



STATE OF THE TAKIWĀ

Cultural Monitoring and Reporting
on the Health of our Environment



**A scoping document for developing a culturally based
environmental monitoring and reporting system for Ngāi Tahu**

Prepared by Kaupapa Taiao for ngā Papatipu Rūnanga

Draft – Kahuru/February 2004



Te Rūnanga o NGĀI TAHU

Mō tātou, ā, mō kā uri a muri ake nei

For us and our children after us

Cover Photograph

Collecting Watercress, Waihao, 2002 by Mahana Paerata

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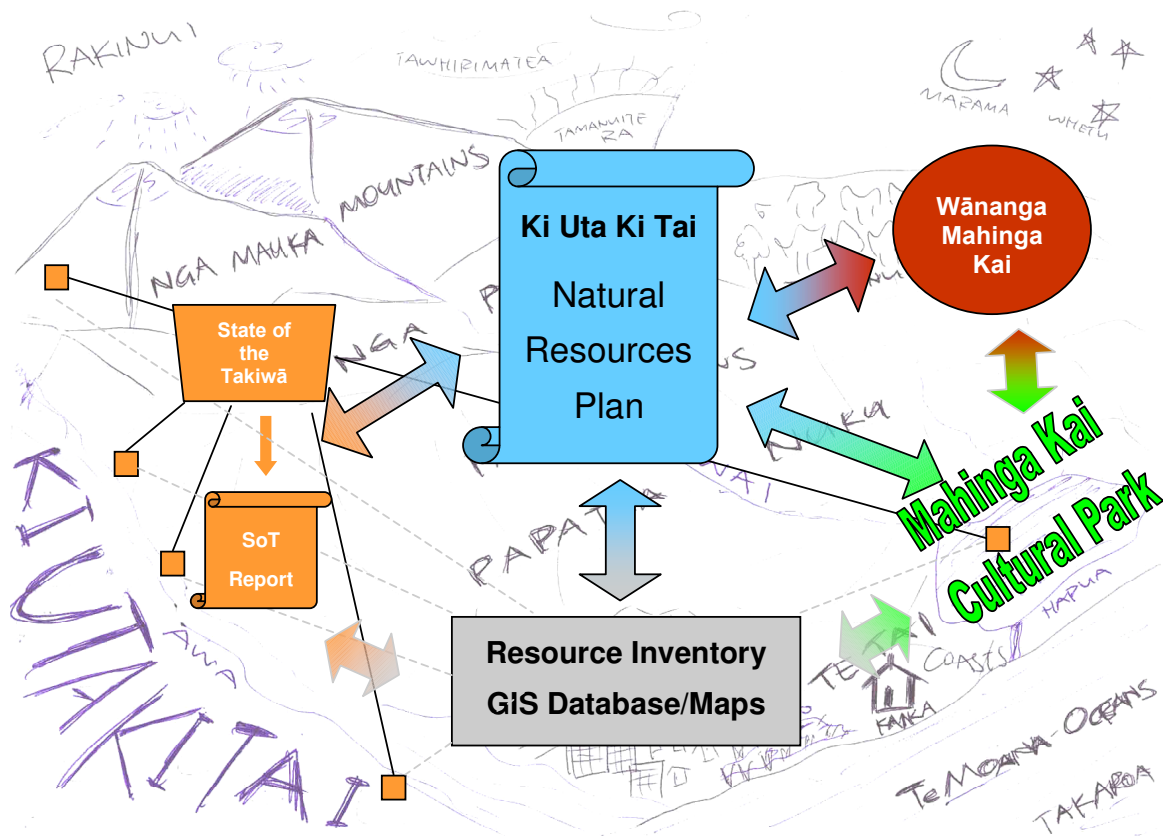
1 Te Whakatuwheratanga - Introduction

This document outlines information about the proposed State of the Takiwā Environmental Monitoring and Reporting system being proposed by Te Rūnanga o Ngāi Tahu under the outcomes set out in Ngāi Tahu 2025.

