

11. IMPLEMENTATION OF THE PLAN

WHAKATINANA I TE MAHERE

Each of the objectives and associated actions in the Plan are important in their own right, and must be seen collectively as the pathway to restore the mauri of the Hauraki Gulf Marine Park.

It is clearly not possible to undertake all the actions immediately, and agencies and stakeholders will need to prioritise them as a time-staged implementation. This is consistent with our generational perspective; it took several generations to create the current impacts on the Hauraki Gulf Marine Park, so we expect that restoration to our desired outcomes may also take decades.

This Chapter outlines how agencies can stage implementation. Included are some attributes of future governance of the Hauraki Gulf Marine Park that we believe are essential for the implementation of this Plan, along with monitoring and research needs, the use of cultural health indicators, and some commentary on prioritisation. We do not attempt to prescribe specific priorities for monitoring, research or indicators, this should be done by the respective agencies, and overseen by the Governance Entity.

HAURAKI GULF GOVERNANCE ATTRIBUTES

Strong, effective co-governance is the key element that will influence the success and implementation of the Plan.

Governance is already in place through statutory agencies, and much of the implementation will occur through these agencies; in particular the Auckland Council, Waikato Regional Council, the Ministry for Primary Industries, and DOC.

An overarching perspective is provided by the Hauraki Gulf Forum. This body is currently considering its future structure and attributes, and its new form may provide the coordinating co-governance entity that is essential for the implementation of the Plan.

We describe here the attributes of governance the Stakeholder Working Group strongly believes must be adopted for long term implementation of the Plan, but do not attempt to design an explicit future governance structure or funding model.

Membership of the governance entity

- The make-up of the Governance Entity should reflect co-governance principles with membership from mana whenua and the community at large.
- All members should bring the ability to make decisions, to influence people. They need to be community leaders, with considerable courage and the ability to drive outcomes for the Hauraki Gulf Marine Park.
- The size of the Governance Entity should be manageable but large enough to allow for sufficient representation of the various groups, and the range of skills required.
- Central and local government agency staff should act as advisors to the Governance Entity.
- The governance body should be sufficiently mandated to be able to contribute meaningfully to the outcomes sought in this Plan for the Hauraki Gulf Marine Park.
- The entity may initiate “Action Committees” with wider membership to oversee and report on the various initiatives undertaken.

Functions

The Governance Entity needs to be the champion for the Hauraki Gulf Marine Park and focus on the acceptance, adoption, and implementation of the Marine Spatial Plan. This includes the following:

- Leading strategic Gulf-wide initiatives described in the Plan that are clearly not the role of any particular statutory agency, and/or facilitating inter-agency cooperation to ensure priority Initiatives are implemented.

- Overseeing the design of a detailed implementation plan (within 6 to 9 months of adoption of the Spatial Plan), which could commence with prioritised fisheries reviews, the development of key performance indicators, and commitment to monitoring and review protocols being established.
- Overseeing and coordinating research, information gathering, and reporting for the Hauraki Gulf Marine Park, as well as providing a central place where Gulf information¹ is held.
- Establishing a public awareness and education campaign on the implementation of the Spatial Plan and other relevant issues associated with the Hauraki Gulf Marine Park.
- Coordinating and supporting the community initiatives and restoration groups actively engaged with the care of the Hauraki Gulf Marine Park
- Providing recommendations to the Minister for Primary Industries on fisheries sustainability measures and regulations applying to the Hauraki Gulf Marine Park. This includes working with the Minister for Primary Industries and local mana whenua groups in establishing customary fisheries tools such as mātaítai, taiāpure, and rāhui.
- Supporting mana whenua and local communities in the establishment of Ahu Moana.
- Assisting iwi to realise their goal of greater participation in the governance, management and kaitiakitanga of the marine space.
- Working closely with DOC, iwi/hapū, and local stakeholder groups and communities to help establish the network of MPAs identified in the Plan and providing support to iwi/hapū and local communities to ensure MPAs are successfully managed in the long term.
- Ensuring that all government agencies and stakeholders consider potential impacts on the Hauraki Gulf Marine Park's ecosystems, and document their process as an integral part of their decision-making systems.
- Developing guidance material on how an ecosystem-management / Mātauranga Māori management approach should be applied to fisheries, conservation, and resource management decision-making in the Hauraki Gulf Marine Park and its catchments.
- Producing a five-yearly "State of the Hauraki Gulf Marine Park" report, which would include a review of the effectiveness of the Marine Spatial Plan and the extent to which targets are being met.
- Revising the Marine Spatial Plan to respond to issues raised in the review. The Governance Entity should be responsible for approval of each revised Spatial Plan, which could then be given statutory recognition under a revised Hauraki Gulf Marine Park Act, with agencies required to give effect to it under their various statutory instruments.
- Reviewing relevant draft statutory documents prepared by agencies prior to public notification to ensure that they give effect to the Spatial Plan and the Hauraki Gulf Marine Park Act. These would include plans prepared under the Resource Management Act, the Conservation Act and in Initial Position Papers prepared under the Fisheries Act.
- Leading regular meetings with statutory agencies to track implementation progress.

