

Verbal Submission in opposition to the applications

Submitter Details:



Full Name:

Nicola Joan Reeves on behalf of Surfbreak Protection Society Inc

Full Postal Address:

P.O. Box 20717

Glen Eden

Auckland 0641

Home Ph: **03 4881008**

Mobile Ph: **027 4627494**

The specific parts of the applications that my submission relates to are:

Placement of harbour dredging spoil and its effects on surfers and the surfing venues – The Spit/ Aromoana, Whareakeake, Karitane point and Beach.

This is a submission on publicly notified resource consent applications pursuant to the Resource Management Act 1991.

Applicant Details: Name of Applicant: Port Otago Limited

The applications that I am opposing: Otago Harbour Dredging

Application No: 2000.472_V1 – Variation – Coastal Permit

To vary the purpose and conditions of existing resource consent 2000.472 to authorise the disposal of dredge material derived from the dredging of the shipping channel or within Otago Harbour from activities associated with the operation and maintenance of Port Chalmers facilities, in accordance with the following existing maximum annual discharge quantities at the following locations: Heywards Point disposal site (200,000 cubic metres), Spit Beach disposal site (200,000 cubic metres), South Spit Beach disposal site (50,000 cubic metres)

Application No: 2010.198 – Coastal Permit – Restricted Coastal Activity

To deposit up to 7.2 million cubic metres of dredge material sourced from the channel upgrading works and maintenance dredging at the new off shore disposal site A0.

Disposal of Dredge Spoil

Purpose: Disposal of associated dredge material at new and existing disposal sites.

Location: New Disposal Site A0 : Pacific Ocean, approximately 6.3 kilometres northeast of Tairaroa Head

Existing Heywards Point disposal site: Pacific Ocean, approximately 1.5 kilometres northeast of Heyward Point

Existing Spit Beach disposal site: Pacific Ocean, approximately 1 kilometre to the northeast of Spit Beach

Existing South Spit Beach disposal site: western end of South Spit Beach

The specific parts of the application that my submission relates to are: Disposal of dredged spoil from Project Next Generation.

Areas of concern are the variation of consent 2000. 472_V1 application for disposal of spoil at the Aramoana "Spit" disposal mound and Heywards Point.

The potential effects of the accretion and movement of these spoil mounds and deposition of rock resulting in the potential modification of the wave environment causing adverse effects of the recreational values of the surf break.

These three surfbreaks are now protected under Policy 16 of the New Zealand Coastal Policy Statement 2011.

Policy 16.- Surf breaks of National Significance.

All decision makers must recognise and protect surf breaks of national significance for surfing, including those listed in Schedule 1, by:

- *-Ensuring that activities in the coastal environment do not adversely affect the surf breaks, and*
- *-Avoiding adverse effects of other activities on access to, and use and enjoyment of the surf breaks.*

We request that the consent authority recognises the national and international significance of the surfing waves at Aramoana, Murderers and Karitane in respect of these consent applications. Based upon their listing in schedule 1 of Policy 16 of the proposed New Zealand Coastal Statement (2010). Aramoana 'The Spit', Murderers and Karitane is a listed Schedule 1.

We have concerns over the effects that the continued consented volumes and deposition of dredged spoil at the three existing dumps sites, in particular The Spit/Aramoana, which will have the potential to adversely affect the quality of the surfable wave. This wave is recognised nationally as one of the best beach breaks in New Zealand, and is regarded as world class wave internationally.

What concerns us the most is that the AEE report and associated independently peer review reports presented to satisfy the conditions of Policy 16 in regards to The Spit/Aramoana, Whareake and Karitane surf breaks states reveals that there will be:

"no discernable effect on the 'surfability of the wave" -(Single)

This statement and others like it throughout the May 2010 AEE are made in regards to

modelling of effects based on channel deepening at the harbour mouth, and deposition of spoil at the A0 dumpsite.

I believe these monitoring results do NOT take in the cumulative effect of greater volumes of dumping of spoil from capitol dredging at The Spit mound than previously documented minimal volumetric years.

The real and potential dumping of up to 200,000 m³ a year at The Spit existing spoil mound is a reality, especially in light of the revised stage 1 project of 500,000m³ per year, where the Recommendations report states that the inshore site will be used first and the remainder at the A0 site.

That's FULL CAPACITY at The Spit 200,000m³ over 3 years will raise the 23 hectare mound by 1.5 metres building an already shallow mound giving a greater modifying effect to the swell corridor of the surf break, altering existing wave peel angles and dissipating energy through shoaling over the mound.

