

# Coastal News

Newsletter of the NZ Society for Coastal Sciences  
and Engineering

A Technical Group of IPENZ

Number 4

June 1995

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## Sinking or Swimming The Regional Coastal Environment Plan

*Many regional councils have produced or are in the process of producing their Regional Coastal Plans under the Resource Management Act 1991. In the case of the Canterbury Region, the Council opted for a plan that extended above the "Coastal Marine Area" (the admin boundary between Regions and Districts, which is MHWS) because it recognised that the physical processes of the coast are not confined within legal definitions.*

In that sense, the Canterbury Plan sought to deal with issues of coastal hazards by defining Hazard Zones along the whole coast of the region. These zones, drawn from extensive monitoring over a number of years, represented land that was judged to be likely to be exposed to erosion in the period zero to 50 years (Hazard Line 1) and, inland of that, land likely to be exposed in the period 50 to 100 years. Within these zones, the Regional Council put in place controls over built development. The intention of these controls was to limit public and private investment in areas judged to be at risk. Not surprisingly, these controls were not widely welcomed by district councils, who felt that the Region was trespassing in areas best left to them.

Enter the ogre of the Planning Tribunal in the form of Planning Judges Sheppard and Skelton (not that they are specifically ogres!) to answer an application by the Canterbury Regional Council as to how the Resource Management Act divides the responsibilities for controlling activities on land. In addition, there was a cross-application (very cross) by the Banks Peninsula District Council on a similar matter.

This was one of those Tribunal decisions that ripple outwards from their source and impinge upon tranquil little islands, like the Regional Coastal Environment Plan, with disquieting force. Suffice it to say that the Tribunal's judgement, in relation to another plan that the CRC was preparing, was that interpretation hung on who controlled the *use* of land (RMA Section 30 (1) (c)) and who controlled the *effects* of the use of land (RMA Section 31 (b)). The declaration, on the cross-application by the Banks Peninsula District Council was:

"That a regional council does not have the

power to include in any part of a regional plan having effect in other than the coastal marine area rules to control any actual or potential effects of the use, development, or protection of land for the purpose of the avoidance or the mitigation of natural hazards."

*Planning Tribunal Decision number A 89/94  
(Application ENF 62/94)*

The effect of this is to gut and fillet the coastal hazards chapter of the Councils RCEP. It would appear that the Council's only legitimate function in this area is the control of the *use* of land for the purpose of "the avoidance or mitigation of natural hazards." (RMA Section 30, (c), (iv)). What this means is, of course, absolutely clear to everybody with an intimate knowledge of the navel fluff of semantics that the Resource Management Act throws up. It would appear to mean that regional councils can control such things as lowering sand dunes and constructing seawalls and the like, but they cannot control development that seeks to locate in hazard-prone areas in order to be just a stone's throw from the sea. Such developments do get upset when the sea does start throwing stones! This is the province of the district councils. Their chequered record on this front is plain for all to see and, like many contentious areas, can still be seen lumbering through that same Planning Tribunal.

Would the regional council be able to do any better? Is the cause of sustainable management being well served? The Canterbury Regional Council prepared a Regional Coastal Environment Plan because it saw merit in Section 64 (2) of the Resource Management Act, namely that "a regional coastal plan may form part of a regional

*continued on page 3*



## Chairman's Message From the Management Committee

In Newsletter No. 3, published in December 1994, I said that the Management Committee hoped to publish three newsletters in 1995 (March, July and November). However, in order to prepare newsletters, articles of interest to members are required and thus, Newsletter No. 4 is, regrettably, some three months late. The Management Committee is still hopeful that it will be possible to publish two further newsletters this year and, again, I would like to emphasise the need for members to submit articles, including photos, for publication. The next deadline is 15 August 1995. Please remember, the newsletter remains the best forum for exchanging information.

The subject of coastal hazards remains a contentious issue in New Zealand and there are many differing views on how hazards should be identified and managed. The Society's annual one-day seminar/conference, on Monday, 26 June at the Plaza International Hotel in Wellington, will debate issues concerned with the management of coastal hazards and an excellent programme has been arranged. Last year's event was considered most successful, with over 100 registrations. Note also that the Society's AGM will be held at the end of the formal sessions. Further details are included elsewhere in this newsletter and I would urge as many members as possible to support the Society's efforts and attend this worthwhile event.

