INDICATORS FOR CULTURAL RESOURCES

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(TE ARAWA, NGĀTI TŪWHARETOA, NGĀTI RAUKAWA)

In 1998 A Māori advisory panel was asked to provide a concept and definition of a Māori environmental performance indicator. The following definition was given:

A Māori Environmental Performance Indicator (MEPI) is a tohu created and configured by Māori to gauge, measure or indicate change in an environmental locality. A Māori EPI leads a Māori community towards and sustains a vision and a set of environmental goals defined by that community.

Indicators help to understand the health and wellbeing of cultural resources within our repo (wetlands). They are also used for monitoring and detecting changes over time. If the changes are negative, i.e. a downward trend in indicator health, this signals remedial actions need to be taken, preferably at the earliest opportunity. On the other hand, positive changes reflect improvements in the state of the indicator, which may be a result of restoration activities centred on the cultural resource or the wider repo.

This section of the handbook defines cultural indicators and outlines their importance in managing and restoring cultural resources in our repo. It provides a snapshot of some of the wetland species, and some traditional practices or cultural indicators that have been identified as important components of a broader monitoring tool-kit from the perspective of authors. It is important to recognise that these are relevant to specific kaitiaki (guardians), whānau (families), marae (Māori social and cultural centre), hapū (subtribes), iwi (tribes), and rohe (districts), and should not be taken as the only indicators of importance to tangata whenua (indigenous people). However, they provide a useful set from which a conversation can start between tangata whenua and others interested in wetland rehabilitation and restoration across the motu (country).

Culturally significant plants in wetland. Photo: Monica Peters

WHAT IS AN INDICATOR?

An Indicator is essentially something that can be measured or monitored spatially and through time to show an explicit change or trend and tell us something about what is happening in the environment. Indicators can be developed from ecosystems, habitats, sites, species, or organisms and collectively help us explain and understand the whole system. When collected at regular intervals (e.g. years) indicators can show a trend or pattern in a certain direction. Depending on perspective, a change could be positive or negative – a negative change for example being something harmful or damaging to an organism or ecosystem. Monitoring of indicators, which can be made through measures, observations, or descriptions, give quantitative (numerical data) and qualitative (verbal data) information that can help our understanding of the broader health and wellbeing of the environment or systems we want to protect and manage.

Indicators can also provide information to help determine a response or intervention to sustain or enhance health and wellbeing. Some organisms are called 'proxy' or 'keystone' indicator species; in other words, they are sensitive enough to detect and show small incremental changes and therefore become signals or early warning signs of environmental change. By developing a narrative (or measure) about the health and wellbeing of indicators and their interconnections and interdependencies in the system, a wider whakapapa (connections) can be constructed (e.g. providing links and interdependencies between all the organisms in a natural ecosystem). Matamata (whitebait) provides a good example. By measuring and evaluating the health of matamata and its habitat through time, and understanding its whakapapa, we can build a bigger picture of the overall health and wellbeing of the state of repo and associated habitats to support and sustain matamata into the future.

In the case of repo, a monitoring programme can be developed using ecologically or culturally significant flora (plant) and fauna (animal) indicators (e.g. taonga species) alongside key introduced plant and animal species that compete with or impact on those important species and habitats we value and wish to maintain. Examples of pests may include invasive weedy plants, pest fish, and mammalian predators such as mustelids and feral cats. By better understanding the patterns, movements, and densities of unwanted species, we can develop more effective techniques to restore the habitats, species, and systems we want to value and enhance.

Māori have monitored their environment for centuries to assess natural resources as a basis for sustenance and wellbeing. Using their in-depth knowledge systems (mātauranga Māori), strengthened through a close interdependent relationship with the environment, they were able to detect subtle changes in resource availability and condition to help manage resources. Traditionally, Māori used the term 'tohu' (i.e. a sign, marker, pou (post)) to indicate a signal or direction of change, often using specialist or expert knowledge (e.g. tohunga) used to manage resources.

4.1 Wātakirihi/Watercress

4.2 Kuta/Giant spike rush

4.3 Harakeke/NZ Flax

WHAT IS A CULTURAL INDICATOR?

The term 'cultural indicator' (which can also include 'cultural health indicators') has only emerged in the last 20–30 years. A cultural indicator therefore can be a marker or signpost for local Māori, and needs to be a relevant and meaningful indicator or tohu that can be used to show change within the context of both Māori values and the wider system. Collectively, cultural indicators should be used to understand the overall state of health and wellbeing of resources of the specific environment or ecosystem (e.g. repo) being managed. Cultural indicators should therefore be developed from localised knowledge, in collaboration with whānau, marae, hapū, iwi, and kaitiaki communities to make them relevant and connected.