The true effects are unknown, and although wave monitoring has been promised, measuring and assessing during a period of heaving dumping in the next few years will NOT give an accurate picture of the effects. If it cannot be proved that effects will be avoided, remedied or mitigated...

then dumping at The Spit should be restricted to 30-50,000m³ per year until a robust bathymetric and visual (camEra) dataset has been obtained.

Reasons:

Surfbreaks are a delicate and finite resource with significant social, cultural and economic benefits (Scarfe 2009).

They are affected by bathymetric features and modifications in the coastal marine environment. Once modifications have been made that affect the wave environment it is extremely difficult if not impossible to restore and repair them to their original functioning with current technology.

Although New Zealand possesses thousands of kilometres of coastal area on which waves always break, the specific conditions that create a good surfing wave a rare occurrence.

The Aramoana Surfing Wave:

Swell, currents, water levels, seabed morphology and winds all contribute to a surfable wave. A surfable wave is a wave that can be caught and ridden. The wave has a breaking point that peels along an unbroken wave crest propelling the surfer along the face of the wave laterally.

Ocean swell travels and transforms due to offshore wave focussing creating surfable waves Scarfe (2009).

Kilpatrick (2005) conducted a hydrographic survey and refraction modelling study by Scarfe (2005) at the Aramoana surf break site. (see SPS appendix1 for details of survey components)

The results revealed that surfable waves at Aramoana were created almost

completely by offshore preconditioning over the offshore features

... 'Convergent wave focussing over the ebb tidal delta creates a prominent band of focussed wave energy that varies due to swell direction over the beach. The spoil ground slightly rotates the wave causing less of an angle between the wave orthogonal and the surf zone contours.

The wave is improved by wave focussing, creating a gradient in height along the wave crest promoting wave peeling.'

He went on to conclude that it was possible the character of the wave could change and that the impacts of continued dredging and nourishment of the beach are unknown.

Scarfe (2009) reported "the spoil ground is likely to have improved conditions at the surfing break over time. As the entrance continues to be dredged and spoil deposited offshore the surfing break it is possible that the character of the surfing wave could change. So although engineering activities are likely to have improved surfing conditions, the impacts of continued dredging and nourishment of the beach are unknown." " more research is required to investigate the nuances of the surf break"

3. Current Condition of the Spoil Mound and effect on wave environment:

The dredge spoil dump site at Aramoana has been utilised by Port of Otago since 1985. Detailed recordings of volumes, frequency and bathymetric alteration created from the effect of the disposal of spoil have been diligently recorded.

Upon the renewal of the currently operating resource consent in Feb 2002, (for which a variation is applied for here in application 2000.472_V1), the minister of the Environment requested as a condition of the consent that:

5. ... "The consent holder shall commission a study".. " by a suitably qualified person or organisation" ..."This study shall include a recommendation on any ongoing monitoring requirements .. "This study is to be reported in stages and to be completed within three years.

8.The consent holder shall carry out the following monitoring of the exercise of this consent:

- (a) the quantity of material discharged at each of the three disposal site locations, the nature and type of this material, the areas from which the material was derived and the state of the tide when the material was dumped.
- (b) the monitoring recommended in conditions 5,6,7

The requested study commissioned was produced in 2003

"Sediment pathways around Otago Harbour and the north to Karitane Peninsula" -

Kat Bunting, Dr. Martin Single, Professor Bob Kirk

A report to Port Otago.

The report states that: "Aramoana has become the principal disposal site."

Section 7.2 volumetric Changes of the Aramoana Disposal Site

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"Finally and most significantly, the retention of spoil at this site (Aramoana) is clearly evident from the survey profiles with a well defined mound forming on site".. "the accumulation of sediment for the period 1983 to 1998 was in the order of 708,616,616m³, this being 43% of the total volume of spoil discharged at this site for the same period."

"This retention of spoil may be having an effect on the distribution of wave energy received at the shore through refraction or focussing of long period waves. At present there is no indication that this is occurring, but it is an issue that should be monitored."

8. Conclusions and Recommendations

8.1.4 Near shore Dynamics.

2) .. Further disposal of spoil at this site may increase the amount of sediment build up with the possibility of the height of the mound increasing to where it modifies the distribution of wave energies at shore."

