticide management, and many more.

These changes are having a direct result on improved coastal catchment biodiversity and water quality. These benefits can only grow as this information is taken up more broadly throughout the community.

Coast and Marine Assets
9:00am – 9:20am

Greg Fisk
BMT WBM Pty Ltd

Towards Understanding the Ecological Health and Character of Moreton Bay

Moreton Bay is the focus of numerous management plans/initiatives under which scientific monitoring is undertaken to assess achievement of their specific management objectives. All of these monitoring programs include measures of environmental indicators to report on the condition or state of Moreton Bay's ecological health and character. The Healthy Waterways Strategy (2007-2012) and its Ecosystem Health Monitoring Program (EHMP) funded by the stakeholders of the South East Queensland Healthy Waterways Partnership (HWP) is the largest and most comprehensive of these. It provides a detailed assessment of ecosystem health throughout the Bay, its estuaries and catchments, as well as checking if specific management objectives are achieved.

Two other key management plans/initiatives for Moreton Bay are currently being updated, namely the Moreton Bay Marine Park Zoning Plan and the Ecological Character Description (ECD) for the Moreton Bay Ramsar site. Both of these have associated monitoring objectives and programs to check if their management objectives are being achieved. The former Moreton Bay Marine Park Zoning Plan is being reviewed by the Queensland Environmental Protection Agency (EPA 2008). It forms the basis for management of activities within the Marine Park. The Moreton Bay Ramsar Site is one of the largest Ramsar Sites in Australia. BMT WBM was commissioned by the EPA to prepare the ECD for the Moreton Bay Ramsar Site (BMT WBM 2008).

All these plans/initiatives recognise that Moreton Bay contains a diverse range of estuarine and shallow marine habitat types as well as freshwater aquatic habitats and high energy beaches on the Bay's sand islands. To assist with integration of management and monitoring programs for these three (and other) plans/initiatives, this associated project to develop a conceptual framework showing the current understanding of Moreton Bay's ecological health and character was recently completed. BMT WBM worked collaboratively with the HWP and the EPA (and the authors of this paper) to complete this project and ensure a high level of alignment across the three management and monitoring programs.

This paper describes the conceptual framework and its associated conceptual models of the twelve key habitats and eleven key species in Moreton Bay (including the natural processes and attributes for each, the key stressors and threats and their direct and indirect threats to the habitats/species, and key ecological indicators for them). It also uses this conceptual framework to show the overlap and links between the management and monitoring objectives for the three plans/initiatives, as well as future priorities for ecological health monitoring in Moreton Bay.

SPEAKER ABSTRACTS - *Friday*

Coast and Marine Assets
9:00am – 9:20am

Joanne Burton
SEQ Healthy Waterways Partnership

What happens when it rains in the Logan-Albert Catchment?

In January 2008, an intense rainfall event in the upper catchment of the Logan and Albert River systems resulted in major flooding along the rivers. Another, less intense, flood occurred in the lower reaches of the catchments in early February. These floods, which followed an extended period of drought, provided an opportunity to conduct a monitoring program to assess the effects of the floods and their associated loads of freshwater, nutrients and sediment on the Logan and Albert estuaries and Southern Moreton Bay. This was a particularly relevant monitoring exercise as it provided a rare opportunity to collect data to support advanced hydrodynamic and ecological modelling planned for the region. Furthermore, it enabled the development of a better understanding of the processes associated with flooding and the associated diffuse loads of pollutants from the catchments, and the downstream effects of these loads.

The two flood events (the larger event was equivalent to a 1 in 10 year event at the end of the catchment) discharged some 65% of the average annual freshwater runoff into Southern Moreton Bay. This runoff delivered substantially greater than expected loads of nitrogen, phosphorus and sediment into the Logan Albert Estuaries and Southern Moreton Bay. Despite the massive freshwater runoff into the Bay, oceanic flushing resulted in the salinity of the bay and estuaries returning to almost pre-event conditions within 2 months. Sediment and nutrient concentrations in the estuary and Bay initially rose substantially and then declined to pre-event levels. A non-toxic algal bloom of Skeletonema costatum formed in the Southern Bay for 5 weeks and then dissipated. The most significant and long lasting effect of the event was high concentrations of chlorophyll a in the estuaries that rose constantly after the 2 events and did not decline for three months.

This study has demonstrated the importance of event based, as opposed to ambient monitoring, to measure and understand the effects of diffuse pollutants on river and coastal ecosystems.

Coast and Marine Assets
9:00am – 9:20am

Samantha Miller
Department of Primary Industries and Fisheries

Sustainable Planning for Aquaculture in the Great Sandy Region

The Queensland Government has adopted a planning approach for aquaculture development that will ensure this priority industry is well managed for Queensland's future. It is now internationally accepted that the increasing demand for seafood will be met primarily through aquaculture, and the industry in Queensland will continue to expand in coming years to meet that demand. Planning will ensure that an appropriate balance is met between the needs of the aquaculture industry and existing users of marine resources, and will also protect the environment for a sustainable future.

