

TE MANA O TE TAIAO

AOTEAROA NEW ZEALAND BIODIVERSITY STRATEGY

**Cross-agency development of a draft
Te Mana o te Taiao outcome monitoring
framework: A proceedings report**



**Te Kāwanatanga
o Aotearoa**
New Zealand Government

**Cross-agency development of a draft Te Mana o te Taiao outcome monitoring framework:
A proceedings report**

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Executive summary

Context and background

On 28 and 29 March 2023, the Department of Conservation (DOC) hosted a two-day workshop with the reference group for Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020 (ANZBS).¹ The reference group was formally established in January 2023 to contribute cross-agency expertise to the development of a draft Te Mana o te Taiao outcome monitoring framework.

On 9 and 10 May 2023, a similar workshop was held with regional council Special Interest Group representatives and central government staff.

This report captures the content and processes of both workshops.² The workshops involved exercises and breakout sessions to identify areas of alignment with the objectives and outcomes of Te Mana o te Taiao, the United Nations Convention on Biological Diversity and important related strategies or initiatives of other agencies and councils. Earlier workshops and discussions had helped to build a collective understanding of interdependencies within the ANZBS and across multiple strategies and establish a glossary of terms.

Central and local government agencies were asked to comment on the relevance of indicators in DOC's Outcome Monitoring Framework (OMF), which was used as a starting point for co-developing an 'agency agnostic' monitoring framework for Te Mana o te Taiao. Initially, these indicators were listed in relation to the ANZBS benefits framework organised by the five main drivers of biodiversity loss (invasive species, direct exploitation, climate change, land and sea use, and pollution) and enabling factors that were previously circulated to support a workshop in May 2022.³

Based on that feedback, and with input from the reference group, DOC integrated that understanding into a draft unifying outcome monitoring framework, which supported agency-

specific workshops hosted with reference group members in September 2022.

Considerable progress was made at the March 2023 reference group workshop toward a final draft of the central government component, noting that some gaps in indicators remain for selected objectives. Further input was obtained from special interest group representatives at a regional council workshop in May.

Results

Important outputs from the March reference group workshop included:

1. progress toward a refined central government interagency Te Mana o te Taiao OMF
2. progress toward confirming OMF indicators and measure agency alignment and gaps
3. initial prioritisation of indicators and measures for potential investment
4. identified potential monitoring and reporting of system pilot⁴ opportunities
5. explored draft implementation pathways
6. proposals for continued collaboration beyond 2022/23
7. refinement of the structure and process of the regional council workshop planned for May 2023.

Significant outputs from the May regional council workshop included:

1. identification of relevant indicators and measures from the ANZBS OMF with Te Uru Kahika current work programmes and confirmation of gaps
2. Te Uru Kahika alignment with eight main central government initiatives (eg the National Policy Statement for Freshwater Management) and assessment of current

1 The strategy's full title is Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020. In this document, we refer to it as Te Mana o te Taiao or ANZBS.

2 Additional information is included from subsequent discussions because of time constraints on the day.

3 Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020: Interagency feedback on monitoring and reporting indicators, May 2022.

4 Case studies (proofs of concept) designed to test end-to-end processes.

readiness to meet monitoring and reporting expectations

3. initial prioritisation of indicators and measures from the ANZBS OMF
4. proposals for continued collaboration beyond 2022/23 between central and regional government.

The workshops demonstrated that the draft ANZBS OMF is also relevant and useful for government agencies and regional (and unitary) councils. What is important to measuring the success of the ANZBS can also help government agencies and councils to meet their responsibilities and evaluate their own initiatives. A high proportion of ANZBS measures were ranked as 'critically important' or 'very important' by other agencies and councils for their own programmes.

The gap was highlighted in the workshops between the importance and nominal priority of many of the ANZBS measures to agencies and councils, and the investment available to implement such measures. For example, of those measures, only a small number were identified as available at the highest state of readiness. In addition, assessments done in the May workshop showed that councils are not ready to deliver what will be expected of them by central government policies; further support and guidance is needed.

Numerous opportunities were identified in the workshops to implement aspects of the ANZBS OMF and to simultaneously support other agency- or council-specific programmes. For example, the National Policy Statement for Indigenous Biodiversity requires councils to use national monitoring methods, if they are available. It seems logical that councils, DOC and other government agencies should collaborate to make them available.

The development of the OMF is ongoing and several important steps remain. For example, gaps in indicators for selected objectives need to be filled and many of the social measures need significant coordinated development and formal endorsement across agencies. Others require interagency agreement on common standards for widespread implementation.

It is clear that all participating agencies will need significant investment to develop and update

methodologies, actively conduct research or generate data for new or agreed priority areas. This was a particular point for regional councils because implementation of many of the indicators is currently not funded or part of their long-term plans.

Although the workshop content covered monitoring and reporting associated with Te Mana o te Taiao, an important benefit has been the opportunity to support the cross-agency response to the Parliamentary Commissioner for the Environment's (PCE's) 2022 paper *Environmental reporting, research and investment: Do we know if we're making a difference?*⁵ This has included advising on environmental outcomes and steps to achieving these, as set out in the strategy, as well as contributing to a 'whole-of-government' report about outcomes achieved, guided by the frameworks under development. Standards and methodologies for data collection and national networks of monitoring sites could be expanded or adapted to contribute to setting national direction as recommended by the PCE.

The PCE's 2022 report said (p 3):

Part of the explanation for this is that environmental issues cut across the activities of a wide range of agencies. There is also no common environmental outcomes framework that unites even the eight agencies that constitute the wider natural resources sector.

The PCE did not identify Te Mana o te Taiao specifically, however the workshop outputs, supported by staged investment, suggest it could make a substantial contribution in this direction.

Conclusion

The workshops have given a consistent message that chief executives need to endorse this work, to provide the necessary mandate for ongoing collaboration to successfully implement the monitoring and reporting components of Te Mana o te Taiao.

Systematic investment is needed in research, development, data collection, analysis and reporting on pertinent indicators and measures, including a process that supports formal adoption and widespread implementation by central and local government.

5 Parliamentary Commissioner for the Environment. 2022. *Environmental reporting, research and investment: Do we know if we're making a difference?* Parliamentary Commissioner for the Environment, Wellington.



Makarora River. Photo: Molly Spink, Unsplash

Reference group workshop – 28–29 March 2023

Background and context

The Department of Conservation's (DOC's) Te Mana o te Taiao Monitoring and Reporting (M&R) team has been working with an interagency group (Ministry for the Environment (MfE), Ministry for Primary Industries (MPI), Land Information New Zealand (LINZ), Stats NZ, Ministry of Business, Innovation and Employment (MBIE)) and regional council technical experts since November 2021 to develop a shared Te Mana o te Taiao outcome monitoring framework (see appendix 1 for the multi-year workplan). This work responds to Te Mana o te Taiao goals 4.1 and 4.2 to start building a nationally agreed set of indicators, methods and common data standards to align national monitoring and reporting efforts and measure progress toward ANZBS outcomes. It also shows alignment in domestic reporting needs across strategies, plans and domestic policies, such as the Natural and Built Environment Bill,⁶ National Adaptation Plan,⁷ National Policy Statement for Fresh Water Management (NPS-FM) and National Policy Statement for Indigenous Biodiversity (NPSIB), Biosecurity Strategy, Environmental Reporting Act 2015 and those required internationally, such as goals and targets set for 2030 in the Kunming–Montreal Global Biodiversity Framework of the United Nations Convention on Biological Diversity.

Five workshops were held, along with supplementary collaboration over the past 18 months. Attendees from central government identified where agencies' programmes, policies and/or strategies could or do connect with the Aotearoa New Zealand Biodiversity Strategy 2020 (ANZBS) and highlighted indicators needing development or investment in implementation.

The DOC M&R team, with support from the ANZBS reference group, will analyse feedback from those workshops to confirm the following.

Current state: Current work related to policies, strategies and programmes under way by these organisations where indicators and measures align, gaps are exposed and those indicators and measures needing development are identified. See appendix 6 for a list of current measures.

Future state: Planned work associated with policies, strategies and programmes in mid-term (6–24 months) where indicators and measures could align and those needing development are highlighted.

Gaps: Gaps in proposed indicators and measures are identified in relation to current and planned work for Te Mana of Te Taiao objectives, goals and outcomes.

The workshops were part of an engagement process with partners and stakeholders. These included wānanga with iwi and related research and pilot projects. Work under way by Manaaki Whenua – Landcare Research (funded by the MBIE Endeavour Fund and Biological Heritage National Science Challenge), along with three multi-year iwi case studies and two wānanga (funded by DOC), aims to provide examples of how to develop and implement social and environmental indicators with mātauranga-a-iwi as their foundation. Future challenges include the process of how te ao Māori social and environmental indicators are developed and implemented throughout the country, as well as their interrelationships (if any) with those used by central and regional government. The workshop proceedings will highlight experiences, identify enablers and challenges, and set out a vision for future actions.

The He Awa Whiria (braided river) framework exists as a guide in relation to the intergration of Te Ao Māori and non-Māori knowledge systems. However, practical matters of how to resource mana whenua adequately and enhance capacity for implementing te ao Māori social and

6 Language in this report reflects a point in time, including the status of legislation as it was at the time of the workshops.

7 Informed by the National Climate Change Risk Assessment.

environmental indicators for decision-making (in the longer term to support self-regulation and self-authorisation) need to be addressed. Another imperative is that the Kunming–Montreal Global Biodiversity Framework includes targets specific to indigenous peoples.

Workshop structure and methodology

The workshop covered two days, to accommodate the needs of all agencies. Staff from MfE and Stats NZ were present on 28 March, while 29 March was dedicated to MPI⁸ and LINZ. Regional council representatives were present on both days. See appendix 2 for a list of participants.

This report is organised by the topics covered and outcomes achieved, not by the day.

Workshop outcomes

Aligning and clarifying terminology

To promote effective communication and understanding of the complex terminology, DOC prepared a glossary comparing Te Mana o te Taiao labels with terms in the United Nations Convention on Biological Diversity in the context of significant components of the Outcome Monitoring Framework (OMF) (see appendix 3). Agency representatives looked for potential misrepresentations or conflicts with the way the terms are used in their work. In general, participants felt the glossary was useful but that real-life examples should be included to help visualise what the terms meant. Specific comments included the following.

- How do 'attributes' relate to measures; are they considered a parameter?
- In the section on monitoring objective, what does 'critical component' mean? Is it related to 'the purpose of the monitoring'. Clarification is needed. It was noted that the current definition refers to Te Mana o

te Taiao specifically, rather than being a generic description.

- On the assessment side, 'monitoring objectives' in the glossary is different from the ANZBS 'objectives'. This needs clarification because it sounds like it links back to the ANZBS.⁹
- Include Te Mana o te Taiao objectives in the table, otherwise a layer is missing.
- Te Mana o te Taiao goals, which include action items or outputs, were not included because DOC focused on the outcome assessment aspect. However, if we call it a hierarchy and parts are missing, such as goals, then the structure looks odd.¹⁰

DOC responded to this feedback by revising the glossary presented at the regional council workshop in May. An updated version of the glossary is given in appendix 3.

Prioritising indicators and measures

Based on discussion with the reference group, DOC prototyped a relational database to show workshop participants how indicators and measures are connected across the ANZBS outcomes and objectives and to agencies' initiatives. Although the database is a work in progress, it intends to provide transparency and line-of-sight interrelatedness and connections for all measures and indicators in relation to strategy outcomes.¹¹ Only rarely will data from a single measure suffice for reporting on regional, national and international needs. More often, reporting on progress towards goals, outcomes or targets requires multiple, interrelated indicators (and measures). These might, for example, include both biophysical and social indicators and measures.

At the workshops, participants were asked to consider if any programmes or initiatives were missing from those supplied earlier in the year. They also were asked to rank measures based on the following scale:

8 Although MPI staff participated on 29 March, the large number of branches to which the ANZBS is potentially relevant meant some exercises needed to be done separately with the agency later.

9 'Monitoring objectives' relate to the purpose of the monitoring work, that is, what needs to be known. ANZBS objectives relate to the purpose of the work, that is, what needs to be done or changed.

10 Goals from Te Mana o te Taiao were not included because they are actionable items or outputs that will be captured in routine programme-level governance and assurance-type reporting, as opposed to 'progress toward outcomes'. Note, output reporting is needed to help the interpretation of progress towards outcomes.

11 At the time of the workshop, DOC, MPI and councils were not part of the database but would ultimately be included, as would others such, as Predator Free 2050 Limited.

- **4 = Critically important** – non-activation creates significant operational and strategic risks to your agency – ‘should have it now’ (Audit and Performance Improvement)
- **3 = Very important** – fundamental to your agency’s strategic and operational success – ‘must have’ (Audit and Performance Improvement)
- **2 = Moderately important** – useful to inform planning and operations – ‘preferable to have’ (Performance Improvement)
- **1 = Slightly important** – useful for limited audience or transient initiatives etc – ‘nice to have’ (Performance Improvement).

All agencies were asked to consider indicators in place now, indicators that are in legislation or policies but not active and those expected in the future.

Agencies approached this exercise slightly differently, but all used the same 1–4 scale (except for regional councils).¹² Appendix 4 shows the priority rankings for all measures across agencies.

Ministry for the Environment

Although MfE previously identified itself as a passive harvester of data,¹³ the programmes and initiatives it is responsible for nevertheless have significant links to the ANZBS’ outcomes monitoring framework.

The MfE team ranked 67 of the measures as either very important (27) or critically important (40).¹⁴ Thirteen were ranked as moderately important and only nine as being of limited usefulness, ‘nice to have’.¹⁵ This was seen as confirmation that the OMF for Te Mana o te Taiao was well aligned to MfE’s own initiatives. To refine the prioritisation, it would be useful for MfE to map ANZBS OMF indicators and measures to the Environmental Reporting Act 2015 and the Environmental Monitoring and Reporting System current core indicators, along with any indicators developed by the National Climate Change Risk Assessment and National Adaptation Plan.

Current agency environmental reporting on issues is already using core indicators consistent with high-priority ANZBS indicators or measures. This is not surprising, given the collaborative process originally run by MfE in 2015 to select indicators for environmental reporting. DOC and Manaaki Whenua – Landcare Research participated in that process, promoting indicators of relevance drawn from the DOC OMF completed in 2005 and updated in 2015.

MfE representatives, in doing their mapping, said they preferred to think of the priorities in terms of general conservation themes rather than specific topics, such as sustainable use or biodiversity. They noted that air quality is not a focus for MfE but is within the agency’s responsibility. It would be useful to explore where air quality would fit in the OMF.

The MfE team also made corrections to the scope of initiatives related to the following measures in the relational database:

- 1.1.1.2 Soil carbon content: Add the greenhouse gas inventory and land use change
- 1.1.2.1 Ecosystem primary productivity: Does ecosystem prioritisation primary productivity include both terrestrial and marine? Need to add the National Adaptation Plan
- 1.1.2.4 Marine biological function: Add the National Adaptation Plan
- 1.1.6.3 Land, waterway and marine transformation: Measured at a regional scale, eg freshwater fish barriers
- 1.2.1.1 Non-nutrient contaminants and 1.2.1.3 Severely contaminated land and water: Add waste programme and soil contamination
- 4.2.4.2 Conservation outcomes from fund-supported activity:¹⁶ Add Jobs for Nature water remediation fund, waste levy and waste minimisation
- 4.4.4.1 Analysis and estimate of total economic benefits to communities (nation,

12 A formatting error meant some measures were missing from the OMF tables used on the day.

13 Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020: Interagency feedback on monitoring and reporting indicators, May 2022.

14 Some ranking was started at the workshop and subsequently completed with MfE senior staff.

15 Of 91 total measures, two were not scored.

16 This is the original wording for the initiative, which was then changed to broaden it beyond conservation land, therefore becoming relevant to all agencies. See appendix 6 for the final wording.

region, district, township) from conservation operations and associated business activity;¹⁷ 4.4.4.2 Analysis and estimate of total economic benefits to Treaty partners from Māori conservation operations and associated business activity; and 4.4.5.1 Government agencies', Treaty partners' and others' contribution to social capital from conservation operations and associated business activity: Missing sustainable use, do not focus just on conservation.

The MfE team at the workshop provisionally scored readiness to monitor and report on 15 critically important measures using an 'A, B, C' scale, with C being the least ready. Eight of the 15 were scored A or A-, with three B or B- and four C.¹⁸

Indicative comments associated with agency readiness are given below.

Soil structure and chemistry: A-

"...a big area reasonably well aligned with ANZBS. However, MfE reporting only covers productive or rural land not urban or the natural estate. The scale intended national but current focus is limited; it has potential to provide a national picture," if coverage extended across New Zealand.

Soil carbon content: B

"Part of the MWLR [Manaaki Whenua – Landcare Research] the programme but with the same limitations. At the research stage, unsure if funding will continue."

Freshwater hydrology: A

"LAWA [Land, Air, Water Aotearoa], good investment at a national scale. Groundwater lacking and inconsistent."

Habitat availability: B-

"Scale varies, partial coverage, better for terrestrial."

Ecosystem fragmentation: C

"Need for this is likely to become more explicit. Don't have methodology agreed, at the R&D [research and development] stage not ops."

Land under indigenous vegetation: A

"Investment is uncertain."

Waterway and lake marginal vegetation: C

"No agreed methodology, poor data, low investment."

Contaminated land and water: C

"A gap in environmental reporting, lack of investment, not national scale."

Ecosystem extent: A-/B

"Very important, building investment now, ecosystem classification will be important."

Proportion of ecosystems protected: A-

"Investing now, updating Protected Areas Network (PAN-NZ), hope SNA [significant natural area] information will be coming from councils."

Climate and extreme events: A

"Good monitoring and NIWA [National Institute of Water and Atmospheric Research] well-funded, but agencies are creating different maps ... that could be a concern for reporting."

All Treaty-related measures: C

"Many of these would be considered 'response' and therefore not in environmental reporting legislation. Things like economic benefit are outside the agency MfE [Ministry for the Environment]."

Stats NZ

Like MfE, Stats NZ is primarily a 'passive' harvester of data collected by others. The agency produces New Zealand's environmental reporting series in conjunction with MfE. As a result, the two agencies' priorities are naturally well aligned. Stats NZ used the criteria provided by DOC for the workshops to rank 53¹⁹ of the 101 measures as 'critically important'²⁰ and 43 as high-priority measures relevant to environmental reporting.

While Stats NZ has dedicated full-time equivalent staff for the environmental reporting programme, capacity is restricted to the production of a limited number of environmental indicators each year. Further, Stats NZ does not hold any budget for procuring environmental data. The funding for procurement of existing data for the environmental reporting programme sits with MfE and does not cover implementation. Stats NZ defers to MfE in this area.

17 This is the original wording for the initiative. See appendix 6 for the final wording.

18 The MfE team at the workshop was not able to speak for all MfE programmes and commented on only a subset of measures.

19 Ten measures were ranked as 4s, critically important, even though they were out of scope for environmental reporting and Ngā Tūtohu Aotearoa – Indicators Aotearoa New Zealand. Several Treaty-related measures fell into this category, eg 4.3.2.3 – Treaty partners are satisfied that protection of taonga is improving.

20 Noting again that not all measures were listed on the OMF on the day.

Stats NZ staff said that future indicator production will continue to be constrained by organisational capacity, and the schedule to produce indicators over the next 1-to-2 years is not confirmed. Core indicators under the amended Environmental Reporting Act 2015 are still to be decided by MfE in consultation with Stats NZ and will likely not be developed in isolation from targets and limits as part of the Natural and Built Environment Bill.

The Stats NZ environmental reporting team is working at a national level, but in almost all cases the ability to disaggregate to as low a level as practical is important, to be able to see where the issues are occurring. In most cases, data collected at just a few sites would not be useful for national reporting. In limited cases, for example, lakes, modelling could potentially make the results nationally applicable, but this needs further exploration.

During discussion, a suggestion was made to check Stats NZ's Principles and Protocols for Producers of Tier 1 Statistics against what has been applied to the OMF, to ensure best practice is followed around data quality.

Ministry for Primary Industries

On 7 June, DOC and MPI staff reviewed the OMF measure by measure. However, the large number of MPI branches²¹ to which the ANZBS is potentially relevant meant it was not possible to summarise a single 'MPI position' on the prioritisation of those measures.²²

For example, a measure might be relevant to Fisheries/Policy but not to Fisheries/Operations. Similarly, a measure might be a high priority for Biosecurity New Zealand but a low priority for other MPI branches.²³

In addition, many measures were used for MPI's own internal evaluation, although not necessarily by all branches. For example, the Fisheries Quota Management System used measures related to ecosystem fragmentation and habitat availability, while others did not.

Five MPI business units participated in the 7 June meeting,²⁴ although not all programmes within

those branches were represented.

Three-quarters of measures ranked by MPI staff fell into the 'critical' or 'very important' categories. Only 20% were in the 'moderately important' or 'slightly important' categories (appendix 4).

Land Information New Zealand

LINZ participants first clarified the role of the agency. LINZ is the Government's lead agency for property and location information, managing Crown assets, including some Crown property and administering the overseas investment process.

LINZ is responsible for both implementing (as a regulator) changes in environmental-related strategies and policy, but also adhering to changes (as a landowner). In this context, LINZ is a multi-purpose land manager that must balance the Government's economic, social, cultural and environmental priorities. In a practical sense, balancing priorities means attending to the Government's infrastructure, transport, digital transformation and regional economic development strategies (as several examples) alongside the Government's biodiversity strategy.

LINZ manages 8% of New Zealand's land, including the Waikato River, South Island braided rivers and glacial lakes, and the iconic South Island high country. Linz's biosecurity programme includes aquatic land-based pest and weed management, alongside mapping, monitoring and surveillance of pests and weeds. Regionally, LINZ works with councils where LINZ has landholdings and aligns biosecurity practices with councils' regional pest management plans. As funding allows, LINZ prioritises sites to go beyond biosecurity compliance to protect high ecological, cultural and social values. LINZ has \$7 million in baseline funding allocated to its biosecurity programme to reduce the impact of pests and weeds on Crown land. LINZ also received \$40 million over 4 years (2020/21 to 2024/25) as part of the Jobs for Nature funding.

In addition, the Crown Pastoral Land Reform Act 2022 introduced an outcomes-based approach to managing pastoral leases, to strike a balance

21 MPI has five business units and two functional areas. See www.mpi.govt.nz/about-mpi/structure/organisational-structure/ for further information.

22 A detailed, branch-by-branch assessment for MPI is out of scope for this report but should be done separately.

23 For example, 4.1.1.1 Public Awareness and Understanding of Biodiversity.

24 Forestry, Biosecurity New Zealand, Fisheries, Agriculture and Investment Services, Policy and Trade.

between recognising the place of pastoral farming as a legitimate use of the land, while maintaining or enhancing the land's inherent values. The inherent values include ecological, landscape, cultural, heritage and scientific attributes. LINZ is establishing a new programme of environmental baseline monitoring on the Crown pastoral estate.

LINZ did not identify as many high-priority measures as agencies such as MfE, whose primary work is protecting the environment and for whom many of the measures in Te Mana o te Taiao are fundamental to strategic and operational success.

Similarly, LINZ does not have a well-developed on-the-ground monitoring programme, working instead on the development of technology and infrastructure to enhance the ability of all government and other entities to better monitor New Zealand's biodiversity, such as Light Detection and Ranging (LiDAR) and SouthPAN.²⁵

LINZ is improving its response and is in a better position than 4 years ago after changes in Crown pastoral land legislation and additional time-limited Jobs for Nature funding targeted biosecurity and biodiversity. The agency also now has strategic asset management plans, including a national grouping for specific assets like the land and waterways portfolio. Generally, LINZ monitoring programmes were graded as a C, although site-specific monitoring programmes were better, for example, submerged aquatic weeds. Programmes for pests and kauri dieback were also notably better, scoring A to A-. Biosecurity programmes targeting wallabies, wilding conifers and kauri dieback are MPI-led national programmes. LINZ supports these programmes by developing the necessary information systems. LINZ contracts the National Institute of Water and Atmospheric Research (NIWA) to monitor the effectiveness of biosecurity control on some lakes (Wānaka, Wakatipu and Waitaki). This approach to monitoring effectiveness, regardless of the agency involved, could potentially be scaled up to support and align with the ANZBS, where appropriate.

