Call to Action - Save Matarangi's Ōmaro Spit

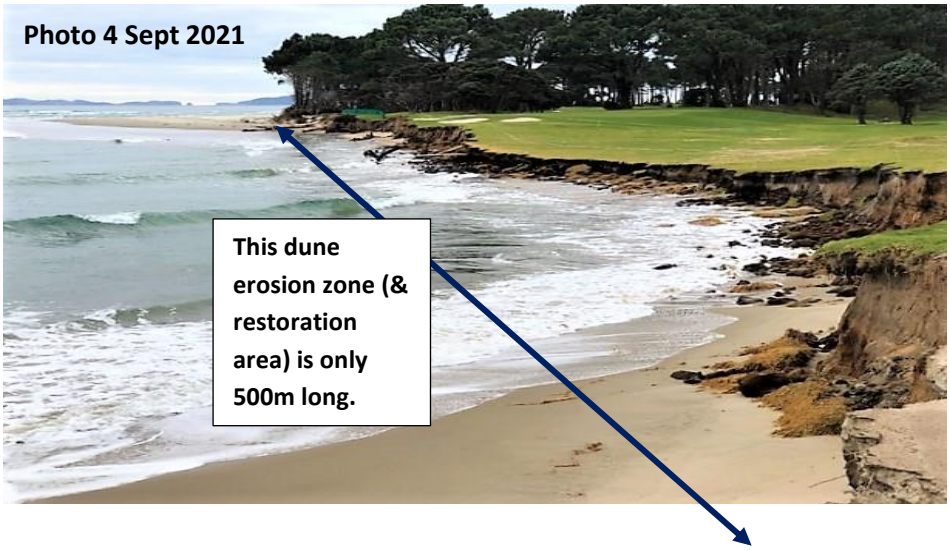
Background: A Matarangi group has been established to address serious erosion issues at the end of the Ōmaro Spit which has caused the loss of the spit walkway as well as parts of the open space and golf course. Our aim is to coordinate a community response that will facilitate diligent restoration of Ōmaro Spit and the affected public walkway. We will be fully consulting with the whole Matarangi Community, Ngāti Hei, Ngāti Huarere, TCDC, Waikato Regional Council, Matarangi Community Groups, and DOC. We have engaged a Coastal Restoration Specialist and have finalised a fully costed project plan.

Historic context:

1. Humans, their grazing animals, feral rabbits, and coastal fires have all damaged this local coastal environment just as many similar effects have impacted other naturally protective ecosystems, like native forests, wetlands, river, and lake margins. Those numerous dune impacts were detailed and presented to the NZ Parliament way back in 1909 and 1911.
2. The colonial NZ Parliament responded with urgent but flawed action to minimise those mounting massive impacts, but due to limited knowledge >100 years ago, they merely recommended utilisation of alien plants – but all these were sensitive to contact with sea water.
3. More recent and progressive research reveals the original native foredune plants (e.g., spinifex and pingao) provide greater protection in part due to their naturally evolved incredibly high tolerance of sea water (they're halophytes). These same plants have already been used locally to successfully restore those dunes adjacent to Kenwood Drive, Matarangi, and on many other NZ beaches.
4. Beach and dune erosion of Ōmaro Spit has been problematic for many years due in part (at least) to that wholly unnatural domination by the salt-sensitive alien plants, and the evident lack of any beneficial halophyte species restoration activity.

Recent Weather Impacts:

1. While this human induced erosion progressively occurred, more recent severe impacts induced by the La Niña Weather Bomb in May 2021 (and its resulting onshore winds) provoked renewed and escalating erosion impacts, with little time for dunes to recuperate between those storm events. Those many impacts forced the dunes further landward and hence eroded the popular dunes walking track.



2. Recent indications now suggest that La Niña is likely to abate over late summer/early autumn 2022. So, this next autumn is becoming probably the best time for restoration action.

AIMS and OBJECTIVES:

Consult, coordinate and plan a sustainable and enduring community response to -

1. Stabilise and reverse existing erosion concerns and so progressively expand existing dune widths and hence the natural storm resilience of that presently impacted coastal margin
2. Ensure all beach restoration work involves ecologically sound and most ethical enduring plus affordable protection of the Ōmaro spit coastal ecosystem
3. Also ensure enduring restoration of the popular Ōmaro Spit walkway, open spaces, and golf course – community land and assets that are all currently adversely affected and threatened by the recent and continuing episodes of erosion exposure
4. Restore the area of endemic shorebird nesting habitat recently washed away by those La Niña intensified storm forces
5. Achieve the above objectives using proven successful, sustainable, ecologically sound and community focussed cost-effective diligent restoration methodologies.

The overall principal objective is to restore and then protect the spit for the enjoyment of all the many current and future residents and visitors' as well as supporting and protecting this natural, environmentally important landmark from further abnormal degradations.