The Great Sandy Regional Marine Aquaculture Plan (GSRMAP) will guide future non-intensive aquaculture development within the Great Sandy Marine Park boundaries. The Marine Park stretches from Baffle Creek to Double Island Point. Under the Great Sandy Marine Park Zoning Plan, non-intensive aquaculture activities are allowed (under permit) in certain areas. However, up until now there has been no comprehensive strategic planning for aquaculture in the region, or in Queensland generally.

The Draft GSRMAP, released in July 2008, identifies proposed sites for bivalve culture methods including rack, surface and subsurface lines, and sea ranching sites for species such as sea cucumbers. The proposed sites were chosen so as to avoid adverse impacts to the environment and conflicts with other user groups, in accordance with planning principles that were endorsed by a state government Inter-Agency Working Group. The proposed sites are consistent with the entry and use provisions of the Marine Park.

Management controls that reduce risks associated with these aquaculture activities are detailed in the Draft GSRMAP and the associated Implementation Guidelines. Management controls for each proposed site include development boundaries, infrastructure design specifications, the requirement for an environmental bond, environmental monitoring program, reporting mechanisms for wildlife interactions and also address general biosecurity issues.

Planning, Policy and Politics
9:00am – 10:00am

Greg Stuart
DHI Water & Environment

Shoreline Erosion Management Planning – Using numerical models to help guide coastal management decisions

Queensland's coastline is dominated by sandy beaches varying from wave dominated reflective beaches to tidal dominated dissipative beaches. The physical coastal processes acting on these beaches including winds, tides, waves and currents interact to define the sediment transport patterns that can lead to beach erosion or accretion. In many locations, development has been allowed to occur within the erosion prone area. Understanding these erosion or accretion patterns is essential to effective beach management.

Shoreline Erosion Management Plans (SEMP) are the preferred the Queensland Government's preferred method for local governments to deal with erosion issues. Adequate planning done before extreme erosion events occur can help to avoid inappropriate protection happening in an ad hoc, reactive manner.

This paper describes a method to develop a SEMP based on detailed numerical modelling to investigate options for managing shoreline erosion. The benefits and limitations of this approach are discussed using Stockton Beach as a case study. Such investigations include the modelling of short, medium and long term processes. Three stages are proposed that include 1) describing and quantifying the coastal processes and hazards, 2) assessing the feasibility, effectiveness and acceptance of management options, and 3) recommending the most locally appropriate solution.

Planning, Policy and Politics
9:00am – 10:00am

George Hill
Surf Life Saving Queensland

Coastal safety and risk management - an imperative for Queensland

The 13,347km1 coastline of Queensland (6,374km related to islands) and the 714 accessible beaches that receive an estimated 30 million visitations each year, while an attraction for living and visiting, have inherent and largely unpredictable risk.

Surf life saving is well known for its extensive volunteer lifesaving network, Australian Lifeguard Service and support services such as rescue helicopters and jet rescue boats. However, it has only been in recent years where Surf Life Saving Queensland has received recognition for its extensive coastal safety and risk assessment services for the whole coast and not just beaches.

Drowning prevention on the coast is best addressed through the adoption of hazard risk management techniques, actions and mitigants. The coastal safety and risk assessment techniques developed by Surf Life Saving, and which use a range of hazard, population and other data inputs to underpin risk analysis and evaluation are now being rolled out across
Queensland.

For more than 10 years Surf Life Saving has developed and integrated a number of programs, resources, experts, best partices and guidelines to create a holistic coastal safety solution. The core components include the Australian Beach Safety and Management Program (ABSAMP), the Australian Coastal Public Safety Guidelines, coastal risk assessments, a coastal risk assessor training program, a Lifesaving Service Level Calculator and the Incident Reporting Database. Where appropriate, these components are underpinned by relevant Australian and international standards such as signage and risk management.

Surf Life Saving Queensland has also expanded its coastal safety capability through a relationship with Coastalwatch that has seen the analysis of beach and water conditions and usage using real time information input into lifesaving operations to assist with planning, readiness and response.

This presentation will outline the Surf Life Saving coastal safety and risk assessment methodolgy and the associated benefits to all levels of government, coastal management agencies, private developers and tourism operators in the reduction of the risk of injury or death, and in the protection of Australia’s coastal lifestyle and the significant economic value this brings to our nation.