Two areas that LINZ identified, in addition to land management, were protecting the names and locations of significant sites and providing accurate and authoritative location data. The naming of sites, such as pā, and the histories implicit in the names, is different from how we normally think of 'taonga' but is important in its own right. Accurate location data are obviously crucial to effective monitoring and reporting. LINZ scored both areas as critically important to the organisation.

Within LINZ, the Overseas Investment Office would potentially be interested in data related to 'sensitive New Zealand assets'.

Overall, out of 70 measures, the LINZ team ranked 23 as critically important to its strategic and operational success, with three being very important. Twenty-three measures were ranked as not applicable, with another 15 only slightly or moderately important (appendix 4).

Of the critically important measures, only eight were ranked as being in use with no impediments to monitoring. Fifteen measures were ranked as not being ready for implementation.

Regardless of the rankings as they relate to LINZ's core business, LINZ supports the critical importance of a whole-of-government (including central and local government) approach to biodiversity and the significance of biodiversity to ensuring New Zealand's sustainable future.

Regional councils

Regional council participants concluded they needed an additional priority 'category 5' to encompass things required of them by statute or regulation. However, even the category 5 'required' monitoring is not always being done because of resource constraints.

In general, councils found that, for them, the OMF measures were clustered around priorities 1 or 2, and 4 or 5; little middle ground existed.

Twenty-four measures were ranked slightly or moderately important, with 13 ranked critically important (appendix 4). Significantly, councils identified 26 category 5 measures required by statute or regulation. When that number is added

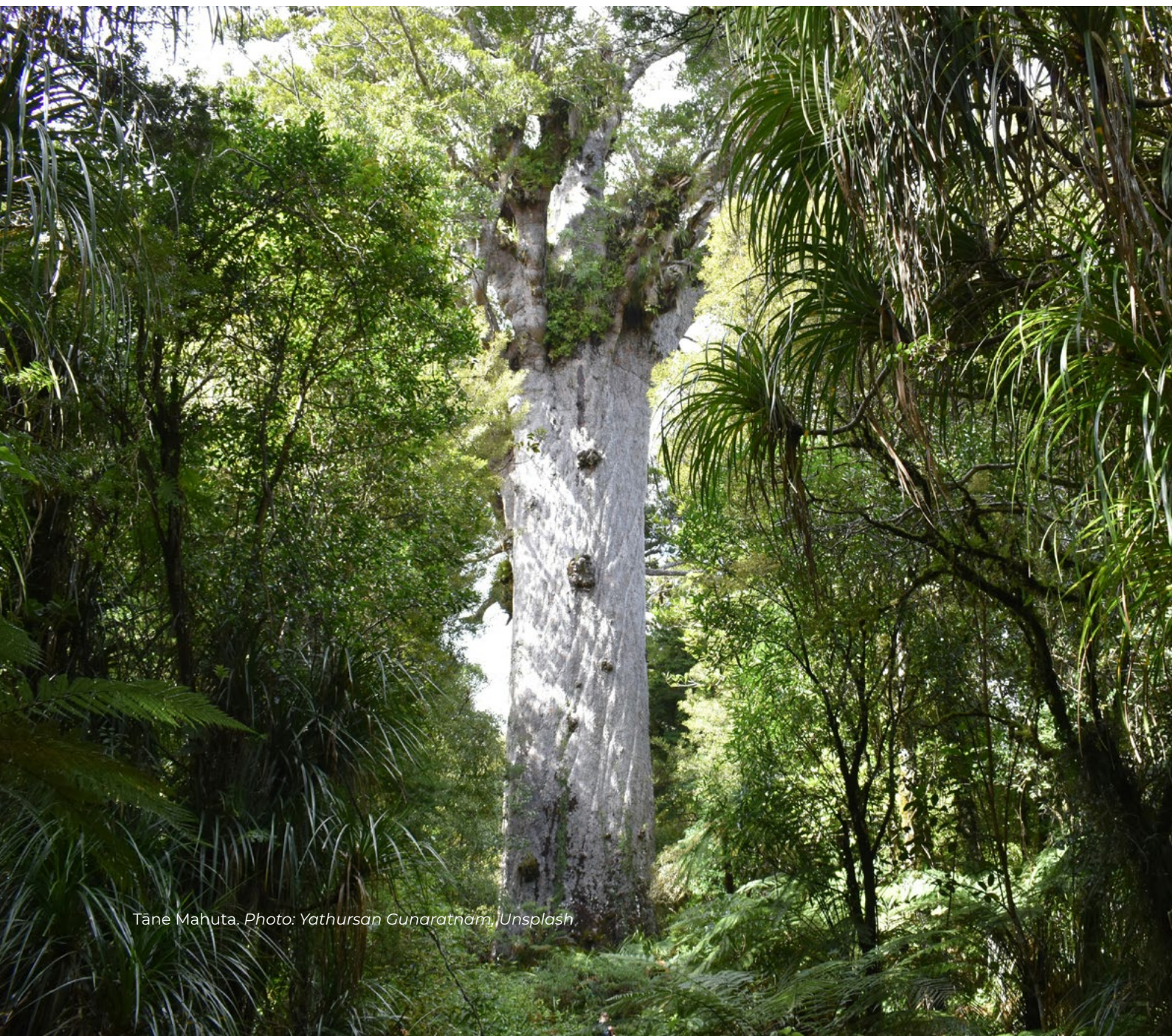
25 SouthPAN is a partnership between LINZ and Geoscience Australia to improve the accuracy and reliability of global navigation satellite systems.

to the critically important category, it suggests councils already have a considerable M&R burden with limited flexibility about what they can choose to monitor or not.

Council representatives noted that, because many expectations are placed on them, 'people don't know where to start'. This is true when the expectations require standard monitoring methods, sampling designs, data management systems, and reporting that does not exist in practice. A global need across local, regional and central government is for consistent methods and measures to inform local, regional and national reporting.

During discussion, a question was asked about council monitoring associated with resource consents and permitted activities. Consent monitoring across councils is not consistent, and the prioritisation exercise did not include it as a factor because it is typically issue specific. It could, however, be considered separately later.

Regional councils preferred to consider M&R issues in the context of a pressure, state, impact framework. Indicators and measures should be mapped to targets and limits, as identified under the Natural and Built Environment Bill. A gap analysis is needed to show where methods to deliver the expected monitoring data do not exist or have not been formalised through a national process.



Tāne Mahuta. Photo: Yathursan Gunaratnam, Unsplash

Identifying implementation opportunities

After considering alignment and prioritisation relevant to the ANZBS, workshop participants were asked to discuss how implementation might be progressed through associated initiatives in their own agencies. These could include legislative efforts, such as a reformed Environmental Reporting Act 2015, or smaller pilot projects through which aspects of the OMF could be developed further or ground truthed.

Ministry for the Environment

MfE will undertake detailed project and business planning in May 2024 and cannot provide detailed plans until then. Some initiatives do, however, stand out.

Funding has been reprioritised towards the establishment of an environmental monitoring and reporting system (EMRS). The EMRS will set the foundations needed to drive consistent, fit-for-purpose national data and information collection by:

- determining the core indicators required to understand New Zealand's environment (with new environmental reporting legislation not passed, these indicators are probably 2-to-3 years away)
- identifying future data system architecture for improved management of and access to environmental information and data
- developing a blueprint design for a national environmental monitoring network to collect environmental information and data.

The Natural and Built Environment Bill is the primary replacement for the Resource Management Act 1991 and sits alongside the Spatial Planning Bill and Climate Adaptation Bill. The Natural and Built Environment Act establishes the National Planning Framework, which will require the setting of environmental limits and targets for air, indigenous biodiversity, coastal water, estuaries, freshwater and soil attributes. These attributes are measurable biophysical characteristics of the natural environment associated with ecological integrity and human

health, some of which are aligned with the ANZBS, for example, land under indigenous vegetation. System outcomes will also be established, such as 'mauri of indigenous biodiversity protected', which will be needed within 1 year of the passage of the legislation.

Another opportunity will come before 2029, when national policy statements will be updated, for example, air quality.

The Environment and Climate Research Strategy²⁶ is expected to be released in August 2024. It will include important data sets and research gaps to prioritise investments that should be aligned with the ANZBS.

Stats NZ

Stats NZ is rolling out training for all staff to develop Māori Crown relations capability. Stats NZ's capability building model could potentially be adopted by other agencies and organisations if Te Mana o te Taiao has a similar capability requirement metric.

It was suggested a repository or database, similar to the Integrated Data Infrastructure for the environment, be developed. To this end, the first phase of work, 'Identifying a future data architecture', under the EMRS is likely to start soon.

As part of work under the EMRS to identify the data system architecture for improved management of and access to environmental information and data, Stats NZ staff also suggested developing a pilot using biodiversity indicators. However, the option for a pilot would need to be considered alongside other non-biodiversity indicators.

26 The Environment and Climate Research Strategy, being led by MfE, responds to the PCE's recommendation for a clear, unambiguous national-level environmental research strategy to guide funding.

Ministry for Primary Industries

Biosecurity New Zealand, a business unit of MPI, is leading a refresh of the Biosecurity System Strategy,²⁷ which will include a performance monitoring framework and road map for implementation. The 'System Integration and Coordination' pou (pillar) also sets expectations for 'utilising technology and data for more informed, timely and risk-based decisions'. Synergies and opportunities for planning and implementation are likely that could be built on through these processes.

The Pest Management Group of Biosecurity New Zealand is setting up a programme to strengthen the pest management system, in line with MPI's responsibilities under the Biosecurity Act 1993 (section 12A). This includes a workstream on data, information and prioritisation, and scoping a project to better mobilise and integrate data on established invasive pest species. This will potentially have applicability to indicators and measures related to invasive species. Although not entirely clear at this stage how far this could be connected, it could provide an opportunity for implementation.

Improving collaboration

Participants also were asked to identify opportunities (or roadblocks) for further collaboration to sustain this work.

Ministry for the Environment and Stats NZ

The two agencies worked together on this exercise. Both suggested it is important to stress how M&R can help demonstrate policy effectiveness. This aspect often is overlooked, even though it can help persuade senior management to support the monitoring.

A cross-agency memorandum of understanding would be useful, to require all agencies to align their M&R to the ANZBS OMF (once agreed). This could be similar to what DOC currently has with MfE for the Land Use and Carbon Analysis System (LUCAS) programme. A rigorous development process would be needed but collaboration between chief executives could help push this forward.

It also was suggested that the Data Investment Plan should support efforts to implement the ANZBS M&R. The Data Investment Plan is a prioritised plan to guide government investment in essential data for New Zealand. Data gaps that have been identified include water quality and ecosystem services.²⁸

Links to MBIE's Te Ara Paerangi – Future Pathways work, especially any national reporting efforts, were also stressed. The reference group for Te Mana o te Taiao would ideally like to influence that effort or be involved in implementation planning.

27 See www.mpi.govt.nz/biosecurity/about-biosecurity-in-new-zealand/new-zealands-biosecurity-system-creating-a-strategy-for-the-future/, for further information.

28 See www.stats.govt.nz/assets/Uploads/Corporate/Cabinet-papers/Report-back-on-government-investment-in-data/A-Revised-Data-Investment-Plan-Report-Back-on-Government-Investment-in-Redacted.pdf, for further information.

Land Information New Zealand

LINZ is currently investigating options to establish a new programme of baseline environmental monitoring on Crown pastoral land. This may create a potential pilot opportunity to align monitoring methods with the ANZBS and with regional councils. The programme has no budget, however, and is just being scoped for now.

LINZ manages databases on behalf of the MPI-led national programmes related to wilding conifers and wallaby eradication that could, depending on discussions with MPI, be included in a pilot on how to use the data better to inform progress with the ANZBS. Data managed by LINZ related to kauri dieback might also fall into this category.

Ten-year lakeweed management plans developed on behalf of multi-agency lake weed management groups offer another possible pilot. LINZ conducts weed control work, in line with lake weed management plans, and contracts NIWA to monitor the effectiveness of the work. The Waitaki Lakes, for example, is a joint Meridian–Environment Canterbury–LINZ programme. Although limited to a few lakes, the concept could potentially be used as a pilot or model of how to collect data from multiple lakes and make the data available for multiple purposes.

One of the primary functions of LINZ is managing spatial and locational data, this includes coordinating the capture, processing and delivery of satellite imagery, aerial photography, LiDAR and bathymetry. The agency is always considering how to make data more useful to its customers, and if this would be possible through a pilot with the ANZBS or Predator Free 2050 Limited. This is an 'enabling factor' that would be useful to all parties. LiDAR technology, as well as coastal mapping, has been useful to marine and land-based activities in this area.

LINZ is investing in better global positioning systems for New Zealand with much greater accuracy. A question to explore would be how this could be most useful to the ANZBS and regional councils.

LINZ has an internal biodiversity and biosecurity strategy goal around data excellence for informed decision-making designed to align with the ANZBS. Highlighting that alignment makes sense as part of further collaboration.

Noting that Treaty of Waitangi compliance is a major gap for all agencies, a cultural health framework could be developed as a case study. It could also be useful to document the process through which the 2006 Te Arawa Lakes Settlement Act saw the ownership of Te Arawa Rotorua Lakes return to hapū and iwi members through Te Arawa Lakes Trust. The Trust has taken over delivery of the lake weed control operations. The Trust is also developing its own cultural monitoring plan associated with the management of aquatic weeds on Te Arawa lakes.

Useful initiatives to promote collaboration would include:

- common language in annual reporting documents
- Cabinet papers being required to show consideration of and reconciliation with the ANZBS
- resourcing to allow LINZ and Stats NZ to play a greater leadership role in the data management discussion in New Zealand.

LINZ also discussed how to work more closely and effectively with regional councils, for example, implementing better information sharing around weeds and pests. Resource management consents, particularly along riverbeds, was another area needing better collaboration. Updating topographical maps for New Zealand with regional council data also would be useful.

Regional councils

Regional council representatives highlighted the need for biodiversity monitoring governance champions. This is particularly important because enabling factors are crucial and often take years to complete, for example, national environmental monitoring standards (NEMS) and sampling designs for all measures. Obviously, it is important to align M&R associated with the ANZBS to current and anticipated legislation.

Participants suggested using the councils' environmental data management systems and Land, Air, Water Aotearoa (LAWA)²⁹ as much as possible, as well as synchronising with councils' long-term planning and regional pest management plan schedules.

29 Land, Air, Water Aotearoa is a website for reporting environmental data. See www.lawa.org.nz/about, for more information.



Unfurling fern frond. Photo: Sabine Bernert

Regional council workshop – 9–10 May 2023

As noted, this workshop was a further step in the process of socialising and testing the OMF with other agencies. The goals were to:

- update councils on relevant work at the national level
- build understanding of regional councils' current monitoring and reporting programmes
- identify needs, priorities and gaps of those programmes
- reflect these in the shared ANZBS OMF
- outline a future collaborative pathway.

The council staff represented seven special interest groups (SIGs) relevant to biodiversity monitoring (see appendix 2 for participants). A graphic of the entire SIG structure is included in appendix 7. Some SIGs were unable to attend, such as the groundwater SIG and Ngā Kairapu, which includes Māori representatives who provide advice and support to the sector. These SIGs will be followed up with separately.

SIGs do not generally conduct any monitoring themselves, but promote more unified and effective monitoring in the regional sector. Environmental monitoring and reporting are done by individual councils, often without standardisation, despite the SIGs' efforts. See appendix 5 for regional council presentations from the workshop.

Update on DOC's freshwater monitoring programme

At councils' request, an update was provided on DOC's freshwater monitoring programme. This is designed to measure the state and trend in components of ecological integrity in freshwater rivers and streams on public conservation land. It is underpinned by the same conceptual framework as the ANZBS OMF. The programme is limited to wadeable rivers and streams, excluding wetlands, lakes or ponds.

Regional councils have their own extensive freshwater monitoring programmes, although their focus is primarily water quality monitoring rather than biodiversity. Councils also use the Macroinvertebrate Community Index, but this is less useful as an indicator of stream health for public conservation land.

Despite the differences, an important question for both DOC and councils is how to have greater strategic alignment and collaboration between the two programmes. For example, GNS Science uses regional councils to collect data for its programmes. This could be a useful model for biodiversity data if it were co-designed and properly resourced.

Terrestrial biodiversity measures developed for regional councils

The councils also had requested an update on how a previous monitoring framework for regional councils to assess terrestrial ecosystems related to the ANZBS OMF. In 2016, Manaaki Whenua – Landcare Research co-developed 18 measures³⁰ with regional council staff.³¹ A proof-of-concept implementation for five measures was completed in the same year for all councils.

Those measures were, unfortunately, never fully implemented by councils. Generally, however, good alignment exists between the council measures and OMF measures. Several are a one-to-one match to a single OMF measure. A few others correspond to several OMF indicators and would require more than one OMF measure. A few more measures could be developed that are suitable for assessing the quality of community engagement in biodiversity restoration, which is important to councils.

Councils noted that, regardless of what framework drives the data collection, it will need to be applicable to district councils, which are responsible for issuing building consents that can have significant impacts on biodiversity, for example, vegetation clearance.

The councils felt that more top-down direction from central government would be helpful to implement the measures widely.

Regional council biodiversity overview

Although several SIGs deal with issues related to biodiversity, the Biodiversity Working Group is the SIG with the most relevance for the ANZBS. Councils recognise that data needs to be collected and managed in standardised ways, to ensure its quality to inform state of the environment reporting and policy development. However, the main purpose of the biodiversity monitoring done by councils is to meet national policy direction

requirements. Councils' capacity to meet the associated data requirements is already stretched, and expectations are expanding under the national policy statements and resource management planning framework. Councils want to collaborate with central government to develop monitoring and reporting tools and systems that can meet those needs.

For example, councils' biodiversity data are fragmented across data storage platforms, making it difficult to federate. Federated, geospatially enabled, data storage and retrieval systems are needed to properly curate the data required by the NPS-FM, NPS-IB, National Planning Framework, ANZBS, Biosecurity Act 1993 and Predator Free 2050 Limited. This should be a collaborative effort between councils, central government and other important partners.

Biodiversity Working Group

The Biodiversity Working Group flagged significant issues it would like to work on collaboratively with central government. These included:

- species survey methods and sampling designs
- species distribution data repository to support both regional and national species conservation assessments (citizen science data repositories, such as eBird and iNaturalist, lack the required data integrity, security and sovereignty protections)
- ecosystem classification, especially given its link to ANZBS Goal 12.5.1³²
- ecosystem mapping standards and data repository
- ecosystem monitoring methods and sampling designs
- ecosystem monitoring data repository.

Special emphasis was placed on social and community monitoring data that is critical for understanding the levers for change but

30 Bellingham, P.J.; Overton, J.; Thomson, F.J.; MacLeod, C.J.; Holdaway, R.J.; Wiser, S.K.; Brown, M.; Gormley, A.M.; Collins, D.; Latham, D.M.; Bishop, C.; Rutledge, D.T.; Innes, J.G.; Warburton, B. 2016: *Standardised terrestrial biodiversity indicators for use by regional councils*. Prepared for Regional Councils' Biodiversity Monitoring Working Group. Manaaki Whenua – Landcare Research. 426 p.

31 This built on Lee, W.C.; Allen, R.B. 2011: *Recommended monitoring framework for regional councils assessing biodiversity outcomes in terrestrial ecosystems*. Regional Council Biodiversity Forum. Manaaki Whenua – Landcare Research, Dunedin. 37 p.

32 ANZBS Goal 12.5.1 is the most appropriate place for the protection and restoration of indigenous biodiversity, and areas suitable for other uses that have been identified.

that receives little investment. We have a poor understanding of the social and cultural drivers of both environmental degradation and restoration and protection. Councils have no capacity to develop frameworks and methods for this and see a significant role for Te Mana o te Taiao in this area. Councils also noted they are just starting to explore how mātauranga can inform their data and information. It is quickly becoming a priority and needs more resources.

The Biosecurity Working Group noted it works well to have the statutory cycles in the Biosecurity Act 1993 as an operational planning and annual reporting requirement. However, accountability and standardisation are absent in the Act, so the form of this planning and reporting is varied across the regional sector.

A notable gap is the lack of standard monitoring methods and data management practices necessary to post indicators on LAWA. Discussions have been held on invasive species data standards (the Global Biodiversity Information Facility, New Zealand Organisms Register and so on) but no significant progress has been achieved.³³

The ANZBS OMF and collaborating agencies could help this SIG, or councils generally, by providing a clear purpose for the collection and reporting of invasive species data that relate to the management of biodiversity.

Land Monitoring Forum

In contrast, the Land Monitoring Forum was instrumental in developing the NEMS for soil quality and ensuring relevant monitoring data were available on LAWA. Central government support would be useful to improve database and soil archive support. Currently, each region has own database and spreadsheet system, and archiving of soil samples is ad hoc.

Coastal Special Interest Group

The Coastal SIG said it was pleased by the increasing attention being given to the health of estuaries and the coast, as indicated by a new healthy estuary module on LAWA. The proposed National Planning Framework includes planning for estuarine health attributes, which will provide opportunities for resourcing and driving consistency across coastal monitoring and reporting by councils.

The purpose of monitoring is for state of the environment reporting, which is linked to ANZBS Goal 10.1.1. It is also used to assess policy effectiveness, climate change impacts and cumulative effects management. A NEMS is in place for saline water quality and others are under way, but no formal cross-council data management practices have been established. Similarly, no coastal indicators, habitat mapping methods, habitat classification or even methodology for defining habitats of significance have been agreed. Councils are collaborating with DOC to develop coastal and marine ecological classification standards. The SIG said that ANZBS Goal 10.4.1 creates an opportunity to progress this type of work.

The Coastal SIG has a document that outlines gaps in knowledge and research needs. Briefly, the goals are as follows.

- 1) Integrate mātauranga Māori and kaitiakitanga into state of the environment reporting.
- 2) Achieve national consistency in coastal monitoring and reporting.
- 3) Understand how the marine environment and associated organisms and habitats respond to various stressors (both natural and anthropogenic).
- 4) Understand how climate change will affect coastal areas.

The Coastal SIG believes Te Mana o te Taiao could support its objectives by:

³³ MPI (Biosecurity New Zealand, Pest Management Group) is scoping a project looking at establishing a pathway for data mobilisation and integration for established invasive species. This follows the 2021 PCE report *Space Invaders: A review of how New Zealand manages weeds that threaten native ecosystems*. Parliamentary Commissioner for the Environment, Wellington. 239 p.

- driving consistency in monitoring through co-design between central and regional government agencies of national indicators
- providing classification of habitats and ecosystems and reporting on the health of the environment at different scales (national, regional, bioregional, catchment, ecosystem)
- advocating for more resourcing in the sector, for example, provision of a national data repository, and gap filling in monitoring networks, incentivising nationally consistent monitoring and/or reporting
- building a stronger connection with central government agencies, ensuring the Coastal SIG and regional council sector are connected consistently.

Environmental monitoring and reporting

The Environmental Monitoring and Reporting initiative's framework should be linked to any efforts organised under Te Mana o te Taiao.

Figure 1 sets out how these elements could be linked.