A CO-ORDINATED APPROACH TO RESEARCH AND MONITORING

We define research here as specific human activities designed to create new fundamental and applied knowledge and understanding of how the Hauraki Gulf Marine Park functions, encompassing the biophysical, economic, social, and/or cultural realms. Monitoring is defined as the repeated measurement of variables that can be used to quantify trajectories of temporal and spatial changes in the context of the Gulf (e.g. increasing, decreasing, static, and/or random). Monitoring in itself is not research, but the data generated by monitoring can be used to assess the effectiveness of different management regimes, and test different hypotheses of how we think the systems work. 'Monitoring for monitoring's' sake is discouraged, and a poor use of resources. Monitoring should be undertaken with a clear understanding of how it will help inform management over time; is water clarity improving in an estuary following change to land management practises in a catchment, has the ability of local communities to harvest kaimoana improved following changes in spatial fisheries management. Monitoring should also be made as 'future/proof' as possible, as changing monitoring approaches or methods

¹ Information in the sense of reports, maps, papers, and metadata; primary databases and associated raw data remain the direct responsibility of the various statutory agencies.

can seriously undermine the value and effectiveness of data collected, for example comparing results over time and space.

A coordinated approach to monitoring and reporting, and the learnings we can take from this, is an important element in an “adaptive management” approach, whereby we modify our management direction as we learn what works and what does not.

Cultural indicators and iwi approaches to environmental monitoring and evaluation

Cultural indicators are used to protect and manage ngā taonga tuku iho (treasures handed down to us), and to aid mana whenua in monitoring, management processes, and decision making. These should be used as part of plan-effectiveness monitoring, to recognise and incorporate mana whenua values. Cultural indicators required to monitor and understand the issues facing the Gulf will need to be determined with mana whenua, but might include:

- Mauri – All elements of the natural environment, including people, possess mauri and all forms of life are related.
- Kaitiakitanga – An ancestral obligation on Māori to protect and enhance the mauri of elements of the natural world. An essential element of kaitiakitanga is the maintenance of a balance between the needs of the environment and those of humans, and the needs of current generations with those yet to be born.
- Ki uta, ki tai – A holistic way of managing the environment. All species are taonga and their habitats are protected, restored, enhanced and managed, consistent with the tikanga and mātauranga of mana whenua. Taonga species sustain mana whenua, providing food and other resources, and contribute to their spiritual well-being. The maintenance of a relationship with treasured ancestral places is essential for keeping mātauranga, cultural knowledge, and tikanga alive and relevant. Waterways are viewed holistically, from their source (mountains, springs, wetlands) to the sea.
- Hauhake, Kohikohi (harvest and gather) – The use of flora and fauna to sustain the people.

More detail is provided in Appendix Six.

Research and monitoring committee

For the purposes of the Plan, a research and monitoring committee should be established, under the ‘umbrella’ of the Governance Entity. This should be constituted of experts from Crown Research Institutes, universities and wānanga, other research organisations, management agencies (especially Auckland Council and Waikato Regional Council), iwi, industry/sector groups, community representatives, and businesses dependant on the Gulf.

Included in this mix should be practising scientists with solid technical skills, who can help evaluate the practicality of the work proposed, and ensure that it allows New Zealand at large to gain the best science advances from the work (e.g., in its wider application to similar issues in other regions). A suitable code of conduct should be adopted/developed to identify and mitigate any major conflicts of interest that might arise for individuals serving on the committee, and to avoid dominance of the committee by any one sector or individual/s.

The committee should be tasked with facilitating and co-ordinating the development of a research and monitoring plan for the Hauraki Gulf Marine Park, focusing on the science and monitoring needed to fill knowledge gaps and reduce uncertainty. The monitoring plan should, at a minimum, include a list of recommended projects with accompanying outputs, contingencies, data requirements, timelines, indicative costs, and potential providers.