Planning, Policy and Politics
9:00am – 10:00am

Darrell Strauss
Griffith Centre for Coastal Management, Griffith University

Assessment of Coastal Hazards – CoastSAFE Alive Australia

Reducing risks to life and property in the coastal environment requires monitoring of conditions to enhance our understanding of hazardous coastal processes. The CoastSAFE Alive project aims to develop real time assessment tools that provide safety indices and risk profiles for Australian beaches. This will build on previous assessments of Australian beaches by incorporating short-term changes to hazard ratings based on prevailing and forecast environmental conditions.

Long-term monitoring of physical coastal processes provides the basis for the development of predictive models of our coastal environment. With a continuous data collection program in place, there is also the opportunity to provide real-time information to authorities charged with the duty of care and management of coastal users and property.

CoastalCOMS, Coastalwatch, Surf Lifesaving Australia, Surf Lifesaving Queensland and Griffith University are working towards the development of assessment tools which integrate data collection and numerical methods to enable short-term forecasting of coastal processes which impact upon coastal users. Techniques being integrated range from video camera installations to complex artificial neural networks and shape detection algorithms.

Coast and Marine Assets
9:00am – 10:00am

Michelle Walker
Michelle Walker & Associates

Evaluating our coastal plans and policies: what's in a framework?

Over the past two decades, many state and local governments across Australia have developed coastal policies and plans of management to guide protection and use of coastal areas and resources. Nationally, these documents have sought to introduce principles of ecologically sustainable development to the way we manage our coasts – that is, a balance for ecological, social and economic outcomes.

After several years of implementation, many of these plans are to be reviewed. Despite evaluation being an accepted part of the planning cycle (plan – do – monitor – review), many of the policies were developed without clarity around the evaluation step. From an evaluation perspective, it is early days and a comprehensive and broadly accepted framework does not currently exist. In many cases, the history of the development of these plans and policies and the paucity of relevant monitoring data present challenges for those who will need to undertake these evaluations.

This paper discusses the nature of these challenges with a focus on the Queensland context and argues that to address them, we require an evaluative framework and capacity tailored for the coastal management discipline.

Much work on monitoring, evaluation and improvement has been done recently in the allied fields of natural resource management, reef protection and fisheries management. Key elements from these approaches could form the foundations of a much needed evaluation framework for coastal policies and programs. This paper proposes some of the elements that would need to be included, such as a clear cause and effect hierarchy, setting of intermediate and long-term targets and making uncertainty around our current knowledge explicit in each of these.

This approach, developed for the Queensland context, has potential for wider application in coastal management planning and evaluation.

Coast and Marine Assets
9:00am – 10:00am

Adam Callinan
Department of Environment and Resource Management

Coastinfo

Around 85% of Queensland's population live within the coastal zone; Queensland's coastline stretches more than 9500km to include 1165 offshore islands and is the terminating point for over 57 rivers and 300 estuaries. Significant Indigenous and cultural heritage values include some 950 Aboriginal cultural heritage sites and 50 non-Indigenous historic cultural heritage sites.

Demand is also increasing for access to the coast from fishing and aquaculture industries, ports and shipping, and mineral exploration. Our coast is under increasing pressure from human activity and its conflicting user demands. Coastal planning and management decisions based on a good understanding of coastal processes and effective planning and management techniques is critical to resolve these conflicting interests.

Numerous studies have identified insufficient access to, or knowledge of, relevant coastal management and planning information as a significant impediment to successful coastal management. The purpose of this project is to build a web site that allows coastal managers and planners to easily access up-to-date information relevant to managing and planning for the coastal zone.

In 2006, representatives from a number of Federal and State and non-government organisations realised a shared interest in understanding and addressing the difficulties coastal planners and managers in Queensland experience in accessing and using coastal information. To address problems identified with accessing relevant coastal information, the Steering Committee Members decided to develop a "first-stop-shop" coastal portal website to consolidate web links and relevant electronic information on coastal management and planning in one central location. As a result, CoastInfo was formed.

Coast and Marine Assets
9:00am – 10:00am

Marine Expert
Sea World

No abstract provided.

Plenary Session 4
10:40am – 11:10pm

Simon Baltais
Queensland Conservation Council

Go West Young Man

'Go west young man' is the proposed strategy of the State Government to manage growth in South East Queensland, but will it save our coast? Will it work? Can the region support 4 million people by 2030 as well as our lifestyle and the region's many environmental values? These are questions major community groups with their broad charters and interaction with multiple disciplines are well placed to answer. This paper will examine the draft SEQ Regional Plan and the results of the State Government's State of the SEQ Region report, the first assessment of the region's progress towards sustainability. Planning matters, economic, environmental and social indicators and judicial decisions will be examined to determine if progress is being made to safeguard our coastal values. It will be a paper that will examine the past to see if decisions made today will lead us to a better future.