"The pattern of retention indicates that the Aramoana site is presently 'full' of sediment"

We seek the following decision from the consent authority:

1. We request that the consent authority recognises the national and international significance of the surfing waves at Aramoana, Murderers and Karitane in respect of these consent applications. And their recreation, cultural and social values.

- **And that these qualities be preserved and protected in accordance with the Otago Regional Policy Statement - Coastal**

Sections:

8.3.1 - Use and development pressures within Otagos coastal environment may compromise.

(f) Amenities.

8.4.1 - To promote sustainable management of Otago's coastal resources in order to meet the present and reasonably foreseeable needs of Otago's people and communities.

8.4.5 - To protect areas of natural character, outstanding natural features and landscapes and their associated values within the coastal environment.

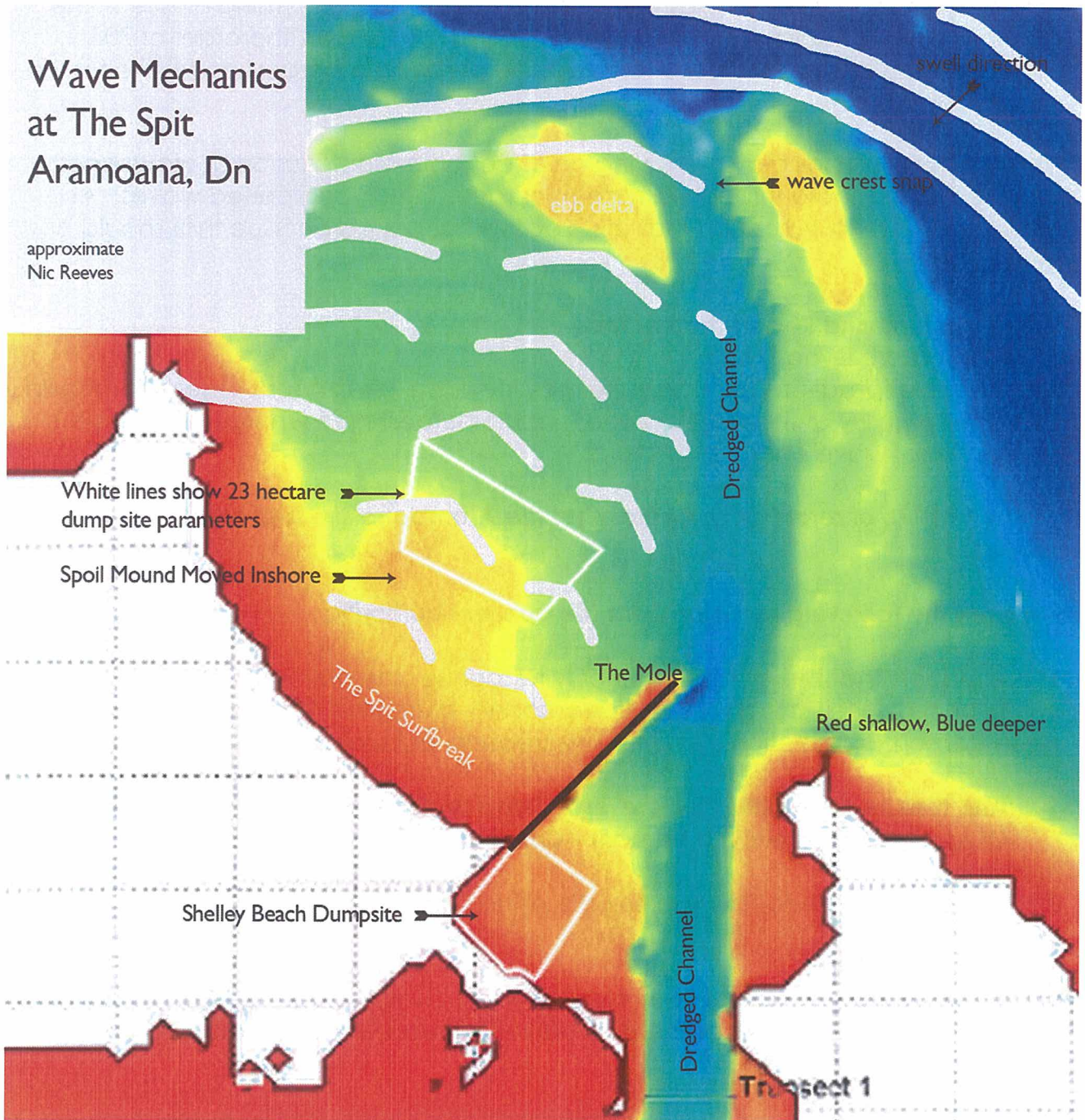
8.5.2 - To recognise uses within the coastal environment through

(c) allowing for activities requiring a coastal location.