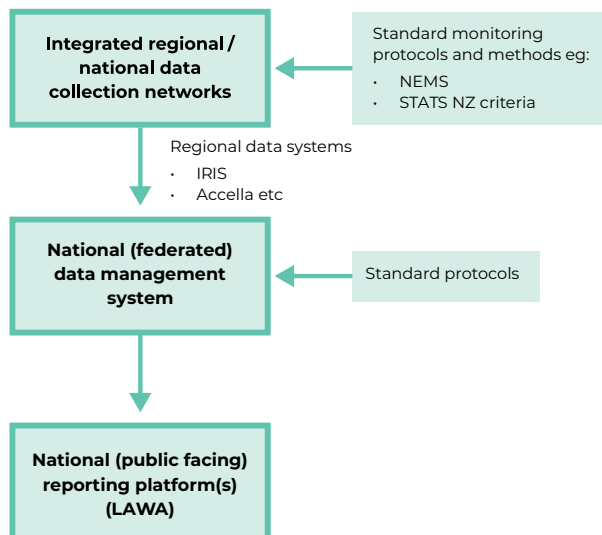


Figure 1. Indicative linkages across the monitoring and reporting system

Note: IRIS = Integrated Regional Information System; LAWA = Land, Air, Water Aotearoa; NEMS = National Environmental Monitoring Standards.

Connecting councils to central government programmes

Central government agencies were asked to list their high-priority initiatives with substantial impacts on regional councils. These were condensed into eight main programmes to be explored further through the workshop:

- 1) Resource Management Reform: Target and Limits / Natural Built Environment Act
- 2) Environmental Monitoring and Reporting System (EMRS)
- 3) National Policy Statement for Indigenous Biodiversity (NPS-IB)
- 4) National Policy Statement for Freshwater Management (NPS-FM)
- 5) Science Investment programme
- 6) National Adaptation Plan
- 7) Stats NZ Data Investment Plan
- 8) MPI pest management programmes.

Council readiness to meet expectations

Councils ranked their readiness to meet the M&R expectations in the central government initiatives by placing coloured dots against each initiative:

- green – it aligns with current council practices and councils are generally ready to deliver on expectations
- orange – provisionally this could align but readiness is lower and support is needed
- red – significant concerns exist (ie misalignment is present and/or systems are very immature)
- yellow – no alignment, considered out of scope for councils.

Overall, the SIG representatives placed 50 dots against the central government initiatives (table 1 and table 2). Fifty-eight percent of the comments were red or yellow: significant concerns or no alignment. Only two green dots³⁴ and 19 orange were applied.

34 The Land Monitoring SIG in relation to resource management reform and the Biosecurity Working Group in relation to MPI pest management plans.

Table 1. Councils' readiness to meet expectations

	Number	Percentage (%)
Green – ready to deliver	2	4
Orange – support is needed	19	38
Red – significant concerns	19	38
Yellow – no alignment, out of scope	10	20

Table 2. Readiness by central government initiative

	Green	Orange	Red	Yellow	Regional council special interest groups
Resource Management Reform: Target and limits, Natural Built Environment Act	1	4	2		7
Environmental Monitoring and Reporting System		5	1		6
National Policy Statement for Indigenous Biodiversity		2	2	1	5
National Policy Statement for Freshwater Management		6	1		7
Science investment programme		1	4	1	6
National Adaption Plan		1	3	2	6
Stats NZ Data Investment Plan			6	1	7
Ministry for Primary Industries pest management programmes	1	1		4	6

The conclusion from table 1 and table 2 is that councils are not ready to deliver what will be expected of them by central government. Councils are most ready to deliver on the NPS-FM and the EMRS, but support and guidance are needed. Only for MPI's pest management programmes did the councils consider themselves 'ready to deliver'.

Other themes became clear during further discussion.

- **Resource constraints:** Councils consider they are already working at 120%, that funding from community rates has reached its limit, a shortage of skills exists, and the science cohort is aging. The perception therefore is of a lack of resources, both financial and human, to implement the national initiatives, such as the NPS-IB.
- **Alignment and understanding:** A recurring theme involved the potential misalignment and misunderstanding across different areas, including central government's own initiatives, such as the resource management reform programme.
- **Engagement:** The importance of engagement between central government

and regional councils was highlighted, particularly regarding the need for support in collecting appropriate data and developing tools. A desire was expressed for more central government guidance without the imposition of mandates.

- **Operational science and missing linkages:** The importance of operational science was emphasised as was poor or missing linkages across the system. The comments suggested that operational science is a major gap and called for the development of monitoring tools and the establishment of a data pipeline.

Improving readiness

The second part of the exercise looked at what could be done to improve councils' readiness and what improvements should be prioritised.

Comments included the following.

- **National direction and guidance:** Greater guidance around national direction in various areas would improve readiness, including ecosystem condition, roles and responsibilities, species guidance, mapping and monitoring, ecosystem extent classification, mātauranga Māori and social dimensions. Also noted was the need for a central government process to co-design and collaborate (ie strategic engagement plans) for more efficient access to resources and to avoid duplication of efforts in data collection.
- **Funding and cost sharing:** Comments emphasised the need for new funding models and cost-sharing mechanisms, along with funding for science investment, development and implementation, and a funding stream from central government to support national requirements.
- **Data management and reporting:** Better, integrated data management and reporting systems are needed that are useful at regional and national scales. Cross-council and cross-agency coordinated networks, such as the Environmental Monitoring and Reporting system, are important.
- **Expertise and collaboration:** Expertise needs to be shared and distributed fairly across the country, particularly among councils with limited resources. Investment in botany, entomology and field training was stressed. Collaboration, trust and cross-council communication were mentioned as crucial factors in managing conflicting political perspectives.
- **Monitoring and reporting pathways:** M&R pathways for strategic invasive species programmes were mentioned. Comments highlighted the need for standards for data, greater visibility, accountability and investment in these programmes. The distinction between strategic intervention within the resource management and biodiversity statutes was also mentioned.
- **Clarity in objectives and direction:** The lack of clarity in objectives and direction was noted, particularly in the context of the NPS-FM. Comments highlighted the need for clear objectives and the 'why' behind national direction.

Overall, the common themes revolve around the need for clear guidance, adequate funding and resourcing, effective data management and reporting, collaboration and expertise sharing, and addressing challenges in land management and conflicting objectives.

Relevance of Outcome Monitoring Framework to councils

The second set of exercises looked further at the OMF and asked councils to highlight and prioritise relevant measures and to identify gaps (appendix 4).

For the Freshwater SIG, all the biophysical measures are relevant, as are Treaty considerations. Monitoring around social and economic impacts is essential but appropriate measures need to be developed.

The Coastal SIG found at least 25 measures linked to its work, and likely many more. Most relevant were those in Outcome 1: Ecosystems, from mountain tops to ocean depths, are thriving. A priority is biological function, while threatened species are a lower priority.

For the Land SIG, physiochemical measures scored highly, along with elements that relate to movement of land (eg erosion, riparian margins). A question was raised about the crossover between wetlands and peatlands; related measures could score low or high depending on how that intersection is approached. The group noted that some marginal lands not assigned to SIGs could be missed. The group is interested in land use change but challenges exist relating to implementation in that no working system is in place for rural areas, unlike urban areas.

The Biodiversity and Biosecurity working groups reiterated that, considering so much impending national direction, many of the measures are needed. Treaty issues are critical and higher priorities than others. Gaps occur with the Biosecurity Act 1993, which has vague priorities.

For the Data SIG and Environmental Monitoring and Reporting, the focus is state of the

environment-related measures and data sets, specifically improving quality and consistency. Having data collection standards (NEMS) is a crucial component for all measures, as is interoperability.

Prioritisation of Outcome Monitoring Framework measures

As with the government agencies in the previous workshops, the SIGs were asked to indicate how important the individual OMF measures would be to help deliver their own objectives. The categories were:

- 5 = Required to do by legislation
- 4 = Critically important, non-activation creates significant operational and strategic risks
- 3 = Very important, fundamental to strategic and operational success
- 2 = Moderately important, useful to inform planning
- 1 = Slightly important, 'nice to have'.

Naturally, measures were more or less important to the individual SIGs, depending on their area of focus (see appendix 4).

The Freshwater SIG identified 13 measures as slightly or moderately important. These tended to be species specific, such as 'genetic diversity in relation to conservation status' and 'natural range occupied'. However, 35 measures were in the very important, critically important or required categories (eg lake biological function and non-nutrient contaminants).

The Land Monitoring SIG rated 16 measures slightly or moderately important (eg 'species diversity' and 'proportion of ecosystems remaining') and 26 in the very important, critically important or required categories (eg 'soil structure and sedimentation' and 'public awareness of conservation').

The Coastal and Marine SIG rated only five measures as slightly or moderately important (eg 'anthropogenic light and sound' and 'predicted trends for threatened species') and 12 in the very important, critically important or required categories (eg 'river and coastal alteration' and 'sediment and sediment quality').

The Biodiversity and Biosecurity SIGs prioritised the measures jointly. They found no measures that were 'slightly important' and only three in

category 2, 'moderately important'. Unsurprisingly, given their strong links to the ANZBS goals, 48 of the measures were in the 'critically important' or 'required' categories. For example, the SIG was keenly interested in species-specific measures and measures linked to ecosystem extent or land cover.

The collective scoring of the SIGs confirms that the ANZBS is highly relevant to their work. Three SIGs, Freshwater, Land, and Coastal and Marine, all said about 50% of the measures were either critically important or involved information they were required by legislation to collect. The combined Biodiversity and Biosecurity SIGs said 84% of the measures fell into those 'critical or required' categories.

Average priority scores (ie the arithmetic mean) across all SIGs also confirmed that most OMF measures are considered to be 'very important' or higher:

- Freshwater – 3.6 average
- Land – 3.4 average
- Coastal – 3.5 average
- Biodiversity and Biosecurity – 4.2 average.

These SIG-specific scores aligned well with the higher-level scoring done by regional council representatives at the reference group workshop (appendix 4), with about 62% of the measures falling into the 'critical or required' categories.

Ongoing implementation and collaboration

The workshop finished with discussion of how implementation of Te Mana o te Taiao could be progressed through collaboration with councils. Many of the themes noted above resurfaced in the context of cost-effective investments that would advance regional and national needs. Several could be approached as pilot projects. For example, it would be particularly useful to pilot co-design of the sample designs and methods needed to deliver requirements under the NPS-IB.

The development of guidance also seemed ripe for a co-design approach between central and regional government. A current concern is that MfE is intentionally vague, to allow each council to find its own solutions, but this has the unintended effect of not being sufficiently clear to achieve harmonised monitoring.

Councils would like to see more incentives from government, such as when MfE paid for air quality monitoring equipment.

A more centralised data management approach was also seen as desirable and in line with the PCE report and intent behind the EMRS. Central government leadership has not been adequate to encourage consistent collection and federation of data. For example, the Land Cover Database is essential to understanding trends in broad land cover types in New Zealand but funding for regular updating is unreliable and inadequate.

The discussion noted the He Awa Whiria framework as applied in Te Mana o te Taiao to developing a mātauranga Māori OMF and suggested it would be a useful area of collaboration with councils. The councils have challenges with capacity and capability in this area, especially when dealing with the overlapping and potentially differing interests of iwi. Learnings from the approach used in Te Mana o te Taiao could be especially useful. Similarly, a useful pilot would be to work with iwi to co-design biodiversity indicators and measures that could be presented on LAWA.

A significant opportunity for collaboration and implementation is the upcoming work by

biosecurity and biodiversity managers on a new 5-year strategic plan.

Implementing the equivalent of DOC's national-scale Tier 1 monitoring programme across private land by regional councils has been under discussion for many years and was raised again as a significant opportunity to support ANZBS outcomes. Two councils (Greater Wellington and Auckland) have already moved in this direction. A case study with another council that describes how to develop a Tier 1-equivalent system and create a data pipeline would be useful.

Stats NZ stressed the need for consistency throughout that data pipeline. A pilot or case study, if within scope of the 'identifying a future data architecture' work under the EMRS, could be useful to advance something like an integrated data infrastructure for the environment.

An opportunity exists to simultaneously support implementation of the ANZBS and NPS-IB by developing national monitoring methods. The NPS-IB requires councils to use national monitoring methods if they are available. It seems logical that councils, DOC and other government agencies should collaborate to make them available.

Discussion

Both workshops showed that the OMF, while developed for the ANZBS, is relevant and useful for government agencies and regional (and unitary) councils. An updated list of OMF measures that reflects agency feedback has been given in appendix 6. A mutually supportive relationship exists between Te Mana o te Taiao OMF and other agencies' priorities. Data collected by regional councils, or for agencies such as MfE, using priority indicators and measures from the OMF framework would be useful for reporting on a range of applications, for example, fisheries management programmes at MPI.

The alignment of priorities was particularly strong for MfE and Stats NZ. For example, MfE rated 27 measures 'very important'³⁵ and 40 as 'critically important'.³⁶ Only 22 were 'slightly'³⁷ or 'moderately

35 'Fundamental to your agency's strategic and operational success – "must have"'.

36 'Non-activation creates significant operational and strategic risks to your agency – "should have it now"'.

37 'Moderately important – "preferable to have"'.

important.³⁸ For Stats NZ, the measures equally reflected the agency's top priorities, 53 of which were rated 'critically important', with another 43 as high priorities.

This confirms that the OMF for Te Mana o te Taiao is well aligned with MfE's initiatives and environmental reporting needs generally. It would be useful, however, to map ANZBS OMF indicators and measures specifically to the Environmental Reporting Act 2015 and EMRS current core indicators and use this work to inform future indicators.

However, a gap exists between the high priority assigned by agencies to many ANZBS measures and the agencies' 'readiness to implement' those measures. For MfE, for example, only 24 were identified as available at the highest state of readiness: 'Indicator and measure templates and protocols ready and no current impediments'. Of the remainder, some merely require interagency agreement on common standards for widespread implementation. Others, including most of the social indicators and measures, require significant coordinated development and formalised endorsement for implementation across agencies. The assessment by Stats NZ was similar. This assessment also reflects the M&R team's evaluation of the development needed to support widespread implementation.

Regional council readiness to meet the monitoring and reporting expectations included in high-priority central government initiatives is poor. A theme from the regional council workshop was that central government expectations were unrealistic, given councils' available resources and capacities.

Of 50 assessments made by council SIG representatives, only two councils were 'ready to deliver' on two government initiatives. For 58% of the assessments either significant concerns or no alignment existed at all with government initiatives. See table 3.

Table 3. Councils' readiness to meet expectations

	Number	Percentage (%)
Green – ready to deliver	2	4
Orange – support is needed	19	38
Red – significant concerns	19	38
Yellow – no alignment, out of scope	10	20

The conclusion is councils are not ready to deliver what will be expected of them and central government support is needed.

These results are sobering but not surprising, being consistent with the PCE's 2022 report that notes a long-standing problem with New Zealand's commitment to evidence-based reporting using consistent indicators and methods.³⁹

It was clear from the workshops organised by the Interagency Monitoring and Reporting Workstream team for Te Mana o te Taiao that the central and regional government representatives all felt similarly. A clear sense was evident in the workshops that the collective 'we' need to do better at environmental monitoring and reporting and the OMF for Te Mana o te Taiao provides a sound framework for doing so.

It also was clear from the workshops that central and regional participants believed more effective direction and guidance from central government is needed and both should be developed collaboratively.

38 'Slightly important – useful for limited audience or transient initiatives etc – "nice to have"'.

39 Parliamentary Commissioner for the Environment. 2022: *Environmental reporting, research and investment: Do we know if we're making a difference?* Parliamentary Commissioner for the Environment, Wellington.

Implementation opportunities

From the workshop feedback, it is clear multiple opportunities exist for pilots or case studies designed to demonstrate the practical implementation of OMF components from end to end.

For example, anticipated changes to the environmental monitoring and reporting system offer numerous opportunities to incorporate and test OMF components. The development of core indicators is clearly an opportunity, as are the anticipated targets and limits associated with resource management reform. Similarly, government agencies should work collaboratively with mana whenua representatives to define system outcomes such as 'mauri of indigenous biodiversity protected'.

An immediate target for collaboration and implementation is the Environment and Climate Research Strategy, which is being led by MfE. Important data sets are expected to be a component of that strategy and should be aligned with the ANZBS.

Stats NZ suggested a pilot to test biodiversity indicators be part of something like the Integrated Data Infrastructure. If within scope, this could be part of work under the EMRS, to identify the data system architecture for improved management of and access to environmental information and data.

The main message from the workshops is that numerous opportunities exist for ANZBS-linked pilots or case studies that would improve New Zealand's ability to report on biodiversity state and trends. For example, it appears the Data Investment Plan, a prioritised plan to guide government investment in data, has not ranked biodiversity in the top tier for early investment. Adjustments here could support efforts to secure the additional investment in data needed to underpin biodiversity indicators.

Other initiatives are already under discussion. For example, the Pest Management Group at MPI has spoken to the DOC M&R team about creating better data repositories to map invasive species distribution. This would also align with regional council needs.

Several examples exist from the regional sector perspective, for example, establishing national guidance on developing a freshwater monitoring network relevant at a regional and national

scale. Similarly, national guidance is needed on monitoring in brackish environments.

Greater strategic alignment and collaboration between the monitoring programmes of DOC and councils is highly desirable. A workshop including DOC, MfE and councils to consider piloting a coordinated approach to freshwater monitoring is already being discussed. This model should be explored for other domains.

Councils also noted that regional chief executives have identified climate change, resource management reform and Treaty compliance as their three top priorities. Te Mana o te Taiao has a role in progressing each of these and should be communicated to regional chief executives.

Better communication on how local-national-international outcomes fit together would also be useful. The workshops have meaningfully improved agencies' collective ability to explain how local, regional, national and international (United Nations Convention on Biological Diversity) responsibilities can be linked through the ANZBS.

At the central government level, MfE is commissioning work to develop nationally consistent ecosystem typology to describe and delineate ecosystems for monitoring, reporting and management. This is essential so ecological data can easily be compared or aggregated at the national level and contribute to risk assessment processes for ecosystems at national and international levels (International Union for Conservation of Nature Red List of Ecosystems).

The biodiversity monitoring system nationwide is fragmented across multiple councils and agencies, with all the associated duplication of effort and resources. An opportunity exists to explore creating a not-for-profit company, similar to Predator Free 2050 Limited, to undertake biodiversity monitoring on behalf of regional councils and central government. A jointly funded entity (or entities serving several councils) could address the current inefficiencies and help to build the capability and capacity to undertake monitoring.

Conclusion

For high-level recommendations to improve New Zealand's environmental and reporting system, it would be difficult to expand on what has already been suggested by the PCE. The PCE's reports were cited several times during the workshops as one of the main drivers for change.⁴⁰ That, in itself, is encouraging.

The workshops showed that implementation of the draft OMF developed for the ANZBS could support improvements to New Zealand's environmental and reporting system, as envisioned by the PCE. A high proportion of ANZBS measures were ranked as 'critically important' or 'very important' by other agencies and councils for their own programmes. However, the development of the OMF is ongoing and important challenges remain. Notably, significant investment will be required by all participating agencies to develop the OMF so it can deliver on its full potential.

A useful way to catalyse the necessary investment would be a cross-agency memorandum of understanding that required all agencies to align their monitoring and reporting to the OMF, once tailored to their specific agency.

In terms of the physical collection of biodiversity data, much of the work is anticipated to be done by regional councils in response to expectations from central government. It would be reasonable, given these are national expectations, for central government to support – financially and otherwise – the tools and resources that councils need to deliver that data.

Recommendations for high-priority areas for collaboration between central and regional government include the following.

1. Develop a national ecosystem classification scheme to support the biodiversity needed to achieve a consistent and systematic approach to prioritise work: A standardised, national approach to describing ecosystems is essential for achieving this prioritisation.
2. Develop national ecosystem mapping standards and repositories: DOC and councils should develop mapping standards for all indigenous ecosystems and maintain a portal and geospatial data repository.
3. Develop species survey methods and sampling designs for threatened species: The NPSFM and NPS-IB require regional councils to develop attributes for these species. For most, however, the picture of their distribution is incomplete and no widely accepted standard monitoring techniques exist. To comply with national directions, councils need models that can predict their occurrence and field techniques to establish their presence to a determined level of probability. Developing this capability will also support New Zealand's international reporting requirements.
4. Develop ecosystem monitoring methods and sampling designs: This need is linked to central government requirements such as the NPS-FM, the NPS-IB and the ANZBS goals. National environmental monitoring standards are needed to achieve these national policy objectives and should be developed collaboratively between central and regional government.
5. Develop a federated repository for ecosystem monitoring data: The only similar repositories are the National Vegetation Survey database maintained by Manaaki Whenua – Landcare Research and the New Zealand Freshwater Fish Database maintained by NIWA. These are important foundational resources, but they are limited and funding for improvements is constrained. Similarly, the LAWA dashboard is used for regional environmental reporting and is not designed as a data storage tool. A consortium of regional councils, DOC and other relevant agencies and partners should scope the lifecycle requirements of biodiversity data storage systems. Coordination and collaboration are necessary with other data management related initiatives, of which many exist, including the EMRS data architecture work. Resolving data sovereignty concerns would be an essential part of this work.

⁴⁰ Parliamentary Commissioner for the Environment. 2022: *Environmental reporting, research and investment: Do we know if we're making a difference?* Parliamentary Commissioner for the Environment, Wellington. Parliamentary Commissioner for the Environment. 2022: *Environmental reporting, research and investment: Do we know if we're making a difference? – Summary for parliamentarians.* Parliamentary Commissioner for the Environment, Wellington. Parliamentary Commissioner for the Environment. 2022: *Estimate of environmental expenditure 2019/20: Method and results.* Parliamentary Commissioner for the Environment, Wellington.

The above recommendations are separate from the need to continue broad collaboration and coordination around ongoing development, adoption and implementation of the ANZBS OMF.



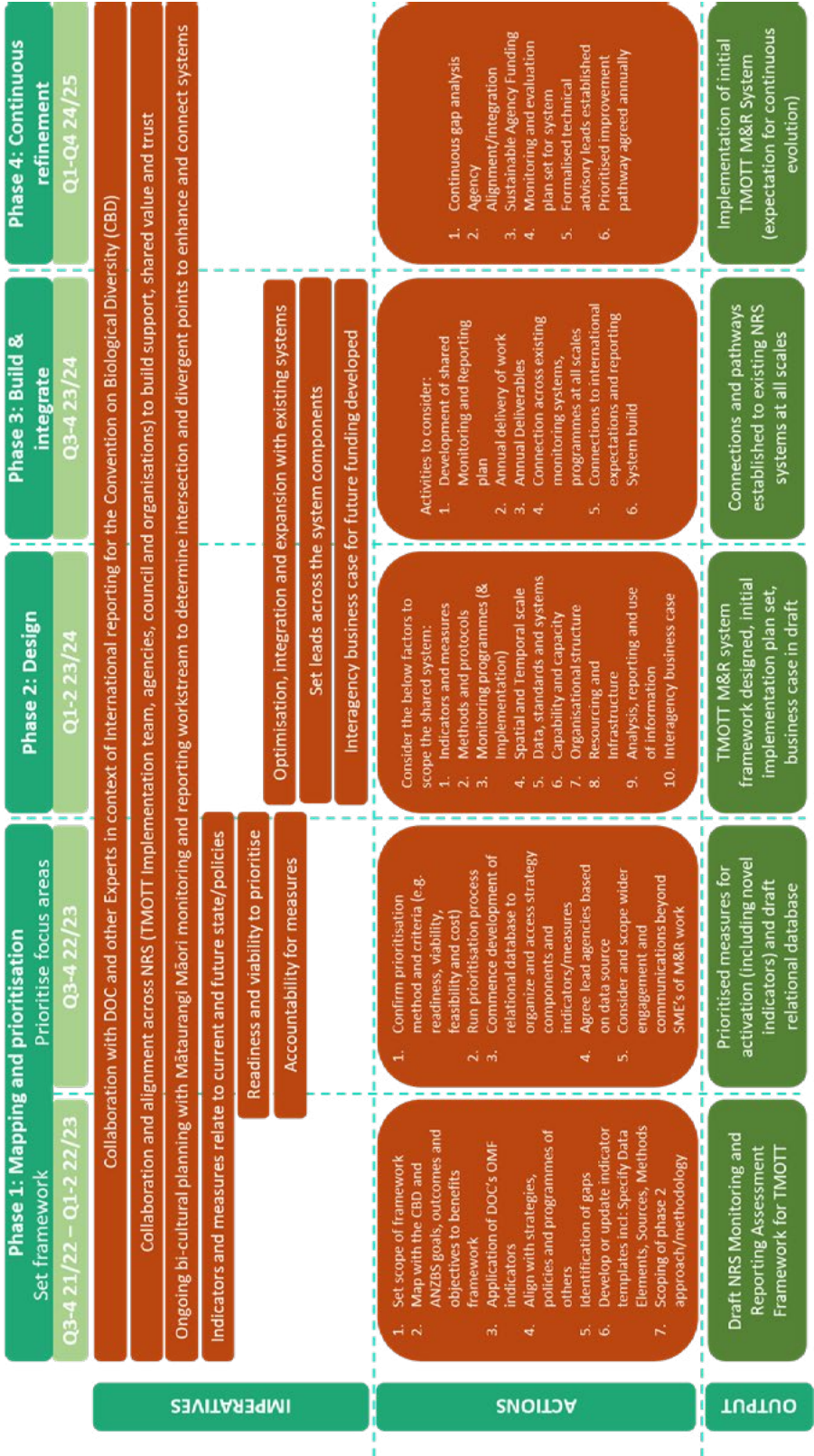
Kiwi. Photo: Neil Hutton

Outcome Monitoring Framework implementation recommendations

The recommendations listed below come from the workshops presented in this report and are directed at the interagency Biodiversity and Biosecurity Leadership Group for Te Mana o te Taiao.

