Coastal news

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Newsletter of the New Zealand Coastal Society: a Technical Group of IPENZ

Contents

An Improved Management Regime for Vehicles on Northland Beaches

The Issue

The use of vehicles on beaches during weekends and in holiday periods, and the lack of an effective management framework around this, has become a serious safety and environmental issue for Northland. While considerable work has already been undertaken to educate vehicle users about safe and responsible driver behaviour, this has proven insufficient as was dramatically highlighted by the tragedy at Ripiro Beach last summer.

Proposed Management Approach

Following considerable discussion between relevant authorities over options to improve the management of vehicles on beaches, it was concluded that the most efficient and effective approach is to develop regionally consistent speed restriction bylaws under the Land Transport Rule - Setting of Speed Limits 2003 and complementary bylaws under the Local Government Act 2002 with both underpinned with continued public education.

Bylaw Development and Implementation

The proposed management approach required district councils to extend their district boundaries to Mean Low Water Springs (MLWS), thus allowing them to enact bylaws. However, while the Whangarei District Council (WDC) has already extended its district boundary and commenced the process to enact bylaws, Kaipara (KDC) and Far North District Councils (FNDC) district boundaries are at Mean High Water Springs (MHWS).

As there was reluctance from both KDC and FNDC to extend their district boundaries, consideration was given to which other agency is able to set speed restrictions on beaches where the district boundary stops at MHWS. The Minister of Conservation has since confirmed that the Minister could be the road controlling authority (RCA) in such circumstances and requested Department of Conservation (DoC) staff to prepare speed restriction bylaws where there is support

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from all other agencies.

While all agencies in the Kaipara district have indicated their support for this approach, because this will be the first time the Minister has acted as a RCA for beaches, DoC staff have decided to begin with a small scale trial at Glinks Gully. The purpose of this trial is to develop a template for the approach and ensure there are no unforeseen legal or technical complications.

Public Education Campaign

Over the past two years, joint agency beach education days have been held during December/January at local 'hot-spot' beaches to educate beach users about safe and responsible driver behaviour. In addition, an intensive media campaign is run involving radio adverts, media releases, posters and information on the NRC website. New this summer period will be the erection of signage at vehicle access points with simple messages highlighting road rules and environmentally responsible driver behaviour. Funding has been obtained from Land Transport New Zealand to assist with the education campaign.

Way Forward

It is expected that speed restrictions will be in place for the Whangarei district before this summer with LGA bylaws consultation undertaken during the summer holidays and enacted early in the New Year. DoC staff intend to consult on the trial speed restriction bylaw for the Kaipara district during this summer. If the development and implementation of the speed restriction bylaw is successful, speed restrictions will be introduced to other coastal communities where vehicles on beaches are an issue and district boundaries remain at MHWS.

NZCS Regional Coordinators

Every region in the country has a NZCS Regional Coordinator who is available to help you with any queries about NZCS activities or coastal issues in your local area.

North Island

Northland	André Labonté	labonte@xtra.co.nz
Auckland	Hugh Leersnyder	hugh.leersnyder@beca.com
Waikato	Jenni Paul	jenni.paul@ew.govt.nz
Bay of Plenty	Reuben Fraser	reubenf@envbop.govt.nz
Hawke's Bay	Neil Daykin	daykin@hbrc.govt.nz
Taranaki	Kate Giles	kate.giles@trc.govt.nz
Manawatu/Wanganui	Johanna Rosier	d.j.rosier@massey.ac.nz
Wellington	Iain Dawe	iain.dawe@gw.govt.nz

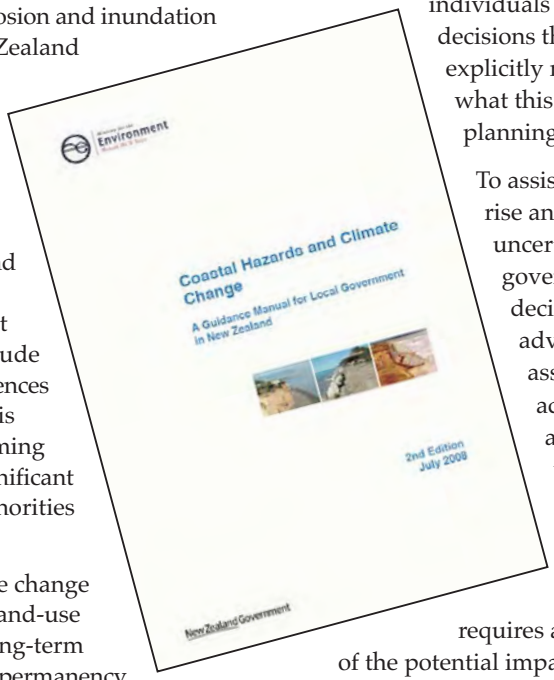
South Island

Upper South Island	Eric Verstappen	eric.verstappen@tdc.govt.nz
Canterbury	Justin Cope	justin.cope@ecan.govt.nz
Otago	Mike Hilton	mjh@geography.otago.ac.nz
Southland	Ken Murray	kmurray@doc.govt.nz

Coastal Hazards and Climate Change

The Ministry for the Environment has recently released the 2nd edition of *Coastal Hazards and Climate Change – A guidance manual for local government in New Zealand*. First published in 2004, the manual has been extensively revised and updated to include the latest guidance on the climate change effects on coastal hazards following the publication of the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report.

Climate change will not introduce any new types of coastal hazards, but it will affect existing coastal hazards by changing some of the hazard drivers. It will exacerbate coastal erosion and inundation in many parts of the New Zealand coast, further increasing the potential impacts of coastal hazards on coastal development from now on. With the intensification of coastal development and associated infrastructure, and the escalation in coastal property values over recent years, the potential magnitude of the impacts and consequences also increase. Managing this escalating risk over the coming decades now presents a significant challenge for planning authorities in New Zealand.