An important matter to be resolved at the AGM will be the future name of the Society. As I mentioned in Newsletter No. 4, it is proposed to change the name of the Society to the "New Zealand Coastal Society". This name is already in common usage and, more importantly, reflects the eclectic nature of the Society in that a good number of members are neither scientists nor engineers. There has also been some resistance from potential members who see the present name of the Society as too restrictive.

Corporate members of the Coastal Society are listed on page 8 of this issue. For those who may be unaware of this category of membership, the present cost is \$200 per year and an organisation may nominate up to eight staff members who, in effect, enjoy the rights of ordinary members of the Society. The Management Committee feels that there are many organisations in New Zealand that would be potential corporate members. Present individual members who belong to such organisations should consider corporate membership. Regional and local authorities, consultants, contractors and port companies are among the more obvious candidates.

I recently attended the 12th Australasian Coastal and Ocean Engineering Conference in Melbourne. Some members will recall that this conference was last held in New Zealand in Auckland (1991). The next conference will be held in 1997 in Christchurch and is being organised by the Coastal Society. The Melbourne conference was combined with the 5th Australasian Port and Harbour Conference and this will also be the case in Christchurch. In line with Coastal Society policy, it is intended that the programme for the 1997 conference will allow for the participation of all disciplines interested in the coastal zone.

The Coastal Society now has over 150 members and is growing steadily. After three years as chairman, I consider it is time for someone else to take over this role and I expect the incoming management committee to elect a new chairperson. I, therefore, take this opportunity to thank all the members of the management committee during the last three years for their contribution. I feel the Society is well on the way to becoming a significant force in matters relating to the coast.

*John Lumsden, Coastal Consultant, Christchurch*

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### NZSCSE Management Committee

John Lumsden	CAE, University of Canterbury (Chairman)	Ph (03) 364 2219
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Ken Grange	NIWA Marine, Nelson	Ph (03) 548 1715
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Dave Peacock (corresp.)	Gisborne District Council	Ph (06) 867 2049



# Coastal Hazards Theme of Society's Second Seminar

*"Coastal Hazards: Are We Managing?" is the theme of the Coastal Society's second seminar, which will be held at the Plaza International Hotel in Wellington on 26 June 1995. The annual Coastal Society seminar provides the only forum presently available in New Zealand where all people interested in the coastal zone can come together to share their knowledge and gain a broader understanding of the many issues involved.*

New Zealand has an outstanding coastline and it is only in recent years that it has begun to receive the attention it deserves. The Resource Management Act 1991 (RMA), with its requirements for preparation of the New Zealand Coastal Policy Statement (NZCPS) as well as Regional and District Plans, has played a significant part in the increasing emphasis on matters concerning the coast.

At the present time local authorities are in the process of preparing coastal management plans and many are finding that the task is far from simple. The topic of coastal hazards is central to many of the issues to be resolved and of direct relevance is Policy 3.4.1 of the NZCPS, which states: "Local authority policy statements and plans should identify areas in the coastal environment where natural hazards exist."

This is seen as a necessary first step in complying with the requirements of Section 31 of the

RMA, which imposes on every territorial authority the function of controlling: "any actual or potential effects of the use, development, or protection of land, including the implementation of rules for the avoidance or mitigation of natural hazards ..."

The content of this seminar has been designed to highlight some of the complex issues to be faced when dealing with coastal hazards. Each of the speakers are leaders in their respective fields. The intended format is for each speaker to give an address that, as well as being informative, will encourage debate on the topic, and it is proposed to allow ample time for discussion.

The keynote speaker is Mr David Thom CBE. David retired five years ago after a distinguished career as a consulting engineer with the firm now known as Kingston Morrison Ltd. He was President of IPENZ in 1979/80 and is currently Chairman of the Environment Committee of the World Federation of Engineering Organisations (WFEO). He is also involved in environmental education in New Zealand and SE Asia and the Pacific regions. David was awarded the CBE for his long association with the National Parks in New Zealand. The New Zealand coastline has been one part of the environment in which he has had a particular interest and he was a co-author of the book *Seacoast in the Seventies: The Future of the New Zealand Shoreline*, which was published in 1973.

Members of the Coastal Society are encouraged to support this important event.

