

# *What is 'quality'?* *Zen and the art of resource management reform*

In the 1974 best-seller *Zen and the Art of Motorcycle Maintenance*, the narrator tied himself up in philosophical and existential knots trying to define 'quality'.

The proposed Natural and Built Environments Act (NBA) offers the opportunity for resource practitioners to promote environmental 'quality', presumably with less angst and more clarity.

This is because the 2020 report of the Resource Management Review Panel (Review Panel) on new directions for resource management in New Zealand (the Randerson Report) advanced 'quality' in its draft purpose for the NBA (at 483):

- (1) *The purpose of this Act is to enhance the quality of the environment to support the wellbeing of present and future generations and to recognise the concept of Te Mana o te Taiao.*

However, the key word 'quality' was left undefined in the proposed NBA definitions of the Randerson Report (at 485–489). Given its central importance and need for clarity for practitioners, this void may only be welcomed by Zen philosophers.

Arguably, the Review Panel envisaged 'quality' to be associated with ensuring that "positive outcomes for the

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environment are identified and promoted" (proposed s 5(2)(a) of the NBA at 483). These outcomes are related to setting biophysical limits through national direction, despite the inadequacies of existing instruments to remedy the state of freshwater and coastal ecosystems, and the capacity of regional councils to implement them effectively.

In early 2021, Cabinet largely agreed with the suggested purpose, with the word 'promote' substituted with 'enhance' (Cabinet Business Committee "Reforming the resource management system" (CAB-20-MIN-0522, February 2021) at 32 (Cabinet Paper)). Essential terms remain undefined however, and the 'exposure draft' of the NBA in May this year will be eagerly awaited.

Similar issues will arise with the liberal use of the terms 'enhancement' and 'maintenance' in relation to biodiversity and the environment generally. For example, Cabinet retained the term 'enhancement' in relation to the national and regionally significant outcomes sought under the NBA (s 8), along with 'maintenance' of indigenous biodiversity. These were left undefined in the Randerson Report (at 485–489).

Presumably, the Review Panel and Cabinet saw the plain English definitions as sufficient. However, this approach has been shown to be inadequate when maintaining biodiversity and ecosystems, as these terms are poorly understood and misapplied in an ecological context (Steve Ulrich, Simon Thrush, Judi Hewitt and Eric Jorgensen "What it means to "maintain" biodiversity in our coastal marine environment" (April 2018) RMJ 25).

When I was the coastal scientist for Marlborough District Council between 2013 and 2018, I found it extraordinary that a policy planner believed 'maintain' to mean merely holding the ecosystem in its current degraded state. When I asked what would happen if one of the last remaining ecologically significant marine sites was to be destroyed, the response was that the new degraded state would then need to be maintained.

This erroneous thinking has likely contributed to the biodiversity crisis, as it is based on a fundamental misunderstanding of what 'maintain' means in an ecological sense. Moreover, as we showed in our 2018 RMJ article, there is actually a dictionary definition that requires repair (restoration) before an ecosystem can be maintained. This flips the notion that restoration comes **after** maintenance – it can actually come **before**.

The 2019 draft National Policy Statement for Indigenous Biodiversity (NPS-IB) recognised that taking action may be necessary for maintaining biodiversity, rather than passively accepting the status quo. The draft NPS-IB stated that: "The maintenance of indigenous biodiversity may also require the restoration or enhancement of ecosystems and habitats" (at [1.7 (3)]), and a number of criteria for biodiversity maintenance were set out.

In the 2018 RMJ article, we also expressed concerns about the lack of a specific ecological definition of 'enhance'. In the NPS-IB, examples of restoration and enhancement were given within an "Information Note", but these terms were run together and not specifically defined (at 27).

Table 1 below demonstrates the differences between dictionary and ecological definitions, illustrating the point that clarity is required in the NBA, as is a reconciliation between planners and ecologists of essential terminology.

This is essential to being able to measure and monitor the effectiveness of 'maintenance' and 'enhancement', as well as to determine how much, and what sort of, enhancement is appropriate and reasonable for an activity, a place or a region. Care will also need to be taken to not conflate enhancement with offsetting.

Without this clarity, it is likely it will fall to the courts to determine, given the subjectivity in applying those terms to plans and consent applications, and the competing values that underpin a myriad of interpretations.

That is an undesirable outcome when the legislative purpose should provide an anchor. The risk is that inconsistent interpretations will occur between regions, resulting in suboptimal environmental outcomes.