Whilst the effects of climate change effects are gradual, many land-use planning decisions have long-term implications because of the permanency of structures and infrastructure. Incorporation of climate change is now a necessary consideration for the majority of coastal planning. This manual has been written primarily to support local authorities (policy, planning, consents, building and engineering staff) in dealing with some of these challenges. It provides best practice information and guidance to strengthen the integration of coastal hazards and climate change considerations in land-use planning and during resource consent decision-making. Specifically the manual:

- provides information on the key effects of climate change on coastal hazards
- provides a risk assessment framework for incorporating coastal hazard and climate change considerations into the decision-making processes associated with policy development, planning and the awarding of resource consents
- promotes the development of long-term adaptive capacity for managing coastal hazard risk through the adoption of adaptive management and no-regrets response options.

A major issue discussed within the manual is advice on planning for sea level rise, and other drivers of coastal hazards such as storm-surge, winds and waves. In its Fourth Assessment Report, the IPCC found that "Because understanding of some important effects driving sea-level rise is too limited, this report does not assess the likelihood, nor provide a best estimate or an upper bound for sea-level rise." While there are uncertainties associated with the science around sea-level changes, national and local governments and individuals must continue to make decisions that either implicitly or explicitly make assumptions about what this rise will be over a planning timeframe.

To assist incorporating sea-level rise and the associated uncertainties within local government planning and decision-making the manual advocates the use of a risk assessment process. The advice has been formulated after detailed discussion with key stakeholders including scientists, engineers, insurance, and local government representatives. This requires a broader consideration of the potential impacts or consequences of sea-level rise (and other coastal hazard drivers) on a specific decision or issue. Rather than define a specific climate change scenario or sea-level rise value to be accommodated, it is recommended in the manual that the magnitude of sea-level rise accommodated is based on the acceptability of the potential risk.

The manual has been rewritten in a more accessible, and user-friendly style and includes a number of factsheets on aspects of coastal hazards.

The full technical manual is available from:

www.mfe.govt.nz/publications/climate/coastal-hazards-climate-change-guidance-manual/

A summary publication, based on the full manual, is due to be published early January 2009. It will be available in printed form and online at: www.mfe.govt.nz/publications/climate/#local.

Warren Gray, MfE, Warren.Gray@mfe.govt.nz
Julie King, MfE, Julie.King@mfe.govt.nz
Doug Ramsay, NIWA, d.ramsay@niwa.co.nz
Rob Bell, NIWA, r.bell@niwa.co.nz

Community-based Coastal Monitoring

Coastal News

Burgeoning coastal development, recreational use, and the projected affects of climate change are placing increasing strain on regulators to manage risk associated with coastal hazards. Low-lying coastal communities in particular are vulnerable to a range of natural hazards including coastal erosion, storm surge inundation, and tsunami, with varying levels of risk to life and property.

Currently New Zealand's coastal hazard monitoring network is patchy and resources are limited. As a consequence there is considerable potential for coastal communities to take a more active role in managing their environment and assisting in collecting data and knowledge that can be used to better manage their coast.

My Master's research involved the development of simple methods, based on the needs of various community groups and sound science principles, that can be used to monitor beaches and the coastal environment. My research targets coastal community groups such as Coast Care, coastal hapu, secondary schools, and surf life saving clubs. It provides these groups with simple monitoring protocols, checklists/templates, and appropriate survey and measurement equipment to carry out coastal monitoring.

Consultation for this research was extensive with the monitoring tools developed in consultation with Tainui ki Whaingaroa hapu, Raglan Area School, and the Waikato Beachcare, Coast Care Bay of Plenty and Waicare programmes. Consultation grew to inform a large part of this research and unearthed a number of key findings that must be considered when developing monitoring tools for community groups.

Tools must be relevant to local needs

One of the keys to the successful uptake of monitoring tools by a community group is their relevance to the group. Tools must fit the interests, needs, capability, and resources of each individual group. All community groups have different objectives and agendas and function in different ways. They also have different requirements, time constraints, and intentions. Monitoring tools need to be flexible to accommodate this, as groups are not going to conduct monitoring without a defined outcome. People are only going to monitor something if they think that what they are going to find out is of some use to them. If tools are not relevant, implementation will be extremely problematic and the monitoring programme difficult to maintain. This means tools have to be developed in a manner that makes them easily tailored and customised to each individual group.

It is difficult for the public to select scientifically robust methods

Monitoring is more than just measuring things. It is about using methods that are matched to the type of beach, using appropriate equipment, collecting appropriate data to which analysis can be applied, incorporating local knowledge of the environment, and making the results of the monitoring and feedback quickly and readily available to interested parties. It is difficult for the public to select the right monitoring methods without scientific advice. Monitoring methods need to be matched to beach type, which is a function of sediment type and the energy of the wave and wind environment. This has a direct bearing on the sampling frequency and the choice of useful parameters or metrics to measure. The

Figure 1: Onemana Coast Care group planting spinifex and other native sand-binding plants to restore the natural dune buffer

Figure 2: Students conducting coastal monitoring at Ngarunui Beach, Raglan

monitoring equipment must be suitable for the task and, just as important, be easily usable. There are various methods for analysing data, and it is important that relevant time-series and statistical analysis procedures be determined and tested before the data collection begins in order to ensure that appropriate data are collected for the task. Data collection in this manner is most valuable because they are scientifically robust, can be compared between sites, and will stand up to technical scrutiny.

The value of web-based tools

Monitoring for community groups does not simply end in the field. Once a group collects data in the field, what do they do with it? How do groups process, analyse and store their field data in a meaningful way? Often data analysis is left to experts, leaving the groups disempowered. Groups need to feel empowered by their monitoring and they need to take ownership of their data. The majority of the successful monitoring programmes reviewed for this research provide their participants with web-based tools for data entry, analysis, and archiving. Programmes that have afforded their participants this facility have noted it as a highly-valued aspect of their monitoring, while participants that were not afforded this facility found the lack of web-based tools proved to be an obstacle to meaningful monitoring.

Aligning tools with the National Science Curriculum

Preliminary discussions with science educators revealed that in order for the tools to be implemented at a secondary school science level they must be aligned with the national curriculum and qualifications. Consultation highlighted that teachers could be reluctant to use the tools if there is no direct link with the New Zealand Science Curriculum, or the tools cannot be easily accommodated by the science achievement standards.

