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A 'Sea Change' in Marine Planning

the development of New Zealand's first marine spatial plan

Introduction

Marine spatial planning is a well-established approach internationally, and has been used to assist in the application of an ecosystem-based management approach to the marine environment (Ehler and Douvere, 2009; Ehler, 2014).

New Zealand's first marine spatial plan was completed in December 2016. It was the result of a three-year Sea Change Tai Timu Tai Pari project which focused on addressing the growing spatial resource conflicts and ecological degradation associated with the Hauraki Gulf. The project was innovative in a number of respects, including: establishing a co-governance structure; tasking a group of Mana Whenua (Hauraki Gulf iwi) and stakeholder representatives with producing the plan on a collaborative basis; addressing both catchment and marine issues in an integrated manner; and integrating mātauranga Māori and Western science. The plan, which is non-statutory, was designed to be bold. This was in order to provide a more effective response to the ongoing ecological degradation of the Hauraki Gulf which decades of traditional management approaches had failed to reverse.

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This article reviews the background to the marine spatial planning project, the process used to develop the plan, and the issues likely to arise during implementation. It probes the question of whether New Zealand's institutional framework is likely to be adequate to support the successful implementation of the marine spatial plan going forward.

Contextual background to the gulf

The Hauraki Gulf Marine Park is a shallow coastal sea comprising some 13,900 km^2 (Hauraki Gulf Forum, 2011a). It is a highly productive marine system which supports a major spawning and nursery area for snapper and other finfish (Zeldis and Francis, 1998). The gulf is also a seabird biodiversity hotspot, with over 70 species being sighted in the area, 20% of the world's total number of seabird species. At least 23 species breed in the Hauraki Gulf (Gaskin and Rayner, 2013). The Hauraki Gulf supports a year-round population of around 50 Bryde's whales, the main-stay of a nationally critically threatened population of fewer than 200 (Constantine, Aguilar de Soto and Johnson, 2012; Constantine et al., 2015). Common and bottlenose dolphins appear to use the gulf as a calving and nursery area, possibly due to the year-round abundance of food (Stockin, 2008; Dwyer et al., 2014).

The Hauraki Gulf might have been one of the earliest places in New Zealand to be settled by eastern Polynesians, possibly around AD 1300 (Furey et al., 2008; Sewell, 1984), although oral tribal histories extend back further. Today there are multiple and overlapping Māori interests in the gulf spanning more than 20 tribal groupings. Auckland, New Zealand's largest (1.6 million people) and fastest growing city, is located on the shores of the gulf, resulting in multiple and increasing pressures on the marine system, including through sewage overflows and heavy metal contamination from storm water. The gulf also supports a large commercial fishing and aquaculture sector, as well as over 200,000 recreational fishers (Hartill, 2014). Some of New Zealand's most productive dairy land is located on the Hauraki Plains within the gulf's catchments, resulting in elevated nutrient discharges. There are also extensive exotic forestry plantations in the Coromandel ranges, and dotted elsewhere around the region, that are regularly clear-felled, increasing erosion and sedimentation risks (Peart, 2016).

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Governance of the Hauraki Gulf

The concept of managing the Hauraki Gulf as a single entity had its inception in 1967 with the establishment of the Hauraki Gulf Maritime Park and associated Maritime Park Board (under the Hauraki Gulf Maritime Park Act 1967). The focus of the park was on the islands and coastal land rather than the marine area. Before its disestablishment in 1990, the board had accumulated 27 maritime park reserves.

Calls for the establishment of a marine park in the Hauraki Gulf, during the late 1980s and early 1990s, were eventually realised when the Hauraki Gulf Marine Park Act was passed into law in 2000 (Waitangi Tribunal, 2001). It established the Hauraki Gulf Marine Park, including the seabed, seawater, coastal and island reserves, and conservation land. The legislation set out a set of clear purposes for the marine park, including recognising and protecting its international and national significance, recognising the special relationship of tangata whenua with the park, and sustaining its life-supporting capacity. Unlike other marine parks in New Zealand at the time, such as Tāwharanui and Mimiwhangata, no restrictions were explicitly placed on any activity within the gulf, although a common set of management objectives were to apply to statutory decision making (Hauraki Gulf Marine Park Act 2000, s33).

