Coastal news

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Contents

Land Use Impacts on Estuarine and Coastal Fish

New Zealand has more than 350 estuarine systems, ranging from small intermittently open lagoons at river mouths, through to large systems with extensive intertidal and subtidal habitats. We also have a wide diversity of coastal systems, including sheltered bays, coastal embayments, straits protected by island chains, large gulfs, sounds and fiords, and inshore and offshore islands. Collectively, these offer a wide range of habitats for coastal fish species, and a range of regionally important customary, recreational, and commercial fisheries based on a variety of species. Most of these fisheries can now be considered to be fully exploited.

Fish rely on a wide range of habitats and related environmental conditions over their life times, and often the habitat requirements of one part of their life-cycle may be quite different from that of another. A core example is that of nursery habitats. Many estuarine/coastal species may use estuaries or other sheltered areas, and specific habitats within them, during their first one to two years of life, and then disperse more widely into the coastal ecosystem as they grow in size and age. This association with particular habitats may be due to a number of factors, but one of the more fundamental ones is to avoid being eaten by predators. For many species, habitats with higher structural complexity appear to be particularly important. Many of these habitats are formed by living plants and animals (called 'biogenic' habitats), and include mangroves, seagrass, shellfish reefs (e.g., horse mussels), bryozoans (often called lace corals), macroalgae and tubeworm mounds (e.g., Figure 1). These habitats in turn require particular environmental conditions to flourish and grow, including adequate light levels for plants, and clean water for filtering-feeding animals, and suitably coarse bottom substrates.

Unfortunately, New Zealand's history of land clearance, and subsequent intensive rural and urban land use, has had, and continues to have adverse impacts on these habitats and the fish species that they support. For example, New Zealand has particularly high levels of sedimentation into the coastal environment relative to pre-human conditions (Figures 2 and 3). In suspended form, this sediment reduces the light levels reaching the seafloor through the water column, and in turn the amount

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Figure 1: Juvenile parore (Girella tricuspidata) in association with Neptune's necklace algal beds at Horseshoe Reef, Whangateau Harbour, Auckland (March 2008). This harbour is one of the most pristine left in the greater Auckland region. (Source: Natalie Usmar, Leigh Marine Laboratory, University of Auckland.)

of energy that aquatic plants such as seagrass and algae receive. When this sediment settles to the seafloor, it continues to reduce the light received by smothering plant surfaces; and may then be re-suspended by subsequent storm events. In the short term such processes adversely affect plant health and growth; in the longer term it kills them, and prevents re-establishment by spores and drifting plants. Elevated rates of nutrient run-off from the land can also have similar adverse affects: potentially causing algal blooms in the water column that shade light (and which when they die settle to the seafloor, smothering habitats and causing reductions in oxygen through their decay); and also increasing epiphytic algal abundance growing on plants (e.g., as a brown 'fuzz' on seagrass blades), to the detriment of seagrass growth. Sedentary animals such as sponges, shellfish and bryozoans are also adversely affected by increased sediment loadings, spending more time and energy filtering their food from the water, and dealing with clogged gills and/or other feeding organs. Ongoing settlement of larval animals is also adversely affected, through sedimentation over surfaces required for the initial attachment, as well as compromising their feeding abilities. Fish themselves can also be directly affected. For instance, recent work on juvenile

Figure 2: River plume from Hurunui River mouth, North Canterbury. (Photograph: Bill Ballantine, Leigh.

snapper (20–100 mm) has shown reductions in foraging success and fish health with increasing suspended sediment levels, both in tank-based and field experiments, as well as increases in gill damage and associated parasite levels.

Examples of habitat impacts in New Zealand's coastal environment include the loss of seagrass meadows around the country. Surveys of juvenile fish in northern estuaries still containing extensive seagrass meadows, especially subtidal areas, have documented very high abundances of juvenile snapper, trevally, parore, spotties, piper (garfish), and other species, as well as small-bodied species such as triplefins and pipefish (Figure 4). Large scale seagrass meadow losses have been documented from the Whangarei, Waitemata, Manukau, Tauranga, and Avon-Heathcote estuaries. For example, Whangarei estuary (east coast, Northland) lost all of its 12–14 km^2 of seagrass, much of it subtidal, in the late 1960s following the dumping of 5 million tonnes of sediment 'fines' into the estuary from port expansion and a cement works. Little recovery

Figure 3: Aerial photograph of Mahia Peninsula, from the west, showing suspended sediment fringe around the land, taken 15 April 2005. (Source: Anna Madarasz-Smith, Hawkes Bay Regional Council.)

Figure 4: A subsample of a fine-mesh beach seine fish sample from a Rangaunu Harbour subtidal seagrass meadow (east coast, Northland), which included almost 2,000 juvenile snapper, along with a high abundance of other species. Average juvenile snapper catches across multiple sample tows were 160 and 20 juvenile snapper per 100 m^2 (Morrison et al., unpublished data) for two different locations in the harbour. (Photograph: Paul Buisson, DOC.)

has occurred since then. Environment Bay of Plenty used aerial photography to quantify seagrass loss in Tauranga Harbour between 1959 and 1996, and found an overall 34% decline in seagrass cover across the whole harbour over this period, with 90% of the subtidal seagrass being lost. Rates of loss in the sub-estuaries were well correlated with suspended sediment loadings into these areas on the basis of relative catchment area.

The net results of such environmental cascades from land-based activities are likely to be a reduction in the absolute capacity of the coastal environment to support abundant fish populations, which in turn affects the amount of fisheries production able to be sustainably harvested from coastal fish populations. Efforts are now underway by a range of environmental groups and regulatory agencies to address such impacts, and potentially in the longer term to reverse such impacts, and go some way back towards a more balanced state.

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Coastal Explorer: A Portal for Information about New Zealand's Coastal Environment

The NZCoast website and the Coastal Explorer web tool have been established by NIWA as a portal for information about New Zealand's coastal environment. A visit to www.naturalhazards.net.nz /tools/nzcoast/home provides resource management agencies such as regional and district councils and the Department of Conservation with robust, high level knowledge and tools to inform decision-making, manage coastal hazards, safeguard lives and property, and provides the public with educational information and resources.

At a basic level NZCoast website provides answers to FAQs like "which beaches are dangerous to swimmers?" and "how much water flows in and out of my estuary". At a more detailed level, the origin of different beach and estuary types and how they function is explained.

Coastal Explorer is underpinned by a coastal classification and GIS (Global Information System) database and information on the NZCoast website. It classifies shores and estuaries, maps where different environments occur and identifies hazards (e.g., coastal erosion and rip currents). The information is provided by way of maps, data, images, references and models, which combine to show the diverse coastal environments, and the hazards associated with different types of coastline. The geographic coverage includes the New Zealand mainland and offshore islands at a basic scale of 1:50,000. We have started by classifying and mapping the open coast sandy and gravelly beaches, although the ultimate aim is a seamless electronic mapping of the entire New Zealand coastline incorporating also estuary/harbour shores and rocky shores in a nationally consistent scheme.

The first step in building Coastal Explorer was to create the coastal classification scheme and mapping procedures, during which we used expert panels, including regional council staff, knowledgeable locals, university staff, and consultants. Information was mined from various sources including 1:50,000 topographic maps, aerial photographs, New Zealand Land Resources Inventory, the National Land Cover Data Base, the NZ Estuarine Environment Classification database, the New Zealand tidal model, wave hindcast models, RNZN Hydrographic charts, and numerous publications and reports. Building the database from this mixture of land and marine maps proved to be a very large task, as the maps came in paper and electronic formats and at differing scales. Importantly, the process is revealing 'blanks on the map' and where more information is needed.