Implementation is the key to success

The extent to which the tools will be taken up by groups is primarily dependent on their implementation. Implementation is not simply a matter of handing the tools over to the end user groups. Implementation is a complex process encompassing a whole number of steps, which are all fundamental in the success of the tools. Implementation of tools requires resources, generally in the form of funding and people. An implementation strategy is essential when developing monitoring tools because there is no point in developing a suite of tools if no-one is ever going to use them.

While the primary objective of this research was to develop a means for coastal communities to monitor changes in their environment, there are additional benefits associated with engaging communities in the study of their environment. These benefits include; increasing awareness of coastal hazards; capacity building; providing valuable educational resources; and improving the temporal and spatial data coverage of information for the New Zealand coastline. Also by encouraging the uptake of these tools within communities, councils, technical experts and community groups make better-informed decisions for managing activities in their coastal environment.

Darcel Rickard, Coastal Scientist, NIWA
d.rickard@niwa.co.nz

Coastal News

Action on Auckland's CBD waterfront

Auckland's CBD waterfront, from the Harbour Bridge to the container terminal, is undergoing a progressive transformation. Significant progress has been achieved recently in several areas of waterfront work.

The changing nature of the waterfront was recognised in the "Auckland Waterfront Vision 2040", developed in 2005 by Auckland City Council (ACC) and Auckland Regional Council (ARC). The Vision sets out an overarching framework for the whole of the CBD waterfront area. It identifies four precincts within the waterfront which each have distinctive characteristics – Westhaven Marina, Wynyard Quarter / Viaduct Harbour, central wharves and the port. The work programmes outlined in the Vision document for each of these areas are steadily being implemented.

Wynyard Quarter plan changes

Wynyard Quarter is also known as Tank Farm, Wynyard Point and the Western Reclamation. It covers 35 hectares with 2.8 km of coastal frontage. It was reclaimed between 1920 and 1940 and has been principally used for the storage of bulk liquids such as petroleum, liquid chemicals, bitumen and vegetable oils. Bulk liquids operations have been decreasing and over the next 25 years, the area will change from a port-related industrial area to a mixed-use, residential and commercial area, with extensive areas of public open space and more space for the fishing and marine industries.

ACC and ARC notified plan changes to the Auckland City District Plan and Regional Plan: Coastal in July 2007. Over 600 submissions were received on the district plan change, with 60 submissions on the coastal plan change. Hearings were held between June and August 2008. Key issues raised included the heights of buildings, amount of open space, traffic constraints and use of wharves. Decisions on both plan changes are expected before the end of the year.

In 2007 the 18 hectares of Wynyard Quarter owned by Ports of Auckland Ltd was transferred to Auckland Regional Holdings (ARC's investment arm), who have established a specialist subsidiary, Sea+City Projects Ltd, to manage the development of the area. Sea+City have been undertaking extensive design work and have demolished a former workshop/storage building to allow repair work on the North Wharf.

Te Wero bridge

A key element of the Wynyard Quarter development proposal is a new opening bridge across the Viaduct Harbour to provide a pedestrian, cycling and public transport link between Wynyard and downtown Auckland.

ACC ran an international design competition for the bridge and the winning design was announced in August. The design features a deck which splits in two as it opens, creating a tall sail-like structure when the bridge is raised. This design is estimated to cost in the region of $51.2 m to build.

ACC have now commissioned a peer review of the transport, urban design and amenity requirements, and navigational standards for the bridge. A preliminary design is needed to apply for resource consent and for NZ Transport Agency funding.

Port Development Plan

Ports of Auckland Ltd have recently released the Port Development Plan 2008 which replaces the 1989 port development plan. Since 1989, areas in the west of the port (Wynyard Quarter and Viaduct Harbour) have been freed up for alternative uses, while port activity has been consolidated in the east.

The new plan outlines a programme of intensification and expansion of the eastern port area. The preferred options for increasing capacity are new terminal operating systems and incremental reclamation between Fergusson and Bledisloe wharves, utilising dredgings. Queens Wharf can be released for other uses in the short to medium term, subject to appropriate commercial arrangements.

New Waitemata Harbour Crossing

A joint study to investigate options for a new Waitemata Harbour crossing, in addition to the Auckland Harbour Bridge, has identified a preferred option that sees the rail network and State Highway 1 extending beneath the seabed

in tunnels to connect the North Shore with the Auckland CBD. The study partners were ACC, ARC, Transit NZ, North Shore City Council and the Auckland Regional Transport Authority.

The recommended option comprises four tunnels - two for trains and two for the motorway - east of the Harbour Bridge. The cross-harbour tunnels would run underground just south of the Onewa Road interchange on the North Shore and reach the isthmus under Westhaven Marina then join the existing motorway near Victoria Park. The estimated cost of the project is $3.7 billion to $4.1 billion. The NZ Transport Agency is now preparing notice of requirement applications to designate the landward part of the new route.

Westhaven Marina

With around 1900 berths and moorings, Westhaven Marina is one of the largest marinas in the southern hemisphere. ACC is working with stakeholders to create an overall concept plan for the marina to guide future proposals for buildings, public outdoor areas, and activities on land and the water. The plan will include enough details to allow feasibility studies and costings to be carried out.

Options being considered include creating more places for the public to fish, walk along the water's edge and enjoy views of sailing events and the harbour. The redevelopment must also enhance existing land and water marina facilities, and ensure that recreational boating, charter services, boat clubs and the marine industry continue to be prioritised.