The legislation also established a new entity, the Hauraki Gulf Forum, to oversee the management of the Hauraki Gulf and its catchments. Instead of having direct management responsibilities, the forum was conceived as an integrating body, bringing together the myriad of agencies that now played a role in the gulf, so its membership largely consists of central and local government representatives. In addition, six tangata whenua representatives are to be appointed by the minister of conservation, thereby recognising the strong cultural linkages between tangata whenua and the gulf. The appointees are from a range of different iwi/hapū, but due to the large number of tribal groupings with interests in the gulf (more than 20) they collectively represent tangata whenua interests more generally (Sea Change Tai Timu Tai Pari, 2016).

The Sea Change Tai Timu Tai Pari process

The Sea Change Tai Timu Tai Pari project had its inception in the Hauraki Gulf Forum's 2011 *State of Our Gulf* report, which indicated that current management approaches were not sufficient to reverse the ongoing environmental decline of the marine system (Hauraki Gulf Forum, 2011a, p.13). At the same time, there was growing awareness that marine spatial planning was becoming increasingly popular overseas. In order to understand what such an approach might contribute to the Hauraki Gulf, the forum commissioned an international review of marine spatial planning. The report concluded that 'Marine spatial planning is a well-accepted strategic planning process which could help achieve the purposes of the HGMPA [Hauraki Gulf Marine Park Act] including integrated management and the protection and enhancement of

the life-supporting capacity of the Gulf' (Hauraki Gulf Forum, 2011b, p.40).

The report generated considerable interest. With the encouragement of the Hauraki Gulf Forum and the Environmental Defence Society, Auckland Council and the Waikato Regional Council agreed to lead a marine spatial planning project. The Department of Conservation and Ministry for Primary Industries subsequently joined (Aguirre et al., in press). A 16-member project steering group was established to oversee the project, with members consisting of eight representatives of the statutory bodies involved in managing the gulf and an equal number of Mana Whenua representatives, thereby putting in place a co-governance structure. The steering group was led by Mana Whenua and agency co-chairs.

The project steering group approved the terms of reference for the stakeholder working group which was to do the work, and was to receive and adopt the plan. It defined the purpose of the project as being

> to develop a spatial plan that will achieve sustainable management of the Hauraki Gulf, including a Hauraki Gulf which is vibrant with life and healthy mauri, is increasingly productive and supports thriving communities. It aims to provide increased certainty for the economic, cultural and social goals of our community and ensure the ecosystem functions that make those goals possible are sustained. (Sea Change Tai Timu Tai Pari, 2013)

The plan itself was developed by the stakeholder working group, which consisted of representatives from commercial and recreational fishing, farming, aquaculture, infrastructure, community and environmental interests. Four positions on the working group were made available to Mana Whenua. The balance of the members was determined through public meetings, where the sector groups were asked to put forward their preferred representatives. These initial selections were tested with other sector groups to ensure that the people nominated were able to work across sectors in a collaborative manner.

The role of the stakeholder working group, as set out in the terms of reference, was to

> compile information and evidence, analyse, represent all points of view, debate and resolve conflicts and work together as a group to develop a future vision for a healthy and productive Hauraki Gulf. This includes identified preferences for the allocation of marine space. The future vision will be manifested as a physical document – the Hauraki Gulf Marine Spatial Plan.

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The group was to operate on a consensus basis, which means that 'every member either supports or does not actively oppose (can live with) the decision' (ibid., pp.2-4).

The stakeholder working group first convened in December 2013, and met approximately monthly up until late 2016 when the plan was completed, with a break of several months during mid-2015. A high degree of trust developed between the working group members and by the end of the process the group operated as a tight team. The collaborative approach enabled the working members, to become well informed about the issues affecting the gulf and possible solutions, helped develop social capital between the sectors, and encouraged members to provide sector information that would normally be withheld under an adversarial process. An independent chair, who was not a member of the working group or the project steering group, was appointed by the latter to facilitate the group. Two people held this position during the course of the project. Neither were professional facilitators, but were senior members of respectively the accounting and legal professions.