Entry into Coastal Explorer launches a map of New Zealand and tools that enable the user to navigate around New Zealand, zoom in to parts of the coast for more detail, and select and display various switchable layers of information. A split screen provides legend information, and clicking on various attributes in the legend brings up relevant information and definitions. The information can be overlaid on either Google maps, satellite images or terrain which helps the user orientate themselves with respect to features they know such as towns, roads, or harbours and river mouths. The layers of information are drawn as lines of information about the shore or identified as points on the coast. Coastal types are classified and displayed as exposed and sheltered coast. Foreshore sediment types are identified as various combinations of mud, sand and gravel. The land backing the beach (hinterland) is classified as low-lying, wetlands, rising ground or cliffed coast. Coastal landforms are classified as various types of beach ridge and barrier dune systems.

Coastal Explorer provides a classification of beach types and beach hazards for about 270 beaches. This classification was developed in collaboration with the University of Sydney and Surf Life Saving New Zealand (SLSNZ), and provides a generalised risk assessment for beaches as part of SLSNZ's National Life Saving Plan. It groups New Zealand

beaches into 14 types on the basis of their wave, tide, and beach morphology, and sediment characteristics. There is a beach hazard rating associated with each beach type for modal (most commonly occurring) wave conditions. The beach hazard rating takes into account hazards such as rips, surf zone currents, deep water nearshore and wave conditions.

Coastal Explorer displays this information as beach report cards which show a conceptual model of the beach, images of the beach, beach activities and facilities, and a scale showing how the hazard rating changes with changing wave conditions. NIWA and SLSNZ are continuing to build this database.

Coastal Explorer also shows where beach profiles are monitored by various organisations. By clicking on the icons, metadata is displayed including survey method, length of record, frequency of monitoring and owner of the data. Importantly the map reveals patchy coverage and that for much of the coast there is no monitoring data.

Coastal Explorer displays information on estuaries as estuary report cards which provide a hydrodynamic classification for individual New Zealand estuaries and key statistics that describe physical and hydrodynamic characteristics for the each estuary and its catchment (e.g., surface area, intertidal area, catchment area, tidal prism, river inflow and mean depth) along with a photograph and schematic of the estuary type.

Future developments planned for the Coastal Explorer web tool include developing filter and buffer functions to provide access to user-defined statistics and facility to dump data to Excel spreadsheets. We will build a directory of information of rates of coastal erosion and build up around the shores and identify locations where beach profiles are measured.

Further down the track we plan to develop methodologies for identifying and mapping the likely impacts (e.g., coastal erosion and flooding) and sensitivity of different coastal types to climate variability and change, and develop regional and national indicators of coastal vulnerability.

Coastal Explorer is continually under development and we welcome feedback. Contact: Darcel Rickard (d.rickard@niwa.co.nz).

The project is part of NIWA's "Weather related hazards" programme funded by the Foundation for Science Research and Technology.

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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.

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Fish Farming – is Feeding Wild Fish to Farmed Fish Sustainable?

Proponents of fish farming highlight the contribution that aquaculture can make to feeding the world's growing population. Opponents often point out that farmed fish are usually fed on fishmeal made from wild caught fish, resulting in a net reduction in the food supply. Both these arguments over-simplify the true situation, and while the sustainability of wild fisheries in other jurisdictions is not strictly speaking an RMA issue, it has been raised so many times in consultation that I thought I'd better get to the bottom of it.

Of course not all aquaculture is equal in this regard. Filter feeding shellfish graze on the available plankton, and many herbivorous and omnivorous fish grown in freshwater aquaculture systems are fed on plant protein. Aquaculture as a whole adds to the world's food supply but the farming of carnivorous fish can cause a net reduction in protein. This is because they are usually fed on pellets made up of fishmeal and fish oil. In a few cases they are fed on whole fish.

Fishmeal is ground up fish, mostly the so-called "trash fish" along with off-cuts and scraps from fish processing. Most of the world's fishmeal production is currently fed to livestock, mainly poultry and pigs. Trash fish are species of small bony and oily fish that are generally not consumed by people and include anchovy, blue whiting, atlantic herring, chub mackerel, pilchards, sprats and sandeels. It is estimated that there is no market for the human consumption for a large proportion of this catch.

The pellets fed to farmed fish are mostly made of fishmeal fish oil. Current formulations are usually around 30% fishmeal and 25% fish oil, with the remainder being cereals or other by-products such as bone meal.

Feed conversation ratios and efficiency

Feed efficiency is normally reported as a feed conversion ratio (FCR) that compares the dry weight of pellets used to produce 1 kilogram of wet product. Fish farms usually achieve FCRs of 1.0 to 1.5. However 1 kilogram of fish feed can require 4 to 5 kilograms of fish to produce so it can take 6 to 7.5 kilograms of wild fish to produce 1 kilogram of farmed fish.

The least efficient forms of aquaculture involve the feeding of whole fish to captured fish. An example of this is the tuna farming in South Australia where whole pilchards are fed to the captive tuna. Up to 10 kilograms of feed is consumed for each 1 kilogram of tuna produced.

While these ratios suggest that fish farming is wasteful it should be noted the efficiency of energy transfer between trophic levels of a natural

Figure 1: Kingfish farm

food web is typically around 10%. That is, it would take 10 kilograms of prey fish to support 1 kilogram of a wild carnivorous fish such as salmon or tuna.

This argument has been used by some industry advocates to dismiss criticisms over food conversion ratios but it must be used with caution. Wild populations are naturally limiting and the number of top predators will be constrained by the population of prey species that supports them. Farming of carnivorous fish is not subject to that natural limit and has the potential to increase numbers beyond that which can be sustained.

Modern aquaculture practices minimise waste of feed as it is the single biggest expense for a fish farm. Excessive feeding contributes to organic enrichment of the seafloor and the adverse effects of that could affect the farm itself. Several early salmon farms in New Zealand closed down as they were in poorly flushed sites.

Farmers can now calculate the exact amount of feed required for the tonnage of fish in the farm. Some farms also use underwater video cameras to check for uneaten feed falling through the bottom of the nets.

Figure 2: Kingfish feeding

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Attempts to replace fish meal with plant protein have had some success but it is unlikely that complete replacement will ever be possible. This is because predatory fish need fish in their diet to be healthy, and using vegetable oils in feed results in reduced levels of omega-3 fatty acids, the main source of their excellent nutritional value.

Industrial fisheries

Fisheries that target trash fish for reduction into fishmeal are called industrial fisheries. Since 1970 they have shown no trend of increasing or decreasing catch. They have caught between 20 and 30 million tonnes per year. Over the same period production from other fisheries has increased steadily from 40 million tonnes in 1970 to 60 million tonnes in 1990 but remained static since.

Fluctuation in the industrial fisheries from year to year can be dramatic and the Peruvian anchovy fishery in particular has experienced crashes. For example it crashed in 1998 and only 1.2 million tonnes was caught compared to 5.3 million tonnes the year before. As a result global production from industrial fisheries dropped from around 26 million tonnes in 1997 to 20 million tonnes. However, the main cause was climatic cycles with over-fishing playing a smaller role. 1998 was an El Nino year and in 2003 production dropped from 8.6 to 5.3 million tonnes in the face of another El Nino.

Despite these crashes production from the industrial fisheries has remained steady. This is because they catch fish that are small, short lived and fast growing. These populations have proven to be very resilient and can recover rapidly from the climatic impacts. Improved management has reduced the impact of overfishing

Sustainable or not?

Aquaculture has grown dramatically over the last 20 years and now supplies half the fish and shellfish eaten by people. Fish farming has grown at nearly 10% per year and now consumes about 3 million tonnes of fishmeal. The United Nations Food and Agriculture Organisation (UNFAO) estimate that aquaculture's consumption of fishmeal tripled from 1992 to 2006.

