Coastal News

Te Hunga Takutai o Aotearoa

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Torngat: Inuit Communities and Arctic Science

NIWA Coastal Scientist Andrew Swales gains insights into the similarities and differences in working with indigenous people on research and monitoring work. Photos by Andrew Swales.

Last year Coastal Scientist and Manager of NIWA's Coastal and Estuarine Processes Group Andrew Swales was invited to join a two-week research cruise in the fjords of Torngat Mountains National Park (TMNP) in Northern Labrador, Canada. The invitation was motivated by NIWA's development of the Estuary Monitoring Toolkit for Maori (Nga Waihotanga Iho). Although the toolkit is based on scientific principles, it is also underpinned by Maori values. The objectives of Nga Waihotanga Iho are to:

1) empower Maori in the resource-management process;
2) provide easy-to-use, inexpensive and robust tools for Maori and community groups; and
3) provide an educational resource for high-school students.

"The Nunatsiavut Inuit of Northern Labrador are very involved in environmental research and monitoring within the national park," says Andrew. "While we may be nearly polar opposites geographically it was apparent to scientists there and those of us developing the toolkit here that there would be many synergies in the work we were doing.

"The objectives of the Estuary Monitoring Toolkit also share similarities with the aspirations of the Nunatsiavut people to take an active role in monitoring the environmental health of their natural resources. This includes providing opportunities for Inuit youth to fully participate in the research and take part in cross-cultural experiences that integrate Inuit culture, environmental science and education in ways that will ultimately influence their career and life paths."

Cooperatively managed

"One of the biggest insights for me on this research trip was finding that Canada is in many ways further down the track in involving indigenous communities in environmental research and monitoring," says Andrew. "This appears to be because of the level of resourcing being much higher in Canada, but also perhaps because of the structure of an autonomous government for Inuit."

Established in 2005, TMNP extends about 200 km along the northern tip of the Labrador coast and consists of a series of deep bays and fjords backed by the Torngat Mountains, which rise to 1700 m above sea level. The park is also 100 km north of treeline and vegetation includes low-lying meadows of mosses, lichens and shrubs. The park is home to caribou, wolves, black bears, polar bears, ringed and bearded seals, minke whales and more.

Canada's newest national park, TMNP is cooperatively managed between Parks Canada and the Labrador Inuit. A 40-year journey, the park came about as part of a comprehensive agreement that includes a final settlement of the aboriginal rights of the Labrador Inuit. This includes recognising Labrador Inuit's relationship with the land and ecosystems, as well as provisions that allow Inuit to continue traditional activities and uses within the park. Scientists working in the TMNP, and

elsewhere in the Canadian Arctic, are funded by ArcticNet, a Canadian-government sponsored programme that brings together scientists and Inuit communities, government agencies and the private sector to study the impacts of climate change in the coastal Canadian Arctic.

The role of research and monitoring

"The best way to share ideas is to roll up your sleeves and get involved," says Andrew. "That meant I joined the research team in most aspects of their work – from seabed habitat mapping to sediment coring. Much of our work also focused on establishing baseline data to inform future studies on the effects of environmental change of ringed seals."

Despite the area's isolation, polychlorinated biphenyls (PCBs) are found in marine sediments and fisheries, including local seal populations. As well as atmospheric deposition, a major source of PCBs is the cold-war radar base located on the southern boundary of the park at Saglek Fjord. Although PCB levels in marine sediments have declined substantially over the last 20 years, the levels are still high enough to be a risk to human health.

Ringed seals are particularly vulnerable to persistent organic pollutants such as PCBs. As well as playing a vital role in the arctic marine ecosystem, ringed seals are an important food source for Inuit so gauging PCB levels in the ringed seal population and sharing that information is critical.

Research vessel MV What's Happening.

Members of the research expedition including Inuit high school students involved in a successful summer research programme.

Lessons learnt

The three things that struck Andrew most during his time at the park include:

1) Projects require adequate funding to ensure training and uptake of environmental monitoring methods.
2) There is a genuine desire to participate in environmental science and management particularly if projects are largely directed by the community or within an equal co-management relationship.
3) Education is valued. Within communities there is a focus on educating young Inuit so that they can take up future leadership roles in governance. ArcticNet has been very successful at encouraging young Inuit into higher education. This is fostered by tribal leaders selecting promising students to participate in the summer research programme (two groups of high school students joined Andrew's group while they were in the field for research work). A number of these students are now enrolled in universities, studying environmental science, law and political studies.

"It became even clearer to me that for monitoring and research to be successfully taken up the information needs to be valued and effective mechanisms must be in place for training and supporting indigenous communities. Equally important, indigenous communities need to be involved from the very beginning and take leadership roles in the work.

"From a professional and personal perspective it was a great opportunity. I would particularly like to thank Dr Sam Bentley, Memorial University of Newfoundland (MUN), who invited me and made the trip possible. Other research trip members included Tanya Brown (ArcticNet Programme Manager), Dr Ralf Bachmayer of MUN and MUN graduate students Mallory Carpenter and David Shea. Our research vessel was the MV *What's Happening*, a 20-m crab boat which is operated by Joey Angnatok. Joey is a Nunatsiavut Inuit community leader and actively involved in the research. His family members Leo and Dorothy Angnatok also served as crew on the trip."

Editor's note: Dr Sam Bentley joined the Department of Geology and Geophysics at Louisiana State University in December 2010.

TMNP is home to polar bears and other arctic wildlife.

Life's a Beach

NZCS Conference 2011

Photo Eric Verstappen

Join us for the 19th annual NZCS Conference, 'Life's a beach: enjoying coastal resources now and into the future'. The conference is scheduled from Monday to Wednesday, 7-9 November. This year's conference will be held beachside in Nelson at the Tahuna Beach Holiday Park. A pre-conference field trip to Abel Tasman National Park and evening icebreaker are scheduled for Sunday, 6 November.

In the past 12 months we have had numerous reminders of how dynamic the coastal environment is. There are also growing demands on many of our coastal areas to provide for industry, recreation, kaimoana and places to live. As coastal practitioners we have a critical role in managing and balancing conflict, which requires robust information about communities and the physical environment. The NZCS conference provides an opportunity to learn more about current research and coastal management approaches, as well as to discuss solutions to some of New Zealand's most challenging coastal issues.