A parallel can be drawn with the 'overall broad judgment approach', rejected by the Supreme Court in 2014 in *Environmental Defence Society Inc v New Zealand King Salmon Company Ltd* [2014] NZSC 38, which had arguably contributed to the ongoing deterioration of land, freshwater and coastal marine environments administered under the Resource Management Act 1991 (RMA) since its enactment.

The Randerson Report also makes the inexplicable error of proposing to change the definition of biodiversity (biological diversity) away from that currently set out in the RMA, which is also the same as the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2021 (EEZ), the Environmental Reporting Act 2015 (ERA); the 1992 international Convention on Biological Diversity (CBD) ratified by New Zealand in 1993; the 2019 draft NPS-IB; and the 2020 Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy (ANZBS).

The new ANZBS also introduced the concept of Te Mana o te Taiao, which has been picked up by the Randerson Panel into the recommended purpose of the new NBA and subsequently adopted by Cabinet.

However, the Randerson Report's definition of biodiversity adopts the Fisheries Act 1996 (FA) definition. The FA definition omitted the crucial concept of ecological

complexes (Steve Ulrich, Simon Thrush, Judi Hewitt, Eric Jorgensen "The Earth Summit 25 years on: why is biodiversity continuing to decline" (April 2018) RMJ 19).

As we pointed out in both 2018 RMJ articles, this means that life-supporting ecological complexes such as biogenic habitats (formed by living and dead tissue of species), which provide multiple feeding niches for other species, store carbon, cycle nutrients and deliver ecosystem services, are essentially unprotected and vulnerable to damage or destruction from direct impacts and cumulative effects in different environments.

Given the global and national biodiversity crisis, it is difficult to see how the Randerson Panel's watering-down of the biodiversity definition will enhance Te Mana o te Taiao. In fact, it will probably contribute to the ongoing degradation of the mauri of te Taiao, as evidenced in the ERA report "Environment Aotearoa 2019" (Ministry for the Environment and Stats New Zealand (ME 1416, April 2019)).

The perpetuation of inconsistent definitions between different statutes is also unhelpful, and leads to different mental models about the same thing (think Treaty of Waitangi vs Te Tiriti o Waitangi), which sends confusing signals to different management agencies about what is important to 'maintain', 'enhance' and 'restore', and how and what to prioritise to 'protect'.

Take biogenic habitats in the territorial sea as an example. One agency may think that it will maintain biodiversity by protecting significant habitats for indigenous flora and fauna, and thereby enable ecosystem processes to recover through the maintenance of ecological complexes. Another agency may ignore these ecological complexes, as the statutory definition of biodiversity within its enabling legislation omits this.

This has recently been brought into sharp focus by the Prime Minister's Chief Science Advisor, Juliet Gerrard, in her report "The Future of Commercial Fishing in Aotearoa New Zealand" (Office of the PMCSA, February 2021). The PMCSA stated (at 5):

*The most striking example [of under-utilisation of existing statutory tools] is perhaps Section 9(c), which enables the protection of habitats of particular significance for fisheries management – but has never been used.*

This is perhaps unsurprising, given the plethora of reasons discussed in the PMCSA's report. For this article, two points need to be made in this vein: first, 'habitats' are not included in the definition of biological diversity in the FA by the omission of the analogous 'ecological complexes' ('habitats' is also not defined in the RMA nor within the proposed NBA); second, the FA does not direct decision-makers to give effect to the environmental principles in s 9(c) – they are just merely required to take them into account.

The NBA may perpetuate this, should the Randerson Panel's recommended definition of biodiversity remain. When the breath-taking scale of seabed habitat damage and destruction in our marine waters is considered (Steve Ulrich "A national issue of international significance: seabed disturbance in our marine waters" (April 2017) RMJ 13), one wonders how the concept of Te Mana o te Taiao will actually be 'recognised' in practice.

This may be allayed somewhat by the setting of biophysical limits in coastal, rural and urban areas to protect and sustain the natural environment's biophysical resources and ecosystem services (Cabinet Paper at [87]). This is dependent though on how well these limits are articulated and the underpinning ecological principles elucidated. For example, it is vital to minimise frequent and intense disturbances, foster habitat connectivity and provide indigenous species with space to shift their ranges under climate change.

Which brings us back to, what is meant by 'quality' in the purpose of the proposed NBA? To me, as an ecologist, 'quality' can be understood in two interrelated ways via the concepts of 'Ecosystem Health' and 'Ecological Integrity' (see Matt McGlone and others "Biodiversity monitoring, ecological integrity, and the design of the New Zealand Biodiversity Assessment Framework" (2020) 44 NZJ Ecology 1).