However, the total production of fishmeal has been static at around 5-7 million tonnes for over 20 years. This reflects a diversion of current fishmeal production from terrestrial livestock to aquaculture. So far fish farming has not increased the pressure on wild populations but this does not preclude that occurring in the future.

Ultimately the sustainability of fishmeal relies on the management of the fish stocks that produce it. The main industrial fish stocks managed by European and South American nations are all subject to total allowable catch limits, closed areas, seasonal restrictions and vessel registration.

At current levels of catch the industrial fisheries are probably sustainable, but like most fisheries, our understanding of them is not complete and a broader ecosystem management framework has yet to be applied.

Skretting, one of the world's largest fish feed suppliers and the only supplier of feed to the New Zealand market has developed a partnership with the Marine Stewardship Council to achieve certification of feed stocks. They recently announced the successful trials of a feed formulation that uses less than 1 kilogram of feed fish to produce 1 kilogram of farmed fish, making a fish farm a net producer of protein for the first time. However this formulation is not yet in commercial use.

The UNFAO has concluded that fishmeal production will remain constant over the next decade and the increased demand generated by a growing aquaculture industry will divert more fishmeal from terrestrial livestock and encourage the development of plant protein and oil substitutes. Rather than contribute to the depletion of wild fisheries, the UNFAO see the inability to harvest more trash fish as a major constraint on fish farming and a threat to the world's food security.

In the short to medium term we can be reasonably confident that the production of fishmeal to supply fish farms is sustainable, but in the longer term greater levels of substitution will be required to prevent an increase in pressure on the industrial fisheries.

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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.

Condition Assessment of Coastal Structures Within Tauranga Harbour

An estimated 3 million New Zealanders now live in coastal urban settlements. This has lead to an increase in the number and type of coastal structures designed to improve public access to the coast or to protect coastal property. Coastal managers seek innovative tools to provide up to date information on structure condition to help them maintain these assets.

Western Bay of Plenty District Council (WBOPDC) owns over 100 coastal structures within the Tauranga Harbour and undertakes regular condition assessments as part of its asset management program. The council requires a system to capture information on the condition of its assets and to upload it directly into its existing asset database. This article describes the system Tonkin & Taylor developed to assist WBOPDC to collect and update coastal structure information.

The system developed to assist WBOPDC is based on handheld GPS technology. The handheld GPS was used in the field to capture the following information for each structure:

- Coordinate position.
- Asset type and dimensions.
- Condition assessment notes
  - asset description;
  - condition rating; and
  - maintenance work required (if any).
- Digital photographs.

This coastal structure information was captured through customised data entry forms within the GPS unit (see Figure 1).

The GPS software provides a user friendly platform to quickly develop the customised data entry forms. The forms prompt the user for specific information to be entered for each structure. Drop down menus were included in the forms to provide quick, accurate and consistent data entry (Figure 1). This system proved to be an accurate and efficient way to record large amounts of information in the field. The use of data entry fields helps ensure that data is recorded consistently, even when recorded by different staff.

A key feature of the handheld GPS technology is the wireless (WIFI) connection to a digital camera. The WIFI connection allows digital photographs to be automatically linked to GPS positions (geo-tagged). The geo-tagged photographs can then be displayed in a GIS, so users know where in the world they were taken. This system is more efficient and accurate than trying to manually match up hundreds of photographs with paper notes back in the office.

The digital output from the GPS was used to update the WBOPDC's asset database. The existing asset database has capacity to link structures to resource consent information and other relevant reports. The digital condition assessment output was also used to establish a schedule of maintenance works including cost estimates. The digital GPS output can also be uploaded to a GIS where the information is displayed spatially (see Figure 2).

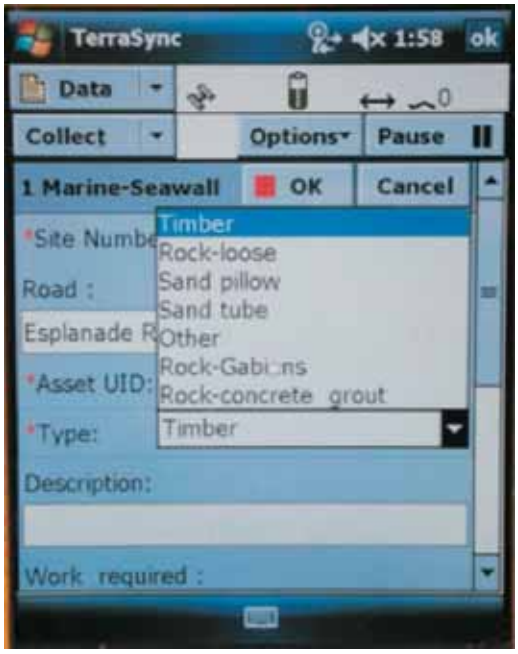

Figure 1: Example of the customised data entry form used to collect condition assessment information within the handheld GPS.

We found the GPS digital data collection system efficient to set up, use in the field and download back in the office. The main benefits of the handheld GPS system for collecting coastal structure information are:

- Customised forms for efficient, accurate and consistent data entry in the field.
- Waterproof, paperless data entry.
- Wireless connection to digital camera.
- Mobile MS Windows to view other documents on site.
- Real time horizontal accuracy to 10 cm.
- Output compatible with existing Asset Management Systems and GIS.

Further development is planned to include capture of the structure's height above mean sea level (MSL). This information will help evaluate the potential effect of predicted sea level rise on coastal structures within the district.

The handheld GPS system obviously has other asset management applications for roading,

utilities and reserves. The system could also be of valuable in the coastal field outside of asset management, where accurate feature positions need to be linked with field notes and photographs (e.g. coastal monitoring, shoreline mapping and habitat mapping).

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Figure 2: Example of the information collected for a structure displayed within a GIS. The dots represent individual coastal structures. The lightning bolt represents a hyperlink within the GIS database to the digital photograph.

AWATEA Conference Review

AWATEA (the Aotearoa Wave and Tidal Energy Association) held its third annual conference at Te Papa in Wellington in May. Over 85 people attended the one-day conference to hear 15 speakers discuss the potential of marine energy in New Zealand waters.

Hon. Gerry Brownlee, Minister of Energy and Resources, opened the conference and gave the new Government's views on marine energy. He announced the 2nd award from the Marine Energy Development Fund (MEDF) which has been given to Power Projects Limited for its joint project with Industrial Research Limited, the Wave Energy Technology - New Zealand (WET-NZ) programme.

The conference presentations ranged from resource assessments, to planning and the consenting process, and connecting new technologies to the national grid. Presentations on NZ's resource identified a number of high energy sites in our marine environment, and focussed on the exceptional Cook Strait tidal resource.

International key note speaker Neil Kermode discussed the Scottish experience and the European Marine Energy Centre based at the Orkney Islands (of which he is Managing Director). There were also presentations by international device development companies, Wavegen Limited and Voith Hydro Holding GmbH. The current coastal planning framework and lessons learnt for planning were discussed by Beca Planners, and Cushla Loomb's Resource Management Law Association fellowship results on a recommended approach for developing planning policy for marine energy in New Zealand was also presented.

The conference finished with a panel discussion consisting of speakers and organisation representatives and, of course, a social hour!

AWATEA was established in April 2006 to promote the uptake of marine energy in New Zealand, with the belief that wave and tidal energy is sustainable, clean, available, reliable and forecastable and that New Zealand could source a significant proportion of its new energy supply from marine energy in the medium term.

For more information on AWATEA you can visit the website www.awatea.org.nz.