Plenary Session 4
11:10am – 11:40am

Darryl Low Choy
Griffith University

Riding the Waves of Change: Towards a joined up planning approach for coastal management

The Australian coastal zone is experiencing increasing pressures for a number of global, national, regional and local drivers of change. Consequently, these highly dynamic and constantly evolving coastal landscapes are becoming increasingly characterised by higher degrees of complexity which require management through proactive planning.

Future management responses will need to address the complexity of unrelenting urbanisation and peri-urbanisation processes, evolving community expectations, future trends in outdoor recreation and coastal tourism, the range of threats to natural resources in the environmentally sensitive coastal locations and the increasing competition for limited coastal resources.

However past planning approaches have failed to adequately address these issues, particularly in the non urban environments and hence, environmental, natural resource, socio0economic and cultural values are at risk. All too often, traditional approaches have been compartmentalised, single purpose attempts to safeguard a narrowly defined or single objective.

This paper will outline current thinking on integrated (joined up) planning approaches to address complex coastal landscape management in a proactive manner. The paper will be supported by examples of outcomes from current research into peri-urbanisation in high growth coastal regions and the evolving role of local government in regional coastal NRM.

Plenary Session 4
11:40am - 12:10pm

Bruce Thom
Australian Coastal Society

Promoting a Queensland chapter of the Australian Coastal Society (ACS)

No abstract provided.

Catherine Acworth
Department of Environment and Resource Management

Coastal Management Practices on a Southern Gold Coast Beach

Kirra beach is located on the southern Gold Coast, bounded by Kirra Point to the south and Bilinga immediately to the north. In the 1960s the Tweed River entrance training walls were extended to improve navigation of the Tweed River entrance. This reduced the net northerly transport of sand to Queensland resulting in substantial erosion of the southern Gold Coast beaches, with the most notable effect being at Kirra.

Over the past four decades, a number of coastal management practices were adopted at Kirra to prevent further recession and provide a usable beach. Different options ranged from hard engineering structures to sand nourishment campaigns, and were found to provide only short term relief and not a long term solution to the problem. In 1994 the Queensland and NSW Governments jointly implemented the Tweed River Entrance Sand Bypassing Project with the joint objectives of establishing and maintaining a safe navigable entrance to the Tweed River, and achieving a continuing natural supply rate of sand to restore and maintain the amenity of the southern Gold Coast beaches.

This paper examines the various coastal management options that have been implemented at Kirra and their relative performance based on the extensive monitoring data available. Of the coastal protection options implemented, the sand bypassing system has proved to be the most effective long term solution. However, due to the highly dynamic nature of the coastal system there is a constant requirement for ongoing refinement.

Gildas Colleter
Aurecon

Mackay Boat Ramp Feasibility Study

Queensland Transport engaged Connell Wagner to identify a preferred option for a new boat ramp. A number of sites have been considered regarding functionality, design, environmental and safety requirements. Two options at the Mackay CBD (Riverside Drive options) and one at the Pioneer River entrance (East Point option) have been assessed in more detail to support the feasibility study.

After reviewing background information, opinions of all stakeholders were sought after to assist with preparation of the concept plan. Meteorological and hydrodynamic investigations were then undertaken to indicate the usage potential for each option. Preliminarily cost estimates were used to classify the different options on economic, social and environmental criteria.

Water levels and peak flood velocities from previous hydrological studies were used to highlight the design levels and civil works requirements. Local wave characteristics were assessed from local standard extreme weather conditions and cyclonic historical activity. A Delft3D hydrodynamic model of the Pioneer River estuary was set up based on tidal, freshwater and wind forcing. This model was used to estimate tidal currents at the three locations.

The preliminary wave climate investigation confirmed the low wave climate to be expected at these locations. The hydrodynamic model results suggest smaller tidal levels and a smaller tidal range for the Riverside Drive options than further downstream at the East Point option in this flood-influenced estuary. Currents are expected to be smaller at East Point location than for the Riverside Drive options, where erosion and scouring would be of concern.

The Riverside Drive sites offer greater potential for future upgrades, easily manageable road access and land tenure matters. However, the East Point site seems preferable due to lower environmental impacts and enhanced navigation access and safety.

