

## The Queensland Floods

On 11 January 2011 the Premier of Queensland, Anna Bligh, declared three quarters of Queensland a disaster zone as the State responded to one of the most severe flooding events in its history.

On Wednesday 12 January the Bremer River peaked at 19.4 metres leaving almost a third of Ipswich under water. By Thursday the Brisbane River peaked at 4.46 metres, a metre below the record 1974 mark. With continuing flash flooding, unprecedented heavy rains, king tides and water from dam releases, 25,000 homes and businesses were flooded in 67 Brisbane suburbs. At 18 January 15,000 homes and businesses were without power in southeast Queensland and about 10,000 homes were uninhabitable. At 25 January the flood-related death toll was 22, and 9 people were still missing.

Queensland sustained massive losses to agriculture. Crops of wheat, cotton, sugar cane, citrus, fruit, vegetables and grains were destroyed. The flood also damaged infrastructure, rail, road networks, vehicles, and machinery. Due to the damage to rail, the subsequent lack of coal supply caused Hay Point and Dalrymple Bay coal terminals to operate at reduced capacity. The significant loss of navigation aids, siltation, and hazards to navigation caused the closure of Brisbane, Bundaberg and Alma Ports.

The full extent of the damage and total cost to the State is a long way from being known, however Main Roads Minister Craig Wallace said Queensland's worst floods in 50 years had a devastating effect on the road network with a final bill possibly worse than the 1974 and 1991 floods combined.



## The Maritime Response

On 12 January 2011, the Regional Harbour Master (Brisbane) closed the Port of Brisbane to ships. Upstream of Brett's Wharf at Hamilton was closed to commercial passenger ferries and commercial charter vessels. Transport Minister, Rachel Nolan warned boat owners and operators to keep off the water. Warnings were issued about dangerous underwater debris and strong undercurrents. With the river speed estimated at up to 12 knots, boat owners were advised to secure their vessels as best they could. Adding to the danger, buoys and beacons had been damaged or destroyed and could not be relied on for safe navigations. Notices to Mariners were posted regularly on the Maritime Safety Queensland (MSQ) website warning of navigational hazards, debris, and underwater obstructions. The Ports of Gladstone, Bundaberg and Alma were also closed to commercial shipping for the duration of the flood.

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Welcome to the 19th edition of the National Plan Newsletter.

We are in interesting times with the very recent launch of the review of the adequacy of the National Plan and the National Maritime Emergency Response Arrangements.

Many of you will be consulted as part of the review process. In addition to these reviews, a comprehensive risk assessment of oil spills in Australian waters is also being undertaken. Not only is there an increasing risk in our waters but the current risk patterns may have changed since the last review, some 10 years ago.

All these projects will feed into the update of the current arrangements for responding to marine casualties and marine pollution.

Much work is also being done in refreshing the National Stockpiles and implementing the outcomes of the Montara Commission of Inquiry. You will hear more about this in the future.

Another key development area is competency based training under the National Plan. AMSA has also recently launched some on-line training modules. As always we would welcome feedback on these new initiatives.

Further information on the above is provided in the following pages. I hope you will find this newsletter informative.

Toby Stone  
General Manager  
Marine Environment Division

Working as part of the State Disaster Management Arrangements, MSQ set up a forward field base at its Pinkenba base in Brisbane to coordinate the post-flood recovery of debris causing hazards to navigation within the Brisbane River, Moreton Bay and pilotage areas. The hazards to navigation included over 500 pontoons, sunken and submerged vessels, drifting vessels, uprooted trees, massive truck tyres, 44-gallon drums, gas bottles, metal gangways, timber piles, as well as parts of the iconic Brisbane walkway (some parts weighing up to 300 tonnes).

Working with staff from Pinkenba, Marine Environment Protection Unit personnel used their incident management skills for a different type of response. Maritime Services Branch staff were heavily involved in providing geographical information system support, updating tidal information, and contract management.