How to Achieve this Sustainable Enduring Result:

The preferred option will involve sand push ups from sand flats (now by the harbour channel), that previously were the nearby standing dunes prior to them being eroded away.

Two (or three) short and soft geotextile groynes are proposed for construction along the 500m long erosion zone, these ranging from 11m to 21m in length. This engineering work will be followed by a community-involved planting of a narrow band of landscape enhancing and protective indigenous salt-tolerant (halophyte) sand trapping foredune grasses.

That narrow band of indigenous halophyte plants will expand rapidly seawards to trap and stabilise more foredune sand to rebuild porous, protective and wider dune buffers at Ōmaro.

Why will this proposed plan work?

1. Similar restoration work has been successfully and beneficially utilised on the now expanding local dunes by Kenwood/Matarangi Drive areas plus this option is supported by many similar diligent restoration projects over 22km of Papamoa and Mt Maunganui beaches. Other beaches diligently restored throughout NZ reveal similar useful results.
2. Other options were considered for controlling erosion at Ōmaro spit including;
   a) Building timber or rock seawalls
   b) Creation of rock groynes
   c) Replanting alien species like European marram, South African Iceplant, Gazania etc

However, the options finally chosen will provide the most beneficial and enduring outcomes while also minimising operational and maintenance costs to this community.

See the 'before' photo of storm damaged dunes at Banks Avenue, Mt Maunganui, below:

Banks Ave beach and dune in 1995. Storm waves surge up this flat degraded beach system to simply be reflected by the vertical face of these eroding 'dunes'

Then compare the above photo with that following, in same location nine years after restoration:

27 July 2008: The remarkable post-restoration effects of fresh sand accumulation during a severe winter storm – Banks Avenue beach, Mount Maunganui

- This is the same beach shown at top, but after diligent restoration of indigenous halophyte (salt-tolerant) foredune plants in **1999** (see the Norfolk Island pines).
- This functional dune is 20m wider than in the 1995 photo above and is now proving dramatically more resilient to wave erosion than that weed infested sand mound.
- This July 'weather bomb' generated onshore swells exceeding **7 metres**, with winds gusting over **111km/hour** (**WEBLINK:** niwa.co.nz/event/July_2008_Weather_Bomb)
- This accumulated sediment resembles snow rather than storm-tossed sand - note all sand is stabilised within the most seaward 10m of this restored foredune.
- The large volumes of accumulated sand are obviously both extremely soft and porous, another natural function of these indigenous foredune plants (Müller 2011).
- This photo also reveals the beach now remains unaffected by erosion, while the plants exhibit useful salt-tolerance and natural abilities to endure significant burial.

3. The other options considered will not provide the same degree of certain success or importantly the low costs as the chosen direction.
4. The most ethical option thus chosen is the only one that will provide beneficial, sustainable, and enduring outcomes like those shown above at Banks Avenue.

5. However, no matter how prudent we believe the viability of this project to be, long-term results could be interrupted by short term significant adverse weather event/s.

Advice sought and peer review of the final proposal:

- The author of this progressive report has a considerable background of enduring success with this and similar works in many parts of NZ, now having 26 years of operational success in this innovative coastal restoration field.
- Has also worked closely with many community and iwi groups, renowned academics plus authored a large array of technical papers published in a range of prestigious local and international journals, including the Journal of Coastal Research, and the Journal for Coastal Conservation.

This project proposal has been positively peer reviewed by Dr. Peter Urich, the Managing Director of CLIMsystems NZ Ltd (a local but world leading climate change adaptation company); Dr. Urich's review states: *"A vital aspect of the best option approach is the wealth of empirical evidence of its success along east coast beaches across the North Island. They exemplify the best cases of 'nature-based solutions' that are increasingly recognised as ecologically, socially and financially sound investments. My final insight is that experience does matter. Greg and his extensive networks in the restoration community bode well for the long-term success of this project and the direct and indirect value it will bring to the environment of Ōmaro Spit and community of Matarangi".*

Next Steps:

- We are seeking community and stakeholder support; arranging public meetings over the summer holiday period (date/location to be advised on Matarangi Facebook page). You can find a link to the full report here too.
- Our committee has prepared the project plan & Resource Consent Application.
- Registration of your support Matarangi Facebook page. Will also be seeking volunteers to help with the planting in Autumn. We will need funds; donations to be care of MCT.
- The detailed report is available by contacting Matarangi Facebook or Mark Bedford, Chairman MRAI.

Members of the Omaro Spit Erosion Action Committee:

Mark Bedford, Chair Matarangi Ratepayers Assn Inc
Alastair MacCormick, Chair Matarangi Community Trust
Gavin Walker, Director Matarangi Land Holdings Ltd
Raymond Fanning, Course Superintendent, The Dunes
Graeme Osborne, Matarangi Community & Member TCDC Shoreline Management Panel.