During the early stages of the project, six 'roundtables' were established to focus the plan development work on key elements of the overall picture, as well as to involve a broader range of stakeholders. The topics for the roundtables were fish stocks, water quality and catchments, aquaculture, biodiversity and biosecurity, accessible gulf (the ability of people to access and experience the gulf) and gulf infrastructure. Two co-chairs were appointed for each roundtable, both of whom were stakeholder working group members.

The roundtables met for approximately one day a month for six months and operated on a broad consensus basis. Members endeavoured to agree on a vision and problem definition, and then focused on developing solutions to the problems identified. The timeframe for the operation of the roundtables was short, particularly for the development of trust between members required for collaboration to work. This meant that, in most cases, only high-level solutions were developed; controversial issues, such as marine protection, were put on hold. The reports prepared by the roundtables were not formally agreed to by all members and were not publicly released. They formed the building blocks of the plan, with the material further developed by the stakeholder working group.

Early on in the process, the working group members agreed that the plan would be science-based as well as incorporating mātauranga Māori. Scientists from a range of research institutions presented their work directly to the group and roundtable meetings and their presentations were uploaded onto

the project website (www.seachange.org.nz). It was also agreed that the plan would be based on existing scientific knowledge, as there was not the time nor budget to commission new work. This proved largely to be the case, although one new piece of research was commissioned to examine benthic recovery in the cable protection zone. In addition, during the project the Waikato Regional Council and DairyNZ commissioned work to review and synthesise current knowledge about the impacts of sediment and nutrient flows into the Firth of Thames (Green and Zeldis, 2015).

Mātauranga Māori was incorporated into the plan through several mechanisms. A mātauranga Māori roundtable was established, comprising Mana Whenua members of the project steering group and the stakeholder working group, to focus on developing plan material with specialist support. A Mana Whenua writer and spatial information expert were incorporated into the plan-writing team to ensure effective integration of the material as the plan was developed. In addition, the plan structure and presentation were informed by a specialist Māori designer to encapsulate a Māori world view. The process was complicated by ongoing Treaty of Waitangi settlements that had not been resolved for the Hauraki tribes. A collective redress deed between the Hauraki Collective (representing 12 Hauraki iwi) and the Crown was signed only in December 2016, after the marine spatial plan had been completed (Hako et al., 2017). In addition, negotiations had yet to commence on any treaty claims over the marine space in the Hauraki Gulf.

An extensive public process was undertaken alongside the stakeholder working group. This involved public meetings, 25 'listening posts' (Sea Change Tai Timu Tai Pari, 2014), a web-based use and values survey (Jarvis et al., 2015), a survey on roundtable topics and a second one on priority issues identified by roundtables (Perceptive Research, 2015), and an active website (www.seachange.org.nz) and email updating programme. In addition, a Love Our Gulf event and social media campaign (www.facebook.com/loveourGulf) were undertaken. This public engagement effort connected with more than 14,500 people overall, with 9,350 actively contributing their views to the project (Sea Change Tai Timu Tai Pari, n.d., p.2). The results of the engagement were summarised and made available to the stakeholder working group members to inform plan development.

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A group of community stakeholders who had been present at meetings held to select the working group members, called the Hauraki 100+, were convened every few months so that the working group could provide an update on progress, discuss key issues and obtain feedback from the broader community. The group was intended to act as a 'sounding board' for the stakeholder working group during the preparation of the marine spatial plan.

Central and local government agencies, led by the Department of Conservation, assembled spatial data sets on a web-based tool called SeaSketch (www.seasketch.org). SeaSketch had been developed by researchers and software developers based at the University of California Santa Barbara (Pohl, n.d.). A technical team, consisting of agency staff, was assembled to support the stakeholder working group and topic roundtables and to access science as requested. This was later refined to a core group focused on plan writing, headed by an independent lead writer and two science advisers.

The work of the stakeholder working group was overseen by an independent review panel comprising five experts in various fields, including Paris-based Charles Ehler, who was the co-author of the UNESCO guide to marine spatial planning. The panel provided three reports and the recommendations helped guide the further development of the plan (Independent Review Panel, 2014, 2015, 2016).