Further information

Additional information on these projects is available on the following websites:

www.aucklandcity.govt.nz; www.arc.govt.nz; www.seacity.co.nz; and www.poal.co.nz

Kath Coombes
Auckland Regional Council
kath.coombes@arc.govt.nz

NZCS Management Committee

Chairperson:	David Phizacklea (david.phizacklea@envbop.govt.nz)
Deputy Chairperson:	Doug Ramsay (d.ramsay@niwa.co.nz)
Treasurer:	Eric Verstappen (eric.verstappen@tdc.govt.nz)
Membership Coordinator:	Kath Coombes (kath.coombes@arc.govt.nz)
Regional Coordinator:	Rick Liefting (rliefting@tonkin.co.nz)
Website Coordinator:	Hannah Hopkins (hannah.hopkins@ew.govt.nz)
	Cushla Coomb (cusha.loomb@beca.com)
	Deidre Hart (deidre.hart@canterbury.ac.nz)
	David Kennedy (david.kennedy@vuw.ac.nz)
	Jenni Paul (jenni.paul@ew.govt.nz)
	Rosalind Wilton (rosalind.wilton@dia.govt.nz)
NZCS Co-ordinator:	Hannah Hopkins (hannah.hopkins@ew.govt.nz)
Conference 2008 Co-ordinator	Kate Giles (kate.giles@trc.govt.nz)

For any enquiries regarding Coastal News articles or advertising please contact **NZCS Editor** Alex Eagles (penguins@clear.net.nz).

"The sea does not reward those who are too anxious, too greedy, or too impatient. One should lie empty, open, choiceless as a beach - waiting for a gift from the sea." *Anne Morrow Lindbergh*

Planning for "Blue Energy"

The following is a short article on the findings from my Resource Management Law Association fellowship research. The RMLA fellowship allows actual and potential resource management leaders to enhance their ability to bring about change in NZ resource management, benefit from leading edge thinking and build NZ and global professional networks. My research centered around learning from UK lessons in the emerging area of marine energy planning. Details of my research will be shared through RMLA roadshows held in early 2009 and published in a paper appearing in the "[2009] Resource Management Theory & Practice" in November 2008. Please contact Karol Helmink RMLA Executive Officer (karol.helmink@xtra.co.nz) to subscribe to the journal.

As a nation, New Zealanders are becoming more aware of the risk of blackout caused by demand exceeding supply for electricity generation. The New Zealand Energy Strategy (NZES) outlines a desire to use a mixture of renewable energy sources to meet energy security objectives. The NZES introduces the Governments target for 90% of electricity being generated from renewable sources by 2025. A potentially significant contributor to meeting these targets in the future is marine energy (i.e. energy generated by utilising the movements of tides and waves).

Marine energy is an emerging industry and there are no devices currently operating in New Zealand. However, recent consent applications for a 200 'array' of tidal turbines in the Kaipara Harbour and a trial turbine in the Cook Strait illustrate the increasing interest in these types of developments in New Zealand.

Most research and development of marine energy technologies to date has occurred overseas. The United Kingdom (UK) is currently the most active investor in marine energy with many pre-commercial 'trial' developments having been deployed. Recently the first commercial turbine was installed in Strangford Lough in Northern Ireland, which can power up to 1,000 homes. The UK planning framework for such developments currently requires a number of authorisations under various legislation, including the Electricity Act, the Coast Protection Act and the Food and Environment Protection Act. A lease is also required from the owner of the foreshore and seabed, the Crown Estate. Recognising the plethora of authorisations currently required in the UK and the lack of specific guidance on what is or is not appropriate in the coastal marine area, there is new legislation currently proposed through the draft UK Marine Bill. This legislation favours a marine spatial planning approach. Regional Coastal Planning maps in New Zealand already provide for spatial planning to some extent, the difference being that regional coastal planning maps adopt a mostly effects based zoning approach rather than the more prescriptive activities based zoning of Marine Spatial Plans

Figure 1: Seagen tidal turbine in Strangford Loch, Northern Ireland

proposed in the UK.

Aquaculture Management Areas are one of the few activities provided for in NZ planning documents that adopt a more prescriptive zoning approach. Future planning for marine energy developments would benefit from a similar approach to Aquaculture planning as there are many similarities between issues requiring management, such as competition for space, efficient use of a resource and balancing environmental and economic development objectives. National level coordination is required to plan appropriately for marine energy developments in the future and to facilitate the achievement of renewable energy targets set through the NZES. It is recommended that the Government take a more proactive approach in undertaking baseline environmental investigations and providing guidance and underlying criteria for regional authorities to effectively plan for marine energy in regional policy statements and plans.

Cushla Loomb, Associate – Beca Planning
Ph: 07 8381162

Figure 2: Seagen – in raised position to show tidal turbines

Aquaculture Amendment Legislation

Aquaculture has had a rocky history in New Zealand. The Moratorium in 2001 to give the overloaded consenting regime some breathing space put a hold on the expected "gold rush". The 2004 reforms were hoped to speed things along, but the full benefits of those reforms are still to be seen.

The 2004 reforms introduced a single consent process, placed more responsibility in the hands of regional councils and provided for the establishment of aquaculture management areas (AMAs). However, the practical realities of getting an AMA (even deemed AMAs) in place had the industry still waiting, indicating that attempts to improve the process were still wanting.

Aquaculture is significant to the economic growth of New Zealand. The New Zealand Aquaculture Strategy aims to build aquaculture to be a billion dollar industry by 2025. As world-wide fishery resources get scarcer and demand increases, the aquaculture industry's role in fisheries is increasingly important. There are sustainability issues around aquaculture. Effects on the aquatic environment need to be managed, along with sourcing wild fish stocks as aquaculture feed.

To support the aquaculture industry, the Government passed the Aquaculture Legislation Amendment Bill on 27 September 2008.

The Resource Management Amendment Act 2008 is one of the resulting amendment acts. It clarifies that applications to occupy parts of the coastal marine area for aquaculture activities may only be made in relation to aquaculture management areas in operative regional coastal plans.

The latest amendments are one of the many steps which are part of the aquaculture reforms. The amendments are in response to the problems raised regarding the wording of current aquaculture legislation in a decision of the Environment Court in May 2006 SMW Consortium Limited v Tasman District Council. The Government considered that the law created by that case was not consistent with the intention of aquaculture legislation.

Some of the other resulting amendments:

- Cancel any application if it is made after 9 May 2006 (the date of the SMW decision) and does not relate to an AMA in an operative regional coastal plan.
- Put on hold applications made on or after 1 January 2005 to 10 May 2006 that did not relate to an AMA in a regional coastal plan. They may be processed if the area covered by the application becomes an AMA in an operative regional coastal plan.
- State that AMAs can be established in two ways: 1) by being included in a regional coastal plan or proposed regional coastal plan; 2) by becoming an AMA under section 44 or 45 of the ARA.