Subject to avoiding, remedying or mitigating the adverse effects of any activity.

8.5.4 - To recognise and provide for the preservation of the natural character of Otago's coastal environment and to protect outstanding natural coastal features and

landscapes from inappropriate subdivision, use and development through identifying and protecting:
 (d) important physical coastal features
 (e) Areas of cultural, historic, spiritual, recreational and scientific significance in Otago.



Graphic Above - The mechanism conducive to forming the surfable wave at The Spit Aramoana is created by a 'wave crest snap' as the swell rounds the ebb delta at the mouth of the harbour, the swell then moves over the dump site.

The spoil mound modifies the swell adjusting the peel angle improving the wave to a point, although energy is dissipated from the wave as it passes over the mound. A

total absence of the spoil mound still gives a high class surfable wave with a slower peel rate and angle.

Unfortunately the presence of the ebb delta and offshore bathymetry creating the initial wave crest snap is artificially created by the construction of the fixed harbour mouth and mole built in the early 1900's and continual dredging of the harbour.

The existing studies indicating the present dump site at Aramoana as being already 'full', leading to concerns over the ongoing deposition of spoil at the current and requested volume of 200,000m³ per year. Although recognising that the existence of the spoil ground does in fact contribute to the quality of the surfable wave in its present state.

Sediment plumes from the AO dump site and the potential to cause sediment accumulation at the shoreline and offshore areas at the Karitane bar surf break affecting the nature of the bar components that create the world class wave at that site.

Turbidity of the water environment as it affects recreation users of the near shore surf zone created by sediment plumes from the disposal of dredged spoil at the Aramoana, Heywards Point and AO sites. And the potential of contaminants in the material suspended in these plumes affecting the health of recreational users.

The Aramoana Surfing Wave:

Swell, currents, water levels, seabed morphology and winds all contribute to a surfable wave. A surfable wave is a wave that can be caught and ridden. The wave has a breaking point that peels along an unbroken wave crest propelling the surfer along the face of the wave laterally.

Ocean swell travels and transforms due to offshore wave focussing creating surfable waves Scarfe (2009).

Kilpatrick (2005) conducted a hydrographic survey and refraction modelling study by Scarfe (2005) at the Aramoana surf break site. (see SPS appendix 1 for details of survey components)

The results revealed that surfable waves at Aramoana were created almost completely by offshore preconditioning over the offshore features

We request:

1. If the Council is to take responsibility for the breaks (should consents be issued), I would expect a condition requiring a monitoring programme for surf breaks be submitted by the Port of Otago to the Regional Council for their approval. This would outline how the consent holder will gather baseline data on the breaks, and then the regional council should have this independently reviewed by someone with the qualifications and experience to determine if the monitoring will adequately demonstrate any effects on the breaks from dredging i.e someone like a Brad Scarfe or Shaw Mead. Then, ideally the s128 review

condition should specify the surf breaks as a matter for which the council can review the consents should adverse effects on the result be proven by monitoring.

a. The need to emphasise that although the AEE reports no adverse affect on surfing, that they do acknowledge that the surfbreak is enhanced to some degree by the spoil mound, therefore there is a direct affect, and that further dumping has the potential to have adverse effects which is verified by Kirk 2003, Kilpatrick 2008 and McComb 2011.

2. Request robust monitoring of the spoil mound and affect on surf break 4 times a year, and that if there is a trigger/change in activity that the volumes be immediately reviewed.

3. The set up of a CamERA site on the cliffs, either by NIWA or by ASR. results can give forecast scenarios of spoil effects by volume, as well as define the characteristics of the surfbreak that bathymetric studies do not afford.

4. That although i have been part of the Next Generation Public Consultative group for 4 years, submitting my concerns along with South Coast Boardriders about the effects to the surfbreaks, that these have not been seriously addressed in the AEE.

The revised Next Generation project Stage One - Total dredged (500,000m³ per year for 3 years).

The Recommendations Report prepared for the hearings panel dated 16th march 2011 states that the inshore sites are to be used first and the balance dumped at the new offshore site at A0, due to the cost o and dubious ability of the current dredges to reach the new A0 site.

Only 43% of spoil moves on in the marine environment at Aramoana spit site, although the mound has in the past accentuated the peel angle of the wave.