News from the Regions

Taranaki Region News

Kate Giles, Taranaki Regional Coordinator

Stony River 'Sand Slug'

Nicola Cowie, a MSc student from The University of Waikato, investigated sand discharge from the Stony River. Her thesis included looking at coastline changes from aerial photo comparison and undertaking regular beach monitoring. Sediment characteristics of beaches north of the Stony River mouth have been investigated. Currently modelling is being undertaken to determine the sediment transport rates between Cape Egmont and New Plymouth with the assistance of MetOcean Solutions. DoC has provided logistical support in terms of vessel and drop camera along with AWE who assisted her in undertaking her field work every three months. Nicola presented her thesis results at the International Coastal Symposium in Portugal in April.

SOE Report

The second State of the Environment Report for Taranaki was released in early April. This is a summary of the last five years SOE work and includes information on coastal monitoring, public access, coastal policy and management. Order a copy (free) or view online at www.trc.govt.nz Publications > State of Environment.

Coastal Plan

The Regional Coastal Plan for Taranaki is now due for its first update since being adopted in 1997. This process has begun with a Taranaki Regional Council in-house review of the Rules and Policies.

Dr Jim Hansom Talk

Despite only having a few coastal society members in Taranaki, we had a great turnout for Dr Jim Hansom's talk 'Extreme wave impacts on cliffs: cliff-top erosion, deposition and chronology'. Attendees enjoyed nibbles, drinks and mingling before Jim launched into a very interesting talk.

Coastal Inventory

In a collaborative project between DoC and the Taranaki Regional Council, information pertaining to the coastal area of Taranaki has been collated into a searchable database, the 'Coastal Information Inventory'. The database can be found at http://www.trc.govt.nz/temp/coastalinv/ and is searchable by keyword, author or publisher. A more user friendly, updated version is currently being developed.

Opunake Artificial Surf Reef

It was intended that this would be completed during the autumn, but the weather window has well and truly passed and it looks like the project has been shelved for another winter.

Northland Region News

Ben Lee, Northland Regional Coordinator

Oysters Ready to Harvest

The Waikare Inlet, Bay of islands, has been reopened for the harvesting of oysters. Oysters have not been able to be harvested for sale directly from those parts of the inlet since 2001 after a harmful water-borne virus contaminated them. Investigations suggested there were a number of possible sources for the virus, including leaking septic tanks, sewage discharges from boats, the Kawakawa sewage treatment plant, or a combination of these. Significant time and money has been invested by Far North District Council, Northland Regional Council, Ministry of Fisheries, the Northland District Health Board and the oyster farmers to deal with the issues.

Tidal Power Generation

The Crest Energy Limited proposal to place up to 200 tidal current power generating devices in the entrance to the Kaipara Harbour is before the Environment Court. The appeal hearing commenced early June 2009.

Areas Earmarked for Aquaculture

Minister for the Environment Nick Smith and Minister of Fisheries Phil Heatley announced recently plans to determine the feasibility of potential Aquaculture Management Areas (AMAs) for oyster and finfish farming and related aquaculture activities in Northland. Under the Government plan, more than two dozen possible AMA sites in Northland will be evaluated for their potential as marine farms this year, however, ultimately only a handful will be investigated further. The bulk of the sites to be initially evaluated have previously been tagged by the NRC as possibly suitable for marine farming after extensive public consultation.

Cows Banned from Bathing

As of 1 July 2009, stock in the Coastal Marine Area (CMA) becomes a 'prohibited activity'. Northland Regional Council changed its Regional Coastal Plan to ban stock from tidal areas in 2004, but allowed a five year grace period for its implementation. Initially the Council will be focusing on those people whose stock still has access to areas close to traditional seafood harvesting grounds, popular swimming areas or marine farms.

Marine Pest Strategy

NRC has released a Discussion Document in relation to the review of the Regional Pest Management Strategy. Of particular note is a section on developing marine pest strategies for Northland. The discussion document has been circulated to key marine stakeholders such as

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MAF BNZ, Ministry of Fisheries, DOC, iwi, aquaculture industry, boat clubs and so on and seeks feedback on the options for managing invasive marine species. The discussion document seeks feedback by 4.30pm Friday 19 June. An electronic version can be found on the NRC website http://www.nrc.govt.nz/Your-Council/Have-your-say/Pest-Management-Review/Marine-Biosecurity/

E. Coli Monitoring

Northland Regional Council (NRC) is monitoring water quality in the Hokianga Harbour each month to assess levels of nutrients, Enterococci and E. Coli. This monitoring includes volunteers from the community/iwi group 'Waiora Hokianga' and FNDC. At the same time, FNDC are co-ordinating the collection of shellfish in the harbour to assess their health (this includes analysing shellfish samples for E. Coli levels).

Helicopter Water Sampling

The NRC and Auckland Regional Council (ARC) are jointly undertaking monthly water quality sampling in the Kaipara Harbour. Due to the vast area in the harbour, sampling is being undertaken by helicopter.

Hawke's Bay Region News

Neil Daykin, Hawke's Regional Coordinator

Hawke's Bay Volunteer Coastguard

It's been a quiet few months for HBVCG. They are currently waiting expectantly, like new fathers, for their new arrival, a brand new $1 million plus rescue boat. It's an 11.5 m AMF jet boat with twin 480 hp inboard diesels.

Dredging of the Lower Clive River

The 12 week contract for cutter suction dredging of approximately 45,000 m^3 of silt from the Lower Clive River has just started. The wedge of silt to be dredged is approximately 1500 m long by 60 m wide by 1 m thick. The material will be disposed of in the surf zone adjacent to the river mouth.

Maritime Oil Spill Exercise

The Hawke's Bay Oil Spill Response team held a practical exercise at the Port of Napier on Thursday 30th April, involving the Hawke's Bay Regional Council and Port of Napier Ltd staff along with Maritime New Zealand and NZ Oil Services Ltd. Exercises are held each year for staff with oil spill response tasks in the Coastal Marine Area under the Maritime Transport Act 1994. Staff practiced using the large equipment that would be needed in a major oil spill at the port, including using rapid deployment booms and skimmers. Another element of the exercise was practising decontamination of workers who might have oil on them after working in a cleanup operation (see photo below showing ingenious use of a blue plastic paddling pool!).

Beach Cleanup

The HBRC Compliance team recently instigated a beach clean up between Haumoana and Clifton, removing hazardous concrete and rail iron type material off the beach. Most of the material removed comes from historical ad hoc unconsented/non complying coastal defences. The basis for the cleanup is health and safety.

Dune Restoration at Mahanga

Hawke's Bay's newest dune restoration group is also its most northern. Mahanga E Tu (Stand up) is based at Mahanga on the Mahia Peninsula. The group formed in response to a planned residential development, which they feel would have a negative impact on the beach and community.

Protecting the character of the beach also includes addressing weed issues, with the long term goal of restoring native dune plants. Many garden escapees have established in the dunes in front of the homes and baches. An infestation of Agapanthus is particularly rife, and controlling the spread of this South African invader has been one of the group's first priorities.

Fortunately the beach east of the township is much less degraded, with healthy populations of spinifex and other native dune plants. This provided the group with a supply of locally sourced seed which was harvested and sorted earlier this year. The seed has been sent to Naturally Native Nursery in Whakatane with a view to buy back the 'ready-to-plant' seedlings next winter. The Hawke's Bay Regional Council (via Warwick Hesketh) helps to facilitate dune restoration through its Regional Landcare Scheme. Groups receive a grant in recognition of their labour and in-kind contribution to the project. The money is reinvested back into the project and used to purchase supplies such as herbicide and seedlings.