At this year's conference we'll feature topics ranging from coastal hazards to climate change to coastal and marine planning. In addition to great presentations there will be plenty of opportunity to network with colleagues.

The NZCS annual conference is timed to dovetail with the New Zealand Aquaculture Conference (also in Nelson, 9-10 November).

Registration

Early-bird registrations begin 10 August. Regular registration beings 30 September. Registration costs are shown below.

Call for abstracts

We are now calling for abstracts for NZCS Conference 2011. Visit www. coastalsociety.org to learn more or email Amy Robinson at amy.robinson@waikatoregion.govt.nz

Abel Tasman National Park field trip

A pre-conference field trip to Abel Tasman National Park is scheduled for Sunday, 6 November. The trip will include visiting Torrent Bay where a successful beach replenishment project has garnered support from local iwi, environmental interests, and the wider community.

www.coastalsociety.org.nz

Earlybird	**Earlybird member** *(includes Icebreaker evening, half-day fieldtrip and conference dinner event)*	$350.00
	Earlybird non member *(includes Icebreaker evening, half-day fieldtrip and conference dinner event)*	$450.00
	Earlybird student *(includes Icebreaker evening, student breakfast, and half-day fieldtrip – dinner tickets available at extra cost)*	$125.00
Full	**Full registration member** *(includes Icebreaker evening, half-day fieldtrip and conference dinner event)*	$400.00
	Full registration non member *(includes Icebreaker evening, half-day fieldtrip and conference dinner event)*	$500.00
	Full student registration *(includes Icebreaker evening, student breakfast, and half-day fieldtrip – dinner tickets available at extra cost)*	$175.00
Day	**Monday registration**	$200.00
	Tuesday registration *(includes half-day fieldtrip and conference dinner event)*	$250.00
	Tuesday registration *(excluding half-day fieldtrip and conference dinner event)*	$150.00
	Wednesday registration	$200.00

Coastal News

Community Involvement in Coastal Management
– Impressions from the EDS Conference

by Michael Steenson, Masters Thesis Student,
Department of Geography, University of Canterbury

The recent Environmental Defence Society conference 'Coastlines – Spatial Planning for Land and Sea' was designed to explore current coastal and marine management thinking and processes in New Zealand, identify knowledge and legislative gaps and provide suggestions for future management. International and local speakers provided insight into these areas.

Community involvement in 'collaborative' style coastal management was a recurrent theme throughout the conference. An important conclusion from the conference was that New Zealand currently lacks adequate means to involve local communities in coastal management. It was highlighted that communities are typically consulted after plans have been drawn up rather than being involved in a collaborative decision-making process.

International examples of coastal management were presented via webcast. Amy Holmes, from Marine Policy and Planning in the United Kingdom's Department of Environment, illustrated the UK attempt at a comprehensive oceans reform. It was a 'bottom-up' stakeholder-led process which had a very clear methodology set in place to give the community a say. John Weber, of the Massachusetts Office of Coastal Zone Management, also presented his experience of marine spatial planning in Boston, MA. He advised New Zealand practitioners to "go to extraordinary lengths to involve stakeholders in management".

New Zealand examples of community collaboration were also highlighted during presentations. Amelia Linzey, Technical Director of Planning for Beca, reflected on community projects she was working on and commented that she was amazed at the local enthusiasm and willingness to be a part of planning. Leigh Robcke, District Plan Manager for the Thames-Coromandel District Council, also talked about a high level of willingness by the community in this district, noting the awareness the community had regarding the impacts of development on coastal environments.

New Zealand coastal management is structured in a top-down fashion. Centrally devised initiatives are expected to be addressed at regional levels, but the diversity of solutions enacted within and between the regions exposes the lack of a clear methodology for involving local stakeholders. This conference highlighted the need to shift our national approach to coastal management, from a top-down, government-led process to a stakeholder-led process with, as Dr Russel Norman of the Green Party said, "bottom-line ecological limits".

Michael can be contacted at michael.steenson@pg.canterbury.ac.nz.

Back Issues

All issues of *Coastal News* are available on the NZCS website (www.coastalsociety.co.nz). You will need to log in to access the latest issue, but back issues (from Issue Number 6, April 1996) are freely available.

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For any enquiries regarding *Coastal News* articles, please contact NZCS Editor **Shelly Biswell (shelly@biswell.net)**.

Word from the Chair

by Deirdre Hart, Chair, NZCS

As coastal managers, planners, engineers, scientists and enthusiasts we face significant challenges in sustaining the many values and balancing the competing uses that define our coastal resources. We specialise in working at a physical and, often, economic and statutory crossroads. What are boundaries and edges to other environmental practitioners are core business to us. Our challenges are layered at local, national and international levels, via individual, community, public and private interests. Coastal community challenges in New Zealand in 2011 include:

- the imperative to recover and learn transferable lessons from the 2010-2011 Canterbury earthquakes and Fukushima-Miyagi disaster;
- to implement the New Zealand Coastal Policy Statement 2010 in light of the Marine and Coastal Area te Takutai Moana Act 2011 and deferment of the Marine Reserves Bill; and
- to engage with current national and international momentum around marine spatial planning and oceans governance, and freshwater resource allocation.

Coastal effects of Canterbury's 2010-2011 earthquakes

On a personal level, the first of these challenges looms large. The effects of the Canterbury earthquakes on the Christchurch coast and coastal suburbs have been extensive, complex, and devastating for residents. For example:

- Raw sewerage discharges to rivers, the estuary and coast have resulted from widespread failure of the city's sewerage system, making the city's beaches off limits for recreation.
- Many coastal and riverside properties have experienced loss of their potable water and sewerage infrastructure since September 2010, 11 months ago.

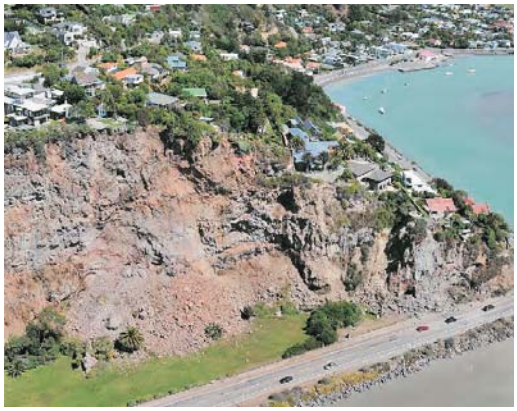
The Lyttelton Lighthouse, post quake. Photo Jillian Frater.