Although the 2003 study by Kirk stated that the spoil site was currently FULL, reduced dumping over the last 5 years has allowed the mound to disperse and create a potential platform for more. Although surfers report a deterioration of the wave over the last 5 years, I can understand that by the graphics that Peter McComb put up (which I have attempted to replicate) for us as the inshore areas are filling in and the mound has moved closer to the shore as it has dispersed, outside the 23 hectare parameters for dumping..

Surfbreak Protection Society is therefore concerned that no (or an inadequate) Assessment of Environmental Effects (AEE) has been conducted regarding the likely effect of the Next Generation project.

Surfbreak Protection Society is very concerned about the actual and potential adverse effects that will or are likely to arise if this consent is granted for the proposed activity. This could result in significant adverse affects on the 'wave environment' and 'amenity value of surfing'

NZCPS 2010 Policy 16 – Surf breaks of national significance

There was a significant response from surfers and surfing organisations to the review of the NZCPS in 2008 by the Minister of Conservation.

This resulted in Policy 16

“**Surf breaks of national significance** in the NZCPS 2010, which states:

Protect the surf breaks of national significance for surfing listed in Schedule 1, by:

(a) ensuring that activities in the coastal environment do not adversely affect the surf breaks; and

(b) avoiding adverse effects of other activities on access to, and use and enjoyment of the surf breaks.

“**Surf break is defined in the Glossary of the NZCPS:** “A natural feature that is comprised of swell, currents, water levels, seabed morphology, and wind. The hydrodynamic character of the ocean (swell, currents and water levels) combines with seabed morphology and winds to give rise to a ‘surfable wave’.

A surf break includes the ‘swell corridor’ through which the swell travels, and the morphology of the seabed of that wave corridor, through to the point where waves created by the swell dissipate and become non-surfable.

‘Swell corridor’ means the region offshore of a surf break where ocean swell travels and transforms to a

‘surfable wave’. ‘Surfable wave’ means a wave that can be caught and ridden by a surfer. Surfable waves have a wave breaking point that peels along the unbroken wave crest so that the surfer is propelled laterally along the wave crest.”

6 All breaks with a rating of 10 out of 10 on the „Stoke Meter in the „Wavetrack New Zealand Surfing Guide (supra) were scheduled for protection under Policy 16. The guide identifies 16 of the 470 listed breaks, as having a 10 out of 10 „stoke or surf quality rating. This was accepted by the BOI as the most authoritative guide to New Zealand surf breaks. The surf break of Papatowai is included as an exception to the Wavetrack method that was protected for its growing international profile as a high performance big wave break. 17 surf breaks were scheduled in total.

Secondly, surf break protection must cover the coastal environment, and not be restricted to the confines of the CMA. This is because activities beyond the CMA can potentially effect surf breaks such as land based discharges effecting water quality and sedimentation, and restriction of public access to a break. These are issues that need to be provided by land use controls in Regional and District Plans, as well as using management areas in Regional Coastal plans. Therefore the OWRPS is the appropriate tool for providing this necessary guidance in applying principles of Policy 16.

Thirdly, the „remedying and mitigating“ of effects on surf breaks is not considered practicable. While the technology for developing artificial surfing reefs is just in its infancy, it is still not feasible to replace the values provided by a natural break. Hence the change to „avoiding“ made by the BOI when drafting Policy 16. Therefore, in developing policy for the PWRPS, SPS submits that avoidance from inappropriate subdivision, use and development in the coastal environment is the only measure as per the requirements of Policy 16 for surf breaks of national significance .

NZCPS 2010 Policy 13 - Preservation of natural character

Due to the nature of the surf breaks listed for protection in Schedule 1 and identified in Policy 16 NZCPS, the NZCPS essentially protects the „best of the best of our high performance waves in New Zealand.

Policy 13 in the NZCPS states:

Preservation of natural character

(1) To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use, and development:

- (a) **avoid** adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and*
- (b) **avoid** significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment;*

including by:

- (c) assessing the natural character of the coastal environment of the region or district, by **mapping or otherwise identifying** at least areas of high natural character; and*
- (d) ensuring **that regional policy statements, and plans, identify areas where preserving natural character requires objectives, policies and rules, and include those provisions.***

*(2) Recognise that **natural character** is not the same as natural features and landscapes or amenity values and **may include matters such as:***

- (a) natural elements, processes and patterns;*
- (b) biophysical, ecological, geological and geomorphological aspects;*
- (c) natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and **surf breaks**;*
- (d) the natural movement of water and sediment;*
- (e) the natural darkness of the night sky;*
- (f) places or areas that are wild or scenic;*
- (g) a range of natural character from pristine to modified; and;*
- (h) experiential attributes, including the sounds and smell of the sea; and their context or setting.*

This policy recognises that surf breaks form part of the natural character of the coastal environment. This provides the framework for the proposal to include surf breaks within it. In achieving the purposes of, and giving effect to Policy 13, it should also be restated that the preservation of the natural character of the coastal environment is a matter of national importance within section 6(a) of the RMA:

Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance: (a) the protection of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development....