Nelson-Tasman Region News

Eric Verstappen, Nelson-Tasman Regional Coordinator

Torrent Bay Replenishment

Those who have walked, run, or kayaked the Abel Tasman National Park coast will attest to the beauty of the golden sand beaches. However, their splendour does not render them immune from the ravages of wave attack and erosion.

This has become a problem on the beach fronting the private land enclave of Torrent Bay, containing some 50 private properties. A once-generous road reserve buffers the community from erosion and provides important amenity as well as high tide coastal access through the community. The shoreline is particularly prone to erosion during easterly winds coinciding with spring tides, which have been more prevalent in recent years. During such conditions, sand is eroded off the beach and deposited as extensive bars on the intertidal platform.

In 2005, the Tasman District Council together with the Torrent Bay community, funded a modest sand replenishment project to uplift and place some 6000 cubic metres of intertidal sandbar deposits along the 400 m long foreshore. An unusual number of easterly storm events have continued to erode and degrade the beach, necessitating a repeat replenishment exercise late in 2008. Some 7000 cubic metres out of a desired 10000 cubic metre volume was uplifted and placed.

While the replenished beach section has performed extremely well in subsequent storm events, machinery is due to return in 2009 to complete the task at the southern end of the beach, where erosion of the earlier unreplenished beach section has become particularly vigorous.

Figure 1a: Looking south along Torrent Bay August 31 2008.

Figure 1b: Looking south along Torrent Bay following the replenishment in September 2008.

Figure 2a: Looking north along Torrent Bay August 31 2008.

Figure 2b: Looking north along Torrent Bay September 26 2008.

Figure 3a: A view from the headland above Torrent Bay August 18 2008.

Figure 3b: A view from the headland above Torrent Bay following the replenishment in September 2008.

Life Member Profile
John Lumsden: A Foundation Stone

John Lumsden received Life Membership of the New Zealand Coastal Society at the annual conference dinner held in Tauranga on 22 November 2007. John is our second only recipient of this award.

John Lumsden is principal consultant in a Christchurch-based consultancy and has over forty years professional engineering experience, with specialist skills in coastal engineering and resource management.

He also has twelve years experience working as a hearings commissioner on a variety of resource consent proposals. His work has featured integration of coastal and ocean sciences into coastal zone decisions. He has authored or co-authored over 60 reports and technical papers.

John helped establish the New Zealand Coastal Society in 1992 and was founding chairman. John remained on the NZCS Executive Committee until 2007, with only a couple of years off the Committee during that time, applying his extensive knowledge to progress the Society and overseeing the production of Coastal News. John is truly a foundation stone of the Society who was instrumental in progressing the Society to where it is today.

Indeed, when the NZCS Executive Committee put in place the requirements for Life Member in 2006, it was John who drafted those and who sought that it only apply to those persons who had retired from work. The Committee saw fit to tweak the requirements knowing that John would be a worthy recipient.

After graduating as a civil engineer from the University of Canterbury John worked as a structural engineer in Canada for several years, returning in 1974 to join and become a director of Christchurch-based Morris & Wilson. Here he specialised in coastal and ocean engineering before becoming Project Director at the Centre for Advanced Engineering at the University of Canterbury in 1989, where he has worked on risk management, waste minimisation, energy efficiency, oceans and lifelines projects. John has achieved as much in these areas as he has in the coastal engineering field.

John's abilities as a professional engineer are well known by those who have worked with him over the years. One of those was former CAE Executive Director, John Blakeley: "The key thing I appreciated was John's ability to bring together these teams of people to work on projects. A lot of projects were multi-disciplinary, involving people from different backgrounds, with differing views. John was very good at coordinating these people to work together on the project."

Eric Verstappen, long-time friend of John's and NZCS Treasurer notes John's quick wit and enjoyment of fine wine as two great personal attributes among his many professional ones.

John has extended a comprehensive career in coastal engineering and resource management by establishing his own consultancy in 2004 and is far from retired just yet. However John has more recently found the time to take regular skiing holidays to Canada and to visit his children in Christchurch, Vancouver, and Perth.

John was Conference Chairman for the Pacific Coasts & Ports '97 conference attended by some 340 delegates from around the Pacific. The conference was the combined 13th Australasian Coastal and Ocean Engineering Conference and 6th Australasian Port and Harbour Conference, held in Christchurch on 7-11 September 1997. John has been on the organising committees of many other conferences, seminars and workshops, including the 2000 Our Oceans conference, and the 2006 NZCS Annual Conference held in Kaikoura.

John Lumsden was elected a Fellow of IPENZ in 2004 for his contribution to the advancement of engineering practice; specifically recognising his leadership in the development of coastal engineering practice in New Zealand.

He was one of the first coastal engineers to recognise the need to go under water, and a feature of his work has been the integration of coastal and ocean sciences into engineering decisions concerning the coastal zone. His service to the New Zealand Coastal Society and IPENZ has been exemplary.

Missed an article in *Coastal News*?

Back issues (from Issue 6, April 1996) are available as pdf downloads from www.coastalsociety.org.nz - follow the Publications link on the front page.

On Campus

University of Canterbury Department of Geography Integrated Coastal Studies Group

1 Research activity and people profiles

The University of Canterbury Integrated Coastal Studies Group comprises a team of academic staff, affiliated consultants and adjuncts, and postgraduate students researching multidisciplinary understandings of coastal environments, including studies focussed on interactions between geomorphology, ecology, climate, and hydrodynamics; and resource and hazard management challenges. This team is based in the Department of Geography with affiliated members in the School of Biological Sciences and Department of Civil and Natural Resources Engineering. Together we deliver a coastal curriculum consisting of core undergraduate and postgraduate coastal studies courses as well as related components in other courses and postgraduate thesis studies.

The group has been very active over the 2008 and early 2009 period. A highlight has been hosting Professor Jim Hansom from the University of Glasgow for five months this year. Many of you will have heard Jim talk at the NZCS regional events around the country over the last few months and gained some appreciation of his depth and breadth of coastal knowledge and insight. Jim has made significant contributions to a number of our courses and fieldtrips and injected the coastal postgraduate research team with his high levels of energy and enthusiasm (Figure 1). We are hoping to keep in close contact with Jim after he returns to Glasgow later this month via a Department of Geography Senior Adjunct Fellow role.

Figure 1: West Coast fieldwork Jim Hansom style – everyone into the waves! Photo by Jim Hansom.

In other news, Dr Hart worked with Dr David Kennedy (Victoria University) to co-edit a special issue of the New Zealand Geographer on Coastal Environments. She received the 2008-2009 NZ Zonta Scientist Award, which allowed her to undertake a research visit to the Coastal Studies group at the University of Cambridge and to chair a session on river mouth wetlands at the International Coastal Symposium in Portugal in April 2009, as well as participating in the International Coastal Symposium in Florida in 2008.

Claire Kain was successful in obtaining a 2008 New Zealand Coastal Society Masters Scholarship and is the 2009 Sir Neil Isaac Scholar (Figure 2, also see the article on her work in the last *Coastal News* and her presentation at the upcoming Coasts and Ports Wellington conference).

Figure 2. Totara River mouth – one of Claire Kain's West Coast field sites. Photo by Jim Hansom.

Rijal Idrus obtained the Best Student Presentation Award at the 2008 NZ Marine Sciences Conference in Christchurch for his talk on the coastal management challenges faced in South Sulawesi Indonesia, while David Alexander was awarded the second best student paper award at the 2008 NZ Coastal Society Conference in New Plymouth. David's paper was on the development of techniques to map nuisance algae (sea lettuce) in estuaries.

