Coastal News

Newsletter of the New Zealand Coastal Society

A Technical Group of IPENZ

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Contents

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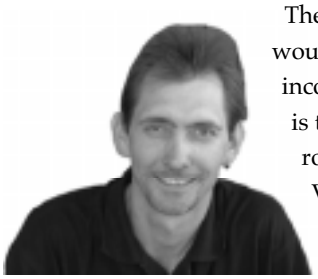
A Word from the Incoming Chairperson



The first thing I would like to do as incoming Chairman is to give a big round of thanks to Victoria Caseley, the members of last years committee and those organizers of the seminar and branch meetings and the editor and organizer of Coastal News (if I didn't thank them I'm sure this wouldn't be published!). Honestly, the Society is really dependent on its members to get involved and participate, and it is great to see that we do.

Secondly, I would like to welcome the new committee members and those who have stayed on. The committee is a fantastic team of people who get things done.

The Coastal Society has continued its commitments to serve its members in 1999. Our committee has worked hard to promulgate the development plan for the society and the goal of the committee to achieve the objectives of the plan has been substantially met.

In 1999 membership increased to 285 people and there is good national participation in the events organized by the Society. This year there have been three publications of *Coastal News*, a two-day national seminar, two evening meetings in Auckland and a one-day seminar in Christchurch.

The year 2000 is promising to be very busy with a lot of opportunity to catch up with the very best of international practice with both the JCR conference here in New Zealand, the ICCE in Sydney and, of course, our seminar that will be held in September/October.

I look forward to the year 2000 with many interesting challenges including increasing membership and exposure, methods to promote the coastal area to students and an improved level of service to our members by means of regular publications, a seminar and local branch meetings.

As with any society, it is only as good and as dynamic as the members desire. So get involved. If you have ideas let us hear them. Participate, contribute and enjoy.

Richard Reinen-Hamill
Tonkin and Taylor, Auckland

Coastal Society Seminar – "Coastal conflicts: smoothing troubled waters"

Te Papa was the venue for the 1999 New Zealand Coastal Society Seminar in September. Fred Smits opened the seminar brandishing a large pair of scissors and threatening to cut the ties of speakers who talked beyond their allocated time. Following this lively welcome, the 80 attendees were exposed to an interesting range of issues facing the complex Wellington coastal environment. These varied from historic and recent port developments to the state-of-the-art Moa Point sewage outfall, the sensitive Pauatahanui Inlet, and to sediment transport and erosion along the dynamic Kapiti coast.

During each afternoon of the two seminar days, a field trip provided the chance to see coastal issues "first hand". A cocktail session on board NIWA's research vessel *Tangaroa* on Friday evening was a worthy conclusion to the seminar.

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Notes from Day 1

Actually Wellington weather was at its benign best for the 1999 Coastal Society Seminar on 16-17 September but bureaucratic rumblings could be heard afar off in some of the excellent presentations.

First up after Fred Smits' introductory comments was Ian Buchanan, Chairman of Wellington Regional Council's Environment Committee. Ian gave us a stimulating and challenging overview of the pressures on Wellington coastal resources, mainly because of population pressures caused by those very resources that attracted people in the first place, and resulting in competing and conflicting demands. Ian went on to identify a wide range of conflicts from development, discharges, mineral resource use, fisheries, even recreational activities.

In many respects he considered there were successes: water quality, point source discharges, mineral extractions. But the failures are predominant: non-preservation of natural character, non-point sources of pollution, illegal fish extractions and the ecosystem implications, river mouth migration, and lack of overall integrated management.

Seminar delegates at Paraparaumu

In advocating personally a focus on the "failures", he pleaded for only very limited interference in coastal processes and keeping development away from water, not vice versa. He concluded that a single national coastal policy should be backed by political and community will to actually achieve such utopia!

The full text is available from the Society Secretary and well worth reading.

Derek Goring then gave a fascinating and well illustrated discourse on variability of sea level around New Zealand's coast, covering lunar and solar tides and other factors influencing how high, how low, when and where.

Add to this the records of storm surges, and the picture of events on April 17 was graphically present as the weather system progressed northwards causing unprecedented levels in the Manukau and other west-exposed places.

NIWA's ongoing research on sealevels was summarised, including efforts to increase the spread of sea level recorders around New Zealand, and to predict future high king tides, to model the passage of weather systems across New Zealand and identify hot spots for tsunami attack. Derek says watch out for high tides over 2-4 July 2000 during the perigean and spring tide concurrence, over the next few years for a "sea level rise catch up" as sea level in the Pacific Ocean slops westwards under a possible La Nina predominance in the next few years.

John Spittal of LINZ then gave us an overview of new directions in hydrographic information by the National Topographic/Hydrographic Authority, including the impact of digital technology. For further information, look at www.linz.govt.nz.

In preparation for the afternoon's field trip, Neil Bellingham and John Lumsden gave detailed overviews of the history of Pauatahanui Inlet and Kapiti coast beaches respectively. Perhaps the most visual impact was afforded by "in-your-face" waste concrete blocks providing interim protection to a recent Kapiti coast subdivision, in contrast to the unseen but vital role of millions of cockles in purifying the Pauatahanui inlet's water.