A second aquaculture amendment bill, the Aquaculture Legislation Amendment Bill (No 2) has had its first reading and has been referred to the Primary Production Select Committee for consideration. The Bill proposes to:

- Further amend legislation to facilitate the creation of new AMAs.
- Provide for the opportunity to negotiate an aquaculture agreement with relevant commercial fishers, where the permit would previously have been declined due to its undue adverse effect on commercial fishing.
- Clarify that if a council does not use an expression of interest process for private plan changes they can chose between competing interests.
- Enable experimental aquaculture.
- Support environmental monitoring (using marine organisms) and other technical amendments relating to the 2004 aquaculture reforms.

There are interim AMAs in place in Tasman Bay, Golden Bay and Wilson Bay. The Chief Executive of the Ministry of Fisheries made preliminary decisions on the interim AMAs in Golden Bay and Tasman Bay earlier this year. It is hoped that with the new reforms in place he will be able to make final decisions on those AMAs around November. The Chief Executive is currently considering the interim Wilson Bay AMA (Firth of Thames), submissions closed 10 October 2008. The Ministry is also still processing a backlog of applications under the old-pre aquaculture reform legislation.

The latest amendments and those proposed may help to clear the way for the aquaculture industry to realise its potential. However, progressing the proposed amendments may depend on the priorities of the next Government.

Rachel Devine, Partner and Linley Black, Solicitor
Minter Ellison Rudd Watts

On Campus

University of Auckland, School of Geography, Geology and Environmental Science

Coastal research at the university of Auckland is currently focussed on:

(a) understanding the dynamics of rocky coasts, coral reefs, and gravel beaches, and

(b) extending understanding to longer timescales using numerical modelling techniques.

Coral reefs and rock platforms

Paul Kench has continued work that attempts to resolve the nature of wave transformation across coral reefs and atolls as well as sediment transport pathways. Postgraduate students have focussed in particular on the southern Maldives (Philip Mandlier, Masters) and Lizard Island, NE Australia (Murray Ford, PhD). New Zealand is short of coral reefs, but does boast an impressive rocky shoreline that in many places is fringed by near-horizontal shore platforms. Morphologically, shore platforms are very similar to coral-reef flats in that both have a steep outer edge and a planar surface. Research on coral reefs has shown that there is a tidal window within which wave energy can propagate across the reef crest and cause morphological change on reef islands. Likewise, during higher tidal levels waves pass across shore platforms and attack the toe of cliffs. At present we do not fully understand the role of shore platforms in filtering the incident wave energy and protecting cliffs from erosion. This is the topic of a current PhD project by Hiroki Ogawa. Hiroki's research is being jointly supervised by Paul Kench and Mark Dickson who recently joined SGGES from NIWA and brings with him research interests in the erosion of cliffed shorelines.

Gravel beaches

Another area of active research at UoA concerns the morphodynamics of beaches composed of mixed sand and gravel. By comparison with their sandy counterparts, gravel beaches are poorly understood, and yet they account for quite long stretches of New Zealand's shoreline including much of the Canterbury and Hawke Bay coasts. Field experiments are currently underway using passive radio frequency identification tags drilled into gravels to track the movement of individual cobbles (Michael Kantor, Masters). Other field measurements are in progress attempting to isolate the rate of abrasion that gravel cobbles undergo in the dynamic swash environment (Abe Tuthill, Honours). Future studies will take on the challenge of deploying electronic instruments to measure processes within these dynamic gravel environments.

Further research at UoA is focussed on the development of numerical models to simulate coastal evolution at longer timescales. Mark Dickson is continuing work with colleagues at NIWA and in the UK on eroding gravel and soft-rock shorelines.

Coastal courses are taught at UoA at a variety of undergraduate and graduate levels. Field trips visit the contrasting beaches of the west and east coasts of Auckland, the prograded chenier plain on the western coast of the Firth of Thames, and the Mahia Peninsula and Hawkes Bay regions.

Recently completed theses

- Christin Schultz. 2008, *Sediment Dynamics in the Upper Wharekawa Estuary, Coromandel Peninsula.*
- Kyle Morgan, 2008. *Biogenic Sediment Controls on Ebb-Tidal Delta Stability.*
- Philipp Mandlier, 2008. *Wave Processes in Huvadhoo Atoll: Maldives, Indian Ocean.*

Please feel free to contact me for any further information (m.dickson@auckland.ac.nz) or visit the SGGES website for more details at: www.sges.auckland.ac.nz/

Student attempting to survey a gravel beach profile (photos by Mark Dickson)

Hawke's Bay Regional News

Neil Daykin, Hawke's Bay Regional Coordinator

HB Volunteer Coastguard

At 1 pm on 1st July an overdue vessel with 2 people on board was reported missing from the Tukituki river mouth. The pair had gone out to check fishing nets the previous night and had not returned. Police activated the Hawke's Bay Volunteer Coastguard and other rescue services (Lowe Rescue helicopter and Coastguard Air Patrol fixed wing) to search for the small orange aluminium dinghy, which had no motor and no emergency equipment on board.