The Port of Brisbane Pty Ltd surveyors covered 1000 hectares, identified 62 obstructions within port limits, and removed all critical obstructions. State-of-the-art multibeam sounding sonar systems were used to take 1.5 billion soundings on the seabed in just five days, to allow the Harbour Master to safely reopen the port for shipping.

The Australian Defence Force supplied a minesweeper to help locate submerged objects in the Brisbane River. Three navy ships – coastal mine hunter *HMAS Huon* and hydrographic survey motor launches *HMAS Paluma* and *HMAS Shepparton* – plus smaller vessels including the *Norfolk* with portable sonar equipment assisted in surveying and taking soundings.

A significant number of aids to navigation such as buoys had been damaged, and the Pinkenba team began the massive task of restoring the navigational aids. Temporary mooring buoys

were also established for the purpose of salvage, recovery and interim storage of navigational hazards. New South Wales Maritime provided valuable assistance by sending six personnel to help in this major operation.



Difficulties were exacerbated as Mineral House, the head office for Maritime Safety Queensland, was closed for an extended period due to unsafe electrical systems caused by the flooding of nearby buildings. A core of key staff provided back-up support through temporary facilities established in another government premises.

There were many instances of staff contributing over and above the call of duty. Staff in Rockhampton and Gladstone provided oversight of a resupply operation by barges using the Rosslyn Bay boat harbour. The Harbour Master in Bundaberg assisted the Queensland Police Service in providing food drops to stranded boaties and houses along the Burnett River.

The Department of Transport and Main Roads added extra buses, drivers and two new bus routes to the public transport network to service Brisbane River ferry terminals. An extra 269 bus services a week helped cater for almost 18,000 commuters who were unable to use river services because of the cancellation of the CityCat and CityFerry services. Transport Minister, Ms Nolan said the State Government was working cooperatively with all levels of government to clean up river systems and restore safety.

Maritime Safety Queensland expressed sincere thanks to all

the agencies, organisations and individuals, in particular New South Wales Maritime, who assisted in the response to the disaster.

# Oil Spill Response Atlas

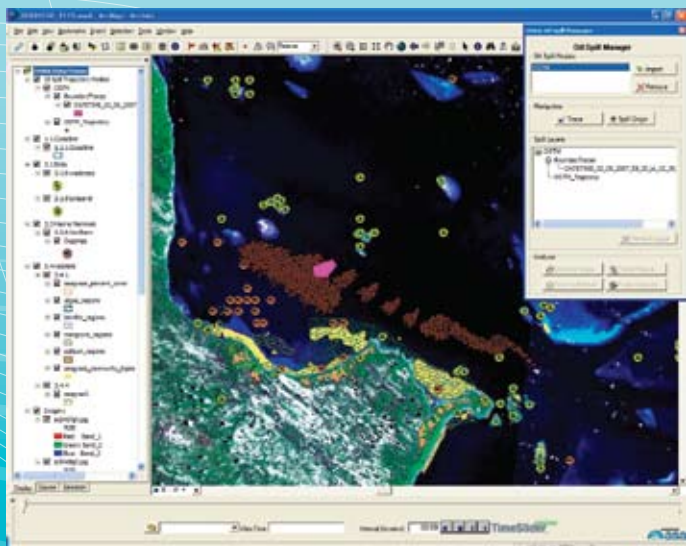
The Oil Spill Response Atlas (OSRA) is a purpose-built resource atlas based on an ArcGIS-embedded toolset and spatial database. OSRA is designed to deliver vital Oil Spill Trajectory Models (OSTM), environmental, biological and logistical information to marine spill responders to help determine sensitive marine and coastal areas that could be affected in the event of a marine pollution incident.

OSRA streamlines the process of data collation, data capture, and result outputs in both electronic and hardcopy formats. It is also a means for importing and displaying OSTMs.