John Duder
Tonkin and Taylor

Notes from Day 2: "Coastal Conflicts: the Judge's View" - Judge Shonagh Kenderdine

Friday morning's programme of speakers began with Judge Shonagh Kenderdine sharing her experiences on coastal issues. She has found, through her work with the Environment Court,

John Lumsden addressing delegates at Kapiti

Seminar delegates viewing recent erosion at Paekakariki

that dealing with the interface between the coast and the land has often been difficult. With coastal issues she sees a need for a collective vision to reinforce our culture as New Zealanders, while still addressing our cultural differences and reinforcing those differences that make us interesting.

One case that required considerable negotiation was between the Ministry of Defence and the Wellington City Council, and concerned the zoning of land at Shelley Bay (Open Space vs. City Centre). By the time the case reached court, communication had broken down and the court issued the parties a minute and sent them away to discuss their differences. This resulted in a change to a Suburban Centre Zone, with some remaining disagreement on details. At this stage the court issued an interim decision and negotiations continued, with landscape, height limits, site coverage and the design guide being major issues. The final outcome included rules on site coverage at just over 40%, as a controlled activity.

The protection of sensitive ecosystems is an important issue in the Marlborough Sounds where strong development demand for marine farming clashes with the conservation of natural values. In some areas marine farms have been prohibited. In the case of Trio Holdings, compromises were reached so that a rare cancer-reducing sponge could be grown in one of a limited number of suitable sites, which also happened to be within a significant natural area. A condition of granting the consent was that sub-surface structures be used to grow the sponges on, in order to reduce the impact on the area.

The Oriental Bay building height appeals illustrated a different aspect of coastal conflict. After a long history of street height controls along the Bay's frontage the Council allowed a height limit of 19 m, with the justification that the area comprised an urban edge. The result was a number of title amalgamations and the development of large buildings, without side yards in between. A number of properties behind these large new buildings lost views, sunlight and privacy. Strong winds funnelling between buildings became a problem and amenity values plummeted. Taking an integrated management perspective, the court came down heavily on developer expectations and on the effects of large walls of buildings.

The conflict between retaining natural character and (as Judge Kenderdine described it) a "wonderful industrial landscape" arose in the case of Milburn vs. Wellington City Council. Milburn's rock quarry is located on the southern Wellington coastline, an area with significant open space, ecological and recreational values, which is regularly flown over and exposed to seal-watching tourists. This large rock quarry provides the only major source of quarried rock in the Wellington region. The resource consent for the operation was reviewed in 1989 at which time the Council was unhappy with the lack of reinstatement work and sought an enforcement order. This resulted in the development of a rehabilitation programme involving putting sludge back onto worked faces and then revegetating them. An enforcement order was not granted but conditions were imposed on the resource consent which allowed the quarry to continue operating while reducing any adverse effects.

A further point Judge Kenderdine made was that, as part of her decision making, she has found it valuable to listen carefully to the concerns of local people and tangata whenua.

Jenny Ridgen
Christchurch City Council

Coastal News

Photo Caption Competition

What are John Duder and John Lumsden up to? Come up with a caption for the photograph above and be in to win a mystery prize! Entries to Terry Hume (t.hume@niwa.cri.nz) by 31 March please. (Judge's decision will be final and no correspondance will be entered into!)

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Cook Strait Ferry Facilities

Ted Calvert of TranzRail spoke about the Clifford Bay Project which was split into three stages (Preliminary, a Fatal Flaw Study and Details), and designed so that TranzRail could withdraw at any stage.

The first stage involved collecting background information on local conditions and determining the best method of construction. The Fatal Flaw Study involved further studies of the physical and environmental aspects of the proposal and an assessment of whether the concept was "buildable". At the conclusion of this stage no major issues were identified that could not be dealt with.

The third stage opened up the concept to public consultation (already established with key stakeholders during the first two stages) and brought to the surface a previously underestimated issue, i.e. deserting Picton.

Project management was critical throughout the process. The project team learnt that it is necessary to find experts who are sound, but also customer focused (especially with respect to timing), and who are good team players. Practical solutions had to be found and experts who treated the project as a research exercise, and wanted to study each aspect to the nth degree, were best avoided. They discovered that legal experts can be skilled in creating conflict, as well as smoothing and solving it and that authorities are best talked to early on and can help identify key players. Everyone involved can influence conflict and, if at all possible, keep out of the CMA!

Ted finished his presentation with an instructional video on what constitutes a good team and what can go wrong (with clever political overtones), reminiscent of the Saatchi and Saatchi "Geese Video".

Wellington Waterfront

Bruce Green, CEO of Lambton Harbour Management Ltd., described how Wellington's waterfront has come along way since a concept plan for the first stage of the Lambton Harbour Development Plan was drawn up in 1986.

Lambton Harbour Development Ltd was established in 1987 by Wellington City Council and Wellington Harbour Board. It has a board of eight people and covers a twenty hectare site from the Overseas Passenger Terminal to Shed 21.

The role of the company includes the development of public space and amenities, the restoration of heritage buildings, promotion of commercial developments, and property and facilities management (including keeping everything clean). They also stage public festivals and events, conferences and promotions, and manage the Queen's Wharf Events Centre.