Rapanui Rock, at the entrance of the Avon Heathcote Estuary, after its collapse during the February earthquake. Photo Schwede66, Wikimedia Commons.

- Many roads into and out of the city's coastal suburbs have experienced closures and are impassable to traffic, hampering ongoing evacuations, rescue and recovery efforts not to mention habitation in these areas.
- Slumping has caused twice-daily, high-tide flooding of coastal reaches of some rivers.
- The estuary's saltmarsh communities and lower river reaches are experiencing ecological shifts in response to subsidence, uplift and silt contamination and smothering by liquefaction.
- Port of Lyttelton infrastructure experienced major damage during the earthquakes. Moves to repair and newly extend the port facilities include the government fast-tracking a 10-ha reclamation using 1 million tonnes of the city's estimated 8.5 million tonnes of earthquake rubble. Around 42,000 tonnes of rubble was dumped on the reclamation site during the earthquake civil emergency phase.
- Government maps released on 23 June 2011 reveal a predominance of riverside and coastal suburbs with areas zoned red, where land repair has been deemed 'prolonged and uneconomic' and residents are strongly encouraged to accept a buy-out deal to abandon their properties. These include parts of the coastal suburbs of Burwood, Avonside, Bexley, Travis, and New Brighton as well as beachside settlements north of the city such as Brooklands and Kairaki. To the south, parts of Sumner, Lyttelton and the coastal hill suburbs are likely to join this list after further assessment.

If these effects can be summarised in one message for practitioners, it is that significant vulnerabilities to such events exist in our coastal planning, management and infrastructure systems. Given that New Zealand is a country highly prone to a range of natural hazards, with a population concentrated around the coast, it is essential that coastal professional and residential communities throughout

Small rock and debris falls on ~100 m high cliff below Searidge Lane at Sumner Head, Scarborough. Photo GNS.



Rock falls on cliff (a former quarry site) below Kinsey Terrace on the Main Road between Sumner and Moncks Bay (right). Photo GNS.

New Zealand analyse and take on board the coastal lessons learnt from Canterbury's earthquakes.

NZCS Conference 2011

Some of the abovementioned challenges are alluded to in the theme of the 2011 New Zealand Coastal Society conference: 'Life's a beach: enjoying coastal resources now and into the future'. Via a new structured format with both invited and member presentations, conference sessions will address topics such as coastal hazards, climate change, and coastal and marine planning, as well as exploring new technologies and approaches available for coastal monitoring.

More lightheartedly, the conference theme also reflects the venue location, beachside in sunny Nelson, the regional gateway to Abel Tasman National Park, where economy and culture are strongly linked to the quality of the coastal environment. Conference opportunities will include a full-day Abel Tasman field trip and, with our event scheduled to dovetail with the Aquaculture New Zealand conference, registrants will have the option of attending both events. Thank you to the NZCS management and conference committees for their efforts in bringing this event to life.

Membership activities

The NZCS annual conference, along with the *Coastal News* publication, email digest, the website and regional events, fulfil the society's main function: to bring together and foster networking, and information and best practice exchange amongst those with an interest in the New Zealand coast. Who are the society's members, what do we do, and what do we want from NZCS in the future?

In order to build a clearer picture of our membership and its needs, members will soon receive a short electronic survey, categorising the spread of professions and disciplines represented by NZCS. This survey will also provide an option to receive future *Coastal News* publications in electronic form alone, one of a few new moves towards greater environmental accountability. Thanks to Cushla Loomb and Kath Coombes for their energy and enthusiasm around these initiatives.

Also on the membership front, the NZCS management committee will soon add a student representative. Students comprise a significant and growing proportion of NZCS members. Having a voice on the management committee will ensure that these emerging coastal professionals are appropriately engaged, encouraged and supported in their coastal endeavours by the society. Our annual student scholarship round is now open for Masters and PhD level applications and includes new and improved judging criteria. Thank you to Karin Bryan and Amy Robinson for these initiatives.

Following a proposal from Andrew Swales, the management committee is also exploring options for supporting non-student members in their professional development – more news on this topic at the society's AGM in Nelson.

Finally, I hope you find this issue of *Coastal News* enjoyable and useful. Remember that submissions for future issues are open now via our website, with queries to be directed to the editor, Shelly Biswell, via shelly@biswell.net.

As *Coastal News* was going to press we learned of the untimely death of our colleague and friend Dr Alastair Senior. Alastair was a Coastal Engineer at Tonkin & Taylor and had previously worked at DHI and NIWA on numerous coastal projects and issues. As co-coordinator for the Auckland Region, Alastair was an active member of NZCS. His loss will be keenly felt in the New Zealand coastal community. All of us at NZCS would like to extend our condolences to his family, friends, and work colleagues.

Contributing to Coastal News

Coastal News welcomes contributions for each issue. Please contact Shelly Biswell at shelly@biswell.net if you'd like to submit a news brief or article. The submission deadline for the next issue of *Coastal News* is 15 September 2011.

A New Technique for Examining Palaeotsunamis Arrives on New Zealand Shores: the Anisotropy of Magnetic Susceptibility

by Christopher Gomez and Deirdre Hart, University of Canterbury, College of Science, Department of Geography

The small tsunami that reached the coasts of New Zealand on 30 September 2009 was a gentle reminder of one of the key risks that coastal communities face. In order to quantify and effectively manage this risk, it is essential to improve our understanding of tsunami triggering processes, return periods, intensities and origins. One of the ways to do this is to analyse the deposits left by palaeotsunamis on New Zealand coasts and palaeo-coasts.

Up until very recently, advancing our understanding of palaeotsunami deposits was limited by the scientific methods applied. A substantial leap forward, however, was made with the adaptation of the anisotropy of magnetic susceptibility (AMS) method to the study of sandy deposits left by the 2004 Banda Aceh tsunami. The AMS method of studying hard rocks has been around since the 1970s but we have modified its protocol to apply to sandy deposits. This methodological development was implemented in the aftermath of the 2004 Boxing Day tsunami by a collaborative team of French researchers, including Dr Patrick Wassmer of the University of Strasbourg and Dr Christopher Gomez who has recently shifted to the University of Canterbury (Wassmer et al., 2010; Wassmer and Gomez, in press).

