

**BEFORE the OTAGO REGIONAL COUNCIL
IN THE MATTER of the Resource Management Act 1991**

AND

IN THE MATTER of the application by Port Otago to undertake various activities within the Lower Otago Harbour.

Submission No 93 by Alan F. Mark FRSNZ. KNZM, Emeritus Professor, University of Otago.

1. Background. I am a retired, Dunedin born plant ecologist, living at 205 Wakari Rd, Dunedin. While most of my research has dealt with various aspects of terrestrial ecology and the sustainable management of ecosystems, I have held several appointed positions dealing with the assessment of environmental impacts and research aimed at mitigation of adverse environmental effects. Most notable was resolution of the major debate over the proposed raising of Fiordland's Lakes Manapouri and Te Anau, initially with Government-invited research and environmental evaluation, and subsequently as Chair for the first 26 years, of the Government-appointed Guardians of Lakes Manapouri, Monowai and Te Anau, during which time lake management regimes to integrate conservation with hydro-electric development were devised and generally accepted. This involvement led to my appointment by the Minister of Fisheries to the local 'Guardians of Fiordland Fisheries and Marine Environment' in 2000, and subsequently by the Government to the 'Fiordland Marine Guardians' when established in 2005. This deals with understanding the marine environment in terms of the Fiordland Marine Management Act 2005, and liaising with five government agencies to achieve the intentions of the legislation. During this period I have been deeply involved in issues marine and evaluating a range of environmental impacts. These contributions have been recognised by both peers and government.

2. Otago Harbour. In relation to relevant aspects of the Otago Harbour, I was involved with the Aramoana smelter issue as a member of the Dunedin Metropolitan Regional Planning Authority during the environmental assessment phase. I was also involved in discussions with senior staff of Fletcher Challenge regarding the very high ecological values of the Aramoana saltmarsh which led to it being designated a Wildlife Refuge as an aspect of the proposed smelter's EIA. I was later involved in the establishment of the wider salt marsh area as a formal Ecological Area, including its official opening by the Minister of Conservation and also with the establishment of a now-popular interpretive boardwalk out onto it from the Aramoana Domain. This salt marsh is very important to the wider Dunedin area, not only for its indigenous biodiversity, but also as an

important earner of ecotourism revenue, along with several other areas on and around the Otago Harbour. I stress that Aramoana is now recognised as one of the most important salt marsh ecosystems in New Zealand and, like all salt marshes, is extremely vulnerable to mismanagement, particularly siltation. This ecosystem, including its wildlife, must not suffer environmentally as a result of this major activity in its vicinity.

3. The Proposal. Having had wide-ranging and constructive discussions with Messrs Plunket and Coe, plus several of their consultants on two occasions, several of my concerns with the application, particularly over mitigation of adverse effects on and adjacent to the harbour, have since been addressed. I accept that the Project Next Generation's proposed deepening of the lower harbour channel up to Port Chalmers is a necessary part of Port Otago's forward planning, so that concern centres around minimising the associated adverse environmental impacts.

3.1. I am aware of Port Otago's recently stated intent of modifying its original proposal, of removing a total of 7.2 million m³ of harbour bed material over 2-15 years (Major Capital Dredging), to a 2-stage process extending to 20 years (Incremental Capital Dredging), which could reduce the environmental impacts somewhat but not negate the importance of monitoring, with specified thresholds ('trigger points') and associated procedures.

3.2. Environmental monitoring. Having been involved with a wide range of environmental monitoring, I am well aware of its values, both thresholds and associated procedures. I was deeply concerned with several aspects of the proposal as outlined in Port Otago's AEE, particularly relating to the standards of the proposed monitoring, i.e., the need for specified acceptable thresholds and also clear statements of the action(s) which would be taken if and when thresholds were reached or exceeded. These concerns were conveyed in discussions with Port Otago staff, who indicated that these issues would be addressed in a management plan, yet to be finalized and released.

My earlier submission to the ORC addressed these issues, particularly in relation to:

3.2.1. Dredging. The most appropriate dredging equipment and methods should be employed to minimise the release of the finer suspended sediments, with provision to differentiate the

dredging (and dumping) of harbour sediments between the coarser sand deposits and the finer clays and silts, the locations of which are apparently known. I share the considerable concern for the proposed dumping of the large amount of dredged material, up to 7.2 million m³, in the open ocean close to the coastline. I have been involved with discussions, involving several local groups and individuals, of a proposal to use some of the dredged material to create a set of artificial islands within the inner harbour, in the vicinity of Portsmouth Drive and also parallel with Ravensbourne, aimed at intertidal habitat restoration and general enhancement of the marine environment. This proposal has been discussed with Port Otago officials, along with need for appropriate feasibility studies. I bring this issue to the Commissioners attention since it could provide an important offset for a later stage in the current proposal. This issue has not been addressed in either the application, the draft management plan or the ORC's Staff Report and Recommendations but may be able to be considered by the Commission during this hearing.

3.2.2. Aramoana Saltmarsh and Seagrass Beds. The very high ecological values and vulnerable condition of the Aramoana Saltmarsh Ecological Area, including the extensive seagrass beds on its outer margin and in other areas of the harbour have now been recognised in both Port Otago's draft management plan and ORC's report and recommendation. I am satisfied that the provisions specified in Consent No: 2010.195 should be adequate to deal with these issues. Consent No 2000.472_V1, which is essentially an extension of the existing Port Otago's consent for the discharge of dredging spoil from Otago Harbour, but with the important additions of: 1. Procedures for the monitoring and management of birdlife, and 2. Establishment of a formal Working Party (or possibly two) as stated in Port Otago's draft management plan, appears to be adequate in this regard. NOTE, however, that these two additional clauses should be added to the conditions attached to Consent No. 2010.195. The conditions specified in Cl. 7 of this Consent, pertaining to "Monitoring Locations, Response Limits and Management Action" are a crucial aspect of this exercise in minimising the potentially very adverse effects of sedimentation on important ecosystems within the harbour. Also, the Cl. 19, providing for the ability "to review conditions of this consent [for each of the stated purposes] within three months of each anniversary of the commencement of this consent" is equally crucial. In relation to "Birdlife", Port Otago agreed in discussion, that the migratory godwit population will be

monitored and they will report results to the Department of Conservation if seeking “approval to commence operations earlier than consented” (Draft Management Plan, p. 17).

3.2.3. Other consent applications. I make no direct comment on them but, given the uncertainty which surrounds many aspects of this project, the condition in many consents, providing for the ability for later review, for the purposes stated, are most important.

Thank you.