A public review of the company's plans was carried out in 1997 and a group of designers commissioned to prepare a revised Concept Plan.

New vision and mission statements have been developed and the company is aiming to improve the interface between public, commercial and industrial interests.

Key features will include giving consideration to the choice of pathways (more contact with the water's edge), retaining and enhancing views, integrating the waterfront with existing archeological lines, pedestrian access and linking the waterfront to the City.

The Concept Plan is to be community based with the company acting as project manager rather than developer. An estimated $42 million will be spent in the next five to seven years and money made on the waterfront will be spent on the waterfront.

ICS2000 update

The International Coastal Symposium runs from the 24-28 April 2000 in Rotorua. The organisers have received over 140 papers from authors in 30 different countries. Keynote speakers professors Bob Dean, Orrin Pilkey and Kerry Black are well known for their diverse opinions and wide knowledge on coastal matters and will provide entertaining talks and stimulate lively debate. Bob Dean comes from the Department of Coastal and Ocean Engineering at the University of Florida, Orrin Pilkey is the James B Duke Professor of Geology at Duke University in North Carolina and Kerry Black is with the Coastal Marine Group at the University of Waikato. The symposium runs over four days with field excursions on three of those days.

For more information contact: ICS 2000, c/- Professor Terry Healy, Coastal Marine Group, Department of Earth Sciences, University of Waikato, Private Bag 3105, Hamilton, New Zealand.

email to: ics2000@waikato.ac.nz

History of Wellington Port

Captain Mike Pryce, Harbour Master, gave an interesting account of the history of the Wellington Port. A lot has gone on in Wellington Harbour since Kupe discovered it in the 10th century. Captain Cook missed it on his first voyage and on his second voyage was heading towards it when the wind dropped and he decided to stay out at Barrett Heads. It wasn't until 1826 that two European ships visited and prepared rough charts, and later Captain Wakefield arrived to survey sites for a new colony at what was by then known as Port Nicholson.

By 1856 a thriving port had been established with a population of 4,000. Even then the settlement was confined by a lack of space, with the first reclamation occurring in1852. The first pile for Queen's Wharf was driven in 1862 and the Harbour Board established in 1880. Reclamation continued, along with the development of further wharves.

Whereas ships were once the main means of transport and communication, the advent of air travel overtook large liners. Prior to that, other major changes occurred when steam ships replaced sailing ships and Wellington became a coal port – a very messy situation. Later oil started to take over from coal and, in the mid-1920s, oil facilities were installed at the port.

The waterfront strike occurred in 1951 and the late 1960s saw new ways of moving cargo and the start of road ferries. In 1969 Trans-Tasman cargo went roll-on roll-off and the first container ship arrived in 1971.

Last year 9 million tonnes of cargo were moved with bigger, but fewer, ships, often spending only a few hours in port. The port has always had to respond to changes and is constantly being reshaped. Fast ferries are one of the more recent innovations, travelling at over 40 knots and reaching Picton in one and a half hours, and already there is talk of faster ferries, travelling at speeds of up to 60 knots.

Port of Wellington – CentrePort

Ken Harris, the CEO of CentrePort Ltd., obviously enjoys working at a port, describing it as a wonderful facility with great toys, which he is allowed to drive from time to time!

The port is currently undergoing a significant increase in cargo growth. To meet this demand, a three stage project is being developed in order to make the best use of space, from both the commercial and community perspective.

Areas have been set aside for third party businesses including a large new coldstore, and specialist operators for cleaning and storing containers, and for loading and unloading them. All of these will provide additional income for the port from the leases collected.

Timber product exports are busy at present with large growth expected, from the current 200,000 tonnes per year now to one million tonnes in a few years. A new area is being considered for this part of the port's operation. By Stage 3 of the proposed development, CentrePort plans to provide for commercial development, third party business activities and more people orientated areas.

CentrePort sees itself as a central hub for New Zealand trade and has developed a computer system to deal with direct orders, for example from architects in Japan to sawmills in New Zealand. The port has developed an excellent reputation for handling chilled meat and, with 97% of New Zealand's products still leaving by sea, it is important to keep the customer happy.

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Notice —NZCS Seminar

The next New Zealand Coastal Society Seminar will be held in Auckland in October 2000 — date and theme to be advised.

What is Seaweek?

Seaweek is an annual national environmental education initiative run by MESA (Marine Education Society of Aotearoa). It has traditionally been targeted at schools, but is now expanding to encompass a wider audience.

This year, Seaweek is on from the 11th to the 19th of March, and the theme is:

"Where to from here — What can I do?"

If you are interested in participating in Seaweek or finding out more about it, check out the website (www.environment.org.nz/seaweek) or contact Tanya Jenkins on Ph/Fax: (03)332 0099.

Marram Grass Eradication on Stewart Island gets Airborne

Coastal News

The Southland Conservancy of the Department of Conservation recently took a major step forward in the campaign to eradicate marram grass from the dunes of Stewart Island. A helicopter was used for the first time to spray approximately 7 hectares of marram grass in the southern dunes of Doughboy Bay on the western shore of the island. Marram had previously been sprayed on Stewart Island using backpacks, a relatively slow and laborious method, unsuitable for large areas of marram.