The AMS technique uses magnetic field measurements through sand deposits to determine the structure and orientation of the grains (Fig 1). In combination with grain-size analysis, the information gathered on grain tilting and orientations can be used to determine the characteristics of the depositing waves, including flow directions (for example, were they flowing from seaward or washing back from land, what was their exact direction, and can we observe reflection patterns using spatially differentiated samples); wave energy levels; and the number of waves that constructed the deposits. Results of the Wassmer et al. (2010) and Wassmer and Gomez (in press) research reveal that the Boxing Day tsunami deposits were placed mainly inside artificial or natural depressions and were unaffected by backwash currents. These deposits recorded structural, grain-size and magnetic fabric characteristics that illustrate the effects of the successive tsunami surging waves. The AMS technique proved to be particularly useful where no visible sedimentary structures were present.

This tool holds great promise for researching tsunami orientations, energies and origins in New Zealand. Moreover, AMS analysis is low cost relative to other sediment analyses and can easily be applied across multiple samples and sites.

We are currently working towards applying this methodology in New Zealand to provide local coastal communities with a more complete and comprehensive understanding of palaeotsunamis in their region and to help improve tsunami hazard and risk planning.

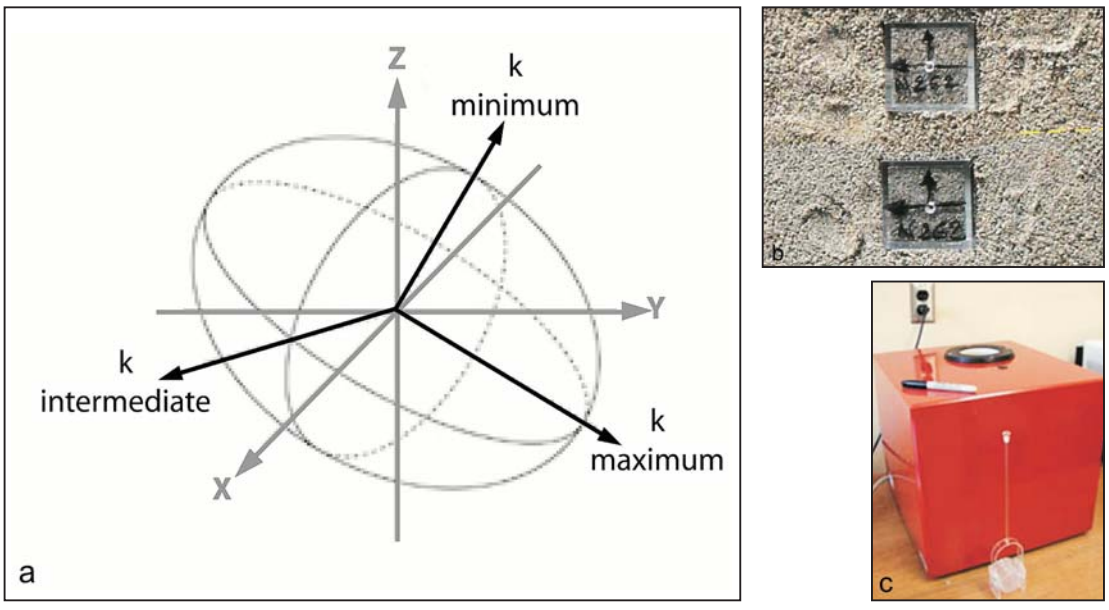


Figure 1

Christopher Gomez is a lecturer in environmental hazards at the University of Canterbury. He works within the Natural Hazards Research Centre and in multidisciplinary international teams (Japan, Indonesia, USA and France). Christopher can be contacted at christopher.gomez@canterbury.ac.nz.

References

Wassmer, P; Schneider, J L; Fonfrege, A V; Lavigne, F; Paris, R; and Gomez, C, 2010. "Use of anisotropy of magnetic susceptibility (AMS) in the study of tsunami deposits: Application to the 2004 deposits on the eastern coast of Banda Aceh, North Sumatra, Indonesia", *Marine Geology 275*, 255-272.

Wassmer, P and Gomez, C, 2011. "Development of the AMS Method for Unconsolidated Sediments, Application to Tsunami Deposits", *Geomorphologie: Relief, Processus, Environnement* (in press).

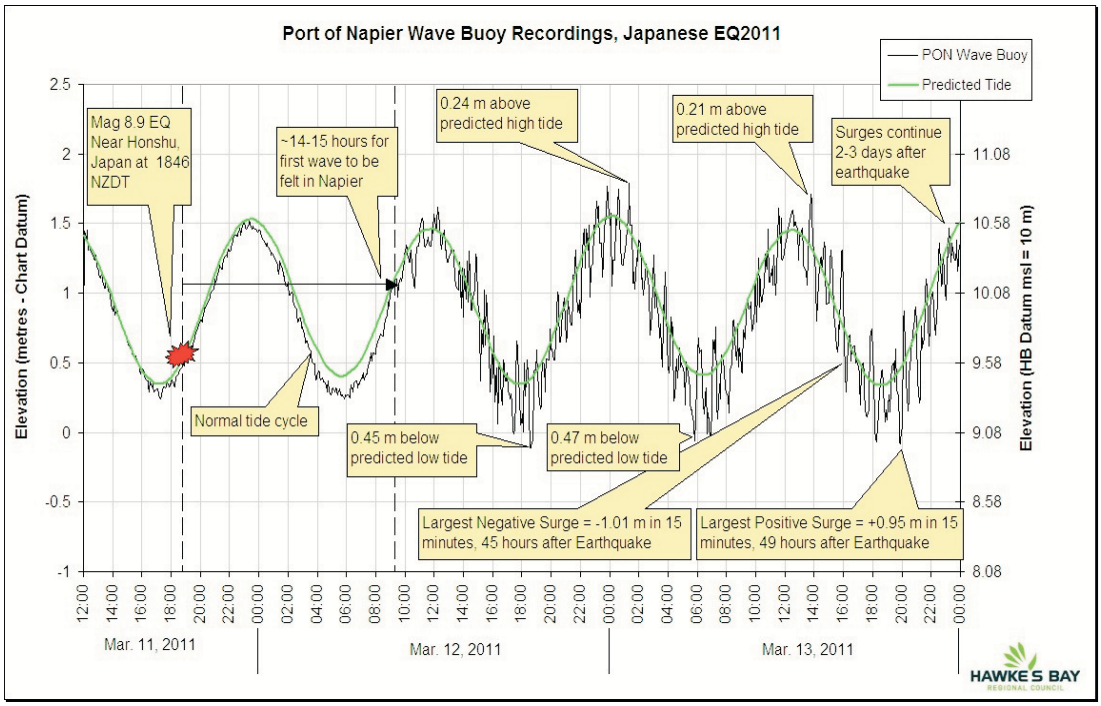
Snapshot of Regional Responses to Tohuku Tsunami