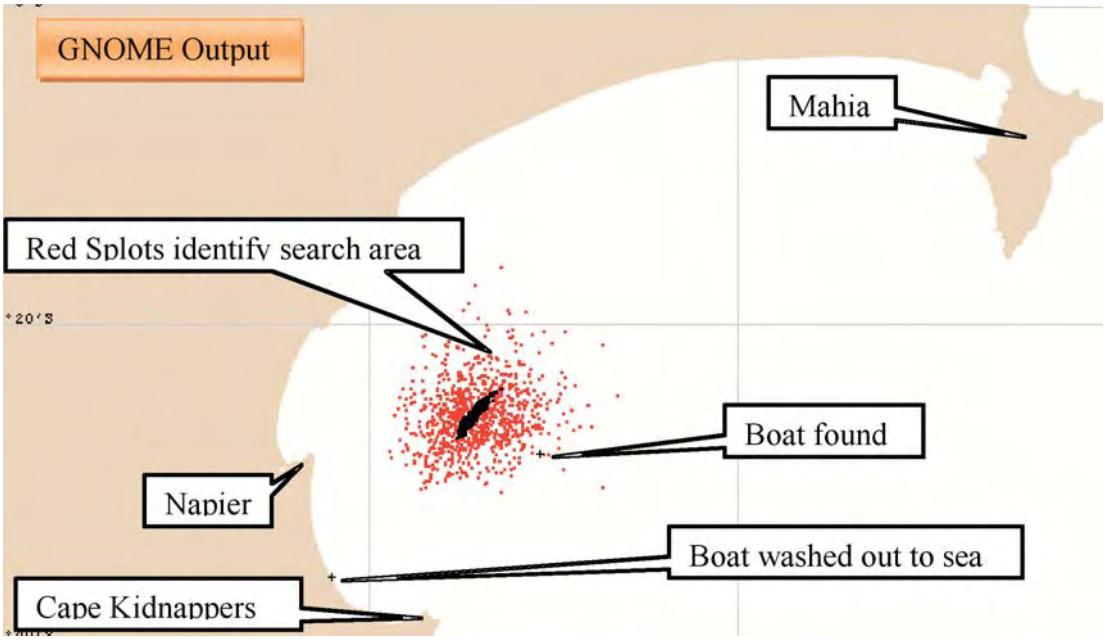
Hawke's Bay Regional Council Design Engineer and volunteer Coastguard boat crew, Neil Daykin, utilised his computer modelling skills to formulate a search area before jumping on one of the Coastguard rescue boats. Neil made use of historical forecast and forecast wave, current, wind and tide data from MetOcean Solutions Ltd and inputted the data into GNOME, a NOAA oil/trajectory computer model, to formulate a search area for the missing boat and or crew. Although GNOME is designed for oil spill trajectory forecasting, it can still be used for other objects in the water such as boats or persons. Marine oil spills typically track in the direction of wind/currents, whereas objects such as a boat will track side ways to wind/currents (know as leeway divergence) due to their asymmetry. GNOME can accommodate leeway divergence of objects in the directional variability of the wind setup parameter.

This search area was then used in conjunction with the Maritime NZ Rescue Coordination Centres search area (MNZ use a different trajectory modelling software system) and Hawke's Bay Coastguards Marine Controllers search area (based on local knowledge and weather).

Dinghy and crew awaiting rescue (photo courtesy of NZPA/Lowe Corp Rescue Helicopter)

Below is the GNOME output for this event, showing the boats last known position, where the boat was predicted to be found (area within red splots) and where it was actually found. Comparing the black splots of where oil (with virtual no leeway wind divergence) would likely to be found versus the dinghy's pick up location, illustrates how much the dinghy's travel had been influenced by leeway wind divergence.

All rescue services worked together to do an extensive search of the coastline and bay area. After 3 hours of searching the dinghy was sighted by a large ship who radioed in a GPS position that was in the search area that hadn't been covered yet. At 4:30 pm, the dinghy was located (28 km offshore!!) with both crew alive and well considering nearly 22 hours at adrift at sea. The photos below show the dinghy and crew just



GNOME output for the event

Dinghy and crew being rescued by HBV Coastguard (photo courtesy of NZPA/Lowe Corp Rescue Helicopter)

before and during rescue by Coastguard. It was a very small boat to be 28 km offshore!!

Westshore renourishment

The annual beach renourishment project at Westshore Beach, Napier is due to start 6th October. This year, 16,500m^3 of mixed sand/gravel beach material is to be carted from Marine Parade beach, Napier to Westshore beach over 4 weeks. The renourishment project started back in 1987 and on average 10,000m^3 per annum of sand/gravel has been carted. The project is jointly funded by Napier City Council and Hawke's Bay Regional Council.

Coastal Erosion: Update

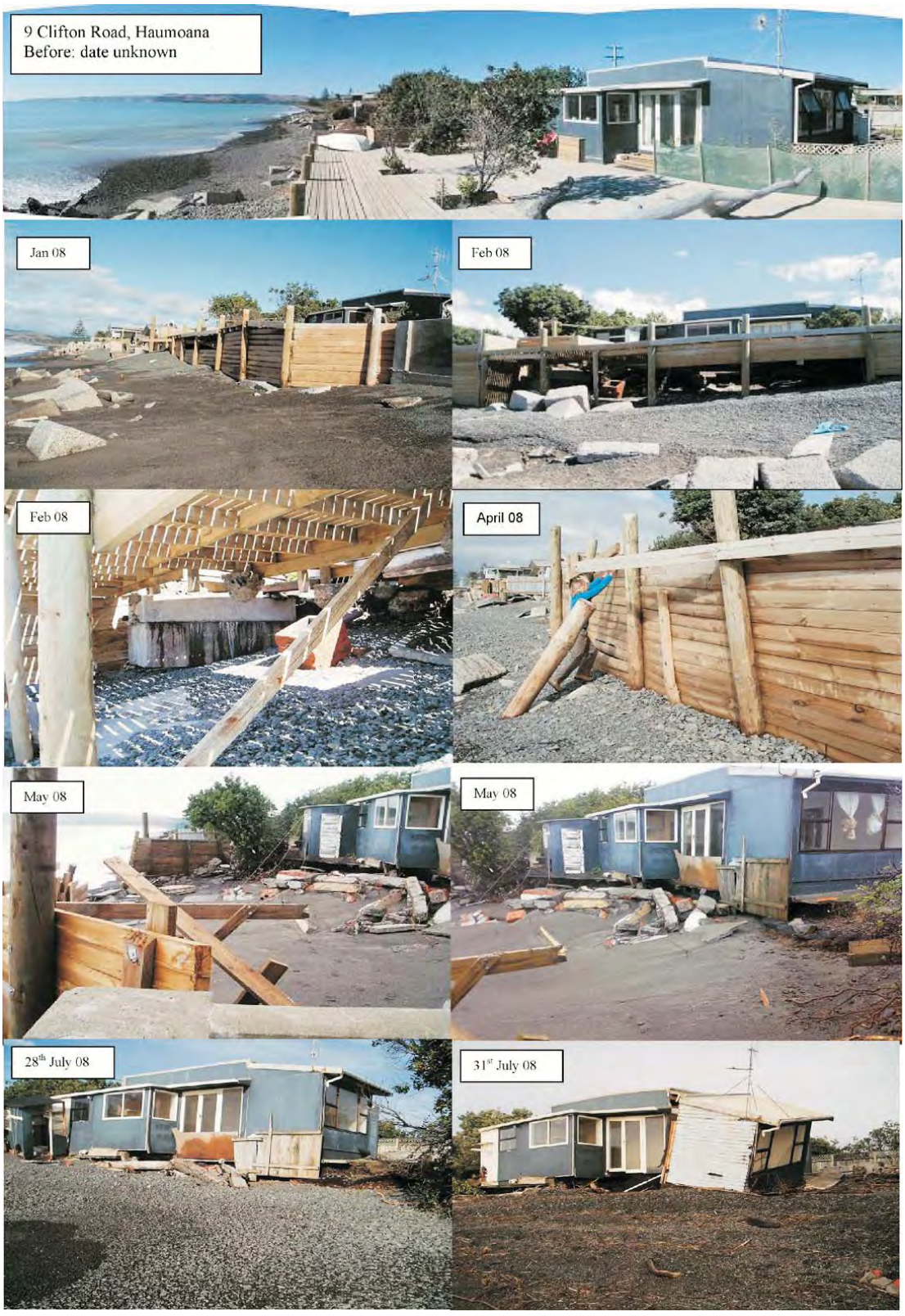
Following on from *Coastal News* Issue 38, the Bay has experienced two further swell events in quick succession (27th & 30th July) resulting in significant property damage and coastal erosion as shown below and on the following page. Maximum recorded wave heights at the Port of Napier wave buoy were 6.5 m and 7.81 m respectively.

