

Measuring Up: Environmental Reporting submission

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How clean is New Zealand? Measuring and reporting on the health of our environment

Question 1: THE ISSUES

Response: Agree with the problems identified – as a former employee of a Regional Council, I regularly witnessed these problems between council's, and between reporting periods within the one council. There exists too much scope for "interference" from local body politicians, and so there is currently considerable inconsistency in the data and methods used in collection.

Question 2: THE ISSUES

Response: - see above. Additionally, other important issues have not been included, which reveals a demonstrable lack of useful real-life data relating to some important environments, e.g. the coastal environment – see below.

Question 3: THE SCALE OF PROBLEMS

Response: There is a lack of audit control over reporting, and currently a lack of scrutiny of sampling site consistency, and a lack of control over timing of sampling (e.g. sampling is being demanded during periods of fine weather rather than during or post-storm, to avoid 'embarrassing' sediment or effluent [i.e. real] discharges; and actual state of contamination by nitrates of ground water in Canterbury).

- Both the points made in the document are problematic, with equal weighting. Both areas are essential for truly accurate statistical information, information that reflects the actual state of the environment, and it's consistent, accurate reporting. The key considerations are the words 'independent' and 'inconsistent'.
- The quote below, taken from page 11 of the 'Measuring Up' discussion document clearly defines the source of many of the problems and issues with current reporting by MfE - ***"The Ministry's state of the environment reporting is almost totally reliant on the availability and quality of data from other agencies."*** This problem in turn reflects poorly on the veracity of the PCE.

Question 4: THE OBJECTIVES

Response: Agree with the objectives, but for the reasons outlined above, these are not currently being delivered in a truly 'objective' manner.

- The three 'objectives' as stated are essential in the quest for true SoE reports. While it is clear to many people that the PCE is independent of Government, inclusion of truly or universally and obviously independent institutes like universities would assist with this worthy goal.

Question 5: THE ISSUES - Assessment criteria

Response: Agree with the 5 assessment criteria, as these all point to reporting on an accurate State of Environment, which then allows for sensible and logical decision-making. An additional point is the word 'consistent', this simple word is *consistently* underused by councils in a desire to gloss over regrettable inconsistencies, which, if published, would present the negative and mis-managed true impacts, and so under-report and understate the true reality.

Question 6: PREFERRED OPTIONS

Response: Agree with the suggestion to expand regulation-making powers under section 360 of the RMA to improve the **consistency** of state of the environment monitoring statistics at the local level. And for the Governor-General to make regulations which would require local authorities to monitor the same aspects of their environment according to specified methodologies and monitoring sites.

Question 7: ALTERNATIVE OPTIONS

Response: No alternative option is suggested; the options presented seem the best way forward.

Question 8: IDENTIFICATION OF PROBLEMS

Response: the problems with each option appear to be well identified.

Question 9: COSTS AND BENEFITS

Response: it is plain that the cost of misreporting (either through malicious or accidental means) will cost the nation more in the long term, as problems do compound to become insurmountable, if not dealt with early enough.

Question 10: WHICH OPTION FOR THE HIGHEST LEVEL OF NET BENEFIT?

Response: the options highlighted appear to contain the highest benefit for cost.

Question 11: PROS AND CONS OF THE PROPOSED ENVIRONMENT ACT AMENDMENT

Response: the proposed amendments contained within the MEASURING-UP document seem very sensible and forward looking, and so would provide accurate information on the state of the environment for logical remedy before events become too late.

Question 12: IS FIVE-YEARLY REPORTING APPROPRIATE?

Response: yes, reporting every five years is quite appropriate.

Question 13: WHAT TOPIC AREAS WOULD YOU SUGGEST?

Response: currently these areas are covered - **fresh water, land, oceans, air and biodiversity**. One increasingly important environment is missing – **coast** - the coastal environment. This pivotal and essential environment has become the focus of public attention due to the oil spill disaster emanating from the container vessel *Rena*, now grounded on the Astrolabe reef.

This environment requires inclusion as these coastal lands reveal historic, underreported and a demonstrable lack of any useful real-life data. Even the Land Use Database provides scant information on this essential buffer area, detailed below.