The magnitude 9.0 (Mw) undersea megathrust earthquake that generated the locally devastating tsunami in Japan also triggered New Zealand Civil Defence Emergency Management responses.

In Hawke's Bay, the Ministry of Civil Defence estimated a wave of ‹0.2 m around 0817 NZDT 12 March 2011. The graph below shows the predicted water (tide) levels versus those measured at the Port of Napier's wave buoy. Although the first arrival of the tsunami barely registered at the wave buoy, in the 24 – 72 hour period following the quake the wave buoy recorded significant surges with a 40 minutes period (peak to peak) and 0.75 m peak to trough vertical change. These delayed effects were believed to be due to wave seiching.

In Waikato the event generated a tsunami alert along both coasts of the region. The wave signal was observed across the region, showing maximum wave heights of 0.36 m in Kawhia Harbour (west coast), 0.5 m at Tararu (Firth of Thames) and 1.61 m at Whitianga Harbour. A number of properties were flooded in Port Charles, north-eastern Coromandel Peninsula, as a result of the tsunami.

Contributed by Neil Daykin and Amy Robinson.



Tide vs Wave Buoy Recordings, Port of Napier.

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 has over 300 members, including representatives from a wide range of coastal science, engineering and planning disciplines, 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 (email: nzcoastalsociety@xtra.co.nz).

Time for a Fresh Look at Coastal Shingle Beaches

by Adam Forbes, Ecologist, MWH New Zealand Limited

In recent years scientists and others have actively raised the profile of shingle beaches and their classification as a type of historically rare ecosystem. Shingle beaches are comprised primarily of a mixture of sand, water-smoothed gravel and cobbles. Shingle is usually deposited at these locations by rivers or eroding coastal cliffs.

The shingle beaches of Hawke's Bay appear to be perceived by many people as uneventful, unglamorous areas of little value and lacking the appeal and relative high profile of their sand dune counterparts. Despite this perception, however, recreational use abounds, with 4WD access, fishing, surfing, dog walking, bonfires and other such activities being particularly common.

Studies of the shingle beaches of Hawke's Bay around the Awatoto, Haumoana and Te Awanga area are revealing the ecological values of these particular shingle beaches. The beaches have been found to support rich fauna values and notable flora. Ecological values are even greater where these shingle beaches are backed by wetlands, such as those which occur in this area at the Muddy Creek wetland complex and along the back of the beach near Haumoana.

Of particular note these shingle beaches support localised breeding populations of the nationally threatened endemic black-billed gull, the vulnerable banded dotterel and black-fronted dotterel. Caspian tern roost on the shingle substrates, and during winter the shingles provide habitat for the threatened endemic black-fronted tern which migrate from South Island braided riverbeds to this and other overwintering sites. As well as these threatened bird species, many common native and introduced birds also add to the biodiversity values of this rare ecosystem.

The at-risk spotted skink is at the northern most extent of its known range in this location and common skink is present in low numbers.

Invertebrate values are slowly becoming better understood, with a notable recent collection being *Maaminga marrisi*, which is one of only two species of a newly discovered endemic wasp family – the *Maamingidae* family. This newly described parasitoid wasp family is currently known only from a small number of sites in New Zealand.

The beaches are home to the commonly occurring ngaio and taupata. The threatened *Muehlenbeckia ephedroies* was present until the 1990s when it was destroyed during heavy storms. The native shore bindweed with its attractive mauve-coloured trumpet flowers readily colonises shingle areas not disturbed by vehicles.

On face value it is perhaps easy to underestimate the ecological values shingle beaches support. Given the rarity of this ecosystem, along with the diversity of common and threatened flora and fauna found on these beaches, however, the Awatoto, Haumoana and Te Awanga area is surely a prime candidate for carefully planned legal and physical protection. Given the generally high public profile of these sites, opportunities for education can also be realised.

To better reach its ecological potential key management actions for this area include legal protection, prevention of vehicle access, and prevention of uncontrolled dogs. Careful thought should be given to the targets, design and long-term viability of predator control. Further inventory studies would also help better understand the values in this area and at other shingle beaches regionally and nationally.

Adam can be contacted at adam.s.forbes@nz.mwhglobal.com.

The shingle beaches around the Awatoto, Haumoana, and Te Awanga area meet the criteria for shingle beach. Photo Adam Forbes.

Tukituki Estuary and beach. Photo Adam Forbes.

News Briefs

Lyttelton Port Reclamation Fast-tracked

The Government has approved the fast-tracking of a 10-ha reclamation of Lyttelton Port using rubble from Canterbury's earthquakes.

Around 42,000 tonnes of earthquake rubble was deposited on the site of the reclamation during the civil emergency phase of the earthquake recovery authorised by the National Controller. This consent will enable approximately 1 million tonnes of rubble to be used for the reclamation.

The Government has given powers to Environment Canterbury and the Christchurch City Council to process the consent on a non-notified basis, subject to specific consultation with the Lyttelton-Mt Herbert Community Board, Ngai Tahu, the Department of Conservation, the NZ Historic Places Trust, Maritime New Zealand, and the Lyttelton and Diamond Harbour community associations.

Environment Minister Dr Nick Smith said at the announcement, "This fast-tracked consent process is for the purposes of supporting Port Lyttelton's existing trade and the recovery. The port has lost 30 per cent of its operational space from earthquake damage and 14 ha of the container terminal will need to be repaired at least twice over the next three to five years due to ongoing settlement caused by the earthquakes. Inland capacity will also be required to support the supply chain of materials needed for Canterbury's rebuild.