State of the Takiwā Monitoring and Reporting is just one tool being developed under the 'Ki Uta Ki Tai - Mountains to the Sea Natural Resource Management' framework outlined in the tribal vision, Ngāi Tahu 2025.

It is envisioned that State of the Takiwā or SoT will be used in combination with the other tools, such as Ki Uta Ki Tai Natural Resource Management Plans and Resource Inventories/GIS Information databases to allow Ngāi Tahu Whānui to better manage the natural resources of Te Waipounamu and to ensure Ngāi Tahu cultural values are a fundamental part of this management.

The diagram below shows the five 'Ki Uta Ki Tai' tools being developed and how they relate to one another. A further explanation of the tools is given in the recently drafted document "Ki Uta Ki Tai - Mountains to the Sea Natural Resource Management: A scoping document for developing Mountains to the Sea Natural Resource Management Tools for Ngāi Tahu" produced by Kaupapa Taiao in 2003.



2 What is State of the Takiwā?

In simple terms, ‘State of the Takiwā’ describes a culturally based environmental monitoring and reporting system. It is being proposed by Te Rūnanga o Ngāi Tahu to allow Ngāi Tahu Whānui to be able to assess and report on the cultural health of the natural resources and environment in the Ngāi Tahu Takiwā.

State of the Takiwā is a play on words from the conventional, largely western science based approach to environmental monitoring called ‘State of the Environment Reporting’. The difference of course is that State of the Takiwā is a monitoring approach that will take into account Ngāi Tahu cultural values, such as mauri and mahinga kai.

Ngāi Tahu 2025 defines State of the Takiwā as ‘An environmental monitoring and reporting approach that integrates Mātauranga Māori and Western Science to gather information about the environment and to establish a baseline for the creation of policy and improvement of environmental health. A programme developed as an alternative to conventional state of the environment reporting used by the Ministry for the Environment, that takes into account tangata whenua values’.

2.1 Where does SoT come from?

In 1997, the Ministry for the Environment developed New Zealand’s first State of the Environment Report and since then has funded the development of monitoring indicators (including cultural indicators such as the Cultural Health Index developed by our own Gail Tipa) to assist the continued monitoring of environmental health and effects. Most environmental monitoring is carried out by Regional Councils, such as air and water quality and land management monitoring. Even though tools have been developed and regular monitoring undertaken these tools and activities struggle to include Ngāi Tahu Whānui and/or cultural values in both their monitoring programmes and final reporting.

During the discussions in developing Te Ao Tūroa / The Natural Environment section of Ngāi Tahu 2025, the idea was raised that Ngāi Tahu should develop their own monitoring and reporting programme. The objective behind this idea was to ensure that Ngāi Tahu Whānui could build robust and defensible information about the health of the environment that could in turn be used to assess the effectiveness of both internal Ngāi Tahu policy and practices as well as those of external agencies, including Local Councils (who have statutory responsibilities to do so!).

State of the Takiwā, or SoT for short, was seen as one part of the overall Ki Uta Ki Tai system to be used in conjunction with other tools such as Ki Uta Ki Tai Natural Resource Plans and Resource Inventories. There are also other influences that have been important in the development of State of the Takiwā, these are outlined below:

2.1.1 Mahinga Kai

Mahinga kai customs underpin Ngāi Tahu culture and are central to the relationships of people with places and resources, and to the ongoing cultural, economic, social and spiritual wellbeing of Ngāi Tahu Whānui. Mahinga kai is also the major vehicle for the transfer of traditional knowledge about the natural environment from generation to generation.

Mahinga kai, literally meaning ‘working the food’ refers to the sustainable gathering of food and resources, the places where they are gathered and the practises used in doing so. Along with whakapapa (genealogy), mahinga kai, is the main axle upon which Ngāi Tahu identity with the whenua (land) and moana (sea) revolves.

The gathering of food and resources from the natural environment and the importance of this for Ngāi Tahu culture highlights a significant value that is not so prevalent for regional councils, landowners and the wider community. That is, that ‘direct’ food gathering requires a pristine environment or in other words, by its very nature mahinga kai requires that the natural environment, our rivers, beaches, oceans and forests are ‘good enough to eat off’. And furthermore, it requires that the species that make their home in these places and which we have an interdependent relationship with are maintained and upheld to continue to provide for our people and our manuhiri, now and in the future – *mō tātou, ā, mō kā uri ā muri ake nei* – for us and our children after us.