- 1.** Endorse briefing the Regional Council Resource Managers Group, which is responsible for all the environmental SIGs, except Biodiversity and Biosecurity, on Te Mana o te Taiao to increase its visibility and opportunities for collaboration and coordination.
- 2.** Endorse MBIE's participation in future development of the ANZBS monitoring and reporting programme.
- 3.** Endorse a branch-by-branch 'prioritisation and readiness assessment' of the ANZBS measures with MPI.
- 4.** Endorse the continuation of the reference group established to promote collaboration around the ANZBS OMF.
- 5.** Endorse mapping ANZBS indicators and measures specifically to the Environmental Reporting Act 2015 and EMRS core indicators being developed, as well as any national adaptation plan measures.
- 6.** Endorse development of pilot projects with agencies, councils and Predator Free 2050 Limited that demonstrate the practical utility of the ANZBS framework and associated indicators and measures.
- 7.** Note the importance of a close link between the ANZBS and the EMRS initiative led by MfE.
- 8.** Note the opportunity for the ANZBS implementation team to contribute to the biosecurity and biodiversity managers' strategic plan review.
- 9.** Note the critical importance of a coordinated and adequately resourced approach to filling gaps and developing social and cultural indicators.
- 10.** Note the need to prioritise investment and build capability and capacity to undertake the increased monitoring that will be required to implement the ANZBS OMF.

Appendix 1: Aotearoa New Zealand Biodiversity Strategy 2020 monitoring and reporting workstream interagency multi-year workplan



Appendix 2: Workshop participant list

Facilitators: Thomas Thompson and Kevin Collins – independent consultants

March 2023 workshop participants

Organisation	Name	Title
Stats NZ	Sonja Miller	Senior Insight Analyst, Environmental Reporting
	David Harris	Insights Analyst, Environmental Reporting
Land Information New Zealand	Julie Percival	Senior Adviser Biosecurity and Biodiversity
	Shaun Thomason	Senior Adviser Biosecurity and Biodiversity
	Shilinka Smith	Senior Adviser Insights, Research and Evaluation
	Dennis MacManus	Senior Policy Advisor
Ministry for the Environment	Anne-Gaelle Ausseil	Principal Science Lead
	Helen Sharpe	Policy Advisor
	Pierre Tellier	Senior Analyst, Marine Policy
	Spencer Clubb	Principal Advisor Strategy
	Kate Hebblethwaite	Senior Advisor, Strategic Partnership Team
Ministry for Primary Industries		
Fisheries New Zealand, Fisheries Policy	Irina Llyushkina	Senior Policy Analyst
Fisheries New Zealand, National Direction	Steve Halley	Principal Advisor National Direction
Biosecurity New Zealand	Amelia Pascoe	Principal Advisor Conservation
Biosecurity Pest Management	Michael Berardozi	Principal Advisor Pest Management
Operational Policy and Intelligence and Biosecurity Support	Pasepa (Sepa) Katia	Policy Analyst
Biosecurity New Zealand	Ursula Torres	Senior Advisor
Biosecurity New Zealand	Andrea Clavijo McCormick	Team Manager Environmental Health
Regional Economic Development and Agricultural Investment Services	Jane Davidson	Principal Advisor Water Availability and Security
Aquatic and Environment team (Surveillance)	Jane Frances	Principal Adviser
Policy and Trade	Laura Grigg	Policy Analyst
Forestry	Mark Hollis	Specialist Indigenous Forestry Advisor
Fit for a Better World	Claire Gunning	Principal Advisor
Coordination point in Policy and Trade	Robin Pickett	Policy Analyst
Regional council	Ali Meade	Biosecurity and Biodiversity Operations Manager
	Roger Uys	Senior Terrestrial Ecologist
	Alan Johnson	Director Marlborough District Council
Internal Department of Conservation	Elaine Wright	Principal Science Advisor
	Meredith McKay	Principal Technical Advisor
	Jeff Dalley	Principal Technical Advisor

Organisation	Name	Title
Manaaki Whenua – Landcare Research	Peter Bellingham	Senior Ecologist

May 2023 regional council representatives (note reference group representatives also participated in the workshop)

Name	Regional council	Special interest group
Alan Johnson	Marlborough	BioManagers
Roger Uys	Greater Wellington	Biodiversity Working Group
Ali Meade	Southland	Biodiversity Working Group
Duncan Gray	Canterbury	Surface Water Integrated Management
Stefan Beaumont	Nelson	Surface Water Integrated Management
Abi Loughnan	National Project Manager – Environmental Monitoring and Reporting Project	Land, Air, Water Aotearoa
Eleanor Gee	Waikato	Coastal Management
Hamish Allen	Auckland	Coastal Management
Chris Daughney	National Institute of Water and Atmospheric Research (Chief Science Advisor)	Chief Scientist
Shay Dean	Bay of Plenty	Biodiversity Working Group
Paul Dutton	Waikato	Biodiversity Working Group
Halema Jamieson	Taranaki	Biodiversity Working Group
Leigh Marshall	Nelson	Biodiversity Working Group
James Griffin	Northland	Biodiversity Working Group
Annabel Beattie	Hawkes Bay	Biodiversity Working Group
Jono Underwood	Marlborough	Biosecurity Working Group
Gina Mohi	Bay of Plenty Regional Council	Putaiāo Mātauranga
Mike Ede	Marlborough District Council	Environmental Data Group
Josh McLennan-Deans	Greater Wellington	Social Scientist
Matthew Taylor	Waikato	Land Monitoring Special Interest Group
Haydon Jones	Waikato	Land Monitoring Special Interest Group
Georgianne Griffiths	Auckland Council	Biodiversity Special Interest Group
Scott Jarvie	Otago Regional Council	Biodiversity Special Interest Group

Appendix 3: Finalised Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020 glossary

Core monitoring and reporting terms						
Term	Te Mana o te Taiao context	Global Biodiversity Framework context	Description	Example	Example	Example
OUTCOME MONITORING FRAMEWORK		Not available (NA)	A hierarchical structure that makes an explicit link between Te Mana o te Taiao outcomes, intermediate outcomes, and objectives to specific monitoring objective(s) to track progress, each of which is supported by indicators and measures that assess performance.			
OUTCOME	2050 Outcomes (including the bullets underneath each outcome)	2050 United Nations Convention on Biological Diversity Goals A–D	Description of a future state that contributes to achieving the vision of the strategy at or before its final date.	Outcome 2: Indigenous species and their habitats across Aotearoa New Zealand and beyond are thriving	Outcome 1: Ecosystems, from mountain tops to ocean depths, are thriving	Outcome 3: People's lives are enriched through their connection with nature
INTERMEDIATE OUTCOME	Bullets underneath each outcome	None	Critical components of outcomes against which progress will be evaluated.	IO1.3: The health, integrity and connectivity of indigenous ecosystems has been maintained and/or restored, including in human-dominated areas	IO1.3: The health, integrity and connectivity of indigenous ecosystems has been maintained and/or restored, including in human-dominated areas	IO3.1: Everyone in Aotearoa New Zealand is connected to nature, and supports and actively contributes to its protection and restoration

Core monitoring and reporting terms						
Term	Te Mana o te Taiao context	Global Biodiversity Framework context	Description	Example	Example	Example
OBJECTIVE	Nine cross-cutting objectives on how transformational change will be achieved and four objectives on what will be done to protect and restore biodiversity		Set out the purpose for the time-bound goals and how the outcomes can be achieved.	4. Improved systems for knowledge, science, data and innovation inform our work	9. Collaboration, co-design and partnership are delivering better outcomes	12. Natural resources are managed sustainably
MONITORING OBJECTIVE	NA	NA	Critical components to be measured that clarify the performance expected and link directly to Te Mana o te Taiao objectives.	1.5 Maintaining ecosystem composition	1.1 Maintaining ecosystem processes	4.2 More conservation is achieved by others
INDICATOR	National indicator	'Headline', 'component' or 'complementary' indicators	An individual qualitative or quantitative parameter (or a set of them) that can be used to report progress.	1.5.1 Species composition and diversity (of plants and animals)	1.1.2 Ecosystem function	4.2.2 Capacity and capacity development by government agencies, Treaty partners and others
MEASURE			An individual assessment of attributes (or a set of them) with a defined methodology and source of information that inform an indicator.	1.5.1.2 Representation of functional groups and guilds (eg by sensitivity to mammal browsing, by nectar or fruit provisioning)	1.1.2.3 Waterway biological function	4.2.2.2 Government agencies', Treaty partners' and others' support of capability and capacity development
DATA ELEMENT			The data that support a measure. Some measures are specific enough that the level of data element is not needed.	Diameters of stems by species (in forests); assessment of percentage cover by species in fixed height classes	Macroinvertebrate community composition; fish index of biotic integrity	

Core monitoring and reporting terms						
Term	Te Mana o te Taiao context	Global Biodiversity Framework context	Description	Example	Example	Example
INDICATOR or ASSESSMENT TEMPLATES			Defines each monitoring objective, its attendant indicator(s) with a defence of them; and a list of measures. The measures section includes a description with an overview about why the measure is important, data elements, scale, measurement and reporting frequency, data sources, information management; the analysis section covers an assessment against agreed criteria: policy and management relevance; conceptual basis and robustness; compatibility with other agencies; links to other indicators and measures; implementation and cost.			
ATTRIBUTE			The Natural Built Environment Act established the National Planning Framework, requiring the setting of environmental limits and targets for air, indigenous biodiversity, coastal water, estuaries, freshwater and soil attributes.	Measurable biophysical characteristics associated with ecological integrity and human health, some of which are aligned with the Aotearoa New Zealand Biodiversity Strategy 2020 measures, eg land under indigenous vegetation		

Terms in relation to Te Mana o te Taiao and the United Nations Convention on Biological Diversity (UN CBD)			
Term	Te Mana o te Taiao	UN CBD terms	Description
VISION	2050 Vision (Te Mauri Hikahika o te Taiao – The mauri of nature is vibrant and vigorous)	2050 Vision	High-level statement that details an aspiration.
STRATEGY	Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020	National Biodiversity Strategy and Action Plan (NBSAP)	Document that sets out a path or plan to achieve the defined vision. New Zealand's NBSAP to be reviewed and updated after ratification of UN CBD Global Biodiversity Framework.
OBJECTIVE	2050 Objectives	None	Qualitative description of specific requirements needed to achieve intermediate outcomes.
GOAL	2025 and 2030 Goals		Measurable, time-bound actions needed to achieve objectives.
TARGET	None	2030	Similar to Te Mana o te Taiao objectives; some set specific, measurable and timebound commitments by 2030; others set qualitative intentions that are not timebound.
ACTION PLAN	Te Mana o te Taiao /ANZBS Implementation Plan	The 'Action Plan' component of NBSAP	Detailed national plans setting out concrete actions, policies and programmes designed to meet a country's national targets (eg as set out in the NBSAP), and contribute to the global goals and targets, including spatial, temporal and financial aspects, as appropriate. Finance and other means of implementation Action plans should also include the identification of financing and capacity gaps and the development of national finance plans, or similar instruments, as well as capacity-building and development plans.

Appendix 4: Comparative table of prioritisation of measures as assessed by central and regional government agencies

(NB: Grey highlight notes issue with pivot so measure not visible when initially scored).

Te Mana o te Tāiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIC	Regional council LMF SIC	Regional council Coastal and Marine SIC	Regional council biomanagers and biosecurity
1.1.1.1 Soil structure and chemistry	4	4	3						4	2	5		
1.1.1.2 Soil carbon content	4	4	2						4		4		
1.1.1.3 Sedimentation and sediment quality	4	4	2	2		4			5	5	5	5	5
1.1.2.1 Ecosystem primary productivity	3	4	1						5	5		5	
1.1.2.2 Lake biological function	2	4	2						5	5	2		
1.1.2.3 Waterway biological function	4									5	2		
1.1.2.4 Marine biological function	3	4	NA						3		2	4	3
1.1.2.5 Exploited species production	2	2	NA			4			1	3			3
1.1.2.6 Flower and fruit production	1	2	NA						1				
1.1.3.1 Freshwater hydrology	4	4	4	2					5	5	3		5
1.1.3.2 Catchment water yield and groundwater	4								5	5	3		
1.1.3.3 Ocean regime and temperature	4											4	

Te Mana o te Taiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomangers and biosecurity
1.1.3.4 Water physiochemical factors	4	4	4						5	5	3	4	5
1.1.4.1 Ecosystem fragmentation	3	4	4			4			5	5	2	3	5
1.1.4.2 Habitat availability	4	4	4	2		4			5	5	2		5
1.1.5.1 Mass movement	4									2	3	2	
1.1.5.2 Riverine and coastal alteration	3	4	4						5	5	1	4	4
1.1.5.3 Anthropogenic landform and substrate disturbance	2	4	1						1	5	1	4	4
1.1.5.4 Extent and impact of fire	2	2	2						2	3			4
1.1.5.5 Toxic blooms	4									5	2	4	
1.1.5.6 Disease and pest outbreaks	1	4	NA		4				5	3		5	4
1.1.6.1 Land under indigenous vegetation	4	4	4	4					5	4	3		5
1.1.6.2 Waterway and lake marginal vegetation	4	3	3						3	4	5	3	5
1.1.6.3 Land, waterway and marine transformation	3	4	4						5		2		5
1.2.1.1 Non-nutrient contaminants	4	4	3	2				3	4	5	4	5	
1.2.1.2 Toxins in biotic tissues	3												
1.2.1.3 Severely contaminated land and water	4	1	3							2	4	2	

Te Mana o te Tāiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomanagers and biosecurity
1.2.1.4 Marine litter	3	4	NA						1		2		
1.2.1.5 Anthropogenic sound and light	2	2	NA						5	2		1	
1.3.1.1 Occurrence of populations of invasive non-native species	2	4	1		4				4	3			4
1.3.2.1 Abundance and distribution of invasive pests and diseases	2	4	4	2	4				4	4		3	4
1.3.2.2 Area free of pests and diseases	2	2	1							4			4
1.4.1.1 Status of indigenous taxa	3	4	4						5	3		3	4
1.4.2.1 Current and predicted trends in the status of threatened and at risk taxa	3	4	3						5	5		2	4
1.4.2.2 Current and predicted trends in the demographics of threatened and at risk taxa under active management	1	4	NA						5	5			4
1.4.3.1 Genetic diversity in relation to conservation status	1	4	NA			4	4		1	2			2
1.4.3.2 Genetics of taxa under management	1	1	NA			4	4		1	2			2
1.5.1.1 Demography of functional groups	3	4	NA			4	4		1	5	4	3	5
1.5.1.2 Representation of functional groups and guilds	3	4	NA			4	4		1	3	4	5	5

Te Mana o te Taiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomangers and biosecurity
1.5.1.3 Abundance and demography of common and widespread taxa	3	4	NA			4			1	5	4	4	5
1.5.1.4 Changes in species diversity	3	4	NA			4			4	5	1		5
1.5.2.1 Natural range occupied	2	4	NA						3	2			5
1.6.1.1 Ecosystem extent	4	4	4						5	5	2		5
1.6.1.2 Proportion of ecosystems protected	4	4	3						5	3			5
1.6.1.3 Change in extent of naturally uncommon and reduced ecosystems	4	4	3						5	4	1		5
1.6.1.4 Proportion of ecosystems remaining relative to natural extent	4	4	1						5	4	1		5
1.7.1.1 Climate averages, indices and extreme events	4									3			
1.7.2.1 Biological responses to extreme climate events	3	4	NA			4	4		1			2	
1.7.2.2 Phenological response to climatic regime change	2	4	NA			4			1				
1.7.2.3 Range shifts	3	4	NA			4			3				
1.7.2.4 Ecosystems and taxa vulnerable to the adverse effects of climate change	3	2	1			4			1				
1.8.1.1 Legal hunting and harvesting of indigenous species	1	1	1		4	4			2	2	5		5

Te Mana o te Taiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomangers and biosecurity
1.8.1.2 Illegal hunting and harvesting of indigenous species	3								2				
1.8.2.1 Legal hunting and harvesting of non-native species and resources	1	1	1					1					
1.8.2.2 Illegal hunting and harvesting of non-native species and resources	3												
1.8.2.3 Illegal movement of non-native species into protected areas	2												
1.8.3.1 Attitudes towards interaction with natural ecosystems	2	4	0					2		5			5
1.8.3.2 Current use natural ecosystems for human health and well-being	3	4	0					2		5			5
1.8.4.1 Nature appreciation	4												
1.8.4.2 Scientific investigations	4								4		3		
3.3.1.1 Treaty partners' and others' contributions to outdoor recreational opportunities, facilities and services	2												

Te Mana o te Tāiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomanagers and biosecurity
3.4.1.1 Total economic benefits to communities (national, region, district, township) from outdoor leisure and recreational activity	3												
3.4.2.1 Contribution to improved public health from people recreating outdoors	3												
3.4.2.2 Contribution to national, group and cultural identity and social cohesion from people recreating outdoors	3												
3.4.2.4 Contribution to environmental awareness and understanding from people recreating outdoors	4												
3.5.1.1 Effects of outdoor recreation on natural heritage values: water quality; ecosystems; species; landscapes; and so on	3												
4.1.1.1 Public awareness and understanding of importance of biodiversity and biosecurity for prosperity	1	2	1	2	4	2	4	2	2	3	5		3
4.1.1.2 Connectedness to, relevance, and importance of biodiversity to individual New Zealanders	3	2	0				2		2	3	5		3

Te Mana o te Taiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomangers and biosecurity
4.1.2.3 Co-design of biodiversity and biosecurity information and educational material with mana whenua	1	1	1				4		?	2	5		4
4.1.3.1 Contribution by Government agencies, Treaty partners, and others to biodiversity and biosecurity awareness and engagement from communication and education activities and resources					2		2		2				
4.2.1.1 Quality of relationships between government agencies, Treaty partners and others	4	4	4		4				5	3	5		4
4.2.1.3 Government agencies' processes, practices and procedures are focused and user friendly for Treaty partners and others	4												
4.2.1.5 Government agencies, Treaty partners and others comply with terms of agreements and concessions, regulations and other statutory and industry and sector obligations	4				4					4			

Te Mana o te Tāiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomanagers and biosecurity
4.2.1.6 Government agencies', Treaty partners' and others' return on investment from their investment in biodiversity	4												
4.2.2.1 Assessment of Treaty partners' and others' capability and capacity	3	4	4			3			4	3	1		4
4.2.2.2 Government agencies', Treaty partners' and others' support of capability and capacity development	4	4	4		4				4	3	1		5
4.2.4.1 Profile of social and environmental funds managed by government agencies, Treaty partners and others													
4.2.4.2 Biodiversity outcomes from fund-supported activity	3	1	0				4		5	3			5
4.2.4.3 Improved awareness of, and access to, social and environmental information	4								3				
4.3.1.1 Treaty partners are satisfied that government agencies are meeting their obligations of good faith, reciprocity and reasonableness	4	4	4				4		5	4	5		4

Te Mana o te Tāiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomanagers and biosecurity
4.3.2.1 Treaty partners are satisfied their rangatiratanga over their taonga has been enhanced by government agencies and others	4	5	4				4		5	4	5		5
4.3.2.2 Treaty partners, government agencies and others identify and protect taonga	4	4	4		4		4		5	3	5		5
4.3.2.3 Treaty partners are satisfied that protection of taonga is improving	4	4	4		4		4		5	4	5		5
4.3.3.1 Government agencies, Treaty partners and others engage to arrive at informed decisions	4	4	4		4		4		4	5	5		4
4.3.3.2 Treaty partners are satisfied with the quality of engagement for the purpose of informed decision-making	4	4	4		4		4		4	4	5		4
4.3.3.3 Treaty partners are satisfied government agencies are including tangata whenua views in their decision-making	4	4	4		4		4		5	4	5		4

Te Mana o te Taiao measures	MfE	Stats NZ	LINZ	MPI Forestry	MPI – Biosecurity New Zealand	MPI – Fisheries	MPI – Agriculture and Investment Services	MPI – Policy and Trade	Regional councils	Regional council FW SIG	Regional council LMF SIG	Regional council Coastal and Marine SIG	Regional council biomangers and biosecurity
4.4.1.1 New Zealanders and New Zealand organisations regard investment in biodiversity and biosecurity as essential to New Zealand's prosperity and brand	4									3			3
4.4.2.1 Government agencies' provision of data and tools support the natural resource sector assessment of natural capital	4	3	4				3		2	3			
4.4.3.1 Government agencies', Treaty partners' and others', submissions and advice on biodiversity issues and their outcomes	4						4			3			4
4.4.4.1 Analysis and estimate of benefits to Treaty partners and communities (national, region, district, township) from biodiversity operations and associated business activity	4	2	2			4			4	2			2

Note: FW SIG = Freshwater Special Interest Group; LMF SIG = Land Monitoring Forum Special Interest Group; LINZ = Land Information New Zealand; MfE = Ministry for the Environment; MPI = Ministry for Primary Industries; NA = not available; SIG = Special Interest Group.

Appendix 5: Workshop presentations and written feedback from regional council special interest groups

Includes workshop overview, context sessions from regional council special interest group representatives and central government agencies.