With the help of summer scholars Wybren de Vries, Zara McWilliams, Thomas Nation and Douglas Dibly as well as the School of Biological Sciences' Islay Marsden, the group completed major geomorphic, sediment and biology surveys of Lyttelton and Akaroa Harbours. A similar study will be preformed for the Avon-Heathcote Estuary Ihutai in mid 2009. The data gathered from the harbours will be used in 2009-2010 for a mud flat modelling study in conjunction with Korean

researchers Dr Do-Seong Byun (NORI) and Professor Cho (Chonam National University). In addition, summer student Maki Akiyama conducted a study of tangata whenua values relating to coastal and fluvial environments and management, which she will present at the Coasts and Ports conference in Wellington later this year.

Alexis Bernard has joined the group in order to conduct a 5 month research project on mixed sand and gravel river mouth lagoon morphodynamics. Alexis is an engineering student from Lyon, France and, amongst other methods, he is investigating the use of oblique camera images to learn about lagoon and barrier processes. This work is being done in conjunction with Karin Bryan, Waikato University, with assistance from Giovanni Coco, NIWA.

Derek Todd and Martin Single are currently investigating the physical coastal processes operating at Ocean Beach Dunedin for the purpose of determining a long-term management plan for this important urban coastline. This project is for Dunedin City Council. The comprehensive investigation programme coordinated by Todd and Single involves a number of components undertaken by different parties. These include GIS mapping of historical shorelines (University of Canterbury Geography Department), beach topography surveying (University of Otago Geography and Surveying Departments), bathymetric surveys (Hunter Hydrographics, Timaru), wave and current modelling, shoreline response modelling (Met Ocean Solutions, New Plymouth), sediment sampling, and the establishment of a Cam-Era site.

Staff

Dr Deirdre Hart (PhD UNSW) lectures in coastal studies and researches high-energy temperate and tropical coastal environments. Current research projects in New Zealand include investigations into lagoon and gravel beach dynamics on the West Coast while international projects include Pacific reef island beach systems, algal blooms in the South Sea of Korea, and coastal management internationally.

Professor Jim Hansom is a visiting lecturer in the Department until June 2009. Jim comes from the University of Glasgow and is a specialist in high-energy coasts and storms amongst other things coastal.

Derek Todd (MSc UC, Adjunct Fellow) contributes to teaching in the areas of coastal hazards and resource management, and supervises graduate research projects in these areas. He also consults on coastal resource management and consent projects.

Justin Harrison (MSc UC), Field and Equipment Technician, actively provides technical and field support to coastal research and consultancy projects and contributes to undergraduate and graduate coastal teaching in the areas of sediment and water quality analysis, survey techniques and other field/laboratory methods.

Nicholas Key, Workshop Technician and Boat Master, actively provides field and workshop support to coastal research and consultancy projects and contributes to undergraduate and graduate coastal teaching on sediment analysis.

Paul Bealing, Geospatial Technician, actively provides field support to coastal research and consultancy projects and contributes to undergraduate and graduate coastal field work and research.

Emeritus Professor Bob Kirk (PhD UC) is an Environment Canterbury Councillor

Dr Martin Single (PhD UC, Senior Adjunct Fellow) continues to make teaching contributions in the areas of coastal processes and management while working on lake shore management and consulting on coastal processes and management.

Justin Cope (MSc UC, PGDip NatRes Lincoln) is Senior Coastal and Fluvial Scientist at Environment Canterbury and Adjunct Fellow of the Department of Geography.

Postgraduate students

Rijal Idrus recently submitted his PhD entitled "Hard Habits to Break: Investigating Coastal Resource Utilisations and Management Systems in Sulawesi, Indonesia".

Arash Eisazadeh Moghaddam will join the group in June 2009 to start his PhD examining the wave climates of Canterbury now and in the future.

Zahid is in the second year of his PhD research on the effects of the Indian Monsoon system on the climate and coastal and water resources of the Republic of the Maldives.

Alexis Bernard is studying coastal lagoons over a six month internship in the Department from March 2009.

Claire Kain is studying the evolution, dynamics and management issues of the Totara River and Shearer Swamp lagoon complexes in Westland.

Duncan Foster completed a BSc honours dissertation in 2008 examining the dynamics of the Motunau inlet and is continuing to research this area for his MSc, focussing on the physical, cultural and management dynamics of the area.

Simon Hall completed a BSc honours dissertation in 2008 examining the feasibility of a gryone and artificial opening regime in Wairewa Lake Forsyth and is continuing to research this topic for his MSc.

Thomas Nation is studying historical shoreline movements at Island Park, Dunedin, for his BSc honours dissertation.

Kelly Cattermole is studying the tidal hydraulics and water quality of the Totara River mouth, Westland, for his BSc honours dissertation.

2 List of Recent Publications

(refereed articles including papers, books & monographs and submissions)

Journal articles

Bryan KR, Kench PS, Hart DE. 2008. Multi-decadal coastal change in New Zealand: Evidence, mechanisms and implications. New Zealand Geographer 64, 117-128.

Dickson, ME, Bristow, CS, Hicks, DM, Jol, H, Stapleton, J and Todd, D. (2009) Beach volume on an eroding sand-gravel coast determined using ground penetrating radar. Marine Geology in press.

Hart DE. 2009. Morphodynamics of non-estuarine rivermouth lagoons on high-energy coasts. Journal of Coastal Research SI56, 5p.

Hart DE, Knight GA. 2009. Geographic information system assessment of tsunami vulnerability on a dune coast. Journal of Coastal Research 25, 131-141.

Hart DE, Bryan KR. 2008. New Zealand coastal system boundaries, connections and management. New Zealand Geographer 64, 129-143.

Kench PS, Bryan KR, Hart DE, Kennedy DM, Hilton MJ. 2008. A commentary on coastal research in New Zealand universities. New Zealand Geographer 64, 93-104.

Kennedy DM, Hart DE. 2008. The New Zealand coast: perspectives on science and management. NZ Geographer 64, 91-92.

Book chapters

Hart DE. 2009. Mixed sand and gravel river mouth lagoon science and management. In: Micallef A, Williams AT (eds) Beach Management Guidelines: Principles and Practice, Earthscan, pp 267-280.

Hart DE, Marsden ID, Francis M. 2008. Coastal systems. In: Winterbourne M, Knox G.A, Marsden ID, Burrows C (eds.) Natural History of Canterbury (3rd edn). Canterbury University Press, pp 653-684.

Dissertations

Hall, SJ. 2008 Groyne performance on a mixed sand gravel beach of Birdlings Flat. Unpublished BSc honours dissertation, Geography Dept, University of Canterbury, 66p.

Foster, D. 2008 Low river flows in the Motunau River. Unpublished BSc honours dissertation, Geography Dept, University of Canterbury, 41p.

3 Reports, popular articles and conference proceedings

Alexander DJ, Hart DE, Marsden ID. 2008. Evaluation and Development of Techniques to Map Macroalgae in the Avon-Heathcote Estuary Ihutai. Estuarine Research Report 35. Avon-Heathcote Estuary Trust, Christchurch City Council and Environment Canterbury, 84p.

Hart DE. 2009. The maintenance of reef islands. Proc. 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008, 5p, in press.

Hart, DE. 2009. Proposed deepening and extension of the Lyttelton Port navigation channel: review of hydrodynamic and sediment evidence. Internal report to Lyttelton Port Company, 42pp.

Hart DE. 2008. Review: The geomorphology of the Great Barrier Reef: development, diversity and change. New Zealand Geographer 64: 169-176.

Hart DE, Marsden ID, Todd DJ, de Vries WJ. 2008. Mapping of the bathymetry, soft sediments, and biota of the seabed of Upper Lyttelton Harbour. Estuarine Research Report 36 / ECan Report 08/35, 58p + map/data CD.