Content of the marine spatial plan

The resultant plan is structured around four parts, or kete (baskets) of knowledge: Kaitiakitanga and Guardianship; Mahinga Kai – replenishing the food baskets; Ki Uta Ki Tai – ridge to reef or mountains to sea; and Kotahitanga – Prosperous communities (Sea Change Tai Timu Tai Pari, 2016). The front end of the plan consists largely of objectives and actions, and is supported by a summary of the scientific basis underpinning the plan provided in the appendices. The plan is wide-ranging and detailed. Some key features are described below but the reader is encouraged to read the plan proper.

The fish stocks chapter was based on two broad strategies: first, to apply an ecosystem-based approach to harvest management; and second, to put in place mechanisms to protect and enhance marine habitats, thereby increasing the ecological productivity of the gulf. Restoration of marine habitats focuses on a nested approach. Large benthic areas are to be protected through the retirement or mitigation of key stressors, such a fishing gear impacts, to allow natural regeneration. Smaller areas within these zones will be the focus of passive restoration (through the establishment of marine reserves) and active restoration through the transplanting of species or

establishment of new habitat patches (ibid., p.71).

The chapter also included a proposal to remove seabed-damaging fishing methods from the gulf, including bottom trawling, Danish seining and dredging. This was to prevent any further habitat damage, reduce sediment resuspension, and allow natural or assisted recovery of the three-dimensional benthic habitats which are of critical importance to the survival of many juvenile fish. Fishers will be assisted to transition to methods such as long-lining, which produce higher-quality fish, achieve a higher market price and have less environmental impact (ibid., pp.74-5).

A novel proposal in the plan is the creation of ahu moana co-management areas. These will be located in nearshore areas extending one kilometre seawards. They will be co-managed jointly by Mana Whenua and local communities, to mobilise and focus the energy and knowledge of these parties towards improving the management of local fisheries and inshore coastal waters. This will help strengthen customary practices associated with the marine space, as well as more effectively control harvest levels, particularly in areas under increasing pressure from the growing Auckland population (ibid., pp.52-4).

The plan identifies 13 new aquaculture areas and 13 new protected areas, as well as an extension in size of two existing marine reserves. In addition, an extensive area is identified as being unsuitable for aquaculture due to its proximity to the Auckland metropolitan area, where there are many potentially conflicting uses of the water space.

The provision of marine protection was one of the more difficult issues to reach consensus on, and in some cases this could not be achieved in the time available. As a result, two alternative proposals are included for some specific sites. Provision has been made for customary harvest and the adverse effects on commercial fishers will need to be addressed. In addition, there is to be a 25-year review of the protected areas, and co-governance and management of them once established (ibid., pp.124-6).

The impact of poor water quality on the ecological health of the Hauraki Gulf was one of the greatest areas of concern, with the main stressor being sediment (ibid., pp.133-4). Sediment is a difficult issue to effectively address, due to the large number of diffuse sources that contribute, including conservation land, forestry, agriculture, earthworks and stream bank erosion. In addition, a large amount of sediment has already reached the marine area, and is retained in the gulf for long periods of time, being regularly resuspended by wave action. The approach set out in the plan is wide-ranging and includes measures to reduce soil erosion, to minimise sediment entering waterways and to stabilise sediment once it has reached the marine environment. Some of the key features of the strategy are to develop catchment management plans (starting with four high-priority catchments), establish catchment sediment limits, increase sediment traps through reinstating natural or engineered wetland systems, ensure the adoption of good sediment practice by all land users, and retire inappropriate land use on highly erodible land. Emphasis has also been put on scaling up one-on-one interaction with farmers through doubling resources to employ additional land management officers (ibid., pp.134-41).

Nutrient enrichment was an emerging water quality issue in the Firth of Thames. The rivers discharging into the area have high nutrient loadings, primarily as a result of intensive dairying within the catchment. The Firth of Thames is not well flushed and the water becomes stratified in late summer and early autumn. Water quality monitoring in the outer Firth has identified oxygen depletion and seawater acidification during these times (Green and Zeldis, 2015, pp.40, 49). The plan places a cap on nitrogen discharge levels, which are to be kept at or below current rates until sufficient scientific work has been completed to enable an appropriate nutrient load limit to be put in place (Sea Change Tai Timu Tai Pari, 2016, pp.145-6).