"The Order in Council specifically excludes the new reclaimed area being used for coal storage or handling. This is a contentious issue with some residents and, if Port Lyttelton wishes such a future use, it will need to go through the normal resources consent process."

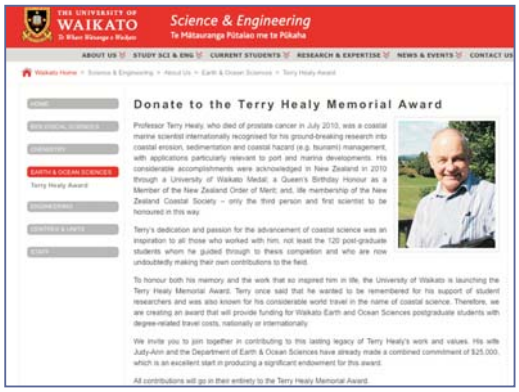
Terry Healy Memorial Award Established

Professor Terry Healy, who died of prostate cancer in July 2010, was widely regarded as New Zealand's pre-eminent coastal marine scientist. His considerable accomplishments were acknowledged last year through a University of Waikato Medal; a Queen's birthday honour as a Member of the New Zealand Order of Merit; and life membership of the New Zealand Coastal Society – only the third person and first scientist to be honoured in this way. Over his 38-year tenure at the University of Waikato's Department of Earth and Ocean Sciences, starting in 1973, Terry made an enormous contribution on many levels.

To honour both his memory and the work that inspired him, the University of Waikato has launched the Terry Healy Memorial Award. Terry once said that he wanted to be remembered for his support of student researchers and was known for his considerable world travel in the name of coastal science. In that vein, the University of Waikato has created an award to provide funding for Waikato Earth and Ocean Sciences postgraduate students with degree-related travel costs.

The University of Waikato, Terry's wife Judy-Ann, and the Department of Earth and Ocean Sciences have already committed a combined contribution of $25,000.The New Zealand Coastal Society has also contributed $5,000 to this lasting legacy of Terry's work and values.

Others who are interested in making a donation or pledge can do so through the University of Waikato's secure online facility at waikato.ac.nz/foundation quoting the reference Terry Healy. All donations will be channelled through the University of Waikato Foundation, which is registered in New Zealand with the Charities Commission.



Environmental Protection Authority

New Zealand now has a standalone Environmental Protection Authority (EPA). The EPA is responsible for several activities under different legislations including processing matters of national significance under the Resource Management Act. The authority also regulates the introduction and use of hazardous substances and new organisms under the Hazardous Substances and New Organisms (HSNO) Act. From January 2012 the EPA will administer the Emissions Trading Scheme and New Zealand Emission Registry under the Climate Change Response Act.

The EPA was established under the Environmental Protection Authority Act in May 2011 and became operational 1 July 2011.

Environmental Protection Authority
Te Mana Rauhī Taiao

EPA Board members include Kerry Prendergast (Chair), David Faulkner, Anake Goodall, Tim Lusk, Graham Pinnell, Taria Tahana, Richard Woods, and Gillian Wratt.

Legislation for Environmental Protection for Oceans

The Government proposes legislation to manage the environmental effects of activities like petroleum exploration and mining within New Zealand's Exclusive Economic Zone (EEZ) and Extended Continental Shelf (ECS).

The Exclusive Economic Zone and Extended Continental Shelf (Environmental Effects) Bill will provide for:

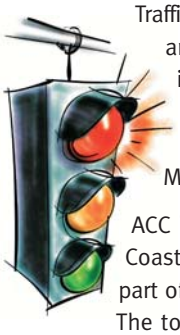
- the new Environmental Protection Authority to be responsible for consenting, monitoring and enforcement;
- activities to be classified as either permitted, discretionary (requiring a consent) or prohibited;
- public notification and consultation required for all regulations and consents;
- an environmental impact assessment on all consents;
- a general duty to avoid, remedy or mitigate adverse environmental effects;
- a joint application process where activities span the EEZ and territorial sea;
- enforcement penalties aligned with the Maritime Transport and Resource Management Acts.

The Bill is expected to be introduced to Parliament soon.

Seaward Boundaries Standardised

The seaward boundaries of 23 territorial authorities have been standardised to the mean low water springs (low tide mark) to provide nationally consistent seaward boundaries for all 53 coastal authorities. Prior to the change, 30 authorities had jurisdiction to the mean low water springs, and 23 had jurisdiction to the mean high water spring. This left these 23 councils with no jurisdiction to regulate activities on the full beach area.

Red Light – Green Light on Some Coastal Bars



Traffic lights on dangerous coastal bars are to be trialled as part of a joint injury prevention initiative from ACC, Coastguard New Zealand, Surf Life Saving New Zealand and Maritime New Zealand.

ACC has invested $100,000 in the Coastal Bar Risk Management Tool as part of its drowning prevention strategy. The tool analyses information from incidents and near misses at specific coastal bars. An example of mitigation relative to conditions is a traffic light warning system that could be viewed by boat users on shore and at sea to indicate whether conditions were safe (green), hazardous (orange) or dangerous (red) based on wave, flow, tidal and weather information.

The new tool is to be trialled on the Buller and Waimakariri river mouths in 2012 and 2013. ACC has contracted Coastguard New Zealand to evaluate another 30 sites around New Zealand for potential use of the tool.

NZCS Regional Coordinators

Every region 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

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Taranaki	Erin Zydervelt	erin.zydervelt@trc.govt.nz
Wellington	Iain Dawe	iain.dawe@gw.govt.nz

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Otago	Mike Hilton	mjh@geography.otago.ac.nz
Southland	Ken Murray	kmurray@doc.govt.nz

Regional News

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Auckland Region

Hugh Leersnyder, Regional Coordinator

Hauraki Gulf Forum

The Hauraki Gulf Forum's third State of the Environment report is to be released at a public seminar to be held at the Auckland Museum on 9 August 2011. The report summarises the current environmental state of the gulf based on an analysis of data from a range of biophysical indicators collected by the forum's contributing agencies. It concludes that the gulf's environment is experiencing continual degradation, highlighting the gap between current and desired states. Further integrated management across a range of environmental issues is seen as necessary to protect and enhance the values of the gulf's environment.