There are many ***disturbing and enduring*** misconceptions about the degraded state of some environments – for example the ***coastal environment***. During submissions to the NZ Coastal Policy Statement 2010 (Greg Jenks; NZCPS submitter No. 142), the commissioners were amazed to hear that ***native plants*** once dominate our coastal dunes, and that marram is **not** native. Furthermore, these skilled people were startled to find that marram is killed by immersion in salt water, rendering it dramatically less functional as a sand-trapping species. This inherently poor quality impacts on its ability to provide adequate dune buffer functions, consequently leading to many of the serious coastal erosion problems seen today.

New Zealand has "*one of the longest coastlines of any country in the world, at more than 18,000km*" (MfE 2007). Consequently, the loss of dune integrity and stability was, and **still is**, a problem of significant proportions. In 1911 Leonard Cockayne, an early NZ botanist, unambiguously described the remarkable, rapid (from a global perspective) and massive scale of dune degradation, and especially the demise of dune integrity along with the natural buffer function (in particular the very sensitive and protective foredune) throughout this nation. However, unlike similar events in other parts of the world (McKelvey 1999), the relatively late colonisation of NZ (in the mid 19th century) allowed some suitable scientific inquiry into the principles of the problem – the degrading effects of newly introduced mammalian herbivores into the natural dune environment.

Members of **The New Zealand Institute** (The 19th Century predecessor of the Royal Society of NZ) became interested in "*objective observations and informed opinions...facing settlers as a whole. These included the threat of moving sands*" (McKelvey 1999). Regrettably, the passage of time has long relegated these significant observations.

During this period the affected area was "*about 40,000ha in 1880; by 1909 the estimate had risen to over 120,000ha*" (McKelvey 1999) amounting to a catastrophic 95% of the estimated total dunelands (129,000ha) in 1911 New Zealand. It was later reported that "*the sand country was fairly stable at the time of European settlement*" and furthermore that indigenous "*spinifex was completely grazed out along the Manawatu coast.*" (Esler 1970).

And so, to the 21st century, while most of these eroding dunes have been planted with the European plant marram (*Ammophila arenaria*), understanding of the reality of the problem has not changed significantly. Marram did slow the rate of erosion, but because it is not tolerant of salt-water immersion, has not successfully combated ongoing erosion. This predicament has been addressed by replanting indigenous dune plant species. In complete contrast, all four NZ native keystone front dune species (*Spinifex*, *Spinifex sericeus*; Pingao, *Desmoschoenus spiralis*; Shore Spurge, *Euphorbia glauca*; and Sand Tussock, *Austrofestuca littoralis*) are not only tolerant of salt spray, but significantly, **are tolerant of salt water immersion and sand inundation.**

Prof. Terry Healy has reported, "*...it should not be assumed that sea level rise is the sole cause of geological or contemporary erosional trends...and would add that ...human activities are far more significant causative factors promoting beach erosion and dune recession.*" (Healy et al 1977). These *human activities* are clearly and widely demonstrated through the erosional effects of dune degradation. And yet, these effects still go poorly or even largely ignored.....

Dune restoration is regarded as a new science, but does have over 15 years of positive effects to build on. One good example of this ethos exists in the BOP region, where dune restoration has been working in excess of 15 years, with 30 community-led dune restoration groups based throughout the region. In excess of 1,200 volunteer members are involved in this large-scale dune planting and restoration programme. The planting programme has been extensive with over 500,000 native dune plants returned natural function (accretion) to over 100 km of managed BOP dunes, with an expanding range of over 30 native-only species used for substantial improvements to dune ecology. Careful planning and inspiring leadership are important components of this success.

A mapping exercise was conducted in 2005 to ascertain the extent of dune restoration in the Bay of Plenty. This revealed that 105km of dunes (or 788ha) were being managed, representing 55% of the 191km total length. In addition to this, 14 sites of significant and rare native flora were located, plus four sites of significant and rare native fauna. The interdependent ecological association between native dune flora and fauna is an area requiring further research as more individuals and dependant associations like the now uncommon Rauparaha copper butterfly (*Lycaena salustius*) and the increasingly rare *Muehlenbeckia* spp are discovered.