The original OSRA toolkit was developed in 2001-2002. However, following an extensive period of inter-agency consultation and an internal review, AMSA recently updated the OSRA toolkit, which has been rebuilt for integration into the current ESRI ArcGIS platform.

A formal rollout of the new toolkit was undertaken in September 2010, at the AMSA Head Office in Canberra. This included delivery of the new application and a training workshop in the use of its enhanced functionality for the OSRA representatives from each State/NT.

This redeveloped application will provide users with two types of greatly improved functionality. Firstly, it makes OSRA information relevant to current incidents available to inexperienced Geographic Information System (GIS) users in a timely manner to assist them with immediate response decisions. Secondly, as the incident progresses and information is collected, the system then enables databases to be created and analysed by experienced GIS operators in line with response planning cycles.



Screenshot showing the new OSRA Toolkit on the ArcGIS platform

## New Aluminium Storage Boxes for Equipment

AMSA received 96,000 litres of dispersant into the Brisbane and Fremantle National Plan stockpiles during October and November 2010; this replaces the dispersant used during the Montara incident.

During December 2010 20 custom built aluminium storage boxes were delivered to the Sydney stockpile. These boxes are 2.4m x 1.2m and 1.4m high and are certified capable of carrying 800kg each. They also have built in certified lifting points, which allow self-aligning stacking and can be stacked up to 4 boxes high. The boxes have been designed to be lifted by crane or fork lifted from all sides, and can be readily transported by road, air and sea. The materials used are all resistant to the elements using structural grade aluminium and 316 stainless steel and are insulated where the two metals meet. This design means they are weather and vermin resistant, and the non-slip surface on the drop down door ensures that they are safe to use, even when dealing with oil. The front door can be removed without lifting the lid and the lid can withstand a 90kg person walking across without deforming. AMSA will now use this storage design for all future equipment purchases.

AMSA is currently updating the specifications of oil spill response equipment before going to tender, this is to replace equipment identified in the recent stocktake and assessment contract as beyond economic repair.

We envisage the tenders for much of the new equipment will be issued in the second quarter of 2011.



# AMSA GIS Staff Provide Mapping Assistance for Queensland Flood Disaster

Alex von Brandenstein from the Maritime Standards Division and Giovanna Lorenzin from the Marine Environment Division in AMSA were recently in Brisbane as part of two separate deployments to provide mapping support to the Australian Red Cross for the Queensland Flood Disaster.



They are two of a number of Geographic Information Systems (GIS) professionals within the ACT that are part of the Mapping and Planning Support (MAPS) group, a GIS volunteer core that was established in 2005 through the ACT Emergency Services Agency (ESA), in response to the 2003 Canberra Bush Fires. MAPS volunteers are spatial professionals who provide mapping and GIS support during major emergency events across Australia and the Asia Pacific region. Currently, it consists of a group of six coordinators and 74 volunteers with financial, administrative and leadership support from the ACT ESA.

Alex and Giovanna were based at the Milton Red Cross Emergency Operations Centre (EOC), where they produced various maps for the Incident Management Team (IMT) to assist with planning, such as locations of Evacuation Centres, access routes, predicted flooded areas, Red Cross deployments to affected areas, and locations of registered flood victims through the Red Cross National Registration and Inquiry System (NRIS). Despite some initial IT issues and an unexpected evacuation from the EOC premises due to rising Brisbane River levels, the MAPS team have been highly praised by the Red Cross for their professionalism and delivery of high quality maps at often very short notice.

The experience gained during these deployments with MAPS will be of valuable benefit to AMSA during a marine pollution event response when activated by the National Plan.



## AMSA Hosts HNS Spill Management Course

As part of AMSA's National Plan training, a Hazardous and Noxious Substance (HNS) Spill Management Course was held from 26-28 October in Melbourne with 19 participants from across the country.

A field trip was an integral component of the course and the Port of Melbourne was extremely generous in allowing the participants to visit its Education Centre, port facilities, the control tower, providing access to a ship and much more. This allowed participants to see first hand how HNS emergencies would be managed.