The West Coast of Stewart Island contains some of New Zealand's largest and least modified dunelands. They contain communities, species, landforms and landscapes largely lost from the North and South Islands. Marram grass was deliberately introduced by farmers early this century and by the late 1980s had invaded or was invading all the major dunelands. Marram grass causes major changes in the composition and structure of plant communities, although the impact on species diversity and distribution is only now being investigated. The native sand sedge pingao and sand tussock Austrofestuca littoralis are clearly displaced by marram in areas of high sedimentation, but little is known of the long-term impact of marram invasion on the numerous small and creeping native coastal herbs and sedges.

Marram control on the island commenced in 1987 using the herbicide "Gallant", a selective grass killer. The goal is eradication of marram grass from Stewart Island. The results have been spectacular. Over a period of about a decade marram grass has been removed from many of Stewart Island's most important dunelands, including Smokey Beach, West Ruggedy, East Ruggedy, Little Hellfire and Big Hellfire. The Sand Dune and Beach Vegetation Inventory of New Zealand (1992) identified these dunelands to be of national significance as refuges for a range of threatened species and exceptional landscapes and landforms. These values would have been largely lost from these beaches had the eradication programme not proceeded. DoC have shown tremendous foresight and persistence in first initiating and then maintaining the programme in the face of competing demands.

South Dune, Doughboy Bay

Doughboy Bay and Mason Bay poses significant new challenges in the marram eradication programme due to the large areas of marram present. The area of dune dominated by marram grass (i.e., >51% marram cover) at Mason Bay was 75 ha in 1998. A study by the Department of Geography, University of Otago, estimated the available marram grass habitat (279 ha) will be dominated by marram by about 2032. The area of marram at Doughboy is relatively stable and small by comparison (about 20 ha).

In 1998 DoC (Southland) undertook to remove marram from Doughboy Bay, commencing with the southern dunes, an area of about 7 ha. These dunes have prograded as a series of foredune ridges over the last 40 years or so under a cover of marram grass. The helicopter employed took about four hours to apply the herbicide. The operation took place in January 1999 and the site was examined four months later. The kill rate appeared very high, close to 100%, but the exact effectiveness of the operation will not be clear until spring growth is examined in late December 1999. Areas of surviving marram will be sprayed using backpacks. Annual checks will be necessary to destroy re-infestations over the next few years. Thereafter, as with all Stewart Island dunelands, occasional visits (every 2-3 years) will be needed to eliminate fresh marram growth. Fragments of marram grass are probably transported to Stewart from the mainland by the Southland current, so the marram eradication programme must be ongoing.

The Doughboy operation followed analysis of the effectiveness and environmental impact of herbicide eradication of marram grass on Stewart

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Backpack application of herbicide over marram

Island. Two principal issues were examined: collateral damage to native dune plant communities and destabilisation of the dunes following marram necrosis. Pingao (a sedge) is not affected by Gallant but the herbicide does kill the native sand tussock and other native grasses. DoC staff can usually discriminate marram from the sand tussock when using backpacks, but this may not be possible during aerial operations. Sand tussock was not present in the southern dunes of Doughboy prior to spraying in 1999 but is still widespread in Mason Bay north of Martin's Creek. If helicopters are eventually used at Mason Bay it may be necessary to hand-spray marram adjacent to areas of sand tussock. Where marram has been removed at other beaches on Stewart Island (e.g., Smokey Beach) sand tussock re-establishes very rapidly, which suggests the seed persists for some time.

There are two aspects to the issue of dune destabilisation in Doughboy Bay. Firstly, observations at other sites suggest marram grass may persist as a dead straw for months to years after herbicide application. The substrate is, therefore, afforded some protection from deflation while pingao and sand tussock re-establish. There is little prospect of rapid erosion of dunes where dense marram has been killed. Secondly, the marram-dominated dunes of southern Doughboy Bay have an artificial stability compared with dunes formed in association with native species. Some instability following spraying is to be expected and welcomed — some native dune plant species favour habitats associated with a dynamic dune environment (e.g., the relatively moist surfaces of deflation hollows).

Helicopter application of herbicide, February 1999 Doughboy Bay

In summary, early indications from the Doughboy Bay operation suggest aerial application of herbicide offers an effective method of eradicating marram grass. Investigations funded by the Department of Conservation and University of Otago will document the impact of marram eradication on dune morphology and native species recovery over the next three years. This information should provide the understanding needed to eradicate marram grass from Mason Bay, the remaining obstacle to Stewart Island becoming marram-free. The restoration and conservation of some of New Zealand's outstanding dunelands should then be celebrated as one of the countries' great conservation achievements.