Dawn Couchman
Qld Primary Industries & Fisheries

From oysters to ecosystems: Adaptive marine plant management in Queensland

Marine plants drive the primary production within the food chain in estuaries and inshore waters. Significant groups are saltmarsh, mangroves and seagrasses. These highly visible marine plants have a variety of roles including the uptake and export of nutrients, feeding, spawning and shelter sites for aquatic species, filtering and consolidating sediment, controlling shoreline erosion, and buffering coastal communities against tidal surges. Historically mangroves were harvested for timber to supply the fledgling oyster culture industry in Moreton Bay. Research over the last 3 decades has confirmed the links between marine plants and fisheries productivity. Forming vital estuarine and marine fish habitats, marine plants support all the fishing sectors: recreational, commercial and indigenous. Mangrove communities in Queensland were first protected within the 1914 fisheries legislation to manage timber harvesting. Further legislation in 1976 led to the protection being extended to other marine plant communities, including saltmarsh and seagrass. This crucial change was in response to community recognition of the broader ecosystem roles of marine plants and the connectivity between these diverse vegetated habitats and those habitats of the adjacent sand or mud flats. The initial single focus of management has evolved over the last 95 years to adopt a broader ecosystem approach that operates within the sustainability framework and accommodates environmental, social and economic parameters. Partnerships with key stakeholders have adopted a more strategic management approach with agreement on areas of foreshore protection and of development. At the forefront of the fish habitats that are being impacted by climate change, marine plant communities require adaptive management if these are to continue to support coastal fisheries resources and fishing. Buffers appropriate to allow landward and poleward shifts of the marine plant communities are a critical element of contemporary management. Recognition of the economic contributions that marine plants bring is long overdue.

POSTER ABSTRACTS - *alphabetical order by surname*

Cathy Ellis
Queensland Wetlands Program

“Surf” Queensland’s wetlands website

The Queensland Wetlands Programme has developed the state’s first-stop-shop for wetland information. It has information that helps manage Queensland’s many wetland types, including estuary and marine.

The Queensland Wetlands Programme produced this interactive site with the help of many of the state’s natural resource managers. These people have provided help, feedback and information. And it hasn’t stopped—continuous improvement sees new information and systems added almost each month.

This is an opportunity to see:
- what the website contains
- how it was developed
- what’s in store for the future
- how you can get involved.

The website is a host for the extensive suite of products available through the Queensland Wetlands Programme. It is suitable for government, research institutions, regional bodies, conservation groups, landholders and other stakeholders interested in the study, conservation, protection and management of wetlands.

Lee Fergusson
Virotec Global Solutions

The role of ViroSoil™ Technology in supporting sustainable coastal development and enhancing environmental remediation

The risks associated with coastal development in locations where Potential Acid Sulphate Soils (PASS) and Actual Acid Sulphate Soils (AASS) are present have long been recognised and the potential to cause oxidation of pyrite resulting in the formation of sulphuric acid leachate that will degrade the immediate and receiving environment is well documented.

Risk based management of development associated with PASS and AASS has been developed and a range of remediation options have been recommended including neutralisation of acidity and management of associated metal and metalloid contaminants. The role of ViroSoil™ Technology in addressing issues associated with the disturbance of PASS and AASS has yet to be fully realised throughout Australia in a variety of contexts.

ViroSoil™ Technology has been successfully applied to permanently neutralise the actual and potential acid generating capacity of sulphidic marine clays, dredge spoil, and other acid sulphate soils. ViroSoil™ Technology will halt the generation of acidic, metal laden leachate, bind into non-bioavailable forms any metal contamination present, facilitate revegetation of affected areas and has improved the yield of commercial aquaculture operations impacted by ASS.

Results from various commercial projects are presented and the applicability of ViroSoil™ Technology to promote sustainable coastal development is explored in conjunction with the possible role of ViroSoil™ Technology in large-scale environmental remediation projects where exposure of ASS is causing significant environmental harm.

POSTER ABSTRACTS - *alphabetical order by surname*

Paul Groves
Great Barrier Reef Marine Park Authority

Building capacity in Local Government and communities to manage oil in the catchment of the Great Barrier Reef

Industrial discharges and urban run-off account for the majority of anthropogenic hydrocarbon pollution entering the world's marine environment. The Great Barrier Reef (Reef) catchment contains numerous urban and industrial centres that may potentially contribute hydrocarbon pollution to Reef waters. As hydrocarbon pollutants pass from freshwater systems through the coastal zone and into the marine environment, they can have a chronic effect on aquatic and coastal marine life. Used engine oil comprises a significant proportion of the hydrocarbons in urban run-off and is known to have important human health and environmental implications. As urbanisation and industrialisation within the Reef catchment are occurring at a rapid rate, there is a critical need to prevent pollutants entering the Reef via land-based run-off.

Many of the facilities to manage waste hydrocarbon streams within the Reef catchment are managed by Local Government. These include structural stormwater management measures such as swale drains to remove pollutants from oily road run-off; non-structural measures such as education programs as well as used engine oil collection facilities at landfill and waste transfer sites. Under the Queensland Environmental Protection (Waste Management) Regulation 2000, Local Government is obligated to collect used engine oil at designated sites for recycling.