Interesting discussions, networking, a revision of learning and a simulated exercise allowed participants to take ideas for improvement back to their areas.



# New Marine Pollution Team In Victoria

In September 2010, the responsibility as control agency for marine pollution in Victoria was transferred from Marine Safety Victoria, to the Security and Emergency Management Division (SEMD) of the Department of Transport.

As a result, the State Marine Pollution Controller is now Mr Tony Pearce, Executive Director Security and Emergency Management. Mr Pearce is responsible for the overall strategic management of marine pollution preparedness and response for Victoria.

The Marine Pollution Team (MPT) consisting of Phillip Starkins (Manager), Amanda Priest (Senior Project Officer), Aleksandra Henclewska (Project Officer) and Lynn Blades (Support Officer) are responsible for ensuring that the Victorian Marine Pollution Contingency Plan can be successfully implemented during an incident. This team is supported by other members of the SEMD, who provide around the clock emergency response capability and additional capacity during marine pollution emergencies.

This is achieved through a number of activities including:

- pollution risk assessment and planning for mitigation activities by State agencies, municipalities and third parties;
- ensuring that there is appropriate equipment to respond to an incident;
- ensuring that response arrangements are drilled and exercised;
- implementing a training program to ensure that sufficient people at both operational and strategic level have the specialised skills to safely respond to an incident;
- ensuring that mutual aid arrangements are in place to provide support to other jurisdictions and the Commonwealth; and
- providing input to Commonwealth-led marine pollution policy and strategy.

One of the MPTs priorities over the next 12 months will be to enhance Victoria's preparedness for a marine pollution incident, by more closely aligning marine pollution response within broader emergency management arrangements. This will be complimented by the development of a comprehensive coastline risk profile from pollution of hydrocarbons, hazardous and noxious substances.



From Left: Amanda Priest, Tony Pearce, Lynn Blades, Aleksandra Henclewska, Phillip Starkins

## Responder Immunity for the National Plan

The Australian Government has recently introduced a new Responder Immunity provision into Australia's maritime legislation. The provision states that *"...no civil action, suit or proceeding lies against a person in relation to anything done, or omitted to be done, reasonably and in good faith by the person in relation to preventing or minimising pollution damage occurring in Australia or the exclusive economic zone of Australia."*

This means that there is legal protection for a person acting in good faith in relation to preventing or minimising pollution damage occurring in Australia. The legal protection is there to encourage prompt and effective response actions to minimise pollution damage. The responder immunity provision applies to all people and all commercial ships that may be involved in a spill response and includes *inter alia* salvors and their crew, crews on board any ship involved in a spill incident, port authority personnel; National Plan response personnel, etc.

The responder immunity provisions will apply to all bunker spills in Australian waters. The new provision can be found in section 24A of the *Protection of the Sea (Civil Liability for Bunker Oil Pollution Damage) Act 2008*, and gives effect to Resolution 3 of the International Conference on Liability and Compensation for Bunker Oil Pollution Damage 2001. The need for such a provision was also identified during the analysis of the response to the *Pacific Adventurer* incident in 2009.

# Tropical Cyclone Yasi

When Tropical Cyclone *Yasi*, a category 5 storm, crossed the Queensland coast in the early hours of Thursday 3 February 2011, it left an unprecedented trail of destruction. One of the hardest hit areas was Port Hinchinbrook at Cardwell where approximately 130 private and commercial vessels were moored.

It is incredible that any of these vessels survived after being lashed by torrential rain, 300 kph winds and a 4.54 metre storm surge. But survive some did, due mainly to good seamanship and adequate preparations. However most were badly damaged and some were destroyed.