Mike Hilton, Department of Geography, University of Otago

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What's hot on the WWW

A guide to things coastal

A guide to web directories, coastal and marine data, research istitutes, port authorities, professional socities, weather information and many other things
http://www.coastal-guide.com/

The artificial surfing reef is completed

An artificial surfing reef constructed as part of beach nourishment and coastal protection strategy on the Gold Coast of Australia.
http://www.wrl.unsw.edu.au/CoastalImaging/

NZCS Website

The genesis of the NZCS website is now open to comment. See
http://www.cae.canterbury.ac.nz/nzcs/nzcs.htm

Eradicating Undaria from Big Glory Bay — Programme Update

Coastal News

Undaria, an invasive seaweed, was discovered in Big Glory Bay, Stewart Island, in March 1997. An eradication programme was implemented after scientific advice and because the spread of Undaria from Big Glory Bay was considered a significant threat to marine ecosystems inhabiting the shore of Paterson Inlet and Stewart Island. Paterson Inlet contains 70% of the types of seaweed found about Stewart Island and has greatest seaweed diversity of any area in New Zealand. The principle technique presently utilised to eradicate Undaria is to simply physically remove the seaweed stage before it reproduces.

Undaria was discovered in Bluff Harbour in September 1998 during routine surveillance and as part of the Big Glory Bay eradication programme. The programme was subsequently extended to include Bluff Harbour due to concerns that the establishment of Undaria at Bluff would lead to the reintroduction and the spread of Undaria to Stewart Island, and the spread of Undaria to Fiordland and the Subantartic Islands.

The main objective for Big Glory Bay during the 1999/2000 season is to reduce the number of seaweeds removed to below 50% of total seaweed numbers removed during 1998/99. A panel of independent scientists has approved this performance standard.

At this stage the total number of seaweeds removed from Big Glory Bay is 18.6% of the total number of seaweed's removed over the same period in 1998 (see Figure 1). The level of maturity in Undaria seaweeds for October 1999 is 15%.

In Bluff Harbour, 10,481 plants have been removed since April 1999. This is the first year the programme has been run in Bluff Harbour, which provides new challenges for management due to the high tidal flows and poor water clarity. The level of maturity of plants removed from Bluff harbour is currently 13%.

While the Department has been effective in preventing the localised spread of Undaria, there is always the risk that the seaweed will be re-introduced to the control sites by vessels that are fouled with Undaria. To assess and manage the risk of re-introduction, the Department has implemented a programme to monitor vessels.

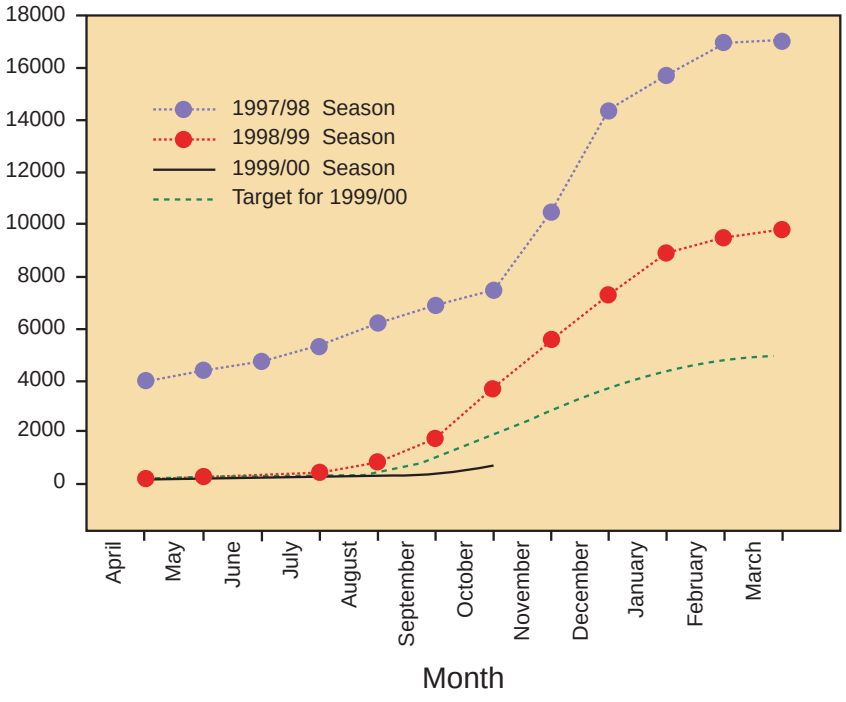

Figure 1: Comparison between the cumulative annual total of individual *Undaria* seaweed's removed from Big Glory Bay in previous seasons, the performance standard (target) for the 1999/2000 season, and the cumulative total number of individual seaweed's removed from April 1999 to October 1999

Undaria

At present we are conducting a vessel-monitoring programme which involves snorkelling under every vessel between Stewart Island and Timaru.

All boats are identified with either their name or a photo. We are recording the presence of the main groups of fouling organisms (e.g., hydrozoans, bryozoans, ascidians etc.), as well as the approximate number of Undaria seaweeds. There are currently 770 vessels in our population, 26% of which are fouled with Undaria, and 86% of these fouled vessels comprise yachts and launches.

Due to the establishment of Undaria on wharf pilings at Bluff Harbour, techniques are being developed to sterilise these wharf pilings with biocide agents. The sterilisation project involved the use of a specially designed PVC sleeve that is fitted to the wharf piles in such a way as to limit the amount of biocide required to treat the piles. Besides increasing our chances of success in Bluff Harbour, the development of these sterilisation techniques will also provide more options for future management of Undaria on wharf pilings in other regions.