*John Lumsden*

## Obituary

### Mr Ralph Simpson, BE BSc MICE MIPENZ

It has been reported that Ralph Simpson, one of the early members of the Coastal Society and, presumably, its oldest member died in October last year. Mr Simpson was born in 1908 and began his lengthy career in 1925 when he joined the engineering staff of the Otago Harbour Board. This was followed by positions with the Dunedin City Council, Napier Harbour Board and the Fiji Public Works Department. When he retired in 1973, he was Chief Investigating Engineer with the Ministry of Works and was Marine Works Engineer with the Marine Department. He had a long career involved in design and construction of port and harbour works and coastal erosion and published a number of papers. During his career, Mr Simpson built an important archive recording changes to the New Zealand coastline, and he wished his files to be given to the Coastal Society and for the contents to be available to its members. Efforts are presently being made to bring the contents of Mr Simpson's archive together.

*John Lumsden*

*continued from front page*

plan where it is considered appropriate in order to promote the integrated management of a coastal marine area and any related part of the coastal environment".

It is said that the law exists to employ people to find a way round it. A growth industry! As to whether the reasonable planning of the coastal area will be achieved, respecting the coastal processes we know to exist, is a matter that only time and tide (which we know waits for no one) will tell.

*David Gregory, Resource Management Planner with  
the Canterbury Regional Council*

All opinions expressed in this article are those of the author and not of the employing authority.

## Coastal News



# Surfers and Surf Reports: An Untapped Source of Wave Data?

*The avid surfing fraternity in Gisborne is well served by the regular (three times daily) surf reports on two radio stations. Having some of the best "offshore" surf in New Zealand, it has become somewhat of a mecca for the serious surfer.*

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The two main surf beaches in Gisborne, Wainui and Midway, face east to southeast and south respectively, and pick up swells from the northeast to the southerly quarters. Having taken up body-boarding over the past few years, I started to listen eagerly to the early morning surf reports and found that they describe the size and direction of the surf accurately and consistently. Because the two beaches face directions over 90° apart, swells originating from the northeast or east will create a surf at Wainui Beach, but not at Midway, and swells originating from the south will create surf at Midway, but not so much at Wainui. Hence, the direction of the swell is often broadcast (in addition to the size of the swell and wind direction) or can be reasonably deduced from observation.

The surf reporters (themselves avid surfers) describe the size of the surf in terms of the height of the vertical face of the wave. When the wind is light or offshore, this is reasonably easy to assess (with experience), but when wind conditions are onshore, this becomes more a matter of guesswork. The normal technical method of measuring wave height is the vertical distance between the trough and crest, and this would appear to be about twice the height of the vertical face of the wave as given on the surf reports. I have come to this (tentative) conclusion from comparing Met Office swell heights with the surf reported wave heights, but since the Met Office swell heights are only predictions and not actual wave heights (and, furthermore, are often wide off the mark), this "correlation" could stand to be improved. It would be interesting to get a more accurate correlation of the surf report wave heights against offshore wave rider buoy readings for the same area. Are any readers aware of this being done in New Zealand?

## Australian Dollars to Coastal Management

In the Australian budget this year, Prime Minister Paul Keating announced AU\$53 million to fund a national coastal management programme over the next four years. This will be Australia's first attempt at a national approach to coastal management between the Commonwealth (national), state and local governments.

After listening to surf reports for some time, I began to record them on paper and now fill in standard sheets that (one day) I hope to enter into a computer database. Wave observation sheets similar to mine are often filled in by other enthusiastic beach-side residents in other parts of the NZ (and overseas), usually for a specific project encouraged by the local council or an engineer or scientist carrying out beach investigations. However, I suspect that these initiatives normally peter out after a year or two, after the beach project is completed, or people simply lose interest. Not so in Gisborne! After sculling around the edges of the surfing fraternity over the years (and learning to understand a whole new vocabulary), I met a "veteran" surfer who has been recording his own surf observations daily over the past 15 years. He has offered to fill in the standard record sheets, which when completed will be a valuable wave climate record for this part of the coastline. There are probably other equally enthusiastic observers at other surf beaches throughout the country who may have done the same. There are also surf reports for a large number of our better-known surf beaches on the radio daily, and there are now "0900" telephone numbers where reports from all over New Zealand are available daily. Is anybody keeping a record of these?

*Dave Peacock, Gisborne District Council*

## Coastal News

*Coastal News* is published by the New Zealand Society for Coastal Sciences and Engineering.

Corporate and individual members are encouraged to contribute material that would be of interest to others.