By far, most of the damage occurred when the storm surge peaked around 1am on 3 February. Hundreds of concrete pontoons in the marina floated off their pylons. These, along with 115 vessels including a 20 metre steel schooner and a 20 metre passenger ferry, were then pushed onto rocks on the southern and western sides of the marina. Some vessels sank almost immediately while others were piled two and three high in a debris field that stretched for over 250 metres. One 12 metre long catamaran even ended up upside down in a swimming pool. The devastation was extensive, and subsequently pollutants such as diesel fuel and lubricating oil were released into the marina.

On 4 February, Maritime Safety Queensland (MSQ) sent a small team of pollution response specialists to the disaster zone to contain pollutants within the marina and assist as required. Since then MSQ has maintained an effective 24/7 pollution response capability on site by rotating various small teams through the area on a regular basis.

Pollution response is not always about big oil spills. However, it is always a challenge.



# Exercise Flamingo

**NSW Maritime in conjunction with the NSW port corporations and other government agencies conducted the State's annual Maritime Incident Response Exercise on 13 and 14 October 2010.**

The first day focused on using the Commonwealth Place of Refuge Guidelines to assess a place of refuge request from a passenger ship, the *MV Flamingo*, which lost power in heavy weather off Port Kembla. As part of the scenario the vessel also suffered hull damage which led to a discharge of about 300 tonnes of bunker fuel oil.

The second day saw the scenario of bunker fuel oil wash up on the Wollongong and Port Kembla beaches. The Port Kembla Port Corporation hosted the exercise and was tasked to develop an incident action plan to assess the condition of the shoreline, carry out an assessment of certain sections of shoreline, deploy decontamination equipment and also respond to oiled wildlife. The exercise also served as a major training opportunity for state personnel to become familiar with a range of equipment, including recently purchased decontamination stations.

A total of 75 people (participants, umpires and observers) representing 14 agencies attended the place of refuge exercise. Over 100 people attended the Port Kembla shoreline response exercise representing 15 agencies. The exercise was highly successful as indicated by the level of attendance and the feedback received. Outcomes and recommendations will be reviewed with the view to build on the strong existing NSW response capability.

The dates for the annual exercises held by the NSW port corporations will be advised via the NSW Technical Working Group and NSW National Plan Executive Committee, once they have been decided.



## Queensland Coastal Contingency Action Plan (QCCAP)

Maritime Safety Queensland has recently undertaken a comprehensive review of the Queensland Coastal Contingency Action Plan (QCCAP).

The new edition embodies the important lessons learned from the *Pacific Adventurer* oil spill, which occurred in March 2009 and the *Shen Neng 1* grounding incident, which occurred in April 2010.

This edition of QCCAP has been compiled by Maritime Safety Queensland through consultation with a wide group of stakeholders. The plan supports Australia's national arrangements for oil and chemical spills under the Inter-Governmental Agreement on Australia's National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances. The plan is also recognised as a hazard-specific plan under Queensland's State Disaster Management Arrangements, and supports Queensland's recently revised State Disaster Management Plan.

This QCCAP represents a significant change from previous editions. The plan is based on the prevention, preparation, response and recovery (PPRR) model, stipulated by the State Disaster Management Plan, and for the first time, both oil and chemical spill incidents are addressed in one document. QCCAP is supported by a number of port and area specific first-strike response plans and also includes the Oiled Wildlife Response Plan.

# Review of the National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances (The National Plan) and the National Maritime Emergency Response Arrangements (NMEMA)

As foreshadowed in the last newsletter, a review of Australia's National Plan and NMEMA has recently commenced and is expected to be completed during the second half of 2011. There are two projects being conducted as part of this process; the Assessment of Risk and the National Plan & NMEMA Review.