The website for the University of Canterbury Department of Geography Integrated Coastal Studies Group can be found at www.geog.canterbury.ac.nz

NZCS Management Committee

Maui Dolphin Survey in North Island West Coast Harbours

A study on the use of habitat of the endangered Maui's Dolphin was recently completed by Otago University. In a research project funded mainly by the Department of Conservation, with support from Environment Waikato's Environment Initiatives Fund granted to Forest and Bird, Silvia Scali, Stephen Dawson and Elisabeth Slooten used acoustic data loggers combined with other techniques to determine whether Maui's Dolphins entered five North Island west coast estuaries.

The sounds made by Hector's Dolphins are quite distinct from those made by other dolphin species, and acoustic data loggers can be set to record the unique frequencies emitted by Maui's Dolphins. These data loggers can then be left on moorings to passively record the presence of Maui's Dolphin over about a year. The use of data loggers (or T-PODs as they're known) offers a means of detecting the presence of dolphins in areas that they might use, such as estuaries. Whilst human survey transects are still used to provide a reliable estimate of population size, T-PODs are useful for determining the use of habitat, and have the advantages that they are cheap to deploy and record continuously, even at night and in bad weather.

Figure 1: Maui Dolphin were detected in the Manukau Harbour in a recent study. Photo by Jason Clark.

The researchers deployed data loggers in Kaipara, Manukau, Raglan, Aotea and Kawhia Harbours. The Aotea Harbour data loggers were lost due to strong currents, and as a result the survey was abandoned in this location. The data loggers in Kaipara, Raglan and Kawhia Harbours did not record any Maui's Dolphins present, but the loggers in Manukau Harbour detected 20 occurrences of the unique 'clicks' made by Maui's Dolphins.

Maui's Dolphin is a critically endangered subspecies of Hector's Dolphin only found on the west coast of the North Island, for which the estimated population size is about 111 individuals and declining. In order to protect the species, it is vital to know which areas they use, so that steps can be taken to safeguard continued use. T-PODs have successfully been used to detect the presence of Hector's Dolphin in areas off the South Island, but this study is the first using the data loggers to survey Maui's Dolphin.

Malene Felsing
malene.felsing@ew.govt.nz

New Publication: Beyond the Tide – Integrating the Management of New Zealand's Coasts

Raewyn Peart, Environmental Defence Society

This book, recently published by the Environmental Defence Society, presents a comprehensive study of the management of the Hauraki Gulf and Kaipara Harbour.

The study included an international literature review and interviews with sixty people involved in coastal management. As well as describing how these areas are currently managed, the book explores the extent to which management is integrated, the presence of factors which are likely to promote integrated coastal management, and how these could be more strongly supported.

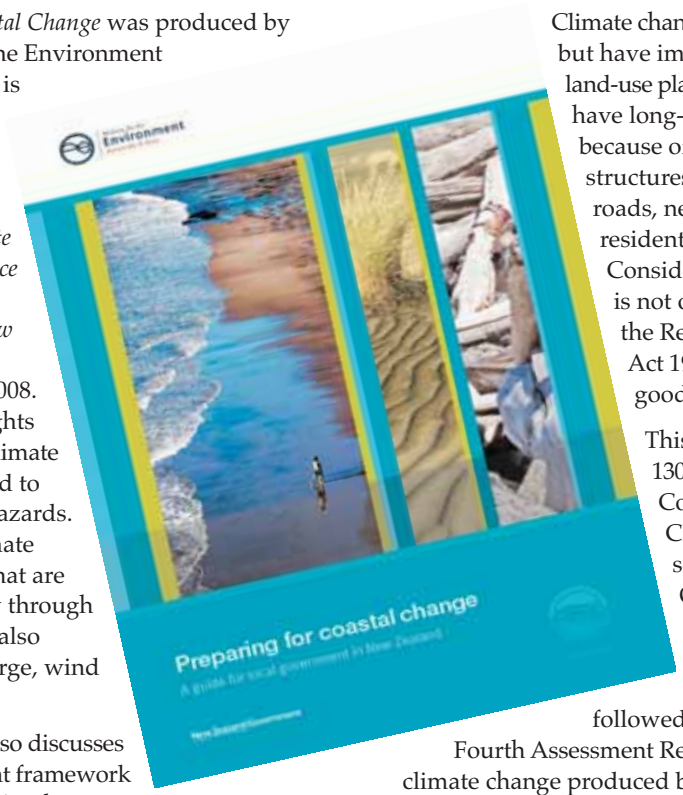
Both the Hauraki Gulf and Kaipara Harbour have significant environmental values and a long history of use. They are under pressure from coastal development, sedimentation, pollution and overharvesting of marine life. The examination of these pressures demonstrates the competing demands on our coast, and the range of legislation and agencies involved in different aspects of coastal management in New Zealand.

This study will be of interest beyond the Hauraki Gulf and Kaipara Harbour. The recommendations to support greater integration between coastal management efforts relate to legislative reform, capacity-building, conflict resolution procedures, strategic planning, monitoring and funding.

"Beyond the Tide" can be ordered from the EDS website at www.eds.org.nz.

Preparing for Coastal Change: A Guide for Local Government in New Zealand

Preparing for Coastal Change was produced by the Ministry for the Environment in March 2009. It is a 30-page summary of the recent technical report *Coastal Hazards and Climate Change – A Guidance Manual for Local Government in New Zealand* (2nd ed) released in July 2008. The guide highlights the impacts that climate change is expected to have on coastal hazards. It details the climate change impacts that are expected not only through sea-level rise but also through storm surge, wind and waves.



The publication also discusses a risk management framework in which to consider the consequences of these hazards.

Much of New Zealand's urban development and infrastructure is located in coastal areas, some of which are vulnerable to coastal hazards such as coastal erosion and inundation. In recent years, coastal development and associated infrastructure have intensified, and property values have increased. As development increases, the potential impacts and consequences of coastal hazards also increase. Managing this growing risk now presents a significant challenge for planning authorities in New Zealand.

Preparing for coastal change provides information to help local government and others across New Zealand strengthen the integration of coastal hazards and climate change considerations into policy, planning, asset management and decision-making.

Climate change effects are gradual, but have implications for many land-use planning decisions. They have long-term implications because of the long lifetime of structures (e.g., buildings, roads, network utilities, residential developments). Considering climate change is not only a requirement of the Resource Management Act 1991, it is also wise and good business practice.

This guide summarises a 130-page technical report, Coastal Hazards and Climate Change ('the source report'). Originally published in 2004, the source report was updated in July 2008. This followed the release of the Fourth Assessment Report on the science of climate change produced by the Intergovernmental Panel on Climate Change (IPCC) in 2007. The source report is available in full at: www.mfe.govt.nz/publications/climate coastal-hazards-climate-change-guidance-manual.

Six coastal hazard fact sheets are included as part of the guide to provide further information on the characteristics of coastal hazards:

1 sea level
2 tides
3 storm surge
4 waves
5 coastal erosion
6 coastal inundation

Both the summary document and coastal hazard fact sheets can be found on the Ministry for the Environment's website at www.mfe.govt.nz/publications/climate/preparing-for-coastal-change-guide-for-local-govt.

Profile: Ben Lee

Northland Regional Coordinator

Ben Lee is currently a "Policy Specialist" with the Northland Regional Council (NRC). Ben's main responsibility is the administration of the Regional Coastal Plan. Much of his time is occupied with progressing a plan change for aquaculture.

Ben has been with the NRC for close to two years. Prior to that, he was with Environment Bay of Plenty doing coastal policy work, and before that with NRC processing coastal permits.