This project looks at the main waste engine oil streams in Local Government involved in the Great Barrier Reef Marine Park Authority's Reef Guardian Council program and reviews the potential impacts from used engine oil within the Great Barrier Reef catchment. Through the Australian Government's Product Stewardship for Oil program, assistance was provided to a number of Local Governments to help with managing waste engine oil through the provision of waste engine oil collection and recycling infrastructure.

Sandra Johnson
Queensland University of Technology

Integrating Bayesian Networks and a GIS-based Nutrient Hazard map of Lyngbya majuscule

Introduction:
There is an abundance of expert modelling software available to the environmental scientist and manager. Consequently there are a multitude of models and simulation outputs focussing on a particular aspect of an environmental issue. Integration of the results and the consolidation of knowledge captured in disparate modelling software systems is a common problem facing the environmental worker.

Here we look at three models of Lyngbya majuscula. Two Bayesian networks were created to model the scientific and management factors in Lyngbya bloom initiation and a GIS based model was produced to assess the relative risk of the nutrients of concern, believed to affect the growth, duration and severity of a Lyngbya bloom.

We suggest a flexible process to integrate these models and translate a scenario of interest into a probability of Lyngbya bloom initiation. We then discuss ways of further automating this process and highlight where the points of integration and flexibility are.

Methods:
A spreadsheet of risks from the Hazard map is transposed into risks for management land uses via a table which maps land uses from the hazard model to the management BN. These values are then transposed into a probability of the available nutrient pool in the scientific BN. After propagating the information through the BN we are able to obtain a new probability for the initiation of a Lyngbya bloom.

Results:
We work through an example scenario to show the process of integration and the subsequent effect on the probability of a Lyngbya bloom initiation.

Conclusions:
The integration of the Lyngbya models yields the probability of an increase in bloom activity in the Bay as a direct result of the proposed scenario. This offers a powerful tool for assessing the impact of changes to the discharge of nutrients of concern due to a change in land use, climate or any other scenario of interest.

POSTER ABSTRACTS - *alphabetical order by surname*

Stewart Lloyd
University of the Sunshine Coast

Nuisance algal blooms in coastal waters: some lessons and experiences from Noosa

Worldwide, algal blooms in coastal waters are becoming more frequent, intense and last longer. Dense accumulations of the brown algae Hincksia sordida have repeatedly occurred in the surf zone of Laguna Bay in Noosa. The beaches of Laguna Bay rank amongst Australia's iconic tourism destinations, and the algae severely impact on the local tourism. Thus, it is economically vital to identify factors which favour bloom development, and, conversely, promote bloom break-down and dispersion. Despite the economic impacts of blooms, there are no standardised algal reporting programs which impedes the development of informed management responses. Analyses of bloom dynamics (e.g. bloom duration, time of development, intensity etc), thus rely on semi-quantitative observations and use "local knowledge". Nevertheless, they indicate that blooms arrived earlier, lasted longer and were more intense in recent years. Importantly, they also show that Hincksia blooms are not a local and recent phenomenon, but extend at least to Fraser Island and for several decades into the 60s. Local knowledge also suggests that Northerly winds coincide with the on-set of blooms, and that excess nutrients are one of the causes of blooms. Yet, we found no consistent match between wind regimes and the occurrence of blooms, but this lack of correlation may not be robust due the lack of standardised algal reporting. Similarly, in SE-Queensland, regular nutrient monitoring does not extend beyond the estuaries, making testing of the frequently mentioned "nutrient enrichment hypothesis" virtually impossible for marine waters. The local authority is trialling the use of a "sea curtain" to prevent algae from washing ashore onto the economically valuable beaches of the Bay – this is currently seen as one of the most viable management response to blooms, and we will report on the efficacy of this intervention in this presentation.

Nicole McKirdy
Queensland Department of Primary Industries and Fisheries

Balancing fish habitat management and impacts of development

Coastal fish habitats are critical to the recreational, commercial and indigenous fishing conducted in Queensland's estuaries and inshore waters. These same habitats are often the target of development which extends from terrestrial lands into tidal and subtidal waters. For managers of fish habitats, the challenge is to balance these competing demands in a way that highlights the values (environmental, social, and economic) and roles of fish habitats and the fisheries that these support. The Department of Primary Industries and Fisheries (DPI&F) assesses coastal development applications that may result in fish habitat loss or disturbance throughout Queensland. New developments proposing removal of mangroves or other marine plants, construction of waterway barriers, or placement of new structures in declared Fish Habitat Areas trigger DPI&F's role in development assessment under the Integrated Planning Act 1997. As a condition of development approvals, DPI&F often requires that applicants counterbalance unavoidable, negative impacts on fish habitats through appropriate offsets.