2.1.2 Mauri, Mana and Manaaki

The major expression of the cultural values upheld within the natural environment is often referred to as mauri. Mauri is a fundamental part of the Ngāi Tahu worldview that needs to be built into any environmental management and monitoring system.

Mauri may be described as the life force, present in all objects living and inanimate, a force that stems from the beginnings and a value that is distinguished by qualities of health, abundance, vitality, the pristine and unpolluted. It is something sacred to Ngāi Tahu whakapapa, a spiritual link in the widest sense, to the past, the present and to the future - the template of influence that maintains our culture with particular values and beliefs. For Ngāi Tahu Whānui, the range of natural resources, species and taonga found within our takiwā are tangible treasures that transcend the generations. The maintenance of the mauri of these resources is as important as the ability of the iwi to continue to survive and to foster healthy offspring.

Mauri is both a physical and metaphysical expression of the state or health and well-being of the natural environment. In this way, there is a strong and important link between environmental and human health that makes it important to maintain the integrity of kai and resources and as a result, the eventual health and wellbeing of our own tinana (bodies). Hence the following whakatauki:

te toto o te tangata, he kai; te oranga o te tangata, he whenua

food supplies the blood of people; their welfare depends on the land

Upholding the mauri of species, habitats, sites and resources is one of the key responsibilities of Ngāi Tahu Whānui as tangata whenua and kaitiaki within Te Waipounamu. Such responsibilities mean that the 'bar' or standard for environmental health is set at a very high level.

The upholding of mauri also has a direct relationship to the ability of an iwi, hapu or whānau to provide manaaki (hospitality) to their manuhiri (visitors) and in turn has an effect on their mana. Hence, if an iwi cannot provide kai (food) to their visitors, due to their surrounding environment being polluted, degraded and unhealthy or if their ability to gather kai is limited, then their mana can be seriously tarnished. In these ways, it is essential that monitoring and management of the natural environment provides for these values.

2.1.3 Mātauranga

Through centuries of observation and the continued practice of mahinga kai customs, Ngāi Tahu Whānui have built a unique body of experience and knowledge that is important for understanding and managing the environment of Te Waipounamu, as well as maintaining its ongoing health and wellbeing.

This knowledge enables Ngāi Tahu to contribute, alongside western science, to the development of tools and processes for ensuring that mauri of the natural environment is maintained and improved.

The knowledge learnt and reinforced from the continued observation and harvesting of important food species and resources also places Ngāi Tahu Whānui in a good position to be able to give an historical account of the changes the natural environment has gone through as well as being the first to notice small changes in particular habitats.

This mātauranga is extremely important to Ngāi Tahu and lays the foundation of Ngāi Tahu identity and wellbeing as it is this knowledge that our tūpuna learnt about the particular ways to survive in the Te Waipounamu environment, while sustaining these resources and passing them on to the current generation.

**Kaua e waiho ki te mähaka harakeke kia uaina e te ua,
kia whitikia e te rā pakapaka, kia puhia e te hau ka motu.
Ekari, waiho ki te mähaka tī, mähaka whitau, kia uaina e te ua,
kia whitikia e te rā pakapaka, kia puhia e te hau, e kore, e motu!!**

*Do not leave it to a snare made from undressed flax to be rained on,
beaten by the sun and blown by the wind,
but instead make it from the tī or the whitau so that it may be rained on,
beaten by the sun, blown by the wind and never be broken!*

2.2 Developing State of the Takiwā

2.2.1 Ngāi Tahu 2025 – Te Ao Tūroa

Ngāi Tahu 2025 is a tribal development map, setting out the desires and aspirations of Ngāi Tahu Whānui covering major environmental, economic, social and cultural outcomes. It also outlines the challenges we have set ourselves in achieving our 25 year vision, which in turn help guide the business plans of particular units within Te Rūnanga o Ngāi Tahu.