These authors define 'Ecosystem Health' as the (at 2):

*... fundamental physical and biological state of an ecosystem in relation to its ability to support [ecosystem] services... in good health [it] is functionally appropriate for a given environment, generates biomass, exchanges gases, recycles nutrients, protects the land and water from erosion and pollutants ... it is resilient to external threats, supports adequate functional diversity and all expected trophic levels are present and well interconnected.*

Their definition of 'Ecological Integrity' is drawn from s 2 of the ERA: "the full potential of indigenous biotic and abiotic features and natural processes, functioning in sustainable communities, habitats, and landscapes". McGlone and others suggest these definitions can be applied together in all environmental domains. For example, an urban area largely free of contaminants can have high ecological health but low ecological integrity. This approach may assist in defining biophysical limits within National Directions under the NBA.

However, as these authors point out, tangata whenua may have their own understanding of these concepts in relation to mauri. Will 'quality' then include an assessment of the mauri of natural and built environments to recognise the concept of Te Mana o te Taiao? And if so, should mauri be defined in the NBA or left to individual iwi and hapū to determine the biophysical and/or cultural limits at the scale of their interest?

The latter approach was suggested in 1993 by Professor Hirini Matunga of Lincoln University through the "Mauriora Systems Framework" (Figure 1 below, Helen Matunga, Hirini Matunga and Steve Ulrich "From exploitative to regenerative tourism: tino rangatiratanga and tourism in Aotearoa New Zealand" (2020) 9 MAI Journal 295). This will challenge some councils to act more bi-culturally, which is appropriate not only for Te Mana o te Taiao.

The Review Panel defined Te Mana o te Taiao as (at 489):

*... refers to the importance of maintaining the health of air, water, soil and ecosystems and the essential relationship between the health of resources and their capacity to sustain all life.*

Cabinet, in adopting this concept (Cabinet Paper at 32), determined that ministers will work with the Māori Collective "on how best to express Te Mana o te Taiao so that it is clear and workable" (at [58]).

The definition of 'health of resources' is therefore a core pillar of the NBA, as is the definition of 'maintain'. If 'maintain' is not about taking action, then it is likely that not only will the biodiversity crisis continue to deepen, but nature's ability to sequester and store carbon in terrestrial, coastal and marine ecosystems will also diminish.

Similarly, the definition of 'positive outcomes for the environment' will also need to be carefully thought through (proposed s 5(2)(b) of the NBA). Te Ātiawa Manawhenua

Ki Te Tau Ihu Trust suggests it is more appropriate to replace 'positive' with 'net enduring restorative outcomes' to actively, additively and incrementally improve the environment and collective wellbeing of people and place (Ian "Shappy" Shapcott, unpublished material).

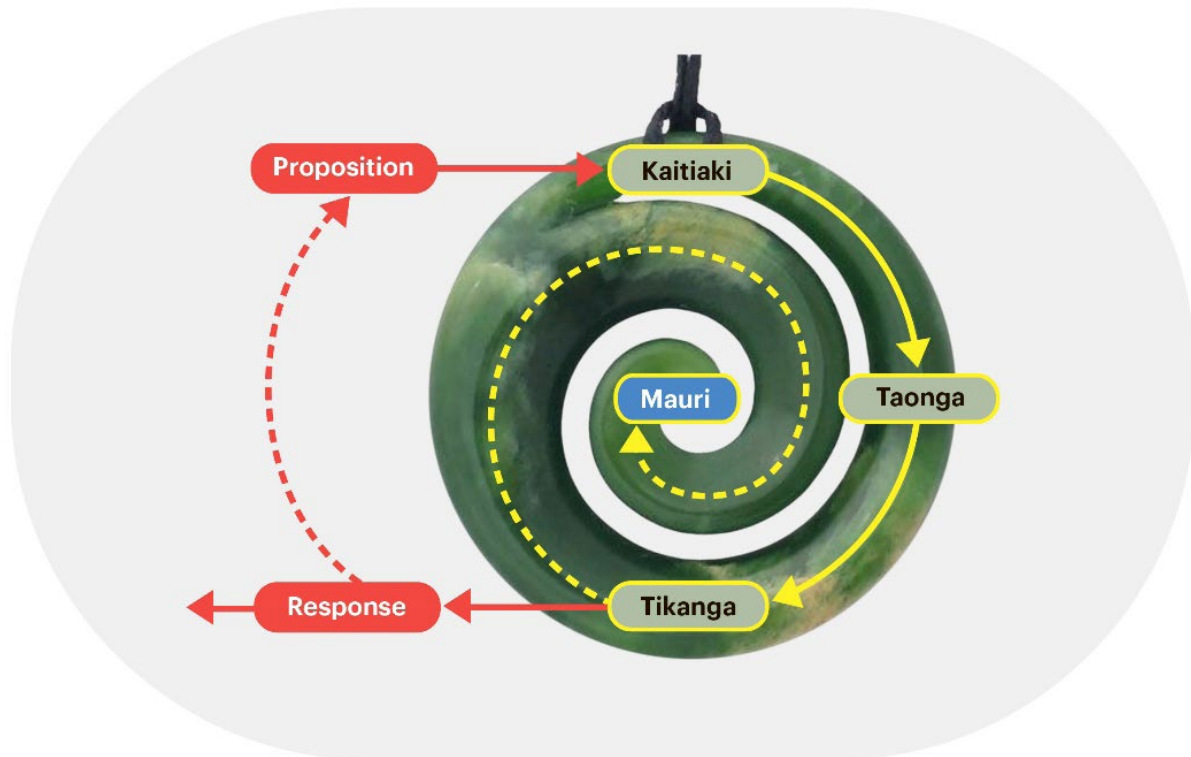
Accordingly, the Cabinet Paper definition of the RMA should be amended to reflect that, with suggested changes emphasised, as follows:

#### **Section 5 Purpose**

- (1) *The purpose of this Act is to promote the **quality [ecological sustainability]** of the environment to support the wellbeing of present and future generations and to **recognise [give effect]** to the concept of Te Mana o te Taiao.*
- (2) *The purpose of this Act is to be achieved by ensuring that:*
  - (a) *the use, development and protection of natural and built environments is within environmental biophysical limits and is sustainable;*
  - (b) *positive **[net enduring restorative]** outcomes for the environment are identified and promoted; and*
  - (c) *subject to (a) and (b), the adverse effects of activities on the environment are avoided, remedied or mitigated.*

Promoting ecological sustainability and net enduring restorative outcomes is a much clearer purpose than the nebulous and ambiguous 'quality' and could well lead to a much more regenerative and resilient ecology, economy and society. That would be a more positive outcome with a much clearer contribution towards wellbeing, worthy of a new story to replace the one in "Environment Aotearoa 2019". Perhaps there could be a new chapter called "Zen and the art of resource management". Now, there's a thought.

**Figure 1:** The Mauriora Systems Framework (redrawn from Matunga, 1993) in H Matunga and others "From exploitative to regenerative tourism: Tino rangatiratanga and tourism in Aotearoa New Zealand" (2020) 9 MAI Journal 295.



**Table 1:** Definitions of 'maintain', 'enhance' and 'restore' relevant to biodiversity from *The New Shorter Oxford Dictionary* (1993) and ecological definitions, along with applied examples (from Ulrich and others "What it means to "maintain" biodiversity in our coastal marine environment" (April 2018) RMJ 29).

Term	Dictionary Definition	Ecological Definition	Example one	Example two	Example three
Maintain	To preserve or retain, cause to continue in being (a state of affairs, a condition, an activity, etc); keep vigorous, effective, or unimpaired; to guard from loss or deterioration	Take action to preserve or retain natural species diversity (including foundational species) from loss and keep the functioning of ecological complexes effective and unimpaired from deterioration	Prevent habitat disturbance to intact mussel reefs at known specific sites	Prevent habitat disturbance to soft sediment habitats to enable ecological functioning to recover at an ecosystem scale	Implement more stringent rules on forest harvesting, earthworks, and replanting to reduce excess sedimentation into estuaries and enable ecological functioning to recover

Enhance	To raise in degree, heighten, intensify (a quality, attribute, etc)	Facilitate recruitment, co-existence and successional processes by stabilising ecological functioning through time	Infilling of existing reefs and expansion from edges after action to maintain	Expansion of biogenic species and succession to three-dimensional complex structures	Shellfish beds expand as storms flush out estuaries over time as sediment inputs reduce
Restore	Bring back or re-establish; return something to a former condition or place	Re-establish species or habitat by direct action	Place live mussels on the seabed to create new reefs	New habitats establish due to increased larval mass from intact and enhanced areas	Replant saltmarsh and seagrass to replace lost habitat



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