For example, indicators based on local community knowledge could include assessing or monitoring the harvest levels of specific taonga species such as; native plants – wātakirihi (watercress), kuta (giant spike sedge), and harakeke (New Zealand flax); fish – matamata (whitebait) and kōura (freshwater crayfish); birds – ruru (morepork) and kawau (shags); and invertebrates – noke (earthworms). The change of harvest in quantity and condition over time can detect a change in the state of the resource. These specific, locally derived indicators are incredibly valuable for a number of reasons:

1. Cultural indicators originate from Te Ao Māori or a Māori world view (belief system), which provides a Māori epistemology (study of knowledge) of source, origin, knowledge, and application. That is, the indicators are generally linked back through generations and whakapapa (genealogy) to Papatūānuku (Earth mother) and Rangi-nui (God of the sky) through important Atua (God, deities) such as Tāne Mahuta (God of forests and birds), Tangaroa (God of sea and fish), Haumiatiketike (God of fernroot and uncultivated food), Tāwhirimatea (God of winds), Rongo mā Tāne (God of kūmara and cultivated food), and Tūmatauenga (God of war). They therefore reflect important Māori values, including rangatiratanga (rights to exercise authority), kaitiakitanga (exercise of guardianship), whakapapa, wairuatanga (spirituality), mauri (life force), and tapu (sacred). Values also define the tikanga (values and practices) and kawa (protocols) for local area restoration, planning and management of resources.

2. Cultural indicators are often founded on generations (e.g. hundreds of years, 1 generation equates to 25 years) of mātauranga Māori (traditional, historic, and contemporary local Māori knowledge), largely built from inter-generational knowledge, technology, relationships, experience, and a long interaction and use with certain resources, species, and organisms and the habitats and ecosystems to which they belong to and which sustain them.

5.1 Noke/Earthworms

5.2 Kōura/Freshwater crayfish

5.3 Ruru/Morepork

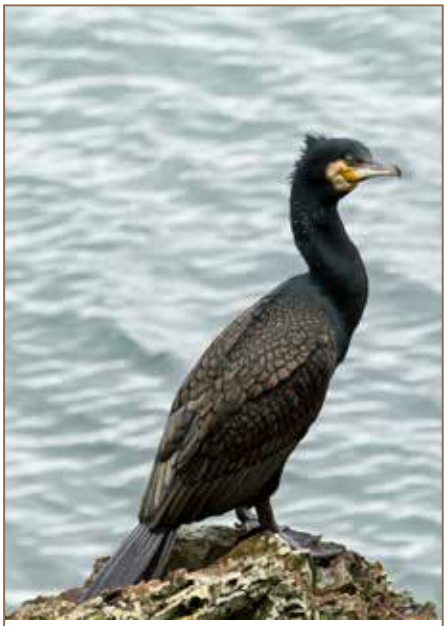
3. Cultural indicators have local context and meaning. Indicators are derived from local knowledge and developed from long-term relationships within specific areas giving important meaning and relevance to whānau, marae, hapū, iwi, and kaitiaki communities. This strengthens and maintains the reo (language) for a community around resources, species, customary use, and the management of resources. This means local knowledge is specific and understood and explicit within a local context of interactions between tangata whenua and the resource or species. Indicators are therefore locally important for resource management, and can indicate change, or trends over time, such as changes in harvest and resource condition.

4. Cultural indicators represent important Māori values, such as iconic, or taonga species that are valued highly by local communities. This local knowledge is critical when planning a restoration or rehabilitation project to protect and manage these taonga values (e.g. wātakirihi, kuta, harakeke, matamata, kōura, ruru, kawau, noke) in order to sustain the ecosystem, habitat, species, and organisms.

5. They provide the tikanga and kawa (values, customary practice), regulations (ritenga, tapu, noa), and rules to carry out customary use of resources, and define, in a local context, the practices associated with use and management of the resource. They also, through generations of knowledge, provide the methods by which that interaction with the resource can be applied (e.g. through tikanga). In addition to the species of interest, the practices associated can incorporate a range of observations and learnings, such as:
   i the time of flowering of specific native plants as clues to a new seasonal phase; or
   ii observing bird behaviour (or listening for specific bird calls) to gauge the appropriate time for harvesting of valued fruits, seeds or leaves as a direct part of traditional harvesting.

6. Cultural indicators also recognise the significance of, and strengthen rangatiratanga. Most importantly, these types of indicators are selected from local people and communities, and so greater incorporation of these indicators sets is not only an appropriate recognition of the value of that local knowledge and expertise, but, also generates a new level of ownership and community application. Ultimately, personal, on-the-ground experience (which may or may not be coupled with other complementary tools within science and policy) can generate new innovations and techniques that can further improve the way we interact with the systems and taonga species we treasure.

Māori have become increasingly interested in combining mātauranga Māori and locally based indicators with scientific or ecologically based indicators. Current research on cultural monitoring and indicators is exploring improved methods to better incorporate locally relevant approaches and indicators with science-based indicators to include them effectively into regional and district monitoring and planning.



5.4 Kawau/Black shag

5.5 Matamata/Whitebait

Watch this space

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References

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