Hawke's Bay Regional Council trial Vetiver

HBRCs engineering section is expanding its bioengineering with additional trialling of the Vetiver plant for use in riverbank protection in the tidal reaches of the Tukituki River. It has been successfully trialled at the Wairoa River mouth over the past year. In addition to the Vetiver, the wetland plant Bulboschoenus is being trialled. Vetiver is a perennial grass and can grow up to 1.5 meters high, form clumps 1.5 m wide with roots growing 2-4 m downwards. The Vetiver is being planted on the river banks whilst the Bulboschoenus is planted on the wetted intertidal perimeter to provide a two pronged erosion control barrier.

Hawke's Bay Regional Council Gravel Beach Research

HBRC are currently funding Auckland University to undertake research into gravel abrasion and movement on the mixed sand gravel beaches between Clive and Clifton. The gravel tracking involves drilling holes in a batch of gravel stones, inserting a transmitter/pinger and then placing the stones in the inter tidal zone of the beach and then tracking their movement and weighing them for abrasion losses. Tracking involves the use of a giant wand being used along the beach much like a metal detector. Initial results have shown 300 m movement in 3 days. Gravel in sacks at the end of a 10 m tether and placed in the swash zone have also been trialled for abrasion loss measurements.



NZCS Mission Statement

The New Zealand Coastal Society was inaugurated in 1992 "to promote and advance sustainable management of the coastal environment".

The Society provides a forum for those with a genuine interest in the coastal zone to communicate amongst themselves and with the public. The Society currently incorporates over 300 members.

Members include representatives from a wide range of coastal science, engineering and planning disciplines, and are employed in the engineering industry, local, regional and central government, research centres and universities.

Applications for membership should be sent to NZCS Administrator
Hannah Hopkins (e-mail: hannah.hopkins@ew.govt.nz)

Word from the Chair

By the time you read this, this year's New Zealand Coastal Society Conference will be upon us. The 2008 conference is being held from 19-21 November in New Plymouth at the New Plymouth Club. The theme of "Coastal Co-existence: Industry, Culture and Environment" illustrates that the Taranaki region has an enormous variety of coastal issues in what can often be a challenging physical environment. Peter Atkinson and the rest of the organising committee have been doing a great job in organising a memorable conference.

The annual conference is run by members and in addition to the keynote speakers we have 38 papers being presented at this year's conference, reflecting the diversity of our membership and the interest from non-members in the NZCS conferences. A special thank you to all the sponsors of this year's conference, who support the Society.

The NZCS Annual General Meeting is being held as part of the conference. It is important that members attend as it is an opportunity to hear what the Executive Committee has done on your behalf over the past 12 months, raise issues and ask questions. Any member of the Society can be nominated at the AGM to come onto the Committee. The Society's financial report, presidents report and membership report will be presented at the AGM and subsequently made available in the member's area of the website.

The NZCS website will be undergoing some changes in the near future to provide a higher quality product which contains more information for users, so stay tuned for an announcement on the revamped website.

The Board of Inquiry to the Proposed New Zealand Coastal Policy Statement 2008 is currently hearing submitters across the country. The hearings phase will be completed around the time of the NZCS conference, with the final NZCPS having ramifications for regional and local government coastal management. I am sure that many of you will be awaiting the outcome of the Board of Inquiry's decisions in earnest.

A reminder to start booking your travel arrangements for the Australasian Coasts and Ports Conference at Te Papa in Wellington from 16-18 September 2009.

Details of the conference, call for papers and registration timetables can be found on the website: www.coastsandports2009.com.

Coasts & Ports is only held once every six years in New Zealand and should see 400+ delegates attending from around the Pacific. This is definitely a conference that everyone with an interest in the coast should attend.

Applications for this year's Student Research Scholarship award closed in September with eight high quality applications received for $5,000 towards any masters or doctorate student studying a coastal related topic in New Zealand. The winner of the 2008 award will be announced at the conference. Last year's winner Yvonne Tay will be giving a paper at the conference on her research findings to date.

I am pleased that we have again been able to award two $500 student travel scholarships for tertiary students to attend the 2008 NZCS Conference in New Plymouth, with a high standard of applications for this award received. Congratulations to the two successful applicants.