Offset requirements for impacted fish habitats are determined by DPI&F policy and in accordance with Queensland fisheries and planning legislation. The Department's policy Mitigation and Compensation for Works or Activities Causing Marine Fish Habitat Loss, 2002 has recently been incorporated into the Queensland Governments Environmental Offsets Policy, 2008. Offsets for marine fish habitat loss or disturbance include habitat rehabilitation and/or creation, conservation of habitats, the surrender of tidal freehold land, and financial contribution to fish habitat research projects. Selected case studies from throughout coastal Queensland describing application and delivery of fish habitat offsets are featured.

POSTER ABSTRACTS - *alphabetical order by surname*

Roshni Narayan
The University of Queensland

Using historical environmental changes to provide a framework for recovery in Moreton Bay

A critical problem for ecosystem restoration is how to measure success part way through a decades-long process? Incremental success criteria can be defined using high resolution palaeoecology, allowing managers to sub-divide long term objectives into goals achievable within political cycles. We examined change in key benthic habitats in Moreton Bay by detailed examination of coral and foraminiferal community composition, diversity, spatial/temporal distribution patterns and their associated sedimentological characteristics. Set in a precise chronology, these new data provide a framework for ecosystem restoration.

We found that coral growth is episodic in the past 7000 years with 400-800 year periods without detectable coral growth between episodes with corals. These episodes seem controlled by ENSO intensity and sea-level oscillations. The present coral community, which is only 400 years old, is markedly different than all prior episodes. Benthic foraminiferal assemblages show modest bay-wide shifts in the species diversity and distribution patterns within the past ~30 years. For example, species diversity has increased in parts of the Bay (western-nearshore) and declined in others (eastern-oceanic). Dramatic changes in zonation indicate how water quality and habitats have changed as a possible result of unprecedented increase in urbanization and development in the catchment areas. The sensitivity of foraminifera allows them to play a valuable role in decadal, centennial and millennial scale investigations of the changes in estuarine and marginal reef environments. Our results also show how fluvial sedimentation responded to past climate change.

These findings are important to managers charged with protecting and restoring whole ecosystems. Since many habitats change slowly, long time series are needed to ensure restoration efforts are not abandoned prematurely. We find that foraminifera assemblages may be used as incremental success criteria in ecosystem restoration projects. Our study provides baseline data with which we can assess the magnitude of past change, and measure the success of management actions.

Lauren O'Brien
QLD Department of Natural Resources and Water

Incorporating Coastal Science into the Queensland Secondary Schools' Curriculum: Acid Sulfate Soils and Senior Chemistry

Introduction: Falling tertiary science enrolments and a need for participatory science in school curricula has inspired collaboration between Education Queensland and soil scientists from the Queensland Department of Natural Resources and Water (NRW) aimed at incorporating soil science into the secondary school curriculum. They jointly developed a Personal Development (PD) package aimed at Senior Chemistry teachers, focusing on the chemistry of Acid Sulfate Soils (ASS). These soils are both a coastal environmental hazard and an illustration of redox chemistry in action.

Methods: Several professional development events were held across Queensland in 2007-2008. The 3 hour sessions involved the presentation of background information and scientific concepts, followed by a hands-on exercise in the determination of Titratable Actual Acidity in soil (TAA, AS4969.2-2008). In addition, field inspections showed teachers the coastal environments where ASS occur and demonstrated operation of field sampling equipment. Teachers attending the events also received a CD containing resources for classroom use.

Results: Feedback from program participants has been overwhelmingly positive, with several schools across the state immediately incorporating the package into their courses. However, many schools are held back from fully utilising the package due to shortages of scientific equipment in the classroom, particularly electronic pH meters. These devices are delicate and costly, but required when performing the TAA procedure. Soil scientists at NRW are currently researching possible low-cost workarounds for this issue.

Conclusions: This project shows that multi-disciplinary collaborations using this coastal example can be extremely effective in revitalising the teaching of essential science disciplines like chemistry, which are often perceived as boring and difficult. The collaborative process has also revealed resource limitations in schools, and allowed space for NRW to find ways around them. Joint projects between coastal scientists and education authorities have the potential to improve secondary education in many areas.

POSTER ABSTRACTS - *alphabetical order by surname*

Micaela Preda
Queensland University of Technology

GIS-based environmental vulnerability mapping of coastal settings, with application to southeast Queensland

Increased nutrient and metal loads resulting in degradation of natural streams, estuaries and marine waterbodies represent a growing environmental issue that has received significant attention in recent years. A specific concern has been in relation to outbreaks of Lyngbya majuscula in the northern parts of Moreton Bay. Many factors have been proposed to contribute to outbreaks of this and other nuisance algae, and an integrated assessment is not straightforward.

The GIS-based multiple criteria analysis (MCA) approach has therefore been proposed and is designed to evaluate the potential for nutrient and/or metal export from catchments to waterways. The methodology is presented for a series of freshwater streams in southeast Queensland. Various land use are considered including urban, agricultural (crops, plantation forests and horticulture) and animal production. The MCA was developed using several criteria including terrain (DEM, geology) and hydrological attributes, in addition to land use.

