



A Mount Artificial Surfing Reef – A Failure?

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INTRODUCTION

On 16th April 2014 Bay of Plenty Regional Council announced its decision to partially remove the artificial surf reef that lies off the Tay Street beach. The reef was initiated by the Artificial Reef Programme (ARP) led by Professor Kerry Black who held a joint appointment at Waikato University and NIWA (National Institute of Water and Atmospheric Research) in the mid-1990s. At the time well-used methods of preventing shoreline erosion were to create groynes, sea walls or reefs to protect shorelines from erosive wave energy. These tended to be single purpose structures, rather unnatural in appearance, detracting from the enjoyment of the amenity values of the coast. Because roads and other highly modified areas have been developed behind often thin areas of shore and dune, there is also potential for sea level rise to result in the exposure of such areas in the future.

The original concept driving the ARP was the development of multi-purpose artificial reefs that would not only protect the shorelines from wave energy, but also provide amenity values such as surfable waves and fish habitat. Shaw Mead designed a reef for the Mount area as part of his PhD research and was immediately challenged by friends and surfers to see if it was possible to turn the concept into reality. Tay Street was chosen as it had a traditional shifting sand bar break of mixed quality and was adjacent to an eroded patch of highly modified shoreline near a node of planned reserve and existing development. It was a site supported by the local life saving community who indicated that if there was a permanent rip

created by a reef this would provide a basis for them to justify having lifeguards based at that site rather than a more temporary and dangerous situation created by the shifting rips of the natural break. This may have been one of the first AEEs (Assessment of Environmental Effects) to include reference to iwi planning documents and for the time there was widespread consultation with the community and tangata whenua. Anticipated benefits included increased tourism, safer surfing, a protected shoreline, improved fishing, increased local knowledge of coastal systems, and a consistently high quality break for advanced surfers. The main opponent to the break was the nearby timeshare that opposed primarily because it opposed surfers and their recreational activities in the dunes and especially noisy, littering surf events.

The reef became the focus of student research ranging from oceanography to planning, social and economic research. It was not just Waikato students either. Now prominent Barrister and internationally recognised expert in coastal and marine planning law, Robert Makgill, based his Auckland honours dissertation on his legal research defending the reef and in the process has extending case law on innominate activities. The AEE, based largely on student research, was praised by the High Court when the decision of the regional council to non-notify it was unsuccessfully challenged by the timeshare. The consent application was by Waikato University for a research reef for a five year term to enable it to study the wave dynamics and the effects of such a reef. The application was transferred to the Mount Reef Trust as a means to facilitate fundraising.

Unfortunately the delays to fundraising caused by the court challenge meant that the reef-building was always underfunded and it relied on considerable community voluntary efforts right into the construction stage. The commercial components of the construction process did not go smoothly and the reef has never been built to its original design parameters. Moreover, subsequent research showed that the effects of offshore islands on the wave corridor was greater than had been assumed and the process of creation and movement of sand bars was somewhat different also. The anticipated more permanent stationing of life savers at the site also never eventuated and there has been a drowning in the vicinity.

Does the removal of the reef mean it is a failure? As one of those originally involved in its development I am obviously biased, but I believe it largely succeeded in its original purpose as a research reef. The lessons learnt, expertise and networks developed, have played a significant role in the world-leading provisions for protecting natural surf breaks in the New Zealand Coastal Policy Statement, the development of multi-purpose reefs in Surfers Paradise and the UK, and a body of knowledge that has been drawn on for things as diverse as oil spill modelling, marine reserve management, aquaculture development and surfing swimming pool design. It helped inspire young planners like Matt Skellern and Bailey Perryman and established New Zealand, and the Mount, at the cutting edge of research on surfing reefs and associated planning globally.

The removal of the reef provides further opportunities for research on the effects of removal and is in keeping with the original reef design and purpose. Moreover, the project is an especially good example of experiential and practical education for all those busloads of students who have been involved over the years. I hope that local councils will take steps to create a heritage site or display to enable ongoing benefits to tourism and education from a project that is now part of the rich coastal heritage of New Zealand and the Mount.