Four outcomes from the Te Ao Tūroa section of Ngāi Tahu 2025 encapsulate the overall outcomes to be achieved by developing Ki Uta Ki Tai, and guide the work of Kaupapa Taiao in doing so. These are:

- The abundance of, access to and use of mahinga kai is increased;
- Papatipu Rūnanga have developed to the extent where they are able to meet all their natural resource and environmental management responsibilities;
- All wāhi tapu, mahinga kai & taonga tuku iho are adequately and appropriately protected according to Ngāi Tahu values and interests; and
- Te Rūnanga o Ngāi Tahu fully participates in the decision-making processes of resource management agencies.

2.2.2 Strategy for developing State of the Takiwā

The objectives within Te Ao Tūroa of Ngāi Tahu 2025 outline the major pathway and timelines for creating State of the Takiwā. These are shown below along with the work undertaken so far and planned for the future.

2.2.2.1 Ngāi Tahu 2025 objectives for State of the Takiwā:

- **In the next five years:**

Develop a State of the Takiwā reporting and monitoring programme for Papatipu Rūnanga and Te Rūnanga o Ngāi Tahu.

- **In the next five to twenty five years:**

Implement a tribal Ki Uta Ki Tai environmental management plan and support it with a comprehensive GIS database and monitoring programme.

An annual State of the Takiwā report is produced by Papatipu Rūnanga and reported to Te Rūnanga o Ngāi Tahu.

2.2.2.2 State of the Takiwā work undertaken so far:

- SHMAK Kit wānanga held with all Papatipu Rūnanga in 2001 including presentations by Gail Tipa on cultural health monitoring.
- Presentation by Gail Tipa on the Cultural Health Index given to ngā rūnanga at the December 2002 Ki Uta Ki Tai hui.
- Identification of different monitoring programmes and reports in existence (SHMAK, Cultural Health Index, NIWA Kaimona Kit, Cockle monitoring guide etc) and initial scoping work underway on making the cultural health index available as a tool for monitoring rain fed streams.
- Identification of the potential involvement of rūnanga in an Environment Southland State of the Environment project.

2.2.2.3 State of the Takiwā work 2003/2004

Issues and Options Paper

The first step in getting SoT off the ground is the completion of this draft issues and options document. This has been developed using the feedback from various ngā rūnanga hui over the past few years and draws together the ideas shared into one place.

Objective 1.1 NTD Business Plan 2003/2004

To develop and recommend a “State of the Takiwā” environmental reporting and monitoring system, approved by Te Rūnanga o Ngāi Tahu, for Ngāi Tahu rūnanga.

KPI December 2003

- Meet with Environmental Science and Research (ESR) to develop funding proposal for State of the Takiwā. Send Issues and options paper to Papatipu Rūnanga and introduce idea of funding proposal.

KPI March 2003

- Gain feedback from Rūnanga on issues and options and funding proposal. Work draft into final SoT paper. Progress funding proposal with ESR (if supported by rūnanga).

KPI May 2004

- Send Papatipu Rūnanga a proposed SoT system outline. Discuss funding proposal actions (if funded).