In this method parameters (criteria) are ranked in terms of their relationship to nutrient/metal export. The final solution of the analysis provides an integrated subcatchment-based evaluation of the potential of various terrains and/or activities to impact on surface water quality. The output also consists of a map incorporating the combined effect of all parameters considered. The analysis does not preclude the use of more sophisticated models but can precede them, and also highlight areas of concern where further investigation is required. The approach is easy to use and relies on widely available datasets. The datasets and assessments can readily be updated when more information becomes available.

Zafer Sarac
Queensland Department of Primary Industries and Fisheries

Challenges with fish passage - A management perspective

Development of instream structures, demand for freshwater by urban, commercial and agricultural uses and changes in rainfall pattern due to the climate change put an increasing pressure on natural migration of Australian freshwater fish. Queensland Department of Primary Industries and Fisheries have been pursuing a fish passage program since mid 1990s to address this issue. This program includes putting in place some legislative requirements to make sure that all new instream structures which obstruct fish passage provide means to assist fish migration over the structure.

However, challenges to providing fish passage over instream structures are numerous. This paper attempts to create a healthy discussion on issues related to provision of fish passage and availability of freshwater habitat to Australia's freshwater fish species.

POSTER ABSTRACTS - *alphabetical order by surname*

Peta Williams
Griffith Centre for Coastal Management

An Adaptive Management Framework in Coastal Waterways: A Case Study in Currimundi Lake, Queensland

There are many benefits to an adaptive management framework as it allows for decision making to proceed even when there are considerable gaps in knowledge and uncertainty, by specifying actions, monitoring and adjustment of visions, targets and associated management practices.

This paper will look at the specific example of Currimundi Lake where an adaptive management framework has been integrated with the existing monitoring program, therefore, not requiring the development of sophisticated water quality and sediment transport models. This allows Council to save on costs as the plan is easily adapted with less expertise and future research required. Currimundi Lake, situated on the Sunshine Coast, has been an issue of growing concern to the community. These concerns have primarily focused on biting midge problems, water quality, entrance management and bank erosion. There is also concern over the impact of the connection of the artificial Lake Kawana into Currimundi. Before appropriate management strategies could be adopted for the lake, it was important to understand the dynamics of the lake and the changes that have occurred over time.

A plan for integrating monitoring data, modelling and management action has been developed and implemented. The plan sets out the procedures for interfacing these components and to develop the AMF. Regular support for the AMF is to be provided with an on-going review of the implementation process, evaluation of the system components including the verification of model outputs and calibration of the monitoring system. An AMF in this context provides a cost effective way of maximising the long term capacity of Council to improve the overall management of a coastal waterway.

Iony Woolaghan
Department of Primary Industries and Fisheries

Understanding and managing Queensland's coastal fish habitats through the Urban Fish Habitat Management research program

Sustainable fisheries require healthy, diverse, extensive and connecting fish habitats, including those in and around urban coastal communities. Targeted research informs and shapes the management direction for coastal fish habitats under pressure from increasing urban development and rising populations. As part of its role in managing Queensland's fish habitats and dependent fisheries, the Department of Primary Industries and Fisheries (DPI&F) has developed and established the Urban Fish Habitat Management (UFHM) research program. This program identifies, prioritizes, coordinates, encourages and financially supports fish habitat research in Queensland's urban coastal waters. Its objectives and research streams provide an integrated framework for commitment of funding to offset the impacts of development on fish habitats. The UFHM research program is updated annually online with summaries of completed projects. Reports are provided directly to external funding sources. Research outcomes are incorporated into DPI&F's fish habitat management activities and in advice to other resource and planning managers (e.g. Local Government). The UFHM research program is closely linked to the DPI&F Marine Fish Habitat (MFH) scholarship program, awarded to Honours projects that are aligned with UFHM objectives. Now into its fourth year with the University of Queensland, the MFH scholarship program has recently been expanded to include James Cook and Central Queensland Universities. This paper will present examples of urban fish habitat research projects and how these have benefited management of Queensland's coastal resources.

Henry Yin
BASF Polyurethanes Australia P/L

Introduction of a new coastal protection method - Elastomeric revetments

Elastomeric revetment is a newly developed method to create a bank and shoreline protection by bonding small riprap or crushed stones with polyurethane (PUR). Elastocoast® bonded stones creates a monolithic, open-porous, stable and flexible structure, which is cost-effective due to improvement in construction efficiency, savings in building material and its handling cost. The raw material of applied PUR consists of ~50% of renewable, re-growing materials and its transparency makes the Elastomeric revetments look the same as naturally set loose rip-rap.

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