Material for the next issue should be submitted by 15 August 1995 to:

• Victoria Caseley  
Davis Ogilvie and Partners  
P O Box 579  
CHRISTCHURCH  
Fax (03) 379 2348

OR

• John Lumsden  
e-mail [j.lumsden@cae.canterbury.ac.nz](mailto:j.lumsden@cae.canterbury.ac.nz)



# New Zealand's Marine Boundaries under the United Nations Law of the Sea

On 16 November 1994, the United Nations Convention on the Law of the Sea came into force, one year after its ratification by 60 states. In late December 1994, the New Zealand Cabinet decided that New Zealand should ratify the Convention, subject to the passage of legislation, which would be sought at the earliest opportunity and hopefully during 1995.

Under the Convention, New Zealand has rights and obligations relating to the exploration, exploitation, conservation and management of its natural resources within its marine boundaries. It must ensure, through proper conservation and management measures and using the best scientific evidence available, that the living resources shall not be endangered by over-exploitation.

The Convention requires that each ratifying country shall, within ten years, delimit its marine boundaries by submitting to the Commission on the Limits of the Continental Shelf (a United Nations body) the coordinates of its Legal Continental Shelf claims. In contrast to the normal continental shelf, which borders New Zealand out to water depths of some 130 metres, the Legal Continental Shelf is based on legal definitions. Therefore, the Legal Continental Shelf, extending a country's claim beyond its 200 nm Exclusive Economic Zone, generally does not coincide with the usual scientific understanding of the continental shelf or margins.

While a coastal State's Territorial (12 nautical miles) and EEZ (200 nm) zones are readily defined from "base points", located on the outermost points of the landmasses and using existing geodetic information, the definition of the Legal Continental Shelf requires a considerable knowledge of the deep marine geological and geophysical conditions of the seabed. Each country is to define its marine boundaries in terms of well-positioned bathymetric and seismic

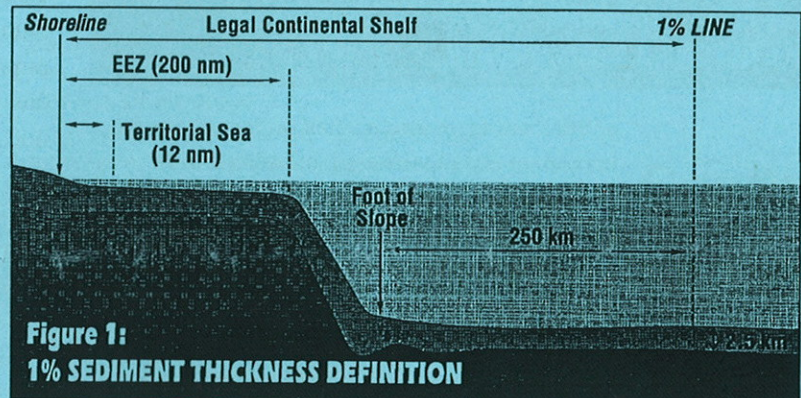


Figure 1

profiles not more than 60 nm apart.

In Article 76 of the United Nations Convention on the Law of the Sea, the Legal Continental Shelf is legally defined as the maximum distance from the shore to the foot of the continental slope **plus:**

- to where the thickness of the sedimentary rocks are at least 1% of the shortest distance from that point to the foot of the continental slope (normally referred to as the "Irish Formula"). For example, if the thickness of sedimentary rocks is 2.5 km then the Legal Continental Shelf is the distance from the shore to the foot of the slope plus 250 km, as depicted in Figure 1 or
- 60 nm, the "Hedberg Line", as defined in Figure 2.

However, the Legal Continental Shelf shall ultimately be restricted to a maximum outer limit of either:

- 350 nm from the shore line (does not apply for submarine elevations which are natural continuations of the continental shelf such as

the Lord Howe Rise and the Chatham Rise) **or**

- 100 miles from the 2,500 metres isobath, whichever is the greater (see Figure 3).