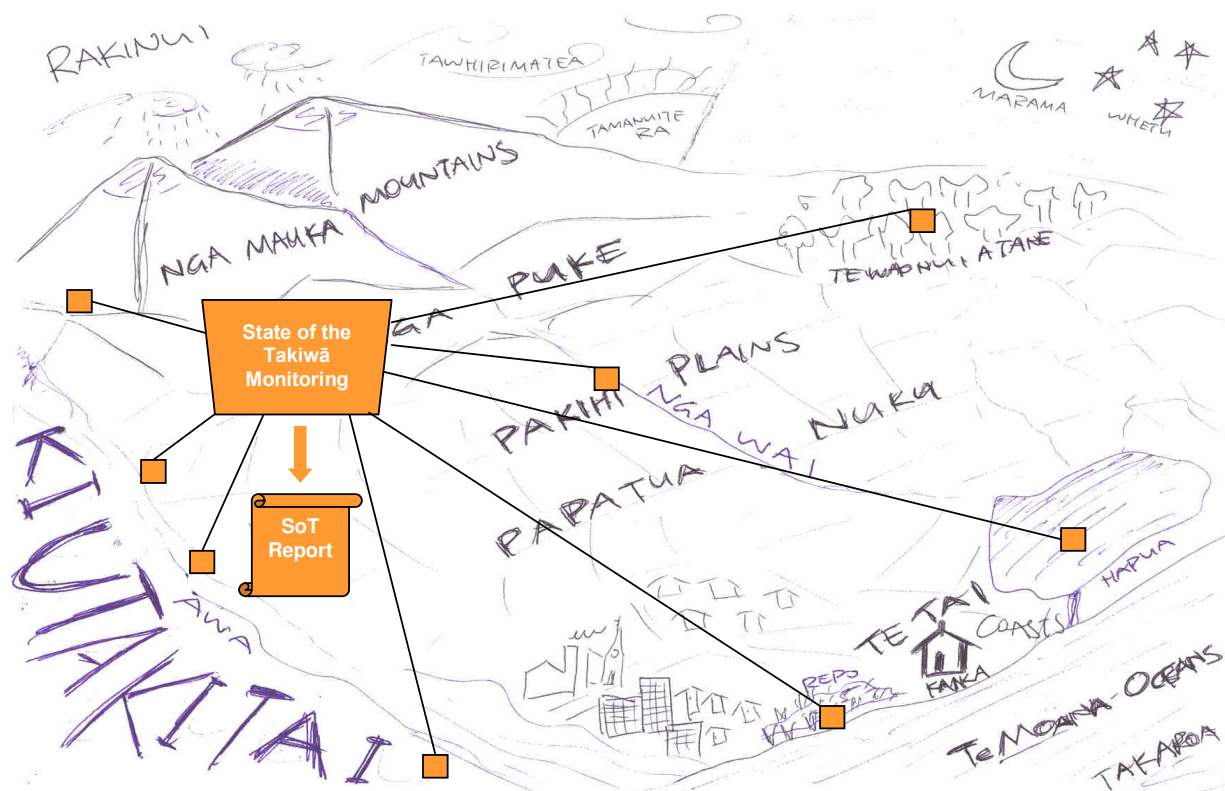
KPI June 2004

- A “State of the Takiwā” environmental reporting and monitoring system has been approved by TRoNT and work begins on implementing funding proposal (if funded).

3 What does SoT involve?

State of the Takiwā in its most simple form is about the gathering of information on the health (or if you like, the mauri or state) of the environment within the takiwā and turning the information collected into databases and reports to help measure the success of, and inform, policy and planning. State of the Takiwā could also make it possible for us to audit the work of key environmental agencies and in particular the monitoring of resource consents and other activities.

The diagram below attempts to illustrate what a State of the Takiwā system could look like when layered over the top of the 'Ki Uta Ki Tai' landscape. The smaller boxes represent possible monitoring sites, which could be nohoanga, tribal properties, tōpuni or other significant sites but may also be complemented by sites monitored by other statutory agencies. Because these sites sit within different ecosystems, such as forests, rivers, lakes, wetlands and/or coastlines, they will require different approaches. The large box represents the bringing together of information and monitoring data from the selected sites into one place. The scroll shaped box represents the potential output from the system, being a State of the Takiwā report.



3.1 Issues for developing State of the Takiwā

3.1.1 Baselines

The first issue in developing a State of the Takiwā system is to gather relevant baseline information. Baseline information gives us a 'standard' by which to compare future results with and to be able to know if the situation is improving or getting worse. For the Ngāi Tahu situation, it is important to gather information on both past (perhaps using an 1840 baseline) and present environmental baselines.

Past baselines will enable us to understand the health of the environment as it was to our tūpuna while present baselines allow us to understand what has happened since. These baselines combined will build a solid picture of current and past environmental health to guide priorities, compare future results as well as allowing us to advocate for improvement in the state of the environment – with the goal of getting it as close as we can to its past or 'potential' health.