The Undaria eradication project has approved funding through to 30 June 2004, subject to annual reports to Ministers and the development of a strategy to manage Undaria at a national level. The Ministry of Fisheries is developing this National Pest Management Strategy (NPMS), for Undaria. The draft discussion document was released for public comment in November 1999 with comments due by Christmas.

Mike Stuart and Mark O'Callaghan
Department of Conservation

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Dusting off the Simpson archives

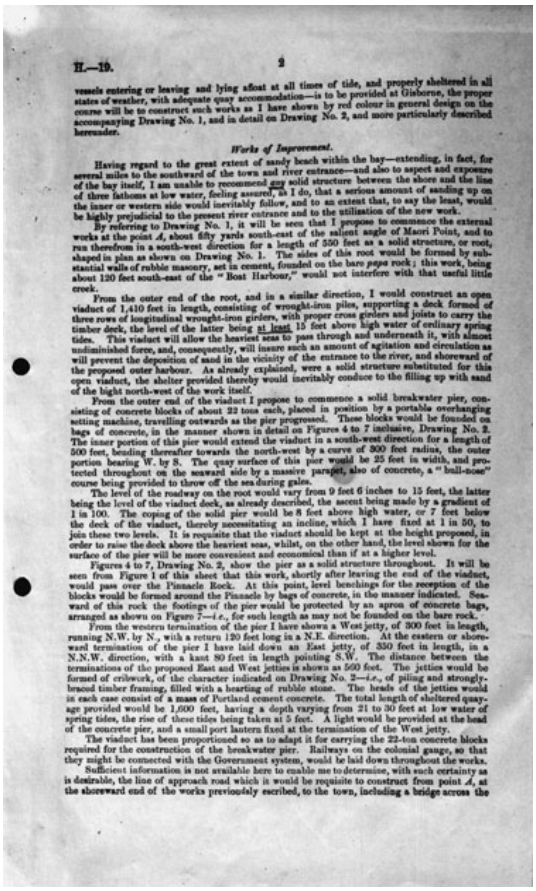
Coastal News

Ralph Simpson left these archives to the NZ Coastal Society in 1994. Simpson was a Coastal Engineer with the Ministry of Works and the archives are his collection of information on a variety of ports and technical subjects. There is a particular emphasis on the West Coast ports of Westport and Greymouth, reflecting Simpson's work on these.

The Coastal Society, largely through the efforts of Peter Steel, have taken on the task of restoring this valuable and historical collection so that the archives are available for use and not lost with the passage of time. So far this has involved having the collection catalogued by an archivist, and placed into archival folders instead of the metal clip folders that they were previously kept in. Part of the archive is held by the Society, with the remainder that has not yet been catalogued or examined by the archivist, held by Jeremy Gibb.

Subject contents of the archives are:

- Auckland
- Doubtful Sound
- Dredging
- Greymouth
- Harbours Association of New Zealand Conference Proceedings 1966, 1970, 1974
- Lyttleton
- New Plymouth
- New Zealand Ports – Coode Report of 1881
- Northland
- Offshore Terminals
- PIANC Reports
- Picton
- Timaru
- Wellington



H.—19. 2

vessels entering or leaving and lying afloat at all times of tide, and properly sheltered in all states of weather, with adequate quay accommodation—is to be provided at Gisborne, the proper course will be to construct such works as I have shown by red colour in general design on the accompanying Drawing No. 1, and in detail on Drawing No. 2, and more particularly described hereunder.

Works of Improvement.

Having regard to the great extent of sandy beach within the bay—extending, in fact, for several miles to the southward of the town and river entrance—and also to aspect and exposure of the bay itself, I am unable to recommend any solid structure between the shore and the line of three fathoms at low water, feeling assured, as I do, that a serious amount of sanding up on the inner or western side would inevitably follow, and to an extent that, to say the least, would be highly prejudicial to the present river entrance and to the utilisation of the new work.

By referring to Drawing No. 1, it will be seen that I propose to commence the external works at the point *A*, about fifty yards south-east of the salient angle of Maori Point, and to run therefrom in a south-west direction for a length of 550 feet as a solid structure, or root, shaped in plan as shown on Drawing No. 1. The sides of this root would be formed by substantial walls of rubble masonry, set in cement, founded on the bare *papa* rock; this work, being about 120 feet south-east of the "Boat Harbour," would not interfere with that useful little creek.

From the outer end of the root, and in a similar direction, I would construct an open viaduct of 1,410 feet in length, consisting of wrought-iron piles, supporting a deck formed of three rows of longitudinal wrought-iron girders, with proper cross girders and joists to carry the timber deck, the level of the latter being at least 15 feet above high water of ordinary spring tides. This viaduct will allow the heaviest seas to pass through and underneath it, with almost undiminished force, and, consequently, will insure such an amount of agitation and circulation as will prevent the deposition of sand in the vicinity of the entrance to the river, and shorward of the proposed outer harbour. As already explained, were a solid structure substituted for this open viaduct, the shelter provided thereby would inevitably conduce to the filling up with sand of the bight north-west of the work itself.