Whakawhanaungatanga

Agenda: Day 1

1. Introductions and whakawhanaungatanga
2. Workshop approach, purpose, outputs and principles
3. Te Mana o te Taiao Monitoring and Reporting (M&R) context and work to date
4. DOC Update on Freshwater monitoring
5. Regional Council M&R what we know
6. SIG updates on your M&R status quo
7. Priority central government M&R work
8. **Exercise:** Te Uru Kahika alignment and readiness
9. Overview of Day 2 approach, exercises and resources

Agenda: Day 2

1. Reflection from day 1
2. **Exercise:** Confirming relevance and priorities of the OMF to your SIG
3. **Exercise:** Continuing collaboration, next steps, accountabilities and risks
4. Te Mana o te Taiao Implementation Team presentation
5. Final reflections from workshop



Agenda: Day 2

1. Reflection from day 1
2. **Exercise:** Confirming relevance and priorities of the OMF to your SIG
3. **Exercise:** Continuing collaboration, next steps, accountabilities and risks
4. Te Mana o te Taiao Implementation Team presentation
5. Final reflections from workshop



How we're going to work

1. Breakout exercises will be by SIG + Social consideration
2. Breakout notes will be written up on flipchart paper
3. Ashley will be taking minutes
4. Please capture all your thoughts in writing... and make sure it's legible 😊

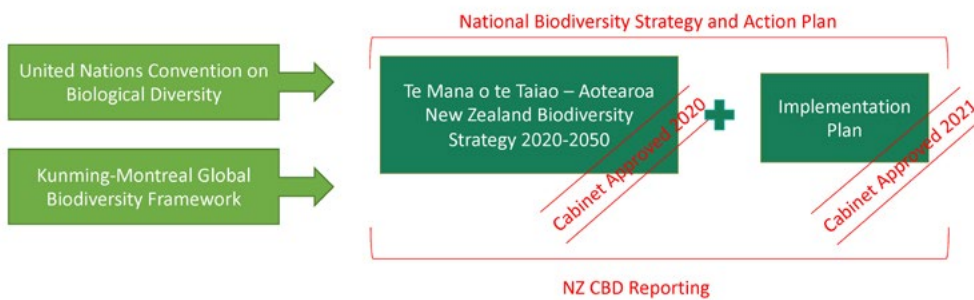


Workshop Principles

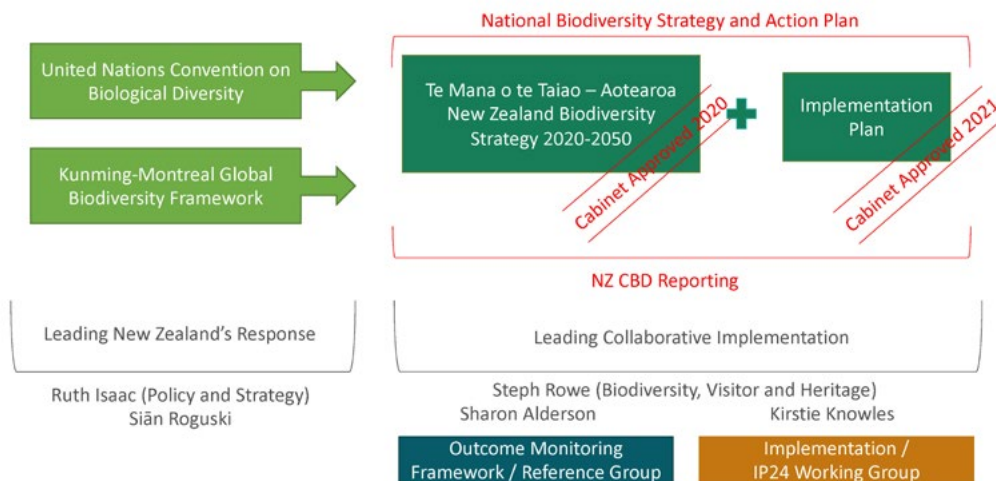
1. Flexible structure, quality over quantity!
2. Take time for questions and discussion
3. The workshop is a first step in a long-term process
4. Focus on understanding, mapping, alignment, collaboration opportunities
5. Open discussion + all contribute
6. Not committing anyone to anything re implementation
7. Safe space to express views or concerns

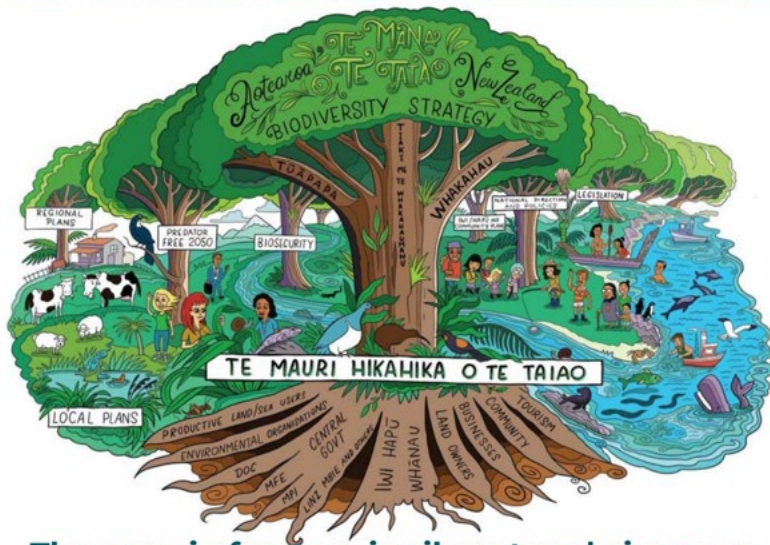
Te Mana o te Taiao M&R Strategic Approach

International setting for Te Mana o te Taiao



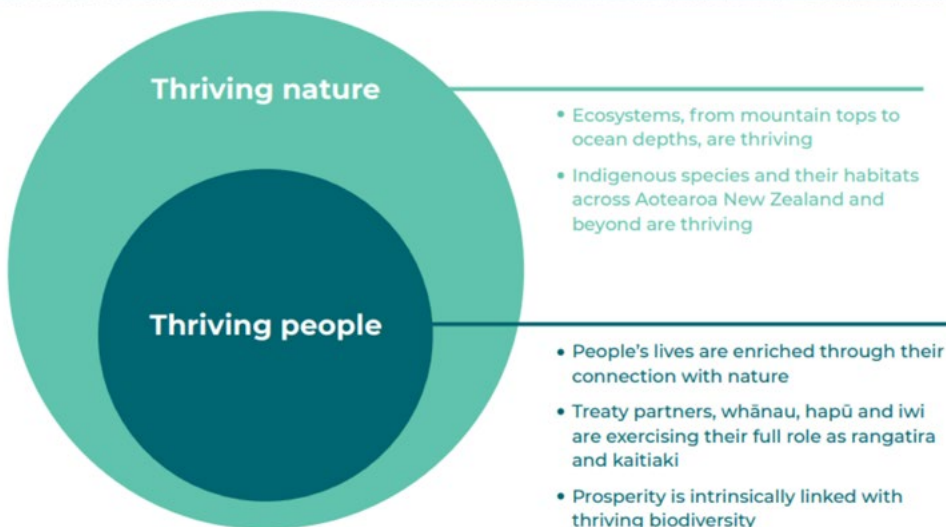
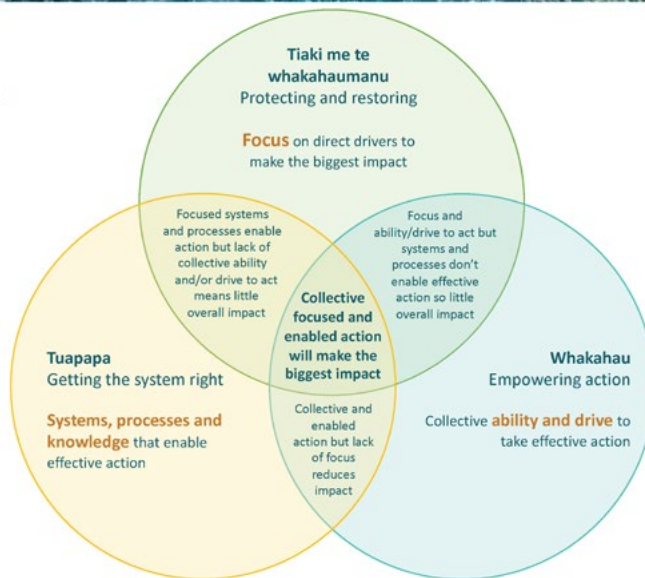
DOC resourcing as all of Government lead

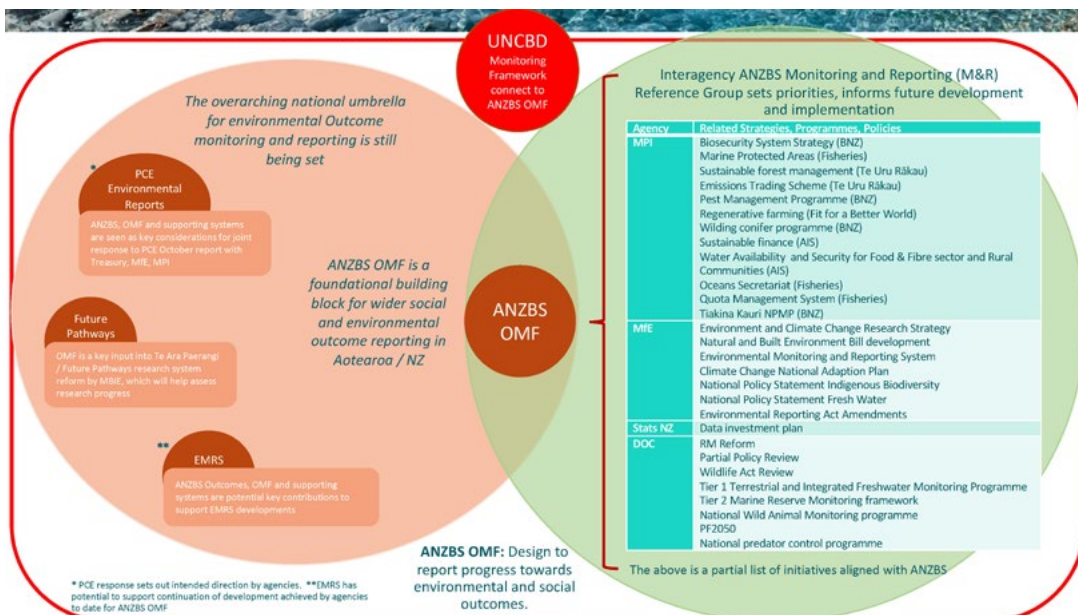
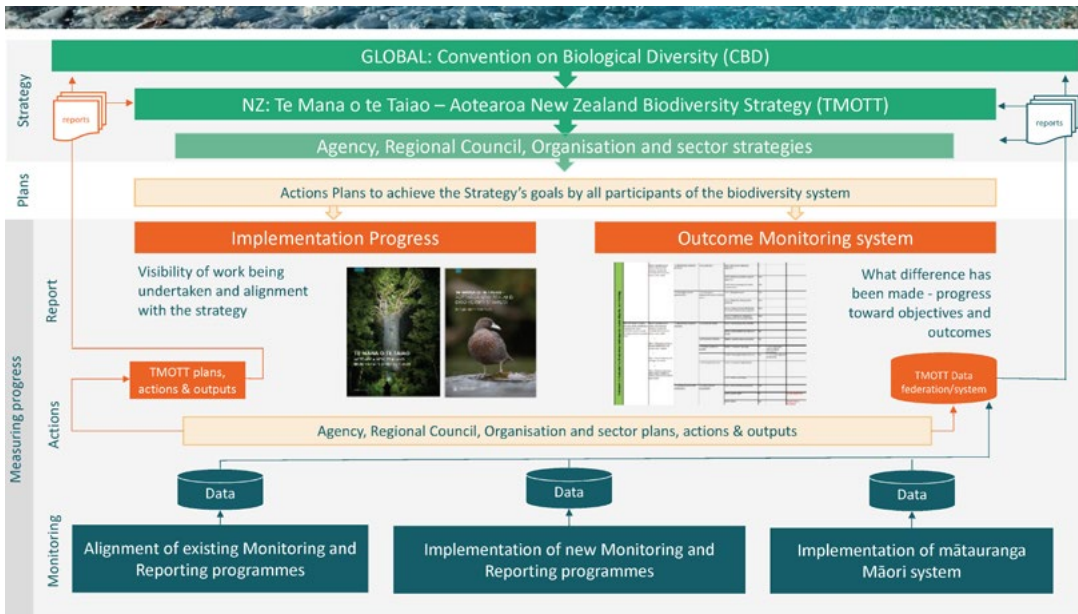
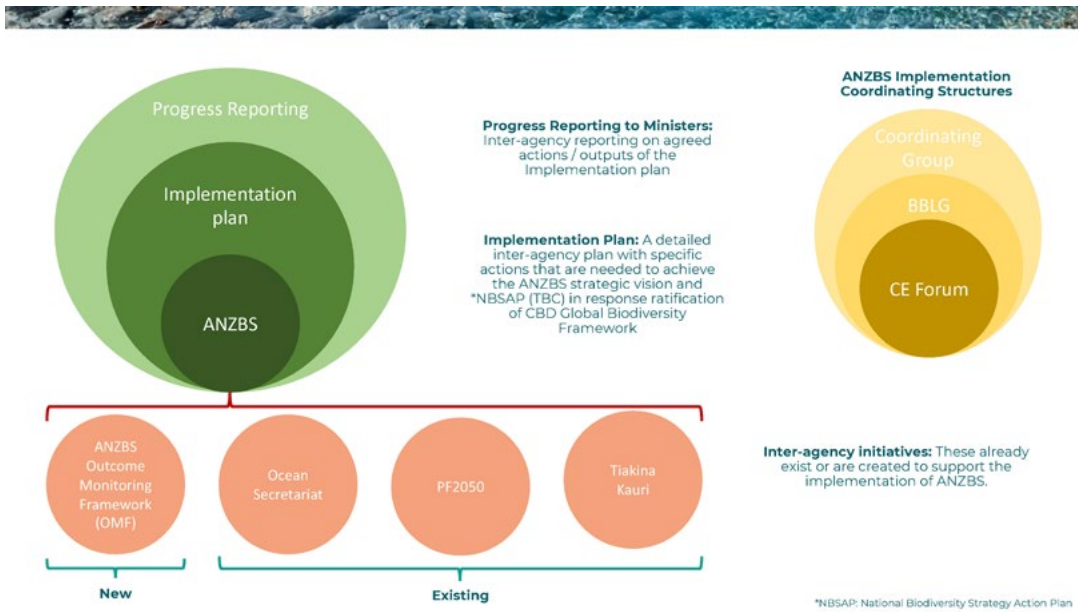




The mauri of nature is vibrant and vigorous

The three pou/pillars of the Strategy come together to make the necessary change





He Awa Whiria

An explicitly bicultural approach to protecting, restoring, and enhancing biodiversity

- Te Mana o te Taiao Outcome 4: Treaty partners, whānau, hapū and iwi are exercising their full role as rangatira and kaitiaki.
- Requires kaupapa Māori monitoring and reporting, elevating mātauranga.
- Requires parallel work by kawangatanga and Iwi/Māori
- This work represents the government framework, wider work is underway in the Mātauranga Māori



M&R Interagency approach to date



FY22/23 Project Outputs

Finalised regional and central government OMF with priorities for investment and draft implementation pathway

Glossary for ANZBS OMF and UNCBD

Prototype relational database for OMF

Alignment of OMF with CBD monitoring framework



Stats NZ
Tatauranga Aotearoa



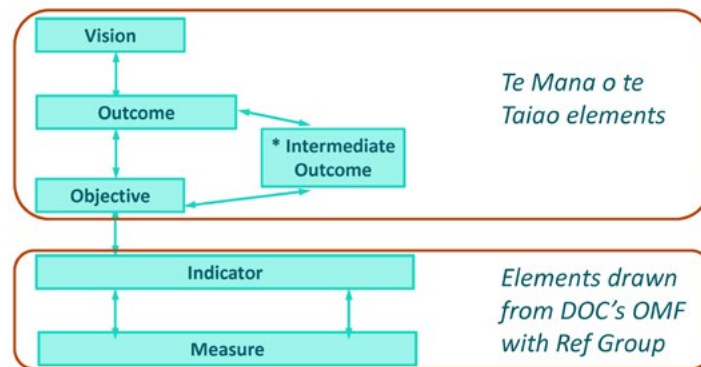
Te Uru Kahika

Regional and Unitary Councils Aotearoa



Convention on Biological Diversity

OMF: The structure



* Components listed under each of 5 strategy outcomes

Future Critical Success factors

1. The benefits of working to a shared Outcome Monitoring Framework
 - a) The OMF enables consistent indicators and measures and operational procedures for data collection
 - b) It enables us to federate data at all scales
2. The social process and a collective impact approach is essential for ongoing collaboration and success
3. ANZBS OMF connects to many initiatives and will continue to evolve and be refined over time, it is a living framework

Questions...

Update on DOC's Fresh Water monitoring

National Freshwater Monitoring Programme

9 May 2023



New Zealand Government

Conceptual models and objectives



Sample frame and design



Indicators and measures



Design

2019 Workshops

DOC's Freshwater Monitoring Objective

Measure the state and trend in components in Ecological Integrity in freshwater rivers and stream on Public Conservation Land.



The full potential of indigenous biotic and abiotic features and natural processes, functioning in sustainable communities, habitats, and landscapes

For more detail on Ecological Integrity and DOC's Outcome Monitoring Framework see [Biodiversity monitoring, ecological integrity, and the design of the New Zealand Biodiversity Assessment Framework | NZES](#) (newzealandecology.org)

	Measure/Data Element	Method
Aquatic Life <ul style="list-style-type: none"> • Fish • Macroinvertebrates • Freshwater Mussels • Aquatic Plants • Algae 	Fish Population	Electrofishing (Joy et al., 2012)
	Macroinvertebrate Population	Modified NEMS Macroinvertebrates v1.0.0
	Mussel Presence/Absence	Presence/Absence - Protocol 1 (Catlin et al., 2019)
	Macrophytes/Bryophytes Presence/Absence	Search & Collection
	Periphyton Cover and Biomass	NEMS Periphyton v1.0.1
	Phytoplankton (Chlorophyll <i>a</i>)	Grab samples; NEMS Water Quality Part 2 Sampling Measuring Processing and Archiving of Discrete River Water Quality Data v1.0.0
	Species Presence/Absence	eDNA syringe mini kit (Wildlab™)
Habitat <ul style="list-style-type: none"> • Hydrology/Morphology • In-stream • Riparian • Substrate 	Mesohabitat, Pool Assessments, Channel Cross-Sections, Discharge	Modified Stream Habitat Assessment Protocols - Hydrology and morphology P2b (Harding et al., 2009)
	Deposited Fine Sediment	In-stream visual estimate - SAM-2 (Clapcott et al., 2011)
	Substrate Size	Modified Wolman Count (Clapcott et al., 2011)
	Substrate Instability	Pfankuch Index (Collier, 1992)
	Sediment Quality – Organic Matter, Nutrients, Pesticides/Herbicides	Grab sample
	Riparian Habitat Assessment	Stream Habitat Assessment Protocols – Riparian P2d (Harding et al., 2009)
Water Quality <ul style="list-style-type: none"> • Physiochemical • Pathogens • Nutrients 	Temperature, DO, Conductivity, pH, Turbidity	NEMS Water Quality Part 2 Sampling Measuring Processing and Archiving of Discrete River Water Quality Data v1.0.0: Multiparameter meter (YSI ProDSS),
	Hardness, Organic Carbon, Dissolved Metals	Grab samples
	Water Clarity, Suspended Sediment	Black Disk, Grab Sample
	Phosphorus, Nitrogen	Grab samples

Network Design

Target Population

- All permanent and intermittent freshwater rivers and streams including tidally affected and modified channels but not artificial channels, associated wetlands, lakes or ponds, brackish or saline waters in Public Conservation Land

Sample Frame

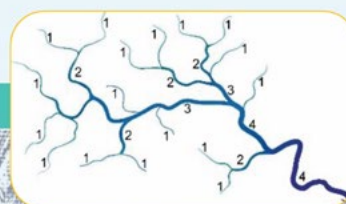
- REC1 network clipped to PCL. Reaches in lakes and permanent snow and ice removed.

Sample Stratification

- REC orders:
 - 1, 2, 3, 4-8
- Sample Allocation:
 - Equal effort between strata

Sample Location/Frequency

- Spatially balanced probabilistic design
- 150 sites measured 3-yearly (~50 sites a year)



Develop Systems, Processes and Tools to Support Implementation



Sampling Sites 2020-21

Year 1

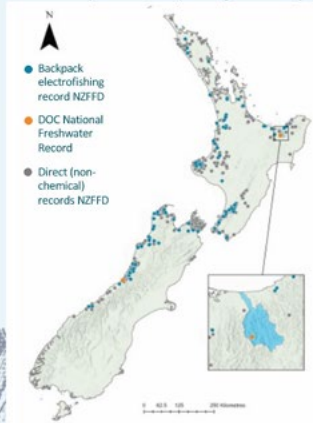
Wadeable rivers & streams



Learnings: Value of Data in the National Context

- ▶ High-quality, comprehensive dataset on biodiversity, habitat and water quality
- ▶ Data available for areas poorly represented in other environmental datasets
- ▶ Increase knowledge of species distribution (e.g. fish species)
- ▶ Improve knowledge of benthic macroinvertebrates: published protocols for increasing taxonomic resolutions

Galaxias postvectis (shortjaw kōkopu)



Learnings: Gaps & Recommendations



- ▶ Fish index of biotic integrity (Fish-IBI): some metrics have a disproportionate effect on the overall score
- ▶ Macroinvertebrate Community Index (MCI): less useful as an indicator of stream health for PCL
- ▶ Lack of national biological databases: demonstrated utility of national databases (e.g. NZFFD), enable data sharing
- ▶ Lack of sample storage and archiving solutions: macroinvertebrates, aquatic plants, eDNA, etc.



**Update:
Regional Councils
existing 18 Indicators and
how they align**

Terrestrial biodiversity indicators developed for regional councils

- Topic areas for indicators developed in response to a consensus among councils (2011 Manaaki Whenua report, “Recommended monitoring framework for regional councils assessing biodiversity outcomes in terrestrial ecosystems”).
- 18 indicators developed between scientists and a nominated RC contact, conferring back with other council representatives (2016 Manaaki Whenua report), ready for implementation.
- Proof-of-concept implementation of 5 indicators for all councils, completed 2016.

Terrestrial biodiversity indicators developed for regional councils

Indicator	Developed	Implemented		Indicator	Developed	Implemented	
		DOC	RCs			DOC	RCs
Status and trend				Effectiveness of policy and management			
M1 Land cover				M12 Change in rare ecosystems		Partial	
M2 Vegetation			2 councils	M13 Threatened species habitat			
M3 Birds			2 councils	M14 Consents compliance		n/a	
M5 Rare ecosystems		Partial		M15 Pest-free ecosystems			
Threats and pressures				M16 Plants and birds at risk		Partial	2 councils (Partial)
M6 Weeds				M17 Catchment protection			
M7 Pest mammals			2 councils	Community engagement			
M8 Land cover change			R&D issues	M18 Protection			
M9 Loss to fire, herbicide			R&D issues	M19 Community restoration			R&D issues
M11 Climate		Related to other indicators		M20 Community pest control			R&D issues

Interrelationship between the 18 regional council indicators and OMF indicators/measures

1. One-to-one match between some RC indicators and OMF indicators:
 - a) Some of these (M1, M6, M11, M12, M17, M18) require only a single OMF measure.
 - b) Others (e.g., M3, M9) correspond to several OMF indicators and would require multiple OMF measures.
2. Some RC indicators matched poorly to OMF indicators:
 - a) Some OMF measures relate to some components of RC indicators (e.g., defining threatened species) but there are no OMF measures that report consents and compliance (e.g., needed for M13, M14).
3. No match at all among current OMF indicators to some RC indicators:
 - a) OMF is notably lacking in indicators and measures fit to assess the quality of community engagement in conservation and restoration of biodiversity.

Questions...

Te Uru Kahika M&R What we know



Biodiversity Working Group

Report back on what is working for



Regional and
Unitary Councils
Aotearoa



You asked?

- Q1. What's working well for your SIG in relation to monitoring and reporting?
- A1. Collaboration with LMF led to LCDB being reported on LAWA.
- Q2. What are the main purposes of the monitoring done by your SIG?
- A2. To meet national policy direction requirements.
- Q3. How has your SIG developed NEMS and data management practices to enable putting indicators up on LAWA?
- A3. In collaboration with the LMF.
- Q4. What are the most important SIG-specific questions you would like to address?
- Q5. How could TMOTT or collaborating agencies help your SIG or councils generally?
- A4&5. See discussion on what regional councils are looking for out of TMOTT.