Therefore, the clear starting point is for Te Rūnanga and Ngā Rūnanga to gather baseline information on past health by undertaking some sort of '1840' State of the Ngāi Tahu Takiwā report which could include a major 'desktop' research exercise of written records, drawings, paintings, photographs and other information on selected sites. This could then be followed by monitoring exercises at these sites to build the present baseline data.

3.1.2 Sites, Indicators and Tools

The second issue involved in creating a SoT system is to select the appropriate sites to monitor, the actual indicators to measure, and the tools that will be used to gather valid and defensible information.

Site selection involves thinking about significant sites that have a good history of use, a good source of written or oral records as well as the ability to access it. It can also be important to understand the relationship of the site to existing monitoring sites and other information.

The indicators or targets of the monitoring are also an important consideration that normally depends on what is at the site. For example, a totally land based site will have different targets to a site with an associated waterway or a marine site.

The selection of the right monitoring tool to use is also highly dependant on the site and the target selected. There are a variety of existing tools that could be used, however, SoT may also require the development and testing of new forms and tools that are simple, but defensible. A tool similar to the Cultural Health Index, SHMAK kits, or a mixture, could be developed.

3.1.3 Gathering the Information

The third issue involves working out how the actual monitoring will take place including, how and when, by who, and what the costs will be. As stated above, initial monitoring and data collection will be done to ascertain baseline information (through both desktop and fieldwork), while ongoing monitoring will provide up to date information. Gathering the information, however is dependant on the sites, targets and tools selected as outlined previously.

3.1.4 Information storage, analysis and reporting

The fourth issue relates to the development of appropriate storage, analysis and reporting systems. This could largely be done digitally using geographical information systems (GIS), geographic positioning systems (GPS) and computer databases. However, it will also involve hardcopy filing and archiving. Such systems can make it simple and quick to access information on particular sites, as well as creating graphs, statistics and other reporting information. Another consideration however is the actual structure and form final reports would take.

3.1.5 Existing Monitoring by Councils and Government

Currently, Regional Councils, the Ministry for the Environment and the Ministry of Health all undertake work surrounding environmental monitoring as do some Crown Research Institutes. However, most do not adequately involve Ngāi Tahu Whānui or our values.

This is important because Ngāi Tahu Whānui are the only ones who can determine 'cultural health' within its takiwā. In saying this, it will be important for Te Rūnanga and ngā Rūnanga to look for opportunities to become involved in external monitoring, gaining and assessing external monitoring information, as well as advocating for State of the Takiwā type processes and cultural monitoring criteria to be included in conventional monitoring programmes.

Accessing and analysing information from existing monitoring reports and databases will be important for the success of the State of the Takiwā system. Therefore it will be important to become familiar with and select the indicators and databases we think are important to start getting information from. Getting regular reports from local councils and government agencies such as flow data, faecal coliform counts, shellfish gathering ban incidents and air quality reports, and analysing these for our own use can assist the creation of State of the Takiwā.

Furthermore, understanding the national standards set for particular indicators and the ways in which we can try to analyse these from a cultural perspective is another consideration.

For example, one standard measure undertaken by regional councils for the health of beaches and freshwater areas is a faecal coliform. Faecal coliforms are naturally occurring bacteria that can indicate the level of faecal matter (from stock, human, bird or other source) in water. The recreation contact standard is a reading of less than 200 parts (of the coliform) per 100 mls of water and the shellfish-gathering standard is 0-4 parts per 100mls. The problem is that the recreation standard is a more common standard used and publicised by councils. Further, results from recent monitoring in the Canterbury region show that while many sites passed the 'recreation standard' test, most failed when it came to the shellfish-gathering standard. From this it is clear, that we need to be aware of these standards and advocate for more appropriate and often much tougher 'cultural' standards. State of the Takiwā is one way to help achieve this.