There were varied reactions to the plan when it was publicly launched on 6 December 2016. The three key ministers, of environment, primary industries and conservation, welcomed the plan in a joint press statement (New Zealand Government, 2016). The Environmental Defence Society chairman called it 'a major achievement not to be underestimated' (Taylor, 2016). The *New Zealand Herald* headlined its article on the plan's release 'Revealed: the bold plan to save Hauraki Gulf'. Science reporter Jamie Morton went on to write: 'The plan – the first of its kind in New Zealand – sought to help stem the flow of sediment and other pollutants into the Hauraki Gulf, ease pressures on wildlife, fish stocks and kaimoana and restore the health of crucial ecosystems' (Morton, 2016).

Some other responses were less positive. The plan has been criticised as being undemocratic due to the adoption of a collaborative, stakeholder-led process for its development instead of the normal process whereby the plan is developed by a statutory body and undergoes wide public consultation (Fox, 2016). The chief executive officer of large fishing corporate

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Sanford Limited expressed concern about the proposed phase-out of bottom-impacting fishing methods, being reported as stating: 'some areas just consist of sand really and bottom trawling doesn't really have a negative impact'. In response, project steering group co-chair Paul Majurey, who is also chair of both the Hauraki Collective of iwi and Tāmaki Makaurau Collective of iwi, was reported as stating: 'For too long we have complained about the indiscriminate, bulk harvesting, benefit-destroying methods being used to harvest fish commercially, to have those phased out over time is a huge win for the environment' (Bradley, 2016).

New governance structure to implement the plan?

Although the stakeholder working group members have reached consensus on the plan's content, and agencies have committed to implementing the plan in principle, it is uncertain whether an integrated plan can be effectively implemented through the existing fragmented institutional structures that apply to the gulf. One of the key principles agreed to by the working group members was that 'The Plan is developed as an integrated package to be implemented as a "whole"' (Sea Change Tai Timu Tai Pari, 2016, p.25). Achieving such integrated implementation will require a cohesive response from the four main implementing agencies, Auckland Council, Waikato Regional Council, the Ministry for Primary Industries and the Department of Conservation.

The Hauraki Gulf Forum currently serves as an integrative body for management roles of these agencies in the Hauraki Gulf. But a recent independent review of the performance of the forum after 15 years concluded that, although '[t]here have been notable successes from the Forum including its leadership role in creating the preconditions and guiding Sea Change', it was 'failing to adequately promote the objectives of the Act, and will not do so without significant change'. The report compiled a number of recommendations on how the current situation could be addressed, including: 'Governance should be reformed and the current structure replaced with a smaller, more agile Forum membership that provides a peer group of politically aware and strong leaders committed to promoting the objectives of the Act', and that it 'needs greater representation of tangata whenua to reflect the nature of the Crown–Iwi partnership' (Bradley, 2015, pp.4-5).

The marine spatial plan itself expresses a view on 'some attributes of future governance of the Hauraki Gulf Marine Park that we believe are essential for the implementation of this Plan'. A key element of this is 'strong, effective co-governance', with a new governance entity having 'membership from Mana Whenua and the community at large'. Fourteen functions of such a new entity are identified in the plan, including leading strategic gulf-wide initiatives, overseeing the design of a detailed implementation plan, providing recommendations to the minster for primary industries on fisheries sustainability measures and regulations applying to the park, and helping to establish the network of marine protected areas identified in the plan (Sea Change Tai Timu Tai Pari, 2016, pp.187-8). This new governance entity could take the form of a reconfigured Hauraki Gulf Forum, which would require legislative amendments to the Hauraki Gulf Marine Park Act 2000.

Conclusion

The Sea Change Tai Timu Tai Pari project has successfully delivered New Zealand's first marine spatial plan through a novel co-governance process. This is a notable achievement in itself, but the effectiveness of the plan will rest on the extent to which it can be successfully implemented. This is likely to require some institutional changes in order to embed this new approach into marine management in New Zealand.

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