However, it should not be so prescriptive as to discourage innovative and new thinking by research providers, and ‘thinking outside the square’, including higher risk for higher potential gains, should be encouraged. The research and monitoring plan should explicitly underpin the delivery of objectives and management actions in the Plan.

The purpose of the committee should be to act as a broker and hub for all research activities in the Hauraki Gulf Marine Park, including:

Funding

- Identifying and promoting research projects that can be conducted within existing MBIE-funded, National Science Challenge, Crown Research Institute core-funded, university-funded, and local government-funded research programmes.
- Looking for opportunities to partner the committee’s

research and monitoring plan with organisations that are planning research proposals, for example, by serving on technical steering groups, and assisting in networking across agencies and other organisations.

- Working with tertiary education institutes to attach students to research projects.
- Partnering with industry research organisations to co-fund projects.
- Finding opportunities for citizens to contribute to the research effort.
- Presenting strong reasoning to philanthropical organisations to provide research support.

Leadership

- Working with central government to ensure adequate research funding.
- Seeking opportunities to add value to research projects, for example, by involving local industry and community groups, and developing opportunities for key stakeholder groups to manage research programmes collaboratively.
- Helping co-ordinate research across different programmes.
- Providing a liaison role between research programmes and management agencies, to ensure important results are noticed and taken up by management.

Strategy and management

- Keeping abreast of timelines, including bidding processes, regional plan reviews and collaborative planning processes, looking to assist research funders in the development of their Requests for Proposals, and to ensure that research opportunities are well publicised to as many potential research providers as practical.
- Identifying future opportunities for synergies between stakeholder and research agencies.

Examples of potential research and monitoring prioritisation

Research is used to fill in gaps in our understanding and reduce uncertainty, as well as expanding knowledge of how things work. It is an adaptive process, and as such, research may often lead to new questions as it unfolds. Good research is essential to underpin the delivery of objectives and management actions for the Plan. For example:

- Determining catchment nutrient load limits for maintaining water quality and ecosystem health of the Firth of Thames requires an understanding of the ability of the Firth to ‘assimilate’ nutrients without having associated adverse effects. Ultimately, an integrated biophysical–economic model for exploring potential nutrient load limits is required.
- Restoring benthic habitats, including green-lipped and horse mussel beds, will require research into effective ways of achieving this, including developing new and innovative on-the-ground methods for habitat restoration.

Brood-stock source populations for scallop and green-lipped mussels need to be identified, so that effective management strategies are developed to ensure that healthy breeding populations are maintained, to help replenish other areas throughout the Hauraki Gulf Marine Park. Prioritising and staging research projects over time will be essential in implementing the Plan, given the resources likely to be available, and New Zealand’s relatively small research sector. Most research can be developed as a series of clearly staged steps, where a step needs to be completed before it is possible to commence the next one. For example:

- Rebuilding fish stocks requires a prioritisation of what key harvested species to work on. Factors which can be used to prioritise might include to what extent different fish species are locally depleted, the uncertainty of stock estimates, the significance of different species to the functioning of the ecosystem, and the economic, recreational and/or cultural significance of different species. A discussion of this with respect to coastal fish-habitat interactions research is given in Morrison et al 2014c.

- Contaminant-generation models, such as those used in the Waikato Regional Prioritisation Project, need to be linked to models that predict transport, dispersal, fate, and effects of land-derived contaminants in the coastal marine area receiving environment. Where such contaminants accumulate in, or otherwise pass through, sensitive or valuable habitats in the coastal marine area, and cause adverse effects on the ecosystem and/or loss of human amenity, this information can be used to prioritise spending on mitigation in the catchment (using cost/benefit analyses).

Monitoring programmes need a similar prioritised approach, but usually run much longer than research projects, so also require ‘future-proofing’² so that they do not diminish in value over time as our understanding of the world moves on. Potential prioritised monitoring examples might include:

- A programme of data collection in the Firth of Thames to underpin the development of a biophysical–economic model for exploring potential nutrient and sediment load limits, examining specific habitats to assess processes rather than state. The parameters measured might include primary and secondary production, seabed nutrient fluxes, and ocean upwelling.
- Data on fisheries population age and size structure, spatial abundance and depletion, and cyclical and seasonal changes to inform to understand the mechanisms driving population change, set catch limits, and assess the success (or otherwise) of management actions.