## 1. Assessment of Risk

A contract for the Assessment of Risk has been awarded to Det Norske Veritas (DNV). The project is being managed by DNV's London office and is expected to be completed by April 2011. DNV has been contracted to:

- ▶ report on current and future risk categorised by cause (ie grounding, collision, offshore petroleum incident);
- ▶ divide Australian waters into 90 subregions, each with a risk index and environmental sensitivity utilising AMSA's Oil Spill Response Atlas (OSRA), as well as other relevant data;
- ▶ estimate shipping densities, type and distribution from the Australian Ship Reporting System and Automatic Identification System (AIS) data;
- ▶ analyse recent worldwide data for accident frequencies and oil size distribution; and
- ▶ develop a parameterised spreadsheet to form a suitable basis for a future modelling tool.

## 2. National Plan and NMEMA Review

A contract for a National Plan and NMEMA Review has been awarded to Parsons Brinckerhoff (PB) and Thompson Clarke Shipping (TCS). PB & TCS have an experienced project team with a comprehensive knowledge of the National Plan. The project is being managed by PB's Newcastle office. PB & TCS will investigate:

- ▶ how well Australia meets its obligations under the International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 and the Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000;
- ▶ the extent to which NMEMA continues to meet Government and stakeholder expectations;
- ▶ the suitability and adequacy of accountabilities, roles and resources for the National Plan and NMEMA;
- ▶ the response capability of Australia to all types of marine oil and HNS spills;
- ▶ the future needs for response and preparedness for marine oil spills; and
- ▶ any gaps in the current system.

## Have your say

AMSA value any contributions to the review process. PB & TCS will be contacting key stakeholders during the review. In addition, if you have any comments on the National Plan and/or NMEMA, these can be forwarded to the attention of Robb McArthur at: [nationalplan@amsa.gov.au](mailto:nationalplan@amsa.gov.au)

# New Kids Website Released

AMSA has recently updated the Educational Resources tab on our website to include a site for Teachers and students. The site is aimed at educating primary school aged children about our marine environment with fun games and interesting facts. Some of the games include a Protect our Seas game, which is an animated rubbish clean up, jigsaw puzzle and word search. The teachers tab has various classroom aids such as experiments, useful links and facts.

To view our games site go to:

[www.amsa.gov.au/Marine\\_Environment\\_Protection/Educational\\_resources\\_and\\_information/Kids/](http://www.amsa.gov.au/Marine_Environment_Protection/Educational_resources_and_information/Kids/)



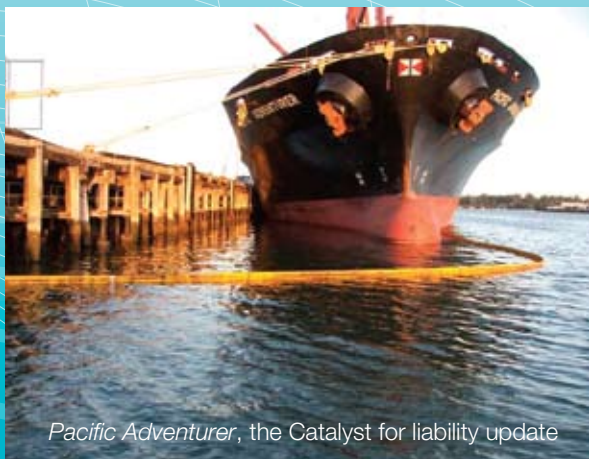


# Liability Limits for Ships Set to Increase

Following the *Pacific Adventurer* incident, AMSA commenced work at the International Maritime Organization (IMO) towards achieving an increase in the limits of liability for maritime claims under the Protocol of 1996 to the Convention on Limitation of Liability for Maritime Claims, 1976 (LLMC 96). In 2009, Australia succeeded in having this issue added to the IMO Legal Committee agenda for consideration. Australia's position is that the current limits are too low to meet international and national expectations that the polluter will pay for damage resulting from an oil spill.

In order for the matter to be formally discussed, Australia also needed to secure agreement from 19 countries (being one half of the member States signatory to the LLMC 96) to co-sponsor Australia's proposal to increase the limits on liability under the Convention. This was achieved in late 2010, and the proposal by Australia, with 20 co-sponsors, was submitted to IMO in November 2010.