Terrestrial biodiversity indicators

State and condition

1. Land area under indigenous vegetation
2. Biodiversity condition

Threats and pressures

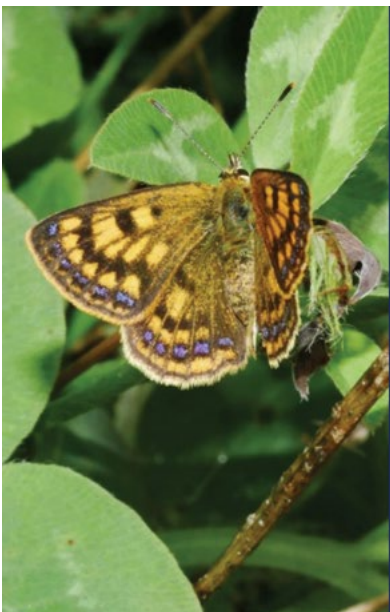
3. Weeds and animal pests
4. Habitat loss
5. Climate change

Effectiveness of policy and management

6. Biodiversity protection
7. Pest management
8. Ecosystem services

Community engagement

9. Protection and restoration
10. Weed and pest control



Initiatives to report on indicators

- A. LCDB landcover changes reported on LAWA
- B. Tier I bird, vegetation and pest monitoring on the national 8km x 8km grid
- C. Tier II sampling methods
- D. Singers and Rogers mapping of predicted historic vegetation extent
- E. Nature Space





Indicators and measures

1. Land area under indigenous vegetation

Indigenous land cover (ha, %) of cover classes, habitat types, across LENZ and Ecological District units, regions [LCDB]

2. Biodiversity condition

Vegetation structure and composition [Tier I]

Avian representation [Tier I]

Habitat for threatened species

Vulnerable ecosystems [S&R]

3. Weeds and animal pests

Number of new naturalisations

Distribution and abundance [Tier I]



Regional and
Unitary Councils
Aotearoa



Indicators and measures

4. Habitat loss

Change in area under intensive land use [LCDB]

Habitat and vegetation loss [LCDB + S&R]

Transformation of indigenous cover through fire or aerial spraying [Fire data from DOC]

5. Climate change

Change in temperature and precipitation (ppt.) [NIWA]

6. Biodiversity protection

Change in extent and protection of indigenous cover or habitats or naturally uncommon ecosystems [LCDB + PNA]



Regional and
Unitary Councils
Aotearoa



Indicators and measures

6. Biodiversity protection – cont.

Threatened species habitat [DOC data + Consents]

Vegetation consents compliance [Consents]

7. Pest management

Indigenous ecosystems released from pests [RC biosecurity data]

Change in the abundance of indigenous plants and animals susceptible to introduced herbivores and carnivores [Tier I]

8. Ecosystem services

Extent of indigenous cover in water catchment [LCDB]



Regional and
Unitary Councils
Aotearoa



Indicators and measures

9. Protection and restoration

Area and type of biodiversity protection achieved on private land ^[Nature Space]

Contribution of initiatives to (i) species translocations and (ii) habitat restoration ^[DOC + Nature Space + RC data]

10. Weed and pest control

Community contribution to weed and animal pest control and reductions ^[Nature Space]



What are regional councils looking for out of TMOTT



Background

- RCs are mandated to collect a range of biodiversity and biosecurity data under the RMA and the Biosecurity Act.
- Data requirements of RCs are expanding under the national policy statements and planning framework.
- RCs recognize that data needs to be collected and managed in standardised ways to ensure its quality to inform state of the environment reporting and informed policy development (Willis 2017 - Biodiversity and the role of regional councils).
- RCs want to collaborate with central government to develop monitoring and reporting tools.





Regional council monitoring and reporting needs

- Species survey methods and sampling designs
- Species data repository
- Ecosystem classification scheme
- Ecosystem mapping standards and repository
- Ecosystem monitoring methods and designs
- Ecosystem monitoring data repository



Species survey methods and sampling designs

- NPS-FM and NPS-IB require RCs to survey the distribution and population status of Threatened freshwater, highly-mobile species and taonga species.
- Biosecurity Act requires RCs to maintain surveillance of pest plants and animals.
- PCE recommends that, “MPI, DOC and RCs, working with iwi and hapū and other relevant organisations, should set up an ‘emerging risks team’ to scan for and coordinate management of newly emerging native ecosystem weeds.”



Species data repository

- RCs also collect species distribution data to inform local policy and need a place to store this.
- A common data repository would support both regional and national species conservation assessments to drive both regulation and conservation incentives.
- Predator Free 2050 has identified the need for a data model, metrics and overarching data management frameworks to be developed, disseminated and adopted.
- Citizen science data repositories (e.g., eBird and iNaturalist) lack the required data integrity, security and sovereignty.





Ecosystem classification scheme

- Key to regional and national systematic conservation planning – see TMOTT Goal 12.5.1.
- RCs invested in the Singers and Rogers classification, but are open to a national scheme that serves a wider purpose.
- NPS-FM requires RCs to map wetlands and attribute their type and NPS-IB to help identify SNAs.
- Potential to be used to set targets and limits, and inform offsets in the NPF.



Ecosystem mapping standards and repository

- Developing an ecosystem classification scheme is the first step. This needs to be operationalised.
- NPS-FM requires RCs to map wetlands and NPS-IB to map SNAs.
- Being able to federate this data would support better informed national direction.
- RCs have been working with DOC to share data and are applying for EnviroLink funding to map naturally uncommon ecosystems.



Ecosystem monitoring methods and sampling designs

- NPS-FM requires RCs to monitor wetlands and the NPS-IB to monitor SNAs.
- The RCs Environmental Monitoring and Reporting (EMaR) programme supports the development of National Environmental Monitoring Standards (NEMS) and the Environmental Data Management System (EDMS) that deliver data to be presented on the Land, Air, Water Aotearoa (LAWA) web platform.
- Like national direction, NEMS lacks guidance on sampling design. This is a key area for work with central government.





Ecosystem monitoring data repository

- EDMS is managing some RC data, but not biodiversity data.
- RCs' biodiversity data is fragmented across data storage platforms, making it difficult to federate.
- If we are to properly curate the data to be collected under the NPS-FM, NPS-IB, NPF, TMOTT and Predator Free 2050, we need federated, geospatially enabled, data storage and retrieval systems.



Social/community monitoring

- Social data is critical for understanding the levers for change, but receives very little investment.
- We have very poor understanding of the social and cultural drivers of both environmental degradation and restoration/protection.
- We have no capacity currently to develop frameworks and methods for this.
- We need to grow our capacity to support mana whenua to lead cultural monitoring.
- We want to get smarter about measuring things like trust and relationships within the environmental system, and the factors that drive them.



Mātauranga and data

- We are just starting to explore how mātauranga can inform our data and information. It's quickly becoming a top priority and needs more resource.
- Data sovereignty is important for our mana whenua partners – it can't be dismissed as being too hard.
- Working with mana whenua to apply mātauranga requires a huge degree of trust and shared understanding. Resourcing needs to consider the time and processes involved in doing this well.





RC considerations

- RCs don't have the money to deliver the data being required of us alone.
- Our priority is to deliver products that support our iwi and ratepayers. Next is to meet the demands of national policies.
- There aren't enough experts to go around.
- We need help with developing standardised methods, sampling designs and reporting.
- We want to build better environmental and social data management systems.
- We want our data to inform national policy.



Regional council monitoring and reporting needs

- Species survey methods and sampling designs
- Species data repository

- Ecosystem classification scheme
- Ecosystem mapping standards and repository

- Ecosystem monitoring methods and designs
- Ecosystem monitoring data repository



Questions/Thoughts...

SIG updates on your M&R status quo...



Biosecurity Working Group

Regional invasive species management

- Invasive species-led
- Strategic intervention (prevent, eradicate, manage)
- Tenure-neutral – wherever they occur

Biodiversity management (key cross-over)

- Invasive species management, any/all threats to high value places [Site-led]
- Private land or locally/regionally managed public land
- Service delivery, assist land occupiers

Questions

- What's working well for your SIG in relation to monitoring and reporting?

Working through statutory cycles in the Biosecurity Act 1993 of an operational plan and an annual reporting requirement. Noting however that there is an absence of accountability and standardisation so the form of this planning and reporting is varied across the regional sector.

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- What are the main purposes of the monitoring done by your SIG?

Invasive species presence, abundance and/or distribution feeding back to demonstrate progress against the likes of RPMP targets. Similarly, at high value sites, to assess the level of threat from invasive species and success of site-based interventions.

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Nil to-date. Have been discussions on invasive species data standards (GBIF, NZOR etc) but no traction. Some elements of invasive species data within biodiversity monitoring indicators. **GAP.**

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Less so a question, more a statement. Invasive species management spans all values – not just biodiversity. It is a large driver, but not the only driver. As such, this mustn't be lost when shaping any data or reporting pathways.

Questions

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- How could TMOTT or collaborating agencies help your SIG or councils generally?

Potentially providing a clear avenue and purpose for the collection and reporting of invasive species data that relates to the management of biodiversity.

Questions asked in pre-completion task

1. What's working well for your SIG in relation to monitoring and reporting?
2. What are the main purposes of the monitoring done by your SIG?
3. How has your SIG developed NEMS and data management practices to enable putting indicators up on LAWA?
4. What are the most important SIG-specific questions you would like to address?
5. How could TMOTT or collaborating agencies help your SIG or councils generally?

Te Uru Kahika SIG input into Te Mana o Te Taiao Monitoring Framework

Pre-completion task for SIG Convenors – Land Monitoring Forum

Matthew Taylor (on behalf of Haydon Jones)_

waikatoregion.govt.nz



1. What are the main purposes of the monitoring done by your SIG?

State of the Environment reporting

- state of soil quality and soil quality changes identified.
- database developed.
- early-warning system provided.



2. What are the main purposes of the monitoring done by your SIG?

State of the Environment reporting

- state of soil quality and soil quality changes identified.
- database developed.
- early-warning system provided.



3. How has your SIG developed NEMS and data management practices to enable putting indicators up on LAWA?

Advocated and supported development of the NEMS soil quality plus contributed to technical panel designing the NEMS soil quality



4. What are the most important SIG-specific questions you would like to address?

Database and soil archive support

- Each region has own database/spreadsheet system.
- Archiving of soil samples ad hoc.



5. How could TMOTT or collaborating agencies help your SIG or councils generally?

Do we need another strategy on environmental monitoring and national reporting?

If so then implementation must follow, e.g. NZ Cd strategy developed followed by CMG formed to implement the strategy

Guidance on what RC's need to monitor (prioritisation)

- Increased environmental awareness of politicians resulting in more questions to councils.
- Huge number of chemical substances released to the environment by modern life.

Crossover occurs between environmental and human health but very difficult to get funding.

Repeating Scientific research to prove it and incorporate it into environmental monitoring

non-novel research that underpins environmental monitoring.



Discussion of themes from SIG updates

Water: Duncan

EMAR: Abi



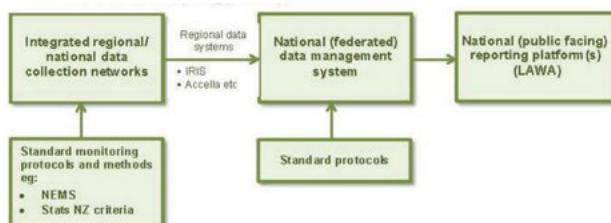
Environmental Monitoring and Reporting

A journey towards improved environmental reporting

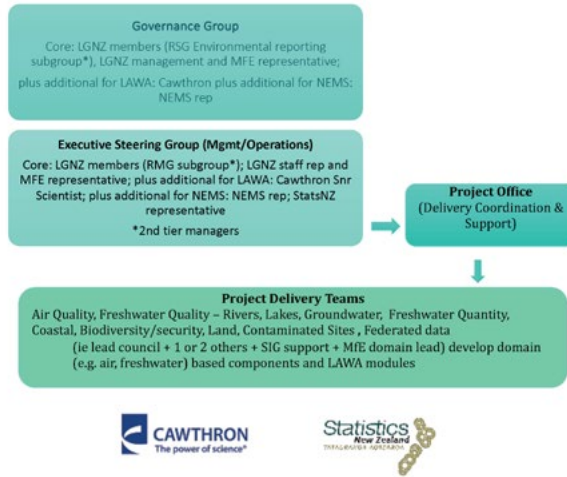


BACKGROUND

Regional Sector & MFE are developing an Environmental Monitoring and Reporting (EMaR) Framework



EMaR Structure



PRINCIPLES

The agreed principles EMaR will operate under are:

- **Partnership** with MfE (and other key central agencies), shared objectives, cost sharing and mutual benefits.
- **Standardised** protocols and methods, and robust quality assurance.
- In acknowledgement of the public funding and the type of data collected, there will be **open access** to the national (public facing) delivery platform. Terms on third party access to and use of data will be developed and agreed with partners.
- The **use of existing investment** (in staff, technology and infrastructure) will be optimised and sector costs contained to current scale, plus any additional costs for the sector in meeting national policies and standards.
- **Messaging and communication** principles will be developed and agreed with partners in a timely manner.



LAWA's VISION



WHAT SUCCESS LOOKS LIKE



Increased public understanding of the issues



Transparent access to data for scientists



Increased community engagement through stories and events



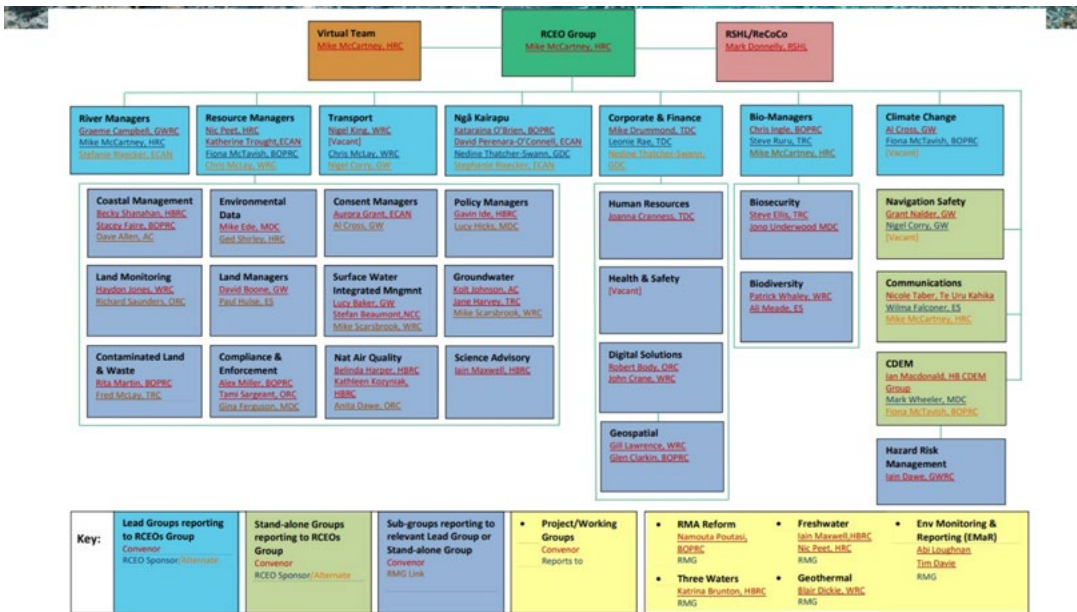
Collaboration between partners, the public and other groups



Questions asked in pre-completion task

1. What's working well for your SIG in relation to monitoring and reporting?
2. What are the main purposes of the monitoring done by your SIG?
3. How has your SIG developed NEMS and data management practices to enable putting indicators up on LAWA?
4. What are the most important SIG-specific questions you would like to address?
5. How could TMOTT or collaborating agencies help your SIG or councils generally?

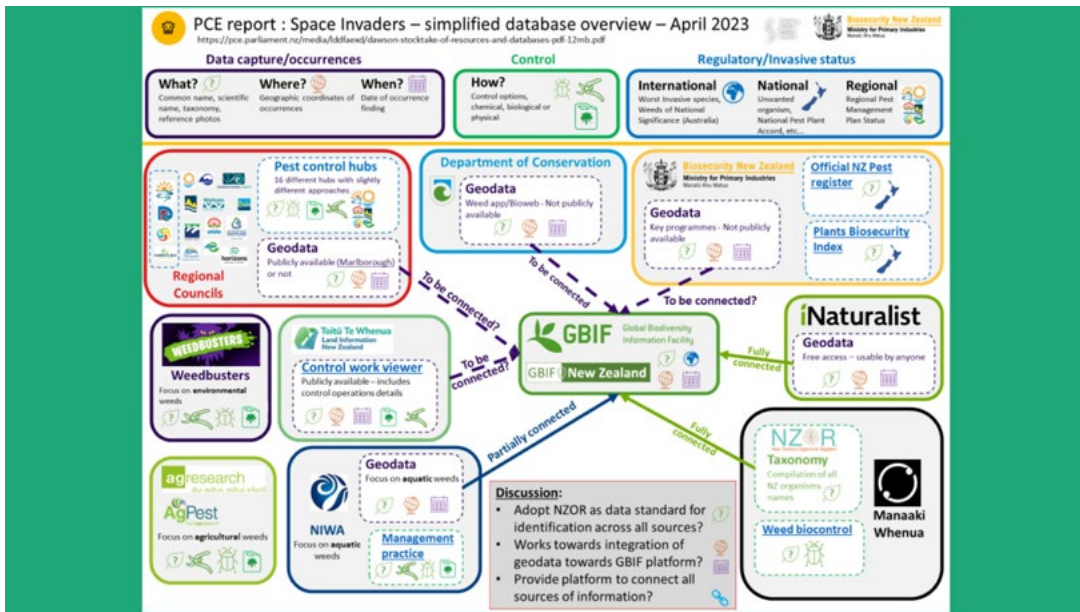
Data: Mike



Coastal: Ellie & Hamish

Priority central government M&R work...

MPI



Whatungarongaro te tangata
toitū te whenua.

People come and go,
but the land remains.

Brooklands Lagoon, opposite Kairaki, Canterbury Region

Te Uru Kahika - Regional & Unitary Council TMOTT M&R Collaborative Alignment Workshop

Shilinka Smith and Dennis MacManus
Toitū Te Whenua/Land Information New Zealand

9 May 2023

LINZ as Crown-Land Owner

- LINZ manages invasive pests and weeds to protect Crown lakes, rivers and lands
- The LINZ Biodiversity team work in partnership with Regional Councils and other organisations to enable better landscape outcomes for biodiversity in specific areas E.g. Rangitata River Steering and Working groups.
- Priorities include species under Regional Pest Management Plan rules – including joint programmes (partly funded by regional councils e.g., ECAN and ORC).
- South Island priority areas include Otago (e.g., Lakes Wanaka, Wakatipu, Dunstan) and Canterbury (e.g., four largest braided rivers systems, Waitaki lakes).
- North Island priorities include the Waikato River and Te Arawa Lakes.

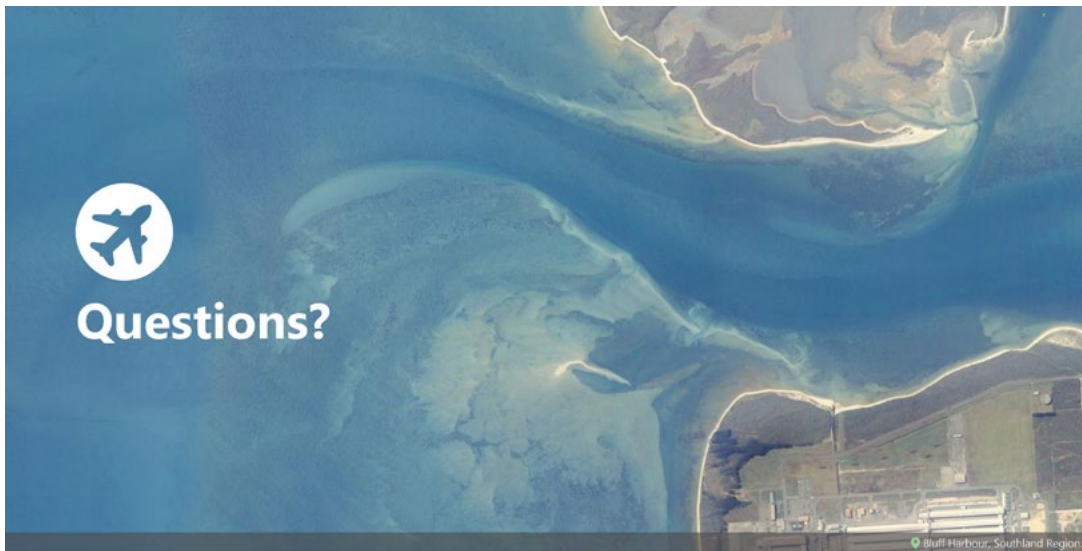


LINZ as Land Information Holder

- LINZ supports MPI-led national programmes by providing expertise and high quality GIS data platforms to:
 - The Wilding Conifer Information System (WCIS)
 - The Wallaby Information System (Wall-IS)
 - Kete Aronui (KA – Kauri)
- Councils use this data. We provide training on these systems, if required.

Land Information: LiDAR MAPPING

- Using laser light to produce high definition, three-dimensional, farm-scale images of landscape, including vegetation.
- Information such as quantified canopy height, plant density and slope of terrain can help manage weed/pest control and natural hazards such as flooding, landslides and erosion.
- Toitū Te Whenua is **partnering with councils** to map 80% of NZ by 2025. About 75% of the way through data collection



Overview: from the Ministry for the Environment and Stats NZ

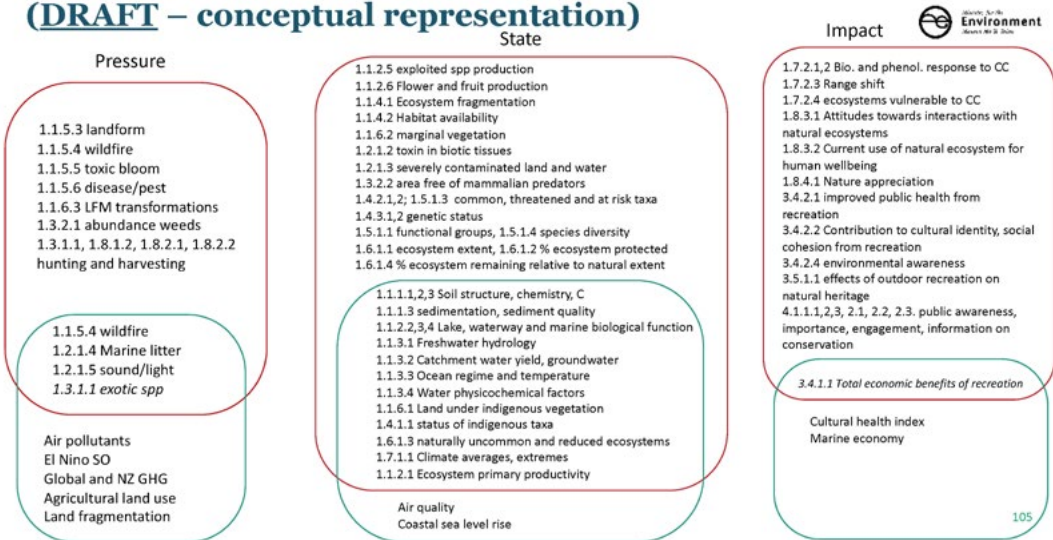
MfE/stats NZ – programmes of work



- Environmental Monitoring and Reporting System
 - National Environmental Monitoring network blueprint
 - Designing an environmental data architecture (incl. data standards)
 - Development of core indicators
 - Production of prioritised Environmental Reporting indicators and multi-year delivery plan by MfE and Stats NZ
 - Repeal and Replacement of the Environmental Reporting Act 2015 (Introduction of the Bill likely pre-election)
- Science investment
 - Environment and Climate Research Strategy
 - Focus on prioritising foundational data investment and research required to fill gaps
- RM reform: Limits and Targets programme
 - Requirements to monitor attributes (anticipated “must-do’s”)
 - Engagement with Regional Councils for each aspects (soil, indigenous biodiversity, coastal water and estuaries, air, freshwater)
- National Policy Statement on Indigenous Biodiversity, NPS Freshwater Management
- National Adaptation plan (chapter 6)
- Ngā Tūtohu Aotearoa - Indicators Aotearoa New Zealand. Monitor progress around social, cultural, economic, and environmental wellbeing.
- Stats NZ Data Investment Plan

103

MfE – SOER connections to te Mana o te Taiao OMF (DRAFT – conceptual representation)



105



Looking to day 2

Overview of exercises/resources for day 2

- Talk through exercises and outputs
- Talk through Resources – to be developed

We will at a different venue tomorrow:

- [Cliftons Wellington, 28/100 Willis Street](#)

Day 1 reflections...