Assessment protocols for research prioritisation

Criteria that could be applied to prioritise research are:

- Does the research fit with the strategies of the Plan?
- Is the research timely?
- Does the research recognise the historic, traditional, cultural, and spiritual relationship of tangata whenua with the Hauraki Gulf Marine Park and its islands (as per the Purpose of the Hauraki Gulf Marine Park Act)?
- Does the research fill a key knowledge gap?
- Will the research be taken up and applied?
- Does the research need to be undertaken in the Hauraki Gulf Marine Park?
- Will the benefits of the research exceed the cost of the research?
- Is there a high probability of the perceived research benefits being realised?
- Is there a critical dependency on the research?

² For example, using technologies which are likely to become obsolete in the near future, or failing to collect key variables which may not appear important/critical at the present time, but which might conceivably become of central importance in the future. Future-proofing is not perfect, and there is always a level of risk that monitoring may over time become ‘unfit-for-purpose’ or even redundant in some circumstances. Regular reviews of the monitoring schemes as part of the five year reviews will help minimise such likelihoods.

Table 11.1 Research topics identified in the Plan

BIODIVERSITY AND BIOSECURITY	
Mapping and description of seafloor habitats	
Interrelationships between habitats and species	
Links between shorebirds and seabird foraging behaviour, state of fish stocks and other environmental indicators	
Ecosystem services provided by different habitats and species	
Cumulative impacts of pressures on the wider Gulf system	
Impacts of light and sound pollution on marine species	
Impacts of set netting on vulnerable or at risk species	
Risk and impacts of disposal of spoil on marine biodiversity	
Identifying areas suitable for restoration	
Innovative ways of restoring degraded habitats	
Seabird foraging habits	
Recreational fishing seabird bycatch	
Effectiveness and feasibility of spatial and/or temporal closures when most at risk seabirds are foraging and breeding	
Necropsies of dead Bryde's whales to identify the cause of death (iwi kaitiaki to ensure cultural sensitivity)	
Identifying and remediating barriers to fish passage, which may significantly impact on taonga species that have a diadromous life cycle	
Identifying inanga spawning habitat	
WATER QUALITY	
Risk assessment of the RMS Niagara	
Linking models that predict transport, dispersal, fate, and effects of contaminants in the coastal marine area receiving environment to contamination-generation models and economic assessments for prioritisation of mitigation	
Developing sediment attributes applicable to the estuaries and inner coastal waters of the Hauraki Gulf Marine Park that can be converted into objectives and then catchment sediment load limits	
Models for calculating catchment sediment load limits	
Identifying land and landuse practices which are generating disproportionately high amounts of sediment	
Options to cap sediment with waste shells or other hard substrates	
Effects of nutrients and nutrient assimilative capacity of the Firth of Thames	
Sources of nutrients to the Firth of Thames	
Seabed nutrient processes in the Firth of Thames	
Biophysical model of Firth of Thames for calculating catchment nutrient load limits	
Future-proofing nutrient and sediment load limits for climate change	
Trends in Hauraki River nutrient loads	
Auditing of water quality risk factors	
Innovative technologies for boat anti-fouling	
Opportunities for large-scale re-creation of natural wetlands	
Opportunities for consolidating and hydraulically linking wetland restoration schemes	
Remnant and historical wetlands	
Artificial sediment traps	
Opportunities for converting simple stormwater treatment ponds in urban areas to fully-functioning wetlands	
Cost-benefit analysis for implementation of drain-trap technology and maintenance to remove plastic from stormwater runoff	
Risks associated with carcinogens and endocrine disruptors in fish	
New biodegradable materials	
The impacts of effluent systems on water quality indicators and potential to reduce associated impacts	
New technologies for on-site wastewater treatment	
Baseline sedimentation rate	
Monitoring methods for sedimentation rate	
Metrics for seabed benthic health	
Protocols and methods for measuring seabed muddiness	
FISH STOCKS	
Priority fish species	
Evidence-based target stock levels for each stock	
Crayfish review	
Hāpuku review	
Tools to monitor health and abundance of kaimoana beds	
Review impact of purse seining	
Review controls on harvested non-QMS species	
Brood stock source populations for scallop and green-lipped mussel beds	
Benefits of increasing the minimum size of snapper	
New bulk-scale fishing methods	
Transition of scallop fishers to other methods	
Historical and current extent of culturally and ecologically important habitats	
Ecosystem services valuation of the habitats	
Rapid identification of potentially successful approaches to active restoration	
Additional sources of stock and spat collection mechanisms	
Population age and size structure, spatial abundance and depletion, cyclical and seasonal changes	
Cultural health indicators for fisheries	
AQUACULTURE	
Environmental enhancement	
New species	
New technologies	
Climate change mitigation	
Opportunities for scallop aquaculture	
Suitable sites to zone for aquaculture	