The proposal will now be formally considered at the IMO Legal Committee's ninety-ninth session in April 2012. The key issue to be resolved at the Legal Committee will be the amount of any increase. Australia has proposed that the limits be more than doubled, taking into account it has been some 15 years since the current limits were set, and it is likely to be another 2-3 years before any increase in limits can enter into force internationally.



*Pacific Adventurer*, the Catalyst for liability update

## New AMSA Staff

AMSA would like to welcome Andrew Griffiths (Resource Coordinator), Jessica Stortz (Executive Assistant to the General Manager), Jocelyn Parsons (Senior Response Coordinator) and Ashleigh Tracey (Administration and Information Coordinator) to the Marine Environment Division.

Andrew joined the Marine Environment Pollution team in October 2010. Andrew is responsible for providing day-to-day management of response assets, including contract management, the development and implementation of operational procedures, training and audit strategies and monitoring of contract performance. Prior to joining AMSA, Andrew worked within the Marine Protected Area Management field where he gained 17 years experience dealing with environmental issues including marine pollution.

Jessica joined AMSA in 2009 where she worked in the Regulatory Affairs and Reform Division. She moved to MED in October 2010, to undertake the role of Executive Assistant to Toby Stone, General Manager of the division. Jess is responsible for providing secretarial and administrative support to the GM and the MED team. She also assists the international travel coordinator with travel arrangements.

Jocelyn joined the Marine Environment Pollution Response Team in January 2011 having already spent a number of years working within the field of Emergency Management in the Resource and Aviation Industries in Western Australia. Joss is responsible for the operational delivery of The National Plan as well as managing operational responses to marine environmental pollution incidents.

Ashleigh joined AMSA in 2009 where she worked to the GM of Corporate Services. Ashleigh has recently moved to MED to take on the role of Administration and Information Coordinator. Ashleigh is responsible for issuing Civil Liability and Bunker Certificates, co-coordinating the quarterly National Plan Newsletter "On Scene", data entry of oil spill incidents, stock take of oil spill kits and preparation of the National Plan Annual Report. Before coming to AMSA Ashleigh worked in Property Management and as a Legal Secretary.



From left Ashleigh Tracey, Jocelyn Parsons, Jessica Stortz and Andrew Griffiths

# Exercise *Waterwitch*

On 24 November 2010 the Queensland Department of Transport and Main Roads hosted a discussion exercise entitled Exercise *Waterwitch* to examine joint operations involving Queensland's disaster management agencies and marine pollution response agencies in response to a marine chemical spill in Far North Queensland.

The exercise was the third in a series of exercises designed to enhance the Queensland government's capacity to respond to a marine pollution event. The exercise was designed to build on and further explore the issues and lessons learned from recent marine incident responses in Queensland, including the *Pacific Adventurer* oil spill response in 2009, and the *Shen Neng 1* grounding response in 2010.

A diverse range of agencies were represented at the exercise reflecting the organisations likely to be involved in a marine pollution incident response in the Far North Queensland region. Agencies represented included the Department of Environment and Resource Management, the Department of Community Safety, Queensland Police Service, Cairns Regional Council, Regional Organisation of Cape York Councils, the Australian Maritime Safety Authority, the Great Barrier Reef Marine Park Authority, Far North Queensland Ports Corporation Limited, the Royal Australian Navy, and Seaswift Pty Ltd which operates multiple vessels in the region.

The exercise scenario involved a container vessel transiting through the inner route of the Great Barrier Reef north of Cairns and experiencing a mechanical failure resulting in the vessel grounding on Waterwitch Reef, in a remote part of the

Great Barrier Reef Marine Park. This caused a spill of cargo identified to be Packaged Harmful Substances (Chemicals as defined in Annex III of MARPOL). The scenario also presented a potential bunker oil spill. The exercise scope did not address related matters such as management of salvage arrangements, issues associated with the granting of a 'place of refuge' or investigations into the cause of incident.