The report highlights the need to control nutrient, contaminant and sediment discharges; extend the network of blue, green and regenerating areas; enhance fish stocks and protect ecosystems from the effects of fishing; and to develop an ecosystem-based research and management framework that values ecosystem services and assets.

Spatial Planning

Staff of the Auckland Council and Waikato Regional Council have signalled their intention to initiate a scope to determine how marine spatial planning might be carried out for the Hauraki Gulf. This follows the Hauraki Gulf Forum's publication of the report *Spatial Planning for the Gulf: an international review of marine spatial planning initiatives and application to the Hauraki Gulf*. Results of the scoping assessment will be reported back to the two councils and the forum.

Matiatia Bay

An application for resource consent for a 160-berth marina in Matiatia Bay on Waiheke Island was lodged with the Auckland Council in April 2011. Demand for moorings around Waiheke is reported to exceed supply, leading to interest in the development of marina facilities. The application is currently on hold pending the provision of further information. The applicant, Waiheke Marinas Ltd, expects the council to publicly notify the applications.

Auckland's Tsunami – Where will it come from and are we ready?

On 3 August NZCS and IPENZ presented 'Auckland's Tsunami – Where will it come from and are we ready?' Tsunami scientist Dr Jose Borrero and civil defence expert Clive Manley discussed the risk and impacts of tsunamis and Auckland's preparedness for such events.

Jose, who is working with the Raglan-based consultancy ASR Ltd and is an adjunct professor with the University of Southern California Tsunami Research Center, discussed the cause and effects of tsunamis. Clive, who is the Auckland Civil Defence Controller and Manager of Civil Defence and Emergency Management for the Auckland Council, discussed how prepared Auckland is for a tsunami.

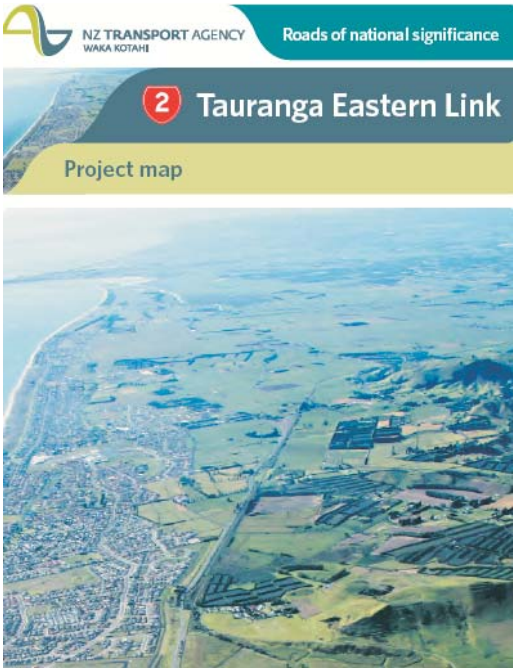
Bay of Plenty Region

Tauranga Eastern Link Update

On 1 July 2011 the NZ Transport Agency (NZTA) opened the Tauranga Eastern Link visitor information centre to allow members of the public access to the latest information about the Bay of Plenty's largest ever roading project. Located at 65 Tara Road, Papamoa, the centre will be open weekdays from 9 am to 4.30 pm.

When completed, the four-lane Tauranga Eastern Link will run from Te Maunga (near Baypark Stadium) in Tauranga to the existing junction of State Highways 2 and 33 (the Rotorua and Whakatane highways) near Paengaroa. It will be made up of 17 km of new road and an upgrade of six km of existing highway. Construction on the project began in December 2010. The new highway is expected to open to traffic in 2016.

Recently a pump capable of moving 1500 litres of water per second was installed near the Kaituna Wildlife Management Reserve. The pump is part of the project's stormwater mitigation plan to remove extra run-off created by the larger road surface of the new highway.



Waikato Region

Amy Robinson, Regional Coordinator

Waikato Regional Coastal Plan

In accordance with Policy 29 of the New Zealand Coastal Policy Statement 2010, all references to restricted coastal activities have been removed from the Waikato Regional Coastal Plan. This change took effect on 24 February 2011.

Plan Change No. 1 (Minor Changes) to the Waikato Regional Coastal Plan was signed off by the Minister of Conservation in May. The changes improved the clarity and workability of permitted and controlled rules within the coastal marine area of the Waikato region.

'Natural Hazards in the Waikato Region' Lecture Series

During March, the University of Waikato presented two free evening sessions featuring experts discussing the possible local challenges in the event of tsunami, volcanoes, earthquakes, floods and droughts. The speakers included:

- Professor Kevin Furlong (Department of Geosciences, Penn State University, USA) presented an overview of the causes and consequences of earthquakes in New Zealand, with a particular focus on the resulting earthquake hazards in the Waikato region.
- Dr Willem de Lange (Department of Earth and Ocean Sciences, University of Waikato) provided an overview of local coastal hazards, including tsunamis, sea-level changes, storm surges, waterspouts and tornadoes.
- Associate Professor Roger Briggs (Department of Earth and Ocean Sciences, University of Waikato) presented a brief history of volcanic activity in the Waikato region, and possible future challenges in the event of a major volcanic eruption.
- Adam Munro and a selected panel from Waikato Regional Council discussed strategies for dealing with natural hazards and emergency management in the Waikato region.

Tsunami Strategy Open Days for Whitianga

The Whitianga community was invited along to two Queen's Birthday weekend open days to discuss the town's preparedness for and response to a tsunami. People were encouraged to bring to the open days copies of any historical and recent photos or video clips they have taken of tsunami events or damage. The open days were part of the Eastern Coromandel Tsunami Strategy project which is looking at how the east coast of the Coromandel Peninsula might better handle tsunami-related risks.

The strategy is being developed by Thames-Coromandel District Council and Waikato Regional Council following new data indicating the risk of tsunami impacting the east coast of the Coromandel is higher than previously understood. Particular attention is focused on the possibility of a major quake in the Tonga-Kermadec Trench causing a large tsunami with a quick arrival time. Information about the strategy is available at: www.tcdc.govt.nz /tsunami.