NZCS Conference 2008 in New Plymouth

The New Zealand Coastal Society (NZCS) annual conference held in New Plymouth 18-20 November 2008 was a great success with positive feedback received from many attendees.

A highlight for many people was the keynote address by Dr Mark Orams, a marine scientist at Massey University. Dr Orams noted the significance of coastal recreation and tourism to New Zealand, and described several innovative ways the use of the coast has developed over recent years. It will be interesting to see if the predictions for underwater hotels and new types of watersports eventuate.

In the other keynote address, Aroha Chamberlain presented an iwi perspective to coastal management in New Plymouth.

The 36 paper presentations covered streams on coastal hazards, ecology, engineering, sedimentation and planning. Several papers related to rip prediction and management of public safety at surf beaches. Other topics included wave and tidal energy, erosion management, shellfish contamination, hydrodynamic modeling and coastal hazard setbacks.

The fieldtrips on the last afternoon began with the New Plymouth coastal walkway and then visited various sites either north or south of the city. Other highlights of the conference included the icebreaker function and the dinner at the East End Surf Life Saving Club.

Analysis of the feedback forms received from conference delegates showed a continuation in the high levels of satisfaction with NZCS conferences (see Figure 3). Several people noted the value of the conference for networking and keeping up to date with coastal issues around New Zealand. People also enjoyed the wide variety in presentation topics. Suggestions for improvement, however, did include requests for both increases in papers on coastal planning and coastal engineering. The NZCS management committee will be considering such matters as we plan for future conferences.

Congratulations to Malcolm Green of NIWA for being awarded the best conference presentation and to Shari Gallop of Waikato University for best student award.

Thanks to the conference sponsors for their continuing support and to the conference organising committee for all their hard work.

A report with analysis of the conference feedback forms is available on the NZCS website (www.coastalsociety.org.nz).

Figure 1: Attendees of the 2008 NZCS Conference hear how the New Plymouth coastal walkway was created.

Figure 2: Urenui Beach was one of the sites visited during the NZCS 2008 Conference.

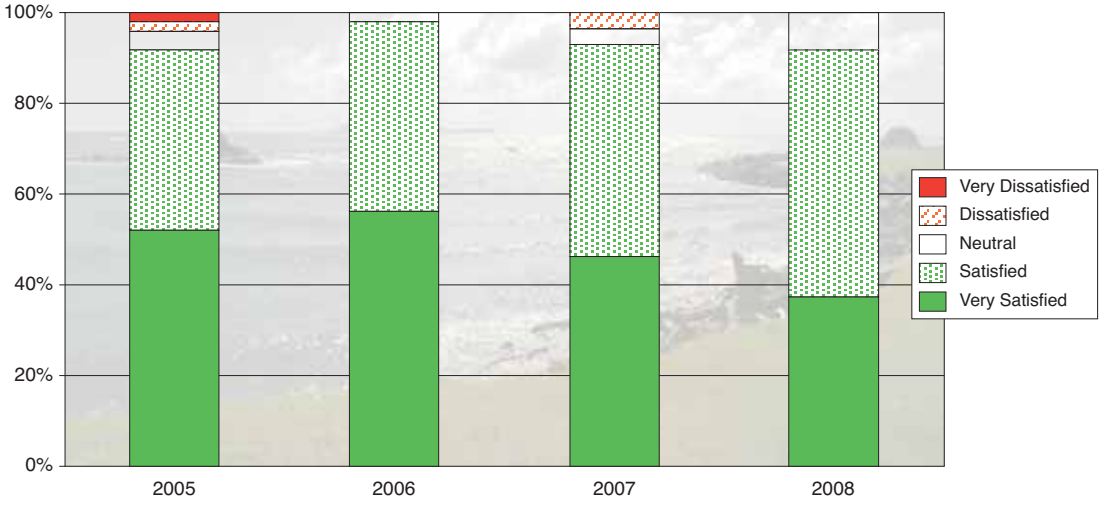


Figure 3: Satisfaction with NZCS conferences since 2005

TE PAPA TONGAREWA, MUSEUM OF NEW ZEALAND, **16-18 September 2009**

Have you registered for Coasts and Ports 2009 yet?

Early bird registrations close on July 17

The Australasian Coasts and Ports Conference is the pre-eminent forum in the Australasian region for industry professionals from all disciplines to join together and discuss issues related to our coasts and ports.

This biennial conference series represents an amalgamation of the Australasian Coastal and Ocean Engineering, Australasian Ports and Harbour and New Zealand Coastal Society conferences. It will bring together engineers, planners, researchers and all those working together on coastal and port matters in this part of the world.

In 2009 the conference will be held for the first time in Wellington, at Te Papa Tongarewa, Museum of New Zealand, from 16–18 September 2009.

The three day conference programme will embrace discussions around the challenges of environmental change, innovations in maritime industries and policy and planning for dynamic environments.

Conference sessions will be complemented with field trips, an Industry Exhibition and will feature a Welcome Reception and Exhibition Opening on Tuesday 15 September and a Gala Dinner on the following night for the 300 national and international delegates to enjoy some of Wellington's world-renowned hospitality.

Keynote Speakers

- Associate Professor Ron Cox
  School of Environmental Engineering, University of New South Wales
- Gary La Grange
  President and CEO, Port of New Orleans
- Tarmo Soomere
  Professor of Coastal Engineering Tallinn University of Technology, Tallinn, Estonia

For more information and to register online visit

www.coastsandports2009.com

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. Further information about the Society is available on the Society's website www.coastalsociety.org.nz.

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

Coastal News

ELCOROCK: An Innovation in Environmental Foreshore Management Solutions

Local governments across New Zealand and Australia are responsible for managing their coastal foreshore reserves to protect the environment and permit an increasing level of public access and use. Coastal erosion is a major problem, and how local governments and asset-owners protect their shoreline is becoming a highly sensitive and emotionally charged issue throughout New Zealand, Australia and internationally.

We are seeing the local community demand local councils apply innovative solutions that maintain the foreshore areas and balance the environmental concerns with the need for ongoing high level of public access and use.

For over 20 years, Maccaferri and the Geofabrics group have been developing their ELCOROCK shoreline protection system as a niche solution that is ideally suited to high public access and use foreshore areas.

The ELCOROCK shoreline protection system is comprised of extremely robust sand filled containers that are installed in a controlled manner to form a stable, durable structure in turbulent coastal environments. The ELCOROCK system is specifically designed for use in the coastal and marine environments and the durability, permeability, stability and flexibility of the containers provide an excellent solution for constructing sea walls and groynes.

An extensive research and development programme at University of New South Wales, Water Research Laboratory with scale model wave testing now means data and guidelines are available to consultants to design structures for various wave environments.

Whilst the ELCOROCK shoreline protection system will not replace traditional rock systems in every application or location, it as several advantages over rock including:

- providing a "softer" solution that dramatically improves the amenity of the beach or foreshore
- reducing the beach contamination from the rock walls
- using site won materials which reduces the volume of imported materials (thereby reducing the volume of truck traffic to the site – an important consideration along most urban foreshores).

A growing number of New Zealand and Australian foreshore and marine projects have successfully utilised the ELCOROCK shoreline protection system which include seawalls, groynes and river training works. On these projects ELCOROCK has enhanced the public use and amenity of the area for the local community as well as creating a foreshore that will resist coastal erosion over the long-term.

Distributed by in New Zealand by Maccaferri NZ Ltd (www.maccaferri.co.nz)

For more information regarding ELCOROCK please contact Simon Moran, 0800 60 60 20.

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

Beca · CPG · OCEL · Environment Canterbury · Environment Waikato Regional Council · Maccaferri · NIWA Taihoro Nukurangi · Northland Regional Council · Taranaki Regional Council · Tonkin & Taylor