

# THE GOOD(ish), THE BAD, THE UGLY - AND THE CONTRASTING DUNE MANAGEMENT OPTIONS

Contrasting the effects of a severe onshore (easterly) storm on 9/10 July 2014 – at OREWA & PAPAMOA Beaches

## THE GOOD(ish): Orewa



This dune area has been ‘modestly’ restored at low cost (utilising **only one** of the existing **four indigenous** dune plant species) but this area displays some restored storm resilience, so is still capable of resisting some of the erosional effects of these storm-surges, **caused by the 3-4metre maximum wave height** conditions. Stolons of these spinifex plants are still present seaward of the barrier and will resume active growth when conditions improve, additionally boosted by the nutrients provided by decaying seaweed delivered naturally by these stormy conditions.

## THE BAD: Orewa



In this case, sand has simply and repeatedly been dumped on this eroding dune (costing >\$50,000 per annum) - with the **same result every time – active erosion**. This work is described as beach nourishment, known globally as an excessively expensive method of simply delaying the inevitable. This is undertaken without any consideration of the obvious problem – coastal ecosystem degradation. The **only** sustainable response here is transformation of the degraded dune by assiduous restoration of the original halophyte indigenous sand-trapping and dune-building plants.

## THE UGLY – a prime example of token planting and management: Orewa



An initial and probably eager burst of ‘fashionable’ dune planting at this northern end was both poorly considered and maintained – resulting in the whole area becoming overrun by salt-susceptible weed species and so losing any briefly improved resilience to storm surges. Predictably, the whole planting has now eroded back to this weedy bank. That problem will continue now, further degrading this beach and weedy bank, exposing nearby houses to increasing risk. Posts should now be removed along with the redundant and insincere “Dune Protection” signs, as this area is not attracting any new or assiduous restoration attention. This modest or token coastal planting at Orewa contrasts markedly to the thorough and transformational restoration at Papamoa, shown on the following page, **in a photo taken during the same storm**.

## AND THE CONTRASTING DUNE MANAGEMENT OPTION - the impact of Assiduous Restoration: Papamoa

## Bay of Plenty Times photo:

Cruisy day at the beach - Friday Jul 11, 2014



A seal was spotted in the sand dunes at Papamoa Beach yesterday morning. It had the beach to itself on this stormy day.

This beach and dune have been transformed from earlier domination by the introduced and inferior marram grass, which proved to not tolerate salt water contact. This assiduously restoration using the simple and systematic techniques is described as “**A-Rest Systems**”. Importantly, at least two species of our indigenous and **salt-tolerant** foredune plant species have been successfully established here - to provide sustainable long-term sand accumulation results that also enhance biodiversity values. And so the seal pictured above (and other native fauna) can safely seek refuge here from storms - and people - on this increasingly wide beach and dune.

Even during these storm surge conditions (**with maximum wave height of 7.6 metres**; measured by the BOP Regional Council wave buoy) sand is still being accumulated by these very effective salt-tolerant plants, unaffected by any encroaching weeds or other unnatural and damaging influences. Weed invasion is easily controlled at the landward margin of such dunes, and by continuing simple vigilance of the seaward face.

**ANALYSIS:** Both of these North Island east coast beaches were exposed to the same onshore storm conditions and over the same time period. Orewa beach has suffered considerable erosional effects, while the wave climate at Orewa is markedly less energetic – 4m maximum wave height vs 7.6 m at Papamoa. The smaller swells here are attributable to the relatively shallow depth of the adjacent Hauraki Gulf and its many islands, naturally providing increased shelter from larger on-shore storm settings. **So why does Orewa beach exhibit increased erosion??** This problem is principally due to one singular factor – poor foredune condition. Human-induced impacts at Orewa have clearly **not** been resolved successfully, in contrast to the Papamoa dunes. Papamoa is clearly also exposed to more severe wave heights (7.6m in this July storm) rolling in through deeper and more exposed ocean conditions, which result in higher wave energies impacting on these dynamic beach systems, protected now by visibly increased resilience provided by **A-Rest Systems** restoration. Additionally, recent data gathered from assiduous restoration sites at Papamoa beach show that this transformation option will completely off-set the effects of +118cm of sea level rise predicted by the IPCC 5 AR through to at least year 2100, by the SimCLIM2013 Coastal Erosion computer model. Orewa beach will **not** enjoy this same advantage.

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