From the outer end of the viaduct I propose to commence a solid breakwater pier, consisting of concrete blocks of about 22 tons each, placed in position by a portable overhanging setting machine, travelling outwards as the pier progressed. These blocks would be founded on bags of concrete, in the manner shown in detail on Figures 4 to 7 inclusive, Drawing No. 2. The inner portion of this pier would extend the viaduct in a south-west direction for a length of 500 feet, bending thereafter towards the north-west by a curve of 300 feet radius, the outer portion bearing W. by S. The quay surface of this pier would be 25 feet in width, and protected throughout on the seaward side by a massive parapet, also of concrete, a "bull-nose" course being provided to throw off the sea during gales.

The level of the roadway on the root would vary from 9 feet 6 inches to 15 feet, the latter being the level of the viaduct deck, as already described, the ascent being made by a gradient of 1 in 100. The coping of the solid pier would be 8 feet above high water, or 7 feet below the deck of the viaduct, thereby necessitating an incline, which I have fixed at 1 in 50, to join these two levels. It is requisite that the viaduct should be kept at the height proposed, in order to raise the dock above the heaviest seas, whilst, on the other hand, the level shown for the surface of the pier will be more convenient and economical than if at a higher level.

Figures 4 to 7, Drawing No. 2, show the pier as a solid structure throughout. It will be seen from Figure 1 of this sheet that this work, shortly after leaving the end of the viaduct, would pass over the Pinnacle Rock. At this point, level benchings for the reception of the blocks would be formed around the Pinnacle by bags of concrete, in the manner indicated. Seaward of this rock the footings of the pier would be protected by an apron of concrete bags, arranged as shown on Figure 7—*i.e.*, for such length as may not be founded on the bare rock.

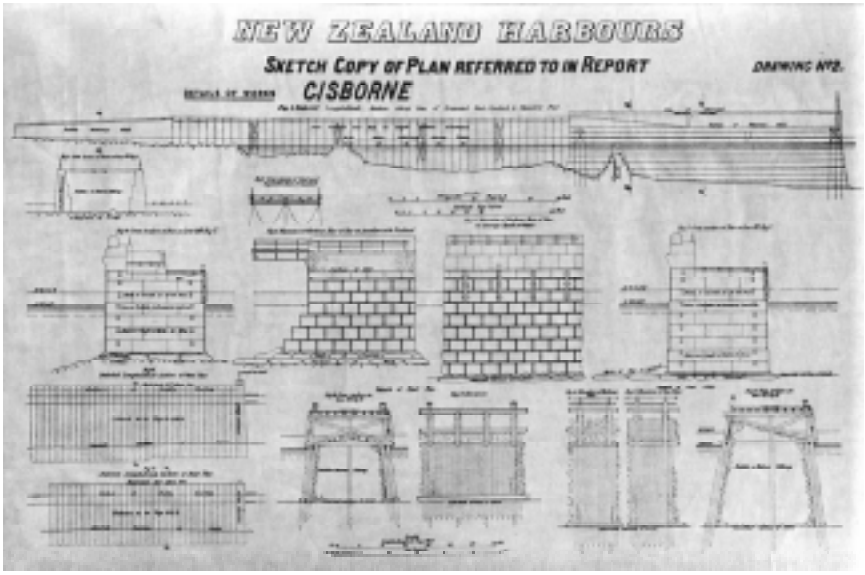
From the western termination of the pier I have shown a West jetty, of 300 feet in length, running N.W. by N., with a return 120 feet long in a N.E. direction. At the eastern or shorward termination of the pier I have laid down an East jetty, of 350 feet in length, in a N.N.W. direction, with a kant 80 feet in length pointing S.W. The distance between the terminations of the proposed East and West jetties is shown as 560 feet. The jetties would be formed of cribwork, of the character indicated on Drawing No. 2—*i.e.*, of piling and strongly-braced timber framing, filled with a hearting of rubble stone. The heads of the jetties would in each case consist of a mass of Portland cement concrete. The total length of sheltered quayage provided would be 1,600 feet, having a depth varying from 21 to 30 feet at low water of spring tides, the rise of these tides being taken at 5 feet. A light would be provided at the head of the concrete pier, and a small port lantern fixed at the termination of the West jetty.

The viaduct has been proportioned so as to adapt it for carrying the 22-ton concrete blocks required for the construction of the breakwater pier. Railways on the colonial gauge, so that they might be connected with the Government system, would be laid down throughout the works.

Sufficient information is not available here to enable me to determine, with such certainty as is desirable, the line of approach road which it would be requisite to construct from point *A*, at the shorward end of the works previously ascribed, to the town, including a bridge across the

- West Coast Harbours
- Westport

Each file consists of a collection of papers relating to the subject. The papers have in almost all cases been published elsewhere or are held in other collections such as the National Archives. Their main potential value to Society members is that they form a single point collection on specific subjects or locations.



It is important for the Society to manage the archive in a manner that, as far as possible, fits with the interests of the Society's membership. It is the Committee's view that this would best be achieved by placing the collection in a library, where it can be maintained as an entity and to

allow the addition of further information that is relevant to the Society.

This collection, maintained by professional librarians can become the core of a Coastal Archive and others can be encouraged to follow Simpson's example to add to the Archive.

We have had an offer from the Energy Library in Wellington to hold the collection where it would be accessible for Society members and others to use and have copies of material made for their own purposes.