Invoices for NZCS membership are being sent out by IPENZ for the period 1 October 2008 to 30 September 2009. Membership fees have remained the same for the past three years. If you have any questions about membership or wish to join the Society please contact Kath Coombes (NZCS Membership Coordinator) at kath.coombes@arc.govt.nz.

Lastly, a reminder about the NZCS email digest. If you have any announcements, information or notices for inclusion in the digest please send to Hannah Hopkins (NZCS Administrator) at hannah.hopkins@ew.govt.nz. This is a forum for members to share information so please make use of it.

I look forward to seeing you all in Taranaki for this year's NZCS Conference. Enjoy another great summer on our coasts and harbours!

David Phizacklea
Chair, New Zealand Coastal Society
david.phizacklea@envbop.govt.nz

Seeking Contributions to *Coastal News*

Your contributions to *Coastal News* are welcome. These contributions are important to keep NZCS members informed about coastal issues in New Zealand and around the world. Contributions may be in the form of advertisements, notification about conferences or workshops, short news items, or longer articles of 400-800 words plus photos or diagrams.

For further information or to submit an idea please contact Alex Eagles, Editor *Coastal News*, on penguins@clear.net.nz.

Postgraduate scholarships in quantitative fisheries science

NIWA and MFish are collaborating to offer both Masters and PhD scholarships in the field of quantitative fisheries science, particularly stock assessment modelling.

Scholarships available:

- PhD: $30,000/yr for up to three years; and
- Masters: $25,000/yr for up to two years.

Applicants with graduate-level qualifications in mathematics, statistics, biology, economics, or computer science and other quantitative fields are encouraged to apply. Applications for the 2009 academic year close 30 November 2008.

We anticipate that these scholarships will be offered on an annual basis and welcome enquiries from students a year or two in advance of when they intend to begin postgraduate study.

For further information, contact Beatrice Stewart at the Ministry of Fisheries - Beatrice.Stewart@fish.govt.nz, tel 04 819 4265.

New Zealand Coastal Policy Statement 2008

A Board of Inquiry has started to hear submissions on the Proposed New Zealand Coastal Policy Statement 2008. Over 500 submissions were accepted by the Board. The submissions and a summary of the submissions are available from the Department of Conservation website www.doc.govt.nz.

The Department has also prepared thirty two overview reports based on themes which arise from the submissions. These are a useful way to get an overview of submitters views on the range of issues raised.

Hearings will continue until approximately mid December 2008. The Board will then prepare a report and recommendations to the Minister of Conservation. A summary of the Board's recommendations and the Minister's decisions will be available in due course.

Rosalind Wilton, rosalind.wilton@dia.govt.nz, Senior Policy Analyst, The Department of Internal Affairs - Te Tari Taiwhenua www.dia.govt.nz

Foodies and Fishers Sign Up to Stop Shark Finning

Some of New Zealand's best-known foodies and fishers have signed Forest & Bird's pledge to help stop shark finning.

Research has found that shark finning – cutting off the high-priced fins of sharks and dumping the rest of the body at sea – is contributing to the decline of shark species worldwide. It is estimated that 100 million sharks are killed each year worldwide. Because sharks are long-lived and slow to mature and breed, they are highly vulnerable to over-fishing.

Approximately 112 species of sharks have been recorded in New Zealand waters. Of these, 28 are listed on the World Conservation Union (IUCN) Red List of species threatened with extinction. Only one threatened species – the great white shark – is protected in New Zealand.

Several countries, including Australia, the EU, USA, South Africa, Brazil, Canada, Ecuador, Mexico, Colombia, Nicaragua, Palau, Spain and Oman have banned the practice of finning but New Zealand has not.

Many sharks that are finned are caught as "by-catch" in other fisheries. For example, the tuna long-line fisheries operating in New Zealand's northern waters catch twice as many sharks as tuna. Of the 13 shark species caught between 2003-04 and 2005-06 in this fishery, 11 are listed on the IUCN Red List of threatened species.

Those who have signed the pledge include: Simon Holst, food writer; Peter Calder, restaurant reviewer, Herald on Sunday; Peta Mathias, chef, author and TV presenter; Julie Le Clerc, chef and food writer; Richard Till, restaurateur, chef, food writer and TV presenter; Annabel Langbein, chef and food writer; and the NZ Recreational Fishing Council.

www.forestandbird.org.nz

Coastal News

New Zealand Coastal Society Corporate Members

Corporate membership enables organisations and companies to become part of the New Zealand Coastal Society and support the Society's mission of taking a leading role in facilitating a vibrant, healthy and sustainable coastal and ocean environment. Organisations and companies can show their support for the aims and activities of the society and achieve public recognition of that support.

Corporate membership benefits include:

- High profile listing as a corporate member sponsor on the NZCS website homepage (www.coastalsociety.org.nz/Corporate.htm)
- Website listing of services provided by corporate organisation, contact details, and links to recent projects or corporate organisation website.
- One free individual membership for the person nominated as the corporate contact or any subsequent replacement alternate.
- Five complimentary copies of *Coastal News* published three times per year – March, June and November.
- Discounted registration at member rates for the corporate contact to all NZCS Conferences.
- Short feature on a Corporate Member in *Coastal News*.

For more information on Corporate memberships please contact:

Kath Coombes
Membership Coordinator
Coastal Society Committee
kath.coombes@arc.govt.nz

The Coastal Society would like to acknowledge our corporate members for their support:

Corporate Member: Duffill Watts

Turning Knowledge into Value

Our specialist Ports and Marine team successfully blend world class expertise and hands-on experience to deliver a wide variety of marine engineering solutions. Our key services include coastal process analysis, coastal defence systems, harbour and port facilities design (including wharfs, breakwaters, container terminals and channels), naval architecture and marine farming. With over 20 years of industry experience and knowledge throughout New Zealand and overseas we create long-term solutions that add value to your business.

Some of our projects include:

* Vessel Design of MV Sinbad Milford Sound.
* Repowering of Tug WH Parr Port Nelson.
* Liquid Natural Gas Terminal Port Taranaki.
* Mountain Landing Jetty Bay of Islands.

To learn more about the value we can add to your business call Dave Marsh on 03 477 7133 or visit us online to view some of our recent projects at www.duffillwatts.com/marine