Most of New Zealand's Legal Continental Shelf limits will be determined in accordance with Article 76. Where, however, New Zealand's

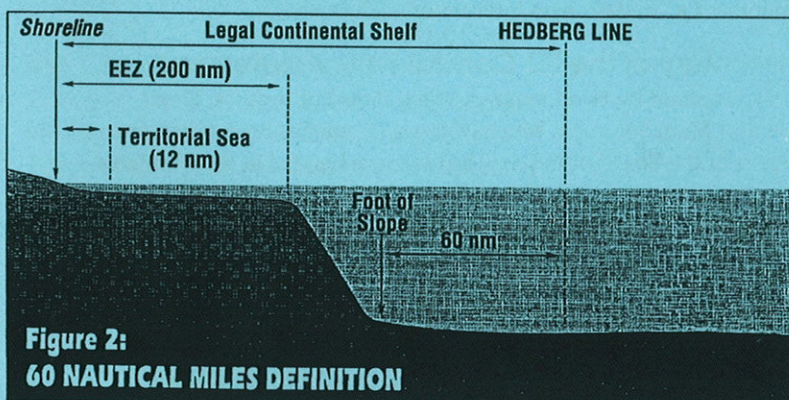


Figure 2



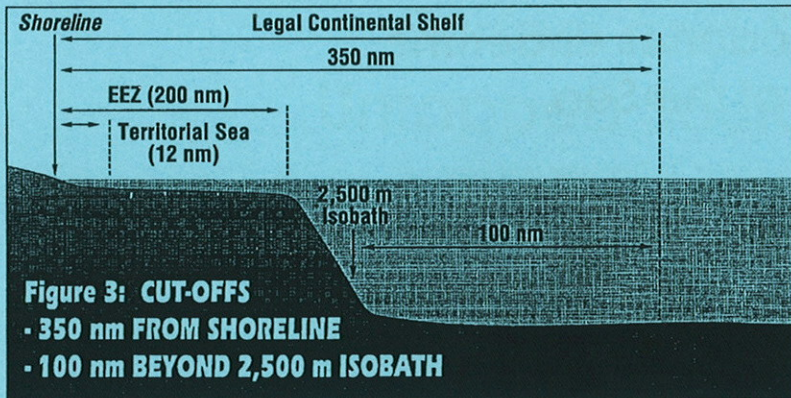
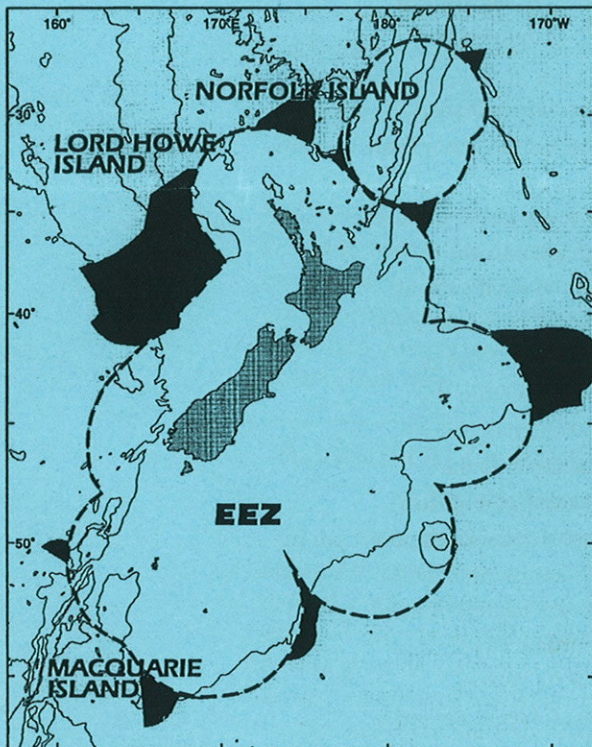


Figure 3

entitlement to an area of shelf falling within the maximum claim permitted under Article 76 overlaps with a neighbouring country's claim, we are left to seek agreement to an appropriate boundary with them. This is likely to be the case with the overlapping shelf claims between New Zealand and Australia for the Lord Howe Rise, Norfolk and the Macquarie Ridges, and with Fiji and Tonga in the potentially overlapping Legal Continental Shelves in the Colville and Tonga-Kermadec Ridges.

To determine the thickness of sedimentary rocks, seismic survey data are required, while the foot of the slope and the 2500 m isobath are determined from bathymetric data. Australia has been mapping its continental shelf since 1977 as part of the scientific and mineral resources studies and, consequently, possesses extensive seismic and bathymetric information on the Legal Continental Shelf areas shared with New Zealand. The Lord Howe Rise and the Norfolk Ridge

Figure 4: Current views on the extent of New Zealand's Legal Continental Shelf



are of special interest because of hydrocarbon potential.