Close and Karakia

Ngā mihi nui



Te Mana o Te Taiao

Aotearoa New Zealand Biodiversity Strategy

Monitoring and Reporting (M&R)
Te Uru Kahika Workshop May 2023



Karakia & any additional reflections from day 1



Agenda: Day 2

1. **Exercise:** Te Uru Kahika alignment and readiness
2. **Exercise:** Confirming relevance and priorities of the OMF to your SIG
3. **Exercise:** Implementation and Continuing collaboration
4. Te Mana o te Taiao Implementation Team presentation
5. Next steps in finalising the OMF
6. Final reflections from workshop



How we're going to work

1. Breakout exercises will be by SIG + Social consideration
2. Breakout notes will be written up on flipchart paper
3. Ashley will be taking minutes
4. Please capture all your thoughts in writing... and make sure it's legible 😊



Workshop Principles

1. Flexible structure, quality over quantity!
2. Take time for questions and discussion
3. The workshop is a first step in a long-term process
4. Focus on understanding, mapping, alignment, collaboration opportunities
5. Open discussion + all contribute
6. Not committing anyone to anything re implementation
7. Safe space to express views or concerns

A look at our resources

EXERCISE 1 / Part 1:

Te Uru Kahika alignment and readiness

Priority Central Government Work

- RM Reform: Target and Limits / Natural Built Environment Act
- Environmental Monitoring and Reporting system (EMRS)
- National Policy Statement for Indigenous Biodiversity (NPSIB)
- National Policy Statement for Freshwater Management (NPSFM)
- Science Investment programme
- National Adaption Plan
- Stats NZ Data Investment Plan
- MPI pest management programmes



Exercise 1 / Part 1: Te Uru Kahika alignment

Purpose: Indication of the councils' readiness to meet the M&R expectations in the initiatives identified by central government.

Using "traffic light" coloured dots, individually place a dot on each initiative:

1. Green – yes it aligns with current council practices and councils are generally ready to deliver on expectations
2. Orange – provisionally this could align but readiness is lower, and support is needed
3. Red – there are significant concerns (i.e., there is misalignment and/or systems are very immature, not ready)
4. Yellow - no alignment, considered out of scope for councils

Provide max 4 points against why



Feedback....



Exercise 1 / Part 2: Te Uru Kahika alignment

Purpose: Understand what could be done to help move toward green and what the priorities are

NOTE: Things could be more ready, but less important to advance

Apply the below criteria and capture on flipcharts provided:

1. Looking at orange (and perhaps some red) results from prior exercise, how could alignment and/or readiness be advanced through pilots or other mechanisms (e.g., research, methods development, etc)?
2. Which should we prioritise?
3. Considering green results from the prior exercise, are there some simple steps that would add value to current practice?
4. Considering yellow results (out of scope for councils), do agencies agree?

Feedback....

Exercise 2:

Confirming relevance of the Te Mana o te Taiao Outcome Monitoring Framework (OMF)

Exercise 2 Part 1: Confirming relevance and priorities of the OMF to your SIG

Using MfE OMF and other agencies as reference:

1. Tick (using the column) relevant initiative and corresponding measures
2. Identify whether there are gaps;
 - a) Against your work which hasn't been included
 - b) There's no relevant measure for the work that you're doing

Feedback....

Exercise 2 Part 2: Confirming relevance and priorities of the OMF to your SIG

Prioritise (using the column) those measures for your SIG

- 1 = Slightly important – useful for limited audience or transient initiatives etc – ‘nice to have’ (Performance Improvement)
- 2 = Moderately important – useful to inform planning & operations – ‘preferable to have’ (Performance Improvement)
- 3 = Very important – fundamental to your agency’s strategic and operational success – ‘must have’ (Audit & Performance Improvement)
- 4 = Critically important – non-activation creates significant operational/strategic risks to your agency – ‘should have it now’ (Audit & Performance Improvement)
- 5 = Required to do by legislation

Feedback....

**Pause for discussion
around what hasn't or
needs to be addressed**

**Implementation and
ongoing Collaboration**

Ongoing implementation & Collaboration

Implementation of monitoring and reporting:

1. What's already being done and do you need more support?
2. What is under development and how do we support ANZBS OMF implementation?
3. What's already being done to support engagement with stakeholder groups and Iwi?
4. What is under development or needs to be with regards to engagement and how do we support ANZBS OMF Implementation?
5. Next steps for specific pilot opportunities?

Let us know:

1. How do we best sustain collaboration with this group
2. What barriers are there to overcome, between your groups and councils, and inside your organisations
3. What do you need (tools, mandate) to support the prioritisation of this collaborative work internally/externally

Let us know risks or potential issues against the below areas for us to consider and apply in the synthesis report and Project Register:

1. Organisation
2. Project
3. Priority associated stakeholders

Feedback....

Ongoing Collaboration & risks

Let us know:

1. How do we best sustain collaboration with this group
2. What barriers are there to overcome, between your groups and councils, and inside your organisations
3. What do you need (tools, mandate) to support the prioritisation of this collaborative work internally/externally

Let us know risks or potential issues against the below areas for us to consider and apply in the synthesis report and Project Register:

1. Organisation
2. Project
3. Priority associated stakeholders

Feedback....

Questions/thoughts

**Te Mana o te Taiao
Implementation Team
focus and pathway**



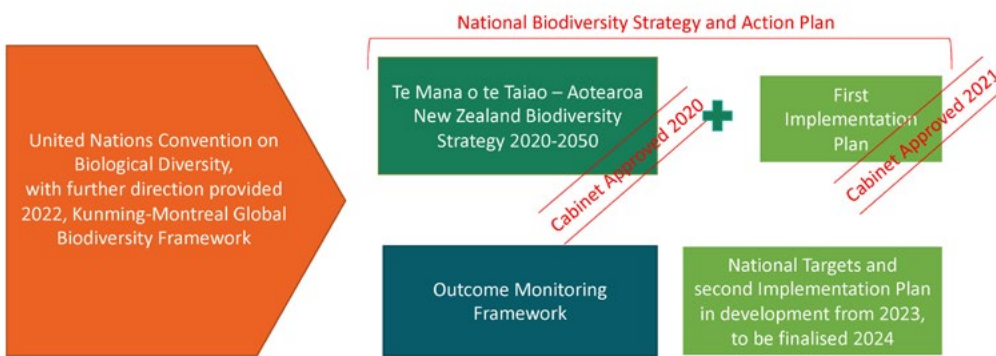
The Kunming-Montreal Global Biodiversity Framework (GBF)



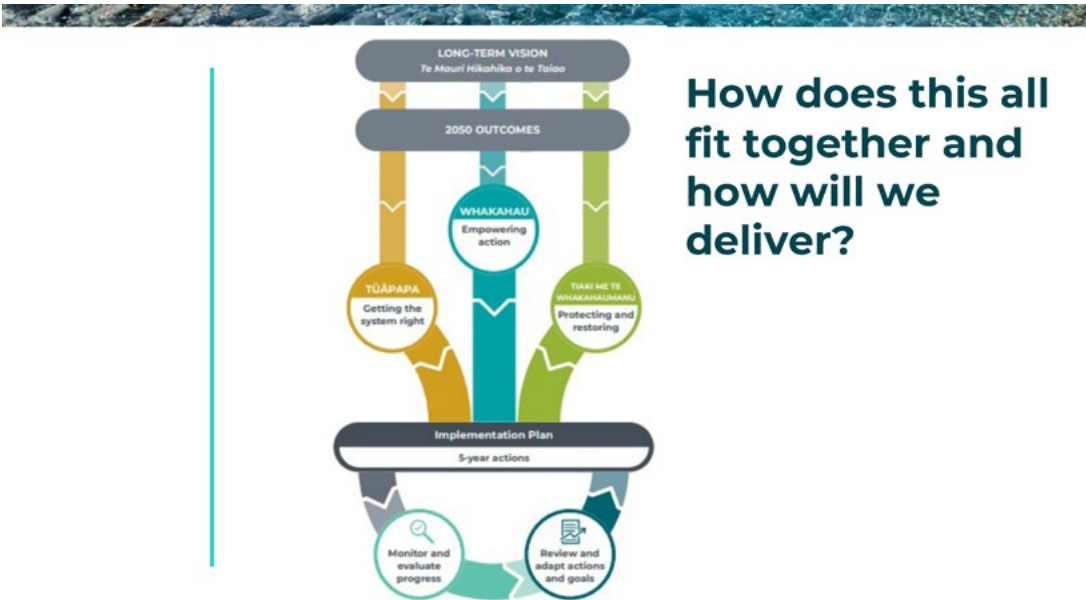
2020 UN BIODIVERSITY CONFERENCE
 COP 15 - CP/MOP 10 - NP/MOP 4
 Ecological Civilization Building a Shared Future for All Life on Earth
 KUNMING - MONTREAL

- 23 action-oriented global targets for urgent action over the decade to 2030.
- Includes the “30x30” commitment to protect 30% of the planet by 2030 (Target 3 – Protected Areas)
- As a party to the CBD, New Zealand is required to have a **national biodiversity strategy and action plan (NBSAP)**;

DOC resourcing as all of Government lead



The mauri of nature is vibrant and vigorous

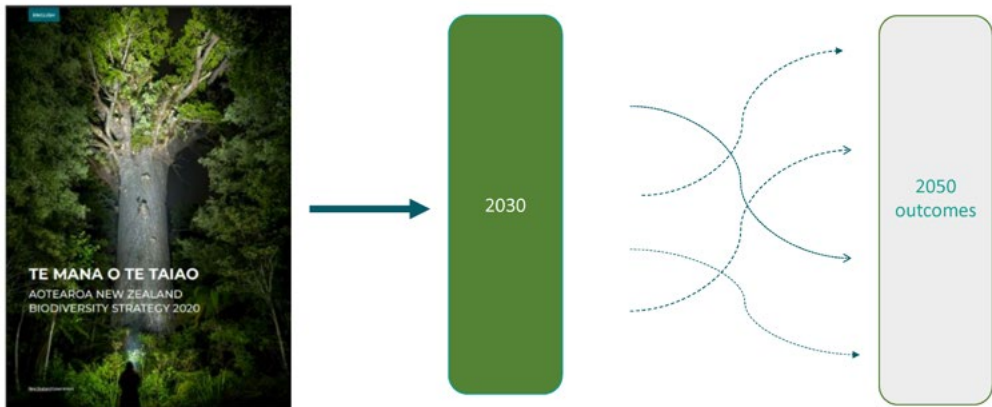


- **Implementation Plan 2022**
- Launched in April 2022 by the Minister of Conservation.
- Limited to stocktake of actions underway by central and local government.
- In June 2022 we undertook a review of progress against IP22 actions. This showed that 88 % of the actions were ongoing.

Where to from here?



Government priorities for inclusion in Implementation plan 2024



Our Plan and Process



Other Implementation work: governance/oversight arrangements, progress reporting, engagement

Overall project next steps

Next steps and timings

- **May/Early June:** Input from today and central government workshops will inform a final ANZBS OMF recommendations report, with validation from all attendees
- **End June:** DOC will seek endorsement of this report from senior leaders across our organisations
- Kevin will remain the point of contact in coordinating this work until the end of this Financial Year
- **From July 2023:** Pending endorsement of the OMF and confirmation of DOC internal funding, we will continue collective work together to align M&R design and implementation of the framework

Final questions...

Final reflections

Close and Karakia

Ngā mihi nui



Coastal Special Interest Group – Eleanor Gee and Hamish Allen

Note: The CSIG doesn't actually conduct any monitoring or reporting, rather we work together to achieve more unified and effective monitoring. Specific monitoring and reporting are undertaken by individual RCs, so in general there was some confusion in how to answer these questions.

1. What's working well for your SIG in relation to monitoring and reporting?

- Increasing attention being given to health of estuaries and the coast as indicated by a new healthy estuary module on LAWA.
- Planning for estuarine health attributes in the proposed national planning framework. This provides opportunities for resourcing and driving consistency across our coastal monitoring and reporting practices.
- Development of monitoring protocols and tools (Seagrass monitoring, macroinvertebrate id etc).

2. What are the main purposes of the monitoring done by your SIG?

- Main purpose is for state of the environment (TMOTT Goal 10.1.1).
- Monitor to assess policy effectiveness (regional plans, RMA, NZCPS) biodiversity mapping, climate change impacts, and cumulative effects management.
- Information collected will be critical for delivering coastal and estuarine targets and limits through the Natural Built Environment Act and National Planning Framework.
- Used to monitor the stormwater network discharges and the effectiveness of policies and practices aimed at reducing contaminant levels within and between catchments.
- Provides real world ground truthing for models and predictions (i.e., stormwater contaminants).
- Provide evidence for identification of the need for management interventions as required by the New Zealand Coastal Policy Statement (NZCPS) and National Policy Statement for Freshwater Management (NPS-FM).
- Provide evidence for consents.

- Provide evidence for compliance activities.
- Provide information to the public and to increase the knowledge base and promote awareness of regional coastal and estuarine issues and their subsequent management.
- Human health monitoring of beach water quality.

3. How has your SIG developed NEMS and data management practices to enable putting indicators up on LAWA?

- NEMS developed for saline WQ (others under development such as marine sediment sampling and analysis).
- Indicators on LAWA (estuaries; metals, mud, macroinvertebrates coming) not yet for sediment quality except for old NEMP which is about to be updated. But no formal cross-RC data management practices.
- Indicators were chosen for LAWA based on being nationally useful and having existing data available. Also had to have measures of pressure and state. Indicators were also selected for general consistency of methods of collection.
- Not for habitat mapping methods, habitat classification or even defining habitats of significance and I think this is a big opportunity that could come from implementing TMoTT Goal 10.4.1. – RCs are waiting on DOC's CMECS (Coastal and Marine Ecological Classification Standard) work in this space. RCs have been engaged and supportive of development in this area.

4. What are the most important SIG-specific questions you would like to address?

The CSIG has a document that outlines gaps in our knowledge and research needs. This is a detailed report that outlines four main goals and the research needs to achieve them (see goals below for detail). Briefly the goals are:

- 1)** Integrate mātauranga Māori and kaitiakitanga into state of the environment.
- 2)** Achieve national consistency in coastal monitoring and reporting.
- 3)** Understand how the marine environment and associated organisms and habitats

respond to various stressors (both natural and anthropogenic).

- 4) Understand climate change and how that will affect coastal areas.

In addition, see specific research needed for estuaries from 2021 workshop.

5. How could TMOTT or collaborating agencies help your SIG or councils generally?

- Drive consistency in monitoring – co-design between central and regional government agencies of national indicators.
- Classification of habitats/ecosystems, and reporting on the health of the environment at a range of scales (national, regional, bioregional, catchment, ecosystem).
- Leverage for more resourcing in the sector, e.g., provision of a national data repository, and gap filling in our monitoring networks. Incentivise nationally consistent monitoring and/or reporting.
- Build a stronger connection with central government agencies, ensuring that the CSIG and RC sector is connected consistently.

Workshop outputs

1. Identification of relevant indicators and measures of Te Uru Kahika current work and how that relates to the Te Mana o te Taiao Outcome Monitoring Framework

This varies across councils and is not uniform. Not aware of all existing workstreams nor those that might be planned. See comments in OMF doc for AC work that relates to current indicators.

Core programmes (though they vary greatly across RCs) generally include:

- water or sediment quality monitoring primarily in estuaries but also in open coastal areas (TMOTT/ANZBS Goal 10.1.1)
- substrate and habitat mapping of key biogenic habitats (focus on estuarine saltmarsh and seagrass) (Goal 10.1.1 & 10.4.1)

- sedimentation measurements (Goal 10.1.1)
- marine habitat mapping of coastal habitats to understand extent, condition, and pressures for management and protection (Goal 10.4.1)
- varied investigations following large weather events and to investigate impacts of human activities (Goal 10.1.1 & 10.2.1).

Note: RCs don't monitor species directly but do often take that information as part of SOE monitoring (i.e., benthic ecology).

Note: There have been stocktakes done on what information is collected by RCs in the marine space (for LAWA development and for MFE 'managing upstream' report).

Note: There is overlap between the State of the environment monitoring we do and the information necessary to determine policy effectiveness, but there is a risk of overusing the data or shoe-horning data into an analysis that it was not designed for. This issue was raised in the PCE report on improving environmental reporting data.

2. Prioritisation of monitoring and reporting needs over short, medium and long term

See question 4 above in CSIG responses and 3 below.

3. Identification of gaps and how this aligns with central government initiatives

Research needs identified by CSIG. The five highest scoring research needs were as follows (blue text indicates links with gaps identified in MFE report 'Our Marine Environment 2022'):

1. **Develop nationally consistent frameworks (including determining core parameters and quality assurance) for both regional and spatially targeted monitoring (e.g., estuaries)**
MFE gap = need to develop fit for purpose environmental monitoring and reporting system.
2. **Characterise⁴¹ the CMA by collecting appropriate data for establishing baselines.**

⁴¹ Characterising the CMA includes classifying and mapping habitats and water bodies (e.g., boulder habitat, cobble habitat, river mouth vs tidal lagoon, hydrodynamics and flushing characteristics). Also includes characterising and mapping the CMA within the context of ecosystem services and natural character/cultural values, and vulnerability (risk) to stressors.

MFE gap = improving our understanding of the state of marine habitats and ecosystems, including their extent, condition, and ecological integrity

3. Identify relevant and meaningful indicators to describe the state and condition and assess change over time of the CMA.

MFE = identified indicators (see below).
Four added in 2022.

4. Research environmental thresholds and establishing appropriate and relevant limits and standards for stressors impacting on the CMA, including those derived from land-based activities.

5. Identify the effects of stressors within both a spatial and temporal context. Understand the synergistic and cumulative effects of multiple stressors and develop tools to manage these effects.

MFE identified gap = cumulative pressures

GOAL 1:

Assist councils to integrate mātauranga Māori and kaitiakitanga into state of the environment and biodiversity statutory functions.

MFE gap = improving access to rohe-based and place-based knowledge and evidence to enhance our understanding of localised pressures and impacts & increasing the resourcing, access, and integration of mātauranga Māori within our environmental monitoring and reporting system to reflect te ao Māori perspectives and aspirations

GOAL 2:

Achieve nationally consistent and effective monitoring and reporting to allow for effective management of the CMA.

MFE gap = enhancing the availability of data to monitor and assess the risks faced by key marine species

GOAL 3:

Understand the response of coastal ecosystems to stressors in order to effectively manage the CMA.

GOAL 4:

Understand the regional impacts of climate change and acidification on the CMA to inform decision-making.

6. Future steps to continue building a collaborative approach to monitoring and reporting

Suggested specific marine workshops with DOC, MPI, Regional Council and MfE.

Note: RCs only have jurisdiction out to 12 nautical miles (territorial sea), and most of the monitoring happens in the near shore, beyond that is largely a gap (MPI monitor fish).

Environmental Monitoring and Reporting – Abi Loughnan

EMAR isn't a SIG as such, rather the Environmental Monitoring and Reporting Framework initiative, which is a collaboration across Councils (Te Uru Kahika, DOC, MfE, Stats NZ and Cawthron). The overall purpose is to gain national consistency in data collection (through NEMS), regional/national monitoring networks, data management (EDMS) and reporting (LAWA and national reporting channels). It covers a range of domains, spanning water quality, water quantity, air, land, coastal, and biodiversity.

1. What's working well for your 'SIG' in relation to monitoring and reporting?

- Clarity on indicators that are required to be monitored, and for what purpose.
- Where there is consistency / best practise guidelines for:
 - Monitoring indicators (both the how,(e.g., NEMS), and the where – monitoring networks)
 - managing and storing data, and
 - reporting / turning the data into information.
- When indicators are meaningful at national / regional and local scales
- When any new indicators have been well considered (clarity on what questions we are answering from collecting the indicator),
- Where there is good lead in time for any new indicators to allows collection methods (e.g., NEMS), systems to store the data, and methods to report on the findings to be developed.
- When there is collaboration (and

coordination) between the agencies working to address issues and gaps (and reduce duplication of effort).

- When there is adequate capacity and investment at the right places for agencies involved in the envl monitoring and reporting system (SMEs and \$\$\$)

2. What are the main purposes of the monitoring done by your SIG?

- EMAR – focus on consistency across national / regional environmental monitoring to inform our understanding of the environment and how it has changed over time.
- To enable accessible, high-quality data and information for decision making

3. How has your SIG developed NEMS and data management practices to enable putting indicators up on LAWA?

- Key components of the EMAR project are for project teams (usually led by a lead council or SIG) to identify:
 - where NEMS or other national standards are required (with some SMEs in SIGs also support drafting the NEMS),
 - work through data exchange processes (with support of ED SIG members) and
 - work through the analyses and reporting methods for LAWA and national reporting purposes E.g., EMAR Land team developed land cover categories for LAWA that have also been adopted for National Reporting. Water quality teams develop state and trend methods / work to align methods. Presenting data and information on LAWA takes into account what data are nationally collected, end users, including supporting community needs for information at local levels (e.g., Can I swim at my local river, lake or beach).

4. What are the most important SIG-specific questions you would like to address?

- What are the suite of indicators are meaningful at international/national/regional and local scales

- What do the national/regional monitoring networks for biodiversity indicators look like
- Knowing what questions can be answered by what indicators at what scales
- Resourcing of data collection, data management and reporting – a process to guide who does what / who pays for what.

5. How could TMOTT or collaborating agencies help your SIG or councils generally?

- Collaborative – key for agencies with a role in biodiversity monitoring and reporting to work together
- Ensure resourcing framework in place for agencies involved in the monitoring and reporting system.
- Ensure we minimise duplication of efforts.

Work for the benefit of NZ inc.

Land Monitoring Forum (LMF)

SIG responses

Matthew Taylor and Haydon Jones

8 May 2023

1. What's working well for your SIG in relation to monitoring and reporting?

- Near nationwide reporting of soil quality and trace elements (supported by a NEMS).
- Nationwide reporting of land cover on LAWA.
- Scale: data able to be amalgamated up to national reporting (Stats NZ/MfE) or reported at regional scale.

2. What are the main purposes of the monitoring done by your SIG?

- State of the Environment reporting:
 - State of soil quality and soil quality changes identified.
 - Database developed.
 - Early-warning system provided.

3. How has your SIG developed NEMS and data management practices to enable putting indicators up on LAWA?

- Proposed, championed, supported, and

informed development of the NEMS for soil quality and trace element monitoring and the NEMS for Suspended Sediment Monitoring (e.g., contributed to technical panel designing this NEMS).

- Non-novel research that underpins environmental monitoring.
- Add weight to support for ongoing funding of regular LCDB updates into the future.

4. What are the most important SIG-specific questions you would like to address?

- Database and soil archive support:
 - Each region has its own (variable) database/spreadsheet system.
 - Archiving of soil samples is ad hoc.