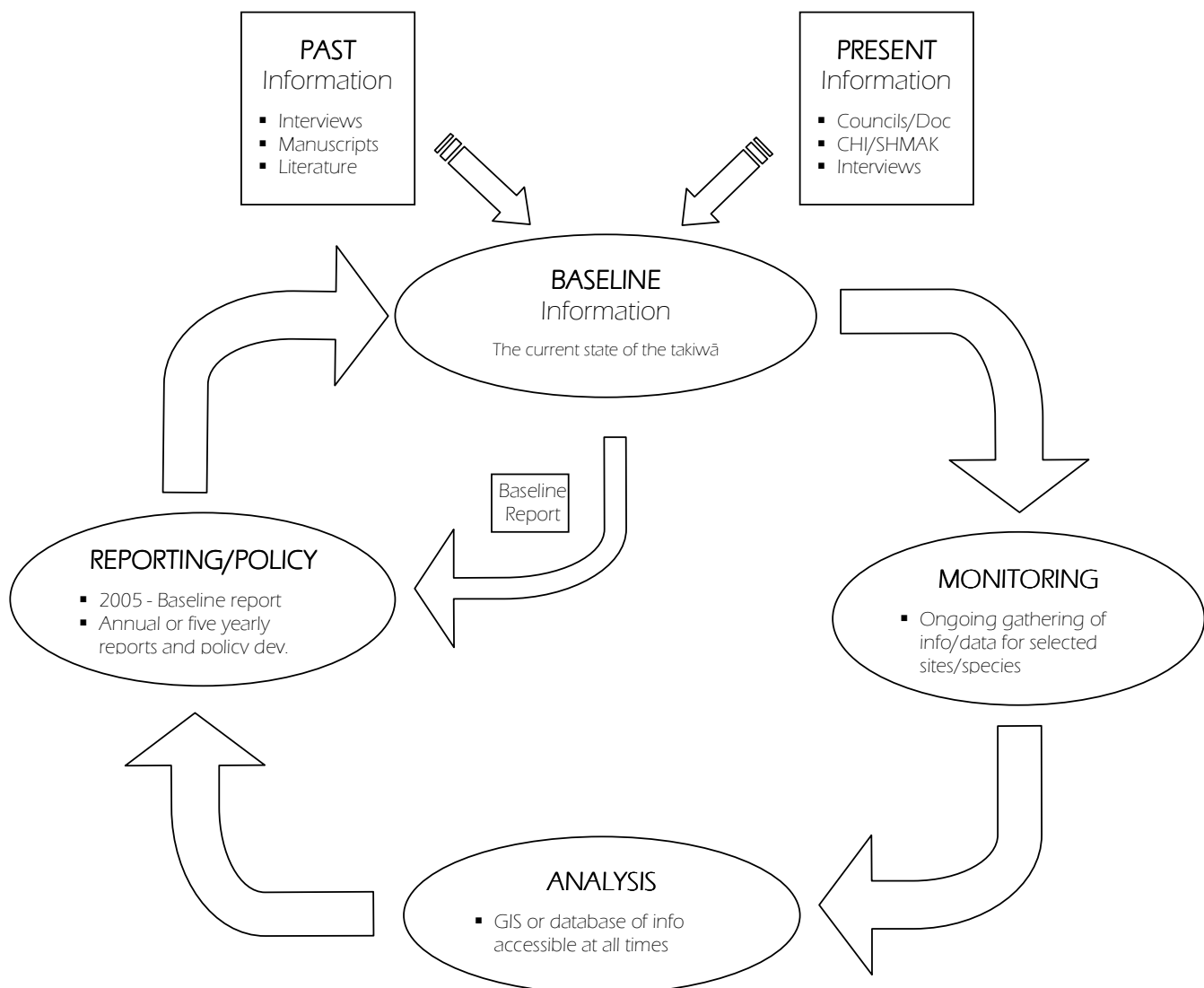
Summarised in the following sections are the major parts and processes of the proposed State of the Takiwā system.

3.2 Essential Parts to the State of the Takiwā System

– ‘The monitoring cycle’

The diagram below shows the main parts of a potential monitoring system or cycle that have been eluded to in the previous section, these parts are:

- **BASELINE INFORMATION:** including both