The scenario presented participants with significant logistical, environmental and incident response challenges, and required a coordinated approach to the marine pollution incident response including logistic and technical support from Queensland's disaster management system.

The exercise identified a number of opportunities for improvement in dealing with a chemical incident response, and highlighted the difficulties of responding to a chemical spill at sea. The exercise also demonstrated the logistical challenges associated with conducting a marine pollution response in a remote part of Far North Queensland. The unique challenges associated with meeting workplace health and safety responsibilities associated with this type of incident response in a tropical marine environment and in dealing with toxic substances were also highlighted.

The benefits of ongoing training and exercising of multi-agency operations to help consolidate the arrangements for activation of Queensland's disaster management system in support of a marine pollution incident response were considered by the exercise participants to be a key element of ongoing improvement.

## ENVI Training

During the Montara Oil Well incident in 2009, the AMSA GIS Support team and the Victorian Fisheries Research Branch of the Department of Primary Industries used ENVI software for the conversion and analysis of aerial IR/UV raw data collected over the oil spill area.

ENVI provides a number of spatial imagery analysis tools and applications for the detection and analysis of features from different types of aerial and satellite imagery. The software's potential for extracting information from remote sensing imagery will allow AMSA to monitor and measure oil spill changes during future incidents.

As part of the National Plan Training, an ENVI software course was held in Canberra from 9-12 November, and was customised to include some specific oil spill feature extraction methods using various ENVI tools and techniques.

Participants included GIS and Remote Sensing staff from AMSA, Geoscience Australia, Defence Imagery and Geospatial Organisation (DIGO), Earth Resource Information Network (ERIN), The Australian National University (ANU), NSW Maritime, and Department of Transport, Energy and Infrastructure (DTEI) SA.



# What's On

## April 2011

Course Name	Organisation	Location	Dates
AllIMS Course	AMSA	Hobart, TAS	5 – 6 April
Regional Responders Revalidation Training Course	Maritime NZ	Canterbury, NZ	11 – 13 April
Introduction to Marine Oil Spill Response Level 3: Oil Spill Responder Course	MSQ	Gladstone, QLD	11 – 15 April
Course in Oil Spill Response Command and Control	AMOSC	Geelong, VIC	11 – 15 April
Equipment Deployment Day	WA DOT	Dampier, WA	13 April
Marine oil Spill Oiled Wildlife Training Course	Maritime NZ	Palmerston North, NZ	27 – 29 April
AllIMS Course	AMSA	Darwin, NT	28 – 29 April

## May 2011

Course Name	Organisation	Location	Dates
Introduction to Marine Oil Spill Response	MSQ	Brisbane, QLD	5-6 May
Regional Responders Revalidation Training Course	Maritime NZ	Auckland, NZ	9 – 11 May
Operator Training Workshop	WA DOT	Fremantle, WA	10 – 12 May
AllIMS Course	AMSA	Sydney, NSW	11 – 12 May
Course in Oil Spill Response Operations	AMOSC	Geelong, VIC	16 – 20 May
Introduction to Marine Oil Spill Response Level 3: Oil Spill Responder Course	MSQ	Karumba, QLD	16 – 20 May
Finance & Administration	MSQ	Cairns, QLD	17-18 May
AllIMS Course	AMSA	Adelaide, SA	18 – 19 May

For further information on national plan training:

[www.amsa.gov.au/Marine\\_Environment\\_Protection/National\\_plan/Training\\_Program/index.asp](http://www.amsa.gov.au/Marine_Environment_Protection/National_plan/Training_Program/index.asp)

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For further information on items in this issue, please contact:

Environment Protection  
Marine Environment Division  
Australian Maritime Safety Authority  
GPO Box 2181 CANBERRA ACT 2601  
Phone: +61 2 6279 5933  
Email: [eps@amsa.gov.au](mailto:eps@amsa.gov.au)



**Australian Government**  
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