As New Zealand's marine area is one of the largest in the world, extensive information to support our claims on this very large territory will be required. At present, several New Zealand databases exist that will furnish at least part of the information needed to define the Legal Continental Shelf. Nevertheless, conclusive delimitation of our marine boundaries will require considerable resources within the next few years to cover the study of available information and the definition, execution and interpretation of additional marine surveys. Funding requirements in excess of \$20M may be needed in the period between 1995 and 2005.

Although these costs are high, the potential area that can be claimed by New Zealand as Legal Continental Shelf may be as much as 20 to 25 percent of the area within the Exclusive Economic Zone, or three to four times the size of our landmass (see Figure 4). Never in our history has there been a similar opportunity to such territorial claims. The economic value of the marine assets for the country is immense and includes this year's (1994) revenue from commercial fisheries (\$1200M pa), aquaculture (\$100M pa) and oil and gas (\$675M pa), as well as from current total estimated mineral (\$150,000M) and hydrocarbon (\$70,000M) resources.

*Fred Smits, NIWA, Greta Point  
 Mac Beggs, IGNS, Lower Hutt  
 Nigel Fyfe, MFAT, Wellington*

## New Zealand Coastal Policy Statement

Most members will by now have copies of, or be aware of, the New Zealand Coastal Policy Statement, which was gazetted on 5 May 1994.

Three further publications related to the gazetted Policy Statement have now been released through Bennett's Bookshops. These are a commentary on the Policy Statement, a Maori translation of the Policy Statement and a Guideline on International Obligations.

### Commentary of the NZ Coastal Policy Statement

This was prepared by two members of the Board of Inquiry, Denis Nugent and Maui Solomon. Much of the material has been taken from the Report of the Board of Inquiry, but is more helpful in that it relates to the policy statement as gazetted. This is an essential reference for those who have to interpret policies in the NZ Coastal Policy Statement.

### Te Kupu Kaupapahere Takutai Mo Aotearoa 1994

This document is a translation into Maori in recognition of the importance of coastal resources and their management to tangata whenua.

*continued on page 7*



# Surfing the Internet for Coastal Information

*Ever heard of hypertext and the World Wide Web? Bulletin boards? Gophers? Well, I hadn't until recently, but I am discovering that there is a wealth of information on a wide range of topics available on the internet.*

This will not be news for some of you, but might be for others. To access this information, you will need a computer connection to the internet (don't ask me how to get this -- see your computer manager or someone who understands these things!). Through the World Wide Web, you can search the world for information on coastal matters. For example, you can see what work the USA's National Oceanographic and Atmospheric Administration is doing on cumulative coastal impacts and tsunami hazard.

You can also subscribe to various news groups, etc. The ones I have joined are Coastnet and Disaster Research.

## Coastnet

Coastnet is "a forum, put on line in August of 1993, to discuss National and International Coastal Management issues, and is being facilitated jointly by the Coastal Resources Center and the Department of Marine Affairs at the University of Rhode Island (USA). This forum encourages dialog on coastal management issues from all nations, and is based on the belief that coastal resource planners, managers, researchers, and users from the developed and developing world have much to learn from and contribute to each other."

Material submitted to Coastnet should fall within the realm of coastal management. This includes, but is not limited to:

- natural resources
- research, new, in progress or planned
- financial resources
- policies and regulations
- development issues
- resource conservation and protection
- integration of science and policy
- management strategies
- job/funding opportunities
- training and education
- evaluation techniques.

*continued from previous page*

## A Guideline of New Zealand's International Obligations affecting the Coastal Environment

This guideline is the first initiative to give effect to Chapter 6 of the NZ Coastal Policy Statement. This guideline does not attempt to set out how our obligations can best be met -- that will be for future guidelines to address. This guideline simply lists those international agreements that create significant obligations for New Zealand in relation to our coastal environment and identifies the nature of the obligations.

*Mike Jacobson, DOC Wellington*

As an example, I recently received this message: "I work for the State of Florida DEP, which is involved in environmental permitting for beach nourishment projects. We may have data which would be of interest to you: water quality, hardbottom impacts, turtle nesting impacts/benefits, etc... If you have any specific areas of interest, let me know."

To subscribe to Coastnet, send an e-mail message to "Listserv@uriacc.uri.edu". In the body of the message, put:

SUBSCRIBE COASTNET <your name>

You will be asked to confirm your subscription.