Water Quality – Southern Firth of Thames

Waikato Regional Council has recently published an analysis on the water quality in the southern Firth of Thames spanning the period 2000 to 2009. The study revealed that the water quality of the southern Firth has been generally good.

The water was predominantly seawater, with freshwater generally representing a minor proportion of the mixture, indicating that the inputs from the rivers (and direct rainfall) were substantially diluted with good quality seawater. The water column was weakly stratified and well oxygenated. Although the water was generally turbid, calculations showed that its relative shallowness meant it was probably sufficiently well lit to support algal growth. The water contained moderate concentrations of nitrogen and phosphorous and low-to-moderate concentrations of chlorophyll a, with values being substantially lower than those found in nutrient-enriched estuarine waters elsewhere.

Hawke's Bay Region

Neil Daykin, Regional Coordinator

Easter 2011 Rain Event

The east coast of Hawke's Bay experienced significant rainfall over a three-day period resulting in massive slips, cliff falls, and flooding. The worst hit coastal areas were from Te Awanga south to Porangahau and northern Hawke's Bay.

Data is still being collated but rainfall in excess of 600 mm was recorded, with return periods >100 yr. Damage to marine reserves, reefs and the general nearshore marine environments was extensive due to the slips, cliff falls, and fluvial sediments that washed out and buried the seafloor.

Storm in Kairakau. Photo Neil Daykin.

Massive slips burying coastal environs south of Pourerere. Photo Neil Daykin.

Coastal News

Mahia Oil Spill Exercise 2011

The Hawke's Bay Oil Spill Response Team held a comprehensive joint practical oil spill exercise with Gisborne District Council at Mahia in March. There were four parts to the exercise on the day, including a pre-beach clean, oiled wildlife collection, air operations using dispersant, and booming the lagoon.

The Gisborne and Napier teams worked well together, making the necessary changes in approach with the changes in the lagoon environs and working through communications difficulties. There were good lessons learnt from the combination of air operations, beach cleaning activities and the testing of various techniques. Working in a remote location had some challenges but staff adapted well to the situation and were innovative in their approach.

Mahia oil spill exercise, 17 March. Photo Neil Daykin.

Mahia oil spill exercise, 17 March. Photo Neil Daykin.

Gisborne and Napier teams worked well together during the Mahia oil spill exercise, 17 March. Photo Neil Daykin.

Mick Courtnell, National On Scene Commander, said planning was good and sound along with reliable logistics (with good food). He added it was also good to see a great working relationship between the councils. Overall, Maritime New Zealand was happy with exercise results.

Scoping and Feasibility Study of Coastal Protection Works for the Haumoana – Te Awanga Coastline

Released in June by Hastings District Council and Hawke's Bay Regional Council, this report provides analysis of the feasibility of protecting the Haumoana coastline with a groyne field. It summarises peer reviews of:

1) the physical coastal processes;
2) the engineering feasibility and costs of a groyne field; and
3) cost-benefit analysis of a do nothing, managed retreat and groyne field option.

Conclusions from the independent authors suggest the groyne field option as the most appropriate engineering solution. This option means downdrift erosion can be avoided and any consent application to the Environment Court would have a reasonably good chance of success.

Taranaki Region

Erin Zydervelt, Regional Coordinator

Biodiversity Projects

Our recently formed biodiversity section has been undertaking some exciting coastal preservation projects in conjunction with our land management team along our Taranaki coastline.

Marine Biosecurity

The biannual port biosecurity survey was conducted by MAF Biosecurity NZ and NIWA in Port Taranaki recently, consisting of survey dives, overnight potting and sledging.

The results indicated that no additional biosecurity threats were found. Taranaki Regional Council will

Biosecurity survey, March 2011. Photo Erin Zydervelt.

be continuing the eradication project for the invasive seaweed *Undaria* this winter.

Coastal Erosion

Coastal erosion is always an ongoing issue on the Taranaki coast due to our high wave energy environment. A local dune at Opunake was eroded during a storm recently and a large portion of the dune and plantings were washed away. Taranaki Regional Council is working with New Plymouth District Council and South Taranaki District Council on a joint monitoring project for coastal erosion.

Dune and plantings were up to the fence prior to the erosion event. Photo Mike Smith.

Showing extent of drop following erosion event. Photo Mike Smith.

Waikirikiri (Komeme Lagoon)

With funding from local oil company AWE, a planting programme is in place with a selection of spinifex and pingao being planted in cluster formations. The long-term vision is for more plants to be locally sourced and planted each year to help in restoring the ever diminishing sand dunes. The fantastic response from local iwi, community members and surfers will bring this vision to fruition.

Stent Road Beach

Another project being driven by the local community is the preservation and restoration of an herb field at Stent Road Beach. A fencing, planting and ongoing monitoring programme will be implemented in the near future.

Coastal Area School planting Waikirikiri Lagoon, May 2010. Photo Rusty Richie.

NZCS Academic Awards 2011

Master and PhD Scholarships

Each year NZCS offers up to two scholarships to students conducting research that has the potential to contribute towards the aims of the society: NZ$5000 to support PhD research, and NZ$2500 to support Masters research.

To learn more about eligibility or to apply visit: www.coastalsociety.org.nz/images/stories/NZCS ResearchScholarshipform2011_Final.pdf.

Applications close 15 September 2011.

Award recipients will be announced at the NZCS annual conference dinner. Recipients will receive a free conference registration and dinner ticket to be present at this announcement.

2011 Undergrad Award

NZCS also recognises the best overall third-year student studying coastal science, planning, engineering, ecology or management with an excellence award. If you are a student and you think your paper meets the guidelines for this award, please encourage your lecturer to take up this opportunity. The value of the award is NZ$100.

Each university offering coastally themed papers at the third-year level may apply to NZCS to award one such excellence award. Teaching staff of the relevant papers must collectively nominate one student within each university to recommend to the society for the award by 15 November every year. The student must demonstrate academic excellence as well as a passion for the coast.

Coastal News

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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 (www.coastalsociety.org.nz/Corporate.htm).
- Website listing of services provided by corporate organisation, contact details, and links to recent projects or corporate member 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.
- Discounted registration at member rates for the corporate contact to all NZCS conferences.
- Short feature on a corporate member in the *Coastal News* newsletter.

For more information on corporate memberships please contact:

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

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

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