Other libraries have been approached, but are unable to provide the commitment to holding the collection together that the Committee considers being an important objective.

We would like comment and feedback on the Energy Library offer, before we take any action to proceed in this direction. Please email any comments to Peter Steel psteel@beca.co.nz

Peter Steel, Beca Consultancy Services

Canterbury Coastal Group Annual Meeting Seminar

Coastal News

The Canterbury Coastal Group annual meeting and seminar day was held in September in the Geography Department of the University of Canterbury. As usual this was a very successful day with over 40 people attending, including coastal planners, resource scientists and coastal researchers, consultants, policy analysts, port company staff and postgraduate students. Professor Bob Kirk was on hand to welcome everyone to the University and provide some opening comments. There were a total of nine presentations throughout the day and we were also fortunate to have Professor Roger McLean along to join in the discussions. Roger was visiting from the Australian National University and has had considerable involvement in the International Panel on Climate Change (IPCC).

The papers presented covered a wide range of coastal management issues and research interests. Frank Stewart and Robin Keer-Keer (Canterbury Regional Council) presented a summary of the contingency plans in place for oil spills along the Canterbury coast, and also a discussion of the response capabilities for clean-up operations. The Christchurch City Council (CCC) has recently conducted a study looking at potential impacts of sea level rise on the cities infrastructure and coastal developments. Jenny Ridgen (CCC) and Derek Todd (Tonkin and Taylor Ltd.) presented the results of this work. This was followed by Trevor Partridge's (Landcare Research) interesting discussion on the contrasting patterns of salt marshes and lagoons in Canterbury, and Graham Macky (NIWA) describing a synthesis of extreme waves off our coast. The morning session concluded with a group discussion on some potential changes to the Hazard Zones (in the Proposed Regional Coastal Plan for Canterbury) and coastal hazard management in general.

After lunch the group heard from Poma Palmer (Department of Conservation) who gave us his personal and thought provoking views on the implications of land and foreshore tenure for coastal planning. Poma also outlined the new Pohatu Marine Reserve on Banks Peninsula, a very positive step for sustainable management of our coast. Rodney Chambers from CoastCare (CCC) discussed the threat posed by Boneseed, an invasive plant pest that is becoming established on sections of the Christchurch coastline. The group was also presented with the findings of two university research projects sponsored by the Regional Council. Maree Hemmingsen (PhD. Student, University of Canterbury) updated us on her investigation into abrasion rates of coastal sediments, and Adam Patterson (M.Sc. Student, University of Waikato) outlined his thesis, which involves using remote video technology (the Cam-Era project run by NIWA) for investigating changes at the Ashburton River mouth.

The Canterbury Coastal Group has been going for nearly 10 years and continues to grow in numbers. These annual meetings provide an excellent forum for communication and interaction for people involved in the management of the local coastal environment. Another meeting and seminar day will be held in the year 2000.

Postscript - *Several coastal practitioners in the Christchurch area have recently left and/or changed their employment. On behalf of the Canterbury Coastal Group I wish them well. Graham Mackey, formally of NIWA now working for Kingston Morrison in Auckland. Dr. Helen Rouse, formally of Lincoln University is now working for the West Coast Regional Council. Derek Todd, formally of Tonkin and Taylor Ltd. now started his own environmental and coastal consultancy, DTec Consulting Ltd. based in Christchurch.*

Brodie Young
Canterbury Regional Council

Committee News

Coastal News

- Thanks to the Seminar Organisation Committee for a successful seminar last September and to the Wellington Regional Council for their support. The 2000 NZCS Seminar will be held in Auckland.
- NZCS now has 285 members.
- The NZCS in a sound financial position, with $45,000 invested and $13,268 in operating funds. NZCS policy on spending/investment was discussed. On a yearly basis, capital will not finance operation of the NZCS. Awards will come out of operating/interest funds. The capital account will be separated from operating account and interest is to go into the operating account.
- We have recently increased fees to $45 for ordinary members and $400 for corporate. Student membership will stay the same. This increase is because, in recent years, the capital funds have been subsidising operating expenses due to a persistent increase in operating expenses. This is not sustainable in the long term.
- Archiving the NZCS database is still under discussion, especially how the proposed system will work with respect to members' access and costs.
- Methods to improve the Society profile were discussed. The newsletter is to be sent to TLAs, universities and polytechnics and further targeting of university students is proposed. In addition, the idea of a prize for the National Science Fair will be investigated.
- The WWW site is under development. A trial site for members to comment on has been set up at : www.cae.canterbury.ac.nz/nzcs/nzcs.htm (use the e-mail address on the site to make comments).
- A grant of $500 was made to Lucy Brake to attend an Australian Coastal Conference, on the condition that she writes an article for coastal news exploring the implications of the conference experience in relation to the management of the BOP coast. (However, Lucy is now unfortunately unable to attend the conference.)
- The discussion of the NZCS contribution to the book on "The New Zealand Coast Te Tai o Aotearoa" continued. Two thousand five hundred dollars will be committed from the NZCS, with certain conditions. The NZCS is awaiting a response from the publishers.
- The possibility of Roadshows, with speakers from the ICS 2000 conference, is being investigated for Wellington and Christchurch.