## Disaster Research

Disaster Research is a moderated bulletin for creators and users of information regarding hazards and disasters. To subscribe, send a message to "Listproc@lists.colorado.edu". In the body of the message, put:

SUBSCRIBE HAZARDS <your name>.

If anyone has any other relevant lists, etc., please let me know at wayne@wrc.govt.nz.

*Wayne Hastie, Wellington Regional Council*

## Coming Events

- 26 June 1995 Coastal Hazards: Are We Managing?, Coastal Society seminar, Wellington (see page 3)
- 4-9 Sept 1995 Coastal Dynamics '95 conference, Gdansk, Poland  
Contact Miss Jarka Szmytkowska, Institute of Hydro-Engineering PAS (IBW PAN), Kosciarska 7, Gdansk 80-953, Poland, Fax 4858 524211, e-mail cdsec@hancio.ibwpan.gda.pl
- 6-8 Sept 1995 Coastal '95: Computer Modelling of Seas and Coastal Regions conference, Cancun, Mexico.  
Contact Liz Johnstone, Conference Secretariat, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK, Fax 44 0 703 292853, e-mail cmi@ib.rl.ac.uk
- 2-6 Sept 1996 25th International Conference on Coastal Engineering: Coastal Engineering Heritage, Orlando, Florida  
Contact ICEE '96, c/- Conrad Blucher Institute, Texas A&M University-Corpus Christi, 6300 Ocean Drive, Corpus Christi, Texas 78412, USA, Fax 001 512 994 2715, e-mail icce96@cbl.tamucc.edu

# Coastal News



## Wellington Group

### Good Turnout for First Meeting

The Wellington Group of the Coastal Society met for the first time late November last year. The 19 people in attendance enjoyed a presentation on coastal erosion in Palliser Bay by Peter Steel. The presentation was based on a study undertaken by Beca Carter Hollings & Ferner for the Wellington Regional Council and the South Wairarapa District Council. Te Kopi can boast one of New Zealand's best collections of "do-it-yourself" coastal protection systems and Peter gave his views on the likely success of a number of these systems. He also outlined the options considered for erosion control and the reasons for the preferred option of a protective boulder beach.

### But ...

Attendance at the second meeting of the Wellington Group was disappointingly low, although the topic would have been of interest to members. Despite the small audience, Captain Mike Pryce, harbourmaster and Manager of the Harbours Department, went ahead with his presentation on marine oil spill response and planning. He is well qualified to speak on this topic and the talk was both interesting and informative. Mike spent 23 years working for Shell Oil on tankers before

working as a safety officer at the Seaview oil terminal and becoming harbourmaster.

Notices were posted two weeks before the meeting, and there is no reason to believe that members did not receive these notices in time.

### Future Meetings

Given the lack of interest displayed by Wellington members, it is uncertain whether further meetings will be viable. Topics suggested for future meetings include:

- fisheries management and the quota management system
- pollution and sediment in Wellington Harbour
- ballast water
- Lambton Harbour development
- the role of the Navy on the coast
- coastal sensitivity index.

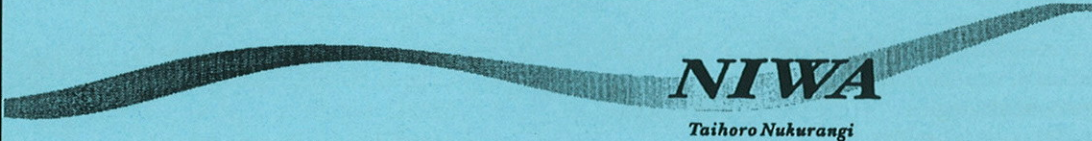
There is, however, little point in organising these meetings if members are not going to attend. It would be helpful if Wellington members could let me know whether it was the topic, the venue or the timing that resulted in the poor attendance. For further information on the Wellington Group, contact Wayne Hastie, Wellington Regional Council, ph (04) 802 0337 or e-mail wayne@wrc.govt.nz

Wayne Hastie

## Coastal News

## Corporate Members

- Tonkin and Taylor Ltd, Consulting Engineers, P O Box 5271, Auckland
- Environment Waikato, P O Box 4010, Hamilton East
- NIWA Marine, P O Box 14-901, Kilbirnie
- EG&G Geos, P O Box 4260, New Plymouth
- OCEL Consultants Ltd, P O Box 877, Christchurch
- Auckland Regional Council, Private Bag 68-912, Auckland
- Canterbury Regional Council, P O Box 345, Christchurch



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