5. How could TMOTT or collaborating agencies help your SIG or councils generally?

- An area of common interest with the LMF may be around soil biodiversity:
 - TMOTT could potentially assist with the development of additional biological indicators of soil quality or perhaps even indicators of soil biodiversity?
- Do we need another strategy on environmental monitoring and national reporting?
 - If so, implementation must be supported (e.g., the development of the NZ Cd strategy was followed by the formation of a CMG to implement the strategy).
- Guidance on what RC's need to monitor (prioritisation):
 - Increased environmental awareness of politicians resulting in more questions to councils.
 - Huge number of chemical substances released to the environment by modern life.
- Crossover occurs between environmental and human health but very difficult to get funding.
 - Repeating scientific research to prove the connection and incorporate it into environmental monitoring.

Appendix 6: List of final Outcome Monitoring Framework measures

Note, rewording requested by central government agencies has been incorporated in this table.

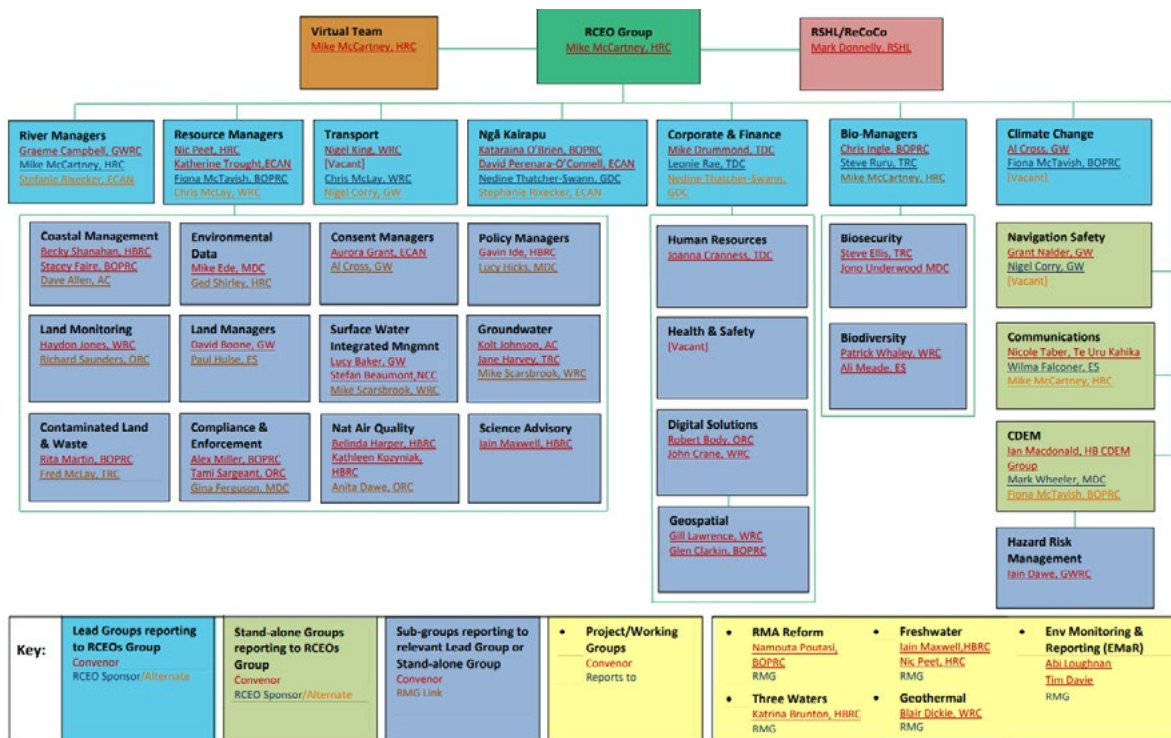
Final Te Mana o te Taiao measures
1.1.1.1 Soil structure and chemistry
1.1.1.2 Soil carbon content
1.1.1.3 Sedimentation and sediment quality
1.1.2.1 Ecosystem primary productivity
1.1.2.2 Lake biological function
1.1.2.3 Waterway biological function
1.1.2.4 Marine biological function
1.1.2.5 Exploited species production
1.1.2.6 Flower and fruit production
1.1.3.1 Freshwater hydrology
1.1.3.2 Catchment water yield and groundwater
1.1.3.3 Ocean regime and temperature
1.1.3.4 Water physiochemical factors
1.1.4.1 Ecosystem fragmentation
1.1.4.2 Habitat availability
1.1.5.1 Mass movement
1.1.5.2 Riverine and coastal alteration
1.1.5.3 Anthropogenic landform and substrate disturbance
1.1.5.4 Extent and impact of fire
1.1.5.5 Toxic blooms
1.1.5.6 Disease and pest outbreaks
1.1.6.1 Land under indigenous vegetation
1.1.6.2 Waterway and lake marginal vegetation
1.1.6.3 Land, waterway and marine transformation
1.2.1.1 Non-nutrient contaminants
1.2.1.2 Toxins in biotic tissues
1.2.1.3 Severely contaminated land and water
1.2.1.4 Marine litter
1.2.1.5 Anthropogenic sound and light
1.3.1.1 Occurrence of populations of invasive non-native species
1.3.2.1 Abundance and distribution of invasive pests and diseases
1.3.2.2 Area free of pests and diseases
1.4.1.1 Status of indigenous taxa
1.4.2.1 Current and predicted trends in the status of threatened and at risk taxa
1.4.2.2 Current and predicted trends in the demographics of threatened and at risk taxa under active management
1.4.3.1 Genetic diversity in relation to conservation status
1.4.3.2 Genetics of taxa under management

Final Te Mana o te Taiao measures
1.5.1.1 Demography of functional groups
1.5.1.2 Representation of functional groups and guilds
1.5.1.3 Abundance and demography of common and widespread taxa
1.5.1.4 Changes in species diversity
1.5.2.1 Natural range occupied
1.6.1.1 Ecosystem extent
1.6.1.2 Proportion of ecosystems protected
1.6.1.3 Change in extent of naturally uncommon and reduced ecosystems
1.6.1.4 Proportion of ecosystems remaining relative to natural extent
1.7.1.1 Climate averages, indices and extreme events
1.7.2.1 Biological responses to extreme climate events
1.7.2.2 Phenological response to climatic regime change
1.7.2.3 Range shifts
1.7.2.4 Ecosystems and taxa vulnerable to the adverse effects of climate change
1.8.1.1 Legal hunting and harvesting of indigenous species
1.8.1.2 Illegal hunting and harvesting of indigenous species
1.8.2.1 Legal hunting and harvesting of non-native species and resources
1.8.2.2 Illegal hunting and harvesting of non-native species and resources
1.8.2.3 Illegal movement of non-native species into protected areas
1.8.3.1 Attitudes towards interaction with natural ecosystems
1.8.3.2 Current use natural ecosystems for human health and well-being
1.8.4.1 Nature appreciation
1.8.4.2 Scientific investigations and applications
3.3.1.1 Treaty partners' and others' contributions to outdoor recreational opportunities, facilities and services
3.4.1.1 Total economic benefits to communities (national, region, district, township) from outdoor leisure and recreational activity
3.4.2.1 Contribution to improved public health from people recreating outdoors
3.4.2.2 Contribution to national, group and cultural identity and social cohesion from people recreating outdoors
3.4.2.4 Contribution to environmental awareness and understanding from people recreating outdoors
3.5.1.1 Effects of outdoor recreation on natural heritage values: water quality; ecosystems; species; landscapes; etc
4.1.1.1 Public awareness and understanding of importance of biodiversity and biosecurity for prosperity
4.1.1.2 Connectedness to, relevance and importance of biodiversity to individual New Zealanders
4.1.2.3 Co-design of biodiversity and biosecurity information and educational material with mana whenua
4.1.3.1 Contribution by government agencies, Treaty partners and others to biodiversity and biosecurity awareness and engagement from communication and education activities and resources
4.2.1.1 Quality of relationships between government agencies, Treaty partners and others
4.2.1.3 Government agencies' processes, practices and procedures are focused and user friendly for Treaty partners and others
4.2.1.5 Government agencies, Treaty partners and others comply with terms of agreements and concessions, regulations and other statutory and industry and sector obligations
4.2.1.6 Government agencies', Treaty partners' and others' return on investment from their investment in biodiversity
4.2.2.1 Assessment of Treaty partners' and others' capability and capacity
4.2.2.2 Government agencies', Treaty partners' and others' support of capability and capacity development
4.2.4.1 Profile of social and environmental funds managed by government agencies, Treaty partners and others
4.2.4.2 Biodiversity outcomes from fund-supported activity
4.2.4.3 Improved awareness of, and access to, social and environmental information
4.3.1.1 Treaty partners are satisfied that government agencies are meeting their obligations of good faith, reciprocity and reasonableness

Final Te Mana o te Taiao measures

4.3.2.1 Treaty partners are satisfied that their rangatiratanga over their taonga has been enhanced by government agencies and others
4.3.2.2 Treaty partners, government agencies and others identify and protect taonga
4.3.2.3 Treaty partners are satisfied that protection of taonga is improving
4.3.3.1 Government agencies, Treaty partners and others engage to arrive at informed decisions
4.3.3.2 Treaty partners are satisfied with the quality of engagement for the purpose of informed decision-making
4.3.3.3 Treaty partners are satisfied government agencies are including tangata whenua views in their decision-making
4.4.1.1 New Zealanders and New Zealand organisations regard investment in biodiversity and biosecurity as essential to New Zealand's prosperity and brand
4.4.2.1 Government agencies' provision of data and tools support natural resource sector assessment of natural capital
4.4.3.1 Government agencies', Treaty partners' and others' submissions and advice on biodiversity issues and their outcomes
4.4.4.1 Analysis and estimate of benefits to Treaty partners and communities (national, region, district, township) from biodiversity operations and associated business activity

Appendix 7: Regional council special interest group structure



Note: AC = Auckland Council; BOPRC = Bay of Plenty Regional Council; CDEM = Civil Defence Emergency Management; ECAN = Environment Canterbury; ES = Environment Southland; GDC = Gisborne District Council; GW = Greater Wellington; GWRC = Greater Wellington Regional Council; HB CDEM = Hawke's Bay Civil Defence Emergency Management; HBRC = Hawke's Bay Regional Council; HRC = Horizons Regional Council; MDC = Masterton District Council; NCC = Nelson City Council; ORC = Otago Regional Council; RCEO = Regional Chief Executive Officer; ReCoCo = Regional Council Collaboration (It is a program that encourages collaboration between regional councils and unitary authorities <https://rshl.co.nz/#:~:text=ReCoCo%20promotes%2Fsupports%2Ffacilitates%20collaboration,acronym%20for%20Regional%20Council%20Collaboration.>); RMA = Resource Management Act 1991; RMG = Resource Managers Group; RSHL = Regional Software Holdings <https://rshl.co.nz/>; TDC = Tasman District Council; TRC = Taranaki Regional Council; WRC = Waikato Regional Council.

Appendix 8: March workshop presentation to interagency reference group



Te Mana o Te Taiao *Aotearoa New Zealand Biodiversity Strategy*

Monitoring and Reporting (M&R)
RG Workshops March 2023

Venue health & safety

**Karakia /
Whakawhanaungatanga**

He Awa Whiria

An explicitly bicultural approach to protecting, restoring, and enhancing biodiversity

- Te Mana o te Taiao Outcome 4: *Treaty partners, whānau, hapū and iwi are exercising their full role as rangatira and kaitiaki.*
- Requires kaupapa Māori monitoring and reporting, elevating mātauranga.
- Requires parallel work by kawangatanga and Iwi/Māori
- This work represents the government framework, wider work is underway in the Mātauranga Māori



Purpose

1. Working with agencies to finalise the Outcome Monitoring Framework (OMF), prioritise indicators and measures for investment and identify potential pathways for implementation
2. Validate and finalise the Regional Council workshop approach, participation and next steps

Outputs

1. Finalised central gov interagency Te Mana o te Taiao OMF
2. OMF indicator and measure agency alignment and gaps
3. Prioritised indicator and measure areas for potential investment
4. Identified potential monitoring and reporting system pilot opportunities
5. OMF draft implementation pathways
6. Risk register for the Reference Group
7. Steps to continue collaboration beyond FY22/23
8. Finalised Regional Council workshop approach and clear accountabilities & next steps

Agenda

Update and context
from DOC hub team

Exercise: Clarifying
our glossary

AM FOCUS

WORKSHOP:
Agreeing OMF
priority content
based on feedback

PM FOCUS

WORKSHOPS:
1. Pilot & potential
implementation
pathways, risk
register
2. RC Workshop

AOB, reflections
+
Next Steps

Update and context from DOC hub team

Principles for today

1. We've got a structure for the day but must be fluid, quality over quantity!
2. Focus remains on mapping and alignment
3. Must uncover path and priorities together, open discussion + all contribute
4. Not committing to Implementation, it's about shared areas of interest and working for and with each other
5. Parking space for; Glossary, Risks, ways of working, Implementation Plan 24
6. Capture everything on flip chart paper!
7. It's gnarly, there's a huge opportunity....this should still be fun 😊

Exercise: Finalising our glossary

This is a priority at the start, so we're using the same language throughout the day

1. Where are there potential misrepresentations or conflicts against your work the way you use these core terms
2. What's missing
3. What needs to change

Term	TMOTT Context	CBD terms	Description
OUTCOME MONITORING FRAMEWORK		N/A	A hierarchical structure that makes an explicit link between Te Mana o te Taiao outcomes, intermediate outcomes, and objectives to specific monitoring objective(s) to track progress, each of which is supported by indicators and measures that assess performance.
OUTCOME	2050 Outcomes	2050 CBD Goals A–D	Description of a future state that contributes to achieving the vision of the strategy at or before its final date
INTERMEDIATE OUTCOME	Bullets underneath each outcome	None	Critical components of Outcomes against which progress will be evaluated
MONITORING OBJECTIVE			Critical components to be measured that link directly to Te Mana o te Taiao objectives.
INDICATOR			An individual qualitative or quantitative parameter (or a set of them) that can be used to inform a monitoring objective.
MEASURE			An individual assessment of attributes (or a set of them) with defined methodology and source of information that inform an indicator.
DATA ELEMENT			The data that support a measure. Some measures are specific enough that the level of data element is not needed.
INDICATOR or ASSESSMENT TEMPLATES			Defines each monitoring objective, its attendant indicator(s) with a defence of them; and a list of measures. The measures section includes a description with an overview about why the measure is important, data elements, Scale, measurement and reporting frequency, Data sources, Information Management; the Analysis section covers an assessment against agreed criteria – policy/management relevance; Conceptual basis and robustness; Compatibility with other agencies; Links to other indicators and measures; Implementation and cost.

Relational database update

Still a work in progress....

Questions...

(Lets get ready to rumble!)

AM Workshop

Finalising a OMF structure



Resources

1. Your latest feedback
2. Relational Database pivot by measure highlighting connected work
3. Flipchart pads, pens and post-its
4. Existing Indicator and measure templates

AM exercises



We'll take a break when we need....sing out if you're gasping for a cuppa!

1. Prioritisation of indicators and measures

Ahead of prioritisation, validate that the work applies to each of the objectives listed against IO 1.3

Purpose: In an ideal world which indicators and measures MUST/may be activated (implemented). Blue Sky! Based on what you've provided, what we've highlight and this workshop, it's an initial read for continued refinement/discussion

At an organisational or branch level apply this scale

- 1 = Slightly important – useful for limited audience or transient initiatives etc – 'nice to have' (Performance Improvement)
- 2 = Moderately important – useful to inform planning & operations – 'preferable to have' (Performance Improvement)
- 3 = Very important – fundamental to your agency's strategic and operational success – 'must have' (Audit & Performance Improvement)
- 4 = Critically important – non-activation creates significant operational/strategic risks to your agency – 'should have it now' (Audit & Performance Improvement)

2. Readiness of Indicators & Measures

1. **In use:** We have indicator and measure templates & protocols ready and no current impediments
2. **In-use; inconsistent at agency level:** full assessment template exists but M&R activity inconsistent and effort required to align. Also, often implemented at small scales so need to be tested if scaling up
3. **Assessment template specified - not widely used:** R&D has been used to develop but no-one has taken it up, i.e the ones for Regional councils
4. **No consistent agreement on the measures:** The template has agreed content for what could be measured but has not been validated, requires process to confirm incl R&D
5. **No assessment template/development required:** Measure is only a stated ambition, needs R&D
6. **Unknown:** We haven't developed the templates but it may exist somewhere (CRI, Uni, Iwi), also lack the expertise without Māori participation to develop
7. **Gap:** The indicator and measure does not currently exist and needs to be developed

Relating to 4, 5, 6 and 7: Who else would need to be involved to develop? CRI's, social agencies

3. CURRENT STATE:

Investment in associated work + scale and inference

Investment

1. Does your work include funding for Monitoring and Reporting activity on Outcomes of ANZBS?
2. Are you working to existing indicators and measures that can we align back to ANZBS OMF?
3. Does it cover FTE or does it also include investment to implement?
4. Is it happening now, what are the timings if not?
5. If it isn't happening and is a priority and funded, why is this?

Scale: *In consideration of each indicator and measure*

1. Regardless of current funding situation, at what scale would the M&R work happen;
 - a) Site specific
 - b) Local: rohe/community/district
 - c) Regional:
 - d) National:

Inference:

1. If collecting locally/at place, would it be used to represent national picture or trends
2. **If no, could/would it useful at national scale**

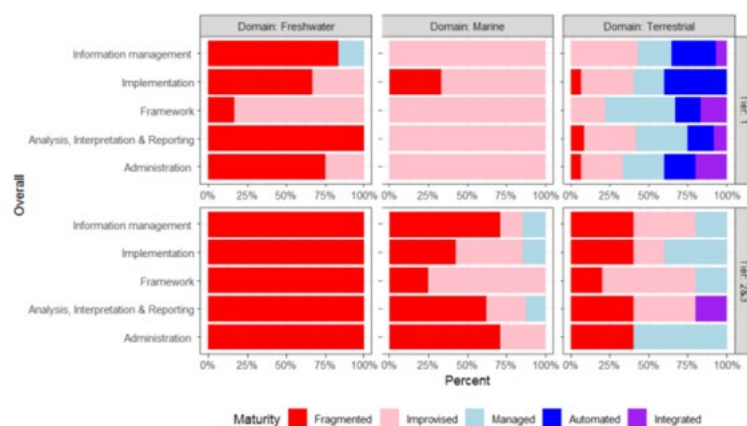
4. System set up: Maturity assessment

If there is work happening what is the system it connects to and what is its maturity

Maturity level	Description	Definition
Fragmented	Management of M&R system components' elements and features is ad hoc and inconsistent.	Fragmented system component management arises in the absence of planning and efforts to ensure consistent management. Components are difficult to access and to use.
Improvised	Management of some M&R system components' elements and features is planned and consistent.	Some system components are managed in a planned and consistent way, and are easy to access and to use. Component management is expert-driven, and in some areas repeatable processes are ensuring that all maturity factors are attended to.
Managed	Management of all M&R system components is consistent.	All system components are managed consistently, and are easy to access and to use. Component management may involve time-consuming manual work. The consistency of component management is measured.
Automated	Tools enable consistent and efficient management of M&R system components.	Tools increase the efficiency of consistent system component management. Components can be consistently accessed and used with little manual work.
Integrated	All systems support consistent and efficient management of M&R system components.	Effective and efficient management of system components is built in to the regular functioning of the entire M&R systems. Data is easily exchanged. Component management and the processes and systems to support it are under ongoing review and improvement.

Maturity of DOCs Monitoring Programmes

Figure 2 – Maturity by domain and tier





What have we not addressed...

1. Do we have a clear prioritisation or does this still need further discussion
2. Have we uncovered any gaps, is there anything we haven't spoken through or that you feel should be included at this stage?
3. Are we feeling comfortable and ready to consider AM exercise about implementation pathway



Lunch / Refuel 😊



Resources

1. Pilot steps and considerations
2. Risks table
3. Key messages
4. Regional Council facilitation guide
5. Flipchart pads, pens and post-its

PM exercises

1. FY23/24 Implementation Pathway

Thinking about where the rubber might hit the road, incl pilots + risks

2. Continuing collaboration

How do we want to work from here? + Review key messages

3. RC Workshop

Finalise the collective approach and agree next steps

Initial Questions to focus thinking

1. Have we agreed where this work connects to the OMF, what indicators and measures (ideally covering social and ecological)?
2. Are the indicators and measures it connects to ready or do we have to take a research based approach to define them first?
3. Is the programme/project/strategy it relates to funded, and does that cover an allocation for monitoring and reporting?

Once you've green lighted the above

1. We need to confirm; the methods, protocols for capturing data, data standards and curation processes, individuals with expertise (skills and knowledge required to document process) to undertake the work and meet standards.
2. Define user requirements: who needs to receive the information to support decisions, reporting products that meet this and business processes required and define review and improvement process
3. What data capture and storage solutions can you prototype for storage and automated reporting

Critical Considerations for Implementation

Enabling foundational factors;

1. governance
2. collaborative engagement
3. investment

Implementation and design steps:

1. Designing an outcome monitoring framework
2. Prioritisation of measures for implementation
3. Designing a monitoring & reporting system
4. Addressing key gaps
5. Business case/plan to build support
6. Core features required to support the system
7. Organisational structure to support implementation
8. Timely delivery & impacts
9. Refinement & review

1. Scoping an FY23/24 Implementation plan

Exercise

Based on conversations so far today and considering internal priorities and live project timings, what is an indicative FY23/24 implementation pathway by quarter

1. Mark up horizontal flipchart page and plot;
 - a) M&R funded projects that will align
 - b) Development work against novel I&M or gaps
 - c) Pilot projects
 - d) Unfunded priorities to address; joint budget bids
2. On a separate flipchart page, capture what the associated organisational, project and/or stakeholder risks associated with this work

Considerations

1. Example: Is there an opportunity to extend the MfE LUCAS and DOC's National Monitoring programme across all of NZ
2. Is there a shared focus in relation to Social or Treaty Partnership areas for implementation

Grab a cuppa and deploy the lollies!

3. Continuing Collaboration

Facilitated discussion

1. What output is going to be most useful for you to sustain engagement/collaboration on this work?
 - a) What vehicle is best for your agencies; DDG discussion paper, MOU, other
2. What mechanisms are most useful for you and your teams to sustain this work? Happy with a continuation of the Ref Group or other option required
 - a) Future consideration for working with Regional Council
3. Can your agencies or teams contribute any technical or wider project resource?
 - a) Business analysts
 - b) Strategic communications



3b. Finalising shared products

1. Glossary
2. Shared risks table
3. Key messages



4. Regional Council workshop

TT: lead discussion through the facilitation guide. Outputs for this session:

1. Updated Regional Council facilitation guide
2. Agreement on core resources for workshop, what does the OMF look like
3. Agreed priority work from central gov
4. Who from your agencies needs to attend
5. Agreed content for each agency to develop ahead of meeting for day 1
6. Review scheduled sessions to continue collective planning and development:
 - a) Friday 31st March 9-10 AM
 - b) Wednesday 5th April 4-5 PM
 - c) Monday 8th May 4-5 PM DOC office for final run through



Next steps and final reflections



Outputs

1. Finalised central gov interagency Te Mana o te Taiao OMF
2. OMF indicator and measure agency alignment and gaps
3. Prioritised indicator and measure areas for potential interagency investment
4. Identified potential monitoring and reporting system pilot opportunities
5. OMF draft implementation pathways
6. Risk register for the Reference Group
7. Steps to continue collaboration beyond FY22/23
8. Finalised Regional Council workshop approach and clear accountabilities & next steps



Next steps

1. DOC team to synthesise outputs/conversations from Ref Group workshops
2. All to continue planning for Regional Council workshops
3. Based on point 2, agencies provide additional agency reps for core work
4. DOC to hold pen on developing agreed products to sustain and support ongoing interagency collaboration, all to collectively review
5. Based on workshop input, DOC team to finalise and circulate shared; Glossary, Risk table and key messages



Final Reflections:
How are you feeling about the road ahead?



Close and Karakia

Ngā mihi nui