The matters listed in Policy 13 NZCPS 2010 also include factors that contribute to the quality and integrity of the natural processes that create a surf break, such as „the natural movement of water and sediment. *The quality of the wave can potentially be compromised by developments in the swell corridor seaward of the break, and the enjoyment of surf breaks by surfers compromised by discharges, limitations on access, and changes to natural character. (DoC 2009b)*

NZCPS 2010

Policy 3: Precautionary approach

1. *Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse.*

2. *In particular, adopt a precautionary approach to use and management of coastal resources potentially vulnerable to effects from climate change, so that:*

- a. avoidable social and economic loss and harm to communities does not occur;*
- b. natural adjustments for coastal processes, natural defences, ecosystems, habitat and species are allowed to occur; and*
- c. the natural character, public access, amenity and other values of the coastal environment meet the needs of future generations.*

SPS maintains that the definition of a surf break covers a large spatial extent, far beyond the location of wave riding. The swell corridor of a surfing break can extend far out to sea (beyond the 12 nautical mile mark), and activities such as aquaculture, dredge spoil disposal and wave energy infrastructure at certain scales could block or modify waves traveling through the swell corridor.

Summary

The NZCPS provides direction for the proposal to provide for surf breaks under Policy 13, 15 and 16. In regard to Policy 16 there are three nationally significant surf breaks in the Otago region within the Blueskin Bay area being The Spit, Murdering Bay and Karitane.

However, it is necessary to include policy in the proposal which is the equivalent of NZCPS Policy 16 but in a regional context. This is to ensure the preservation and protection of surf breaks, and their inherent features and characteristics that contribute toward wave quality and the surfing experience. And this must include components both landward and seaward of the MHS in the coastal environment.

Identification and mapping areas of natural character, landscapes (including seascapes), and the extent of the coastal environment is preferred by SPS in the OWRPS. This will provide the clearest form of guidance to local authorities and decision makers on where development is appropriate and inappropriate.

To date, coastal development has regularly been carried out on an ad hoc basis through lack of guidance on what is appropriate or inappropriate development. The NZCPS provides clear guidance on what makes up natural character, therefore mapping these areas

(including surf breaks as per NZCPS Policy 13, 15, 16) within an area identified as the coastal environment would provide the guidance required to reduce ad hoc development and better provide for sections 6(a), 6(b) and 6(d) and Part 2 generally of the RMA.

There is a necessity to include reference to seascapes in the proposal. As mentioned above the NZCPS Policy 15 includes seascapes as natural landscapes. It would not be appropriate to adopt the status quo, as restricting identification of outstanding natural features and landscape areas to District Plans would exclude seascapes, creating an inconsistency with the NZCPS.

Policy makers require a recognised set of criteria that supports a substantive rating relative to the level of natural character attributable to any given surf break. Assessment of surf breaks against these criteria would be led by surfing communities, preferably facilitated by local authorities during formal and informal consultation processes.

A surf break policy would specifically focus on a component of the natural environment and address the need to protect that component from the negative effects of other activities on it and ensure that adequate regard is given to potential effects. It would adequately recognise and provide for surfers to meet their social and cultural needs, and for other people and communities to meet their economic needs, as well as providing for the foreseeable needs of future generations.

REFERENCES

- 2005 "Determining Surf Break Components at Aromoana Beach, Dunedin": David Kilpatrick.
- 2009 "Sustainable Management of Surfing Breaks: Case Studies and Recommendations": Bradley E. Scarfe, Terry R. Healy, Hamish G. Rennie, Shaw T. Mead
- 2003 "Sediment pathways around Otago Harbour and the north to Karitane Peninsula": - Kat Bunting, Dr. Martin Single, Professor Bob Kirk

Dated 14th April 2011

Nicola Joan Reeves

for and on behalf of

Surfbreak Protection Society Inc.