In a similar approach, Greater Wellington Regional Council has recently taken restoration of degraded dune systems seriously, with their adoption of a restoration

plan for the Kapiti coast beaches (Beadel & Jenks 2008). Some of these beaches reveal some of the most serious cases of human-induced dune erosion, occasionally possessing sea walls in what is now known to be a vain and expensive practice of 'preventing' erosion.

The theoretical trend for accretion is now a proven reality, as Tauranga City Council was advised in July 2009 to move their ocean coastline jurisdictional boundary a full 11 metres **seaward** along the full length of the city's 22km of restored and increasingly resilient coastline, adding this new land to the established Coastal Erosion Risk Zone (CERZ) (or coastal protection buffer). During District Plan Review discussions it was stated their coastal consultant recommended "*the designation line on the coastal strip.....be moved **out** 11 metres... as the coastal strip was (now) accreting... He also told us the sea was getting higher*" (Faulkner 2009). Sea level recorded at the Auckland datum reveals "*rises of 1.5 to 4mm per year since installation in 1899*". This is one of the oldest sea level datum stations in NZ and has measured total local sea level rise of 16 cm (2006 data) (pers.comm.). Significant dune accretion has therefore been occurring *during* sea level rise conditions that *would have previously* been expected to induce *coastal erosion*: through the influence of erosion-inducing La Nina conditions and thermal expansion of the ocean due to global warming. Sea level has never been higher over the preceding 110 years.

Given these remarkably positive impacts and the **low cost** of their achievement, it is disappointing that more regions throughout NZ have not initiated similar restoration programmes. This is the reality of poor cooperation and information exchange between councils, a situation that could be improved with the EPA model.

1. Lack of statutory obligation in NZ requiring regular and independent state of the environment reporting.

- This is categorically obvious from a lack of progress with this key issue in NZ.
- Not only are other council's, DOC offices, Iwi, Crown Research Institutes etc unaware of positive and sustainable projects such as this, the local regional and district councils have simply been ineffective in making the full information available to other regions.
- As a result, building unsustainable and hugely expensive seawalls is seen as the **ONLY** alternative for assisting communities cope with the effects of sea level rise.

2. Inconsistent regional state of the environment monitoring programmes.

- As a former employee of a regional council (Environment BOP), I can only commend the PCE for considering this important and woefully poor consistency of reports presented to the public and Government of NZ.
- This inconsistency affects the quality of decision-making by the Parliament.
- On this point, I recommend initiation of a small national Coastal Protection Agency (CPA), to have a national overview of important coastal restoration needs and to provide best practice advice to community groups, regional and district councils, Iwi, Crown Research Institutes and to appropriate DOC offices. Note CPA type organisations are in place in the United States of America, notably the successful Californian Coastal Commission.

Having consistent reporting on coastal environments will have the following benefits;

- Reporting on the state of New Zealand's coastal environment at a **truly** national level.
- Assist in the development of tools and guidelines to encourage consistent, high-quality and comprehensive monitoring of New Zealand's environment.
- To work in true partnership with those who can materially assist (Iwi, community, local authorities, DOC, CRI's etc) and those who do the monitoring (e.g., local authorities).

Returning consistent functionality to an impressive >100km of coastline is significant, but even that effort still leaves >17,800km yet to be improved. So the real state of the coastline nationally is one of sad neglect, with the induced erosion often being erroneously termed "natural erosion" as more land slips into the sea unabated.

This is a crisis that **must** be solved sooner rather than later. Valuable land is sliding seaward to be consumed by storms and tides, including many sections of our national roading network; State Highway 1.

In addition, there are significant opportunities to not only restore functionality to very large areas of coastlines, but to also restore the original forest cover on these otherwise dry and unproductive coastal margins, if for no other reason than for carbon farming purposes. Even the Ministry for the Environment is unlikely to be aware that *"..more than **99.0% of indigenous forest** on stabilized sand dune had been removed.."* (Landcare Research, pers.comm).

For the above reasons, and in recognition of the fact that the NZ Coastal Policy Statement 2010 does not sufficiently recognise the existing degraded state and potential importance of our dunelands, I humbly suggest that "**coast**" be included in the new PCE reporting on specified environmental domains.

My gratitude for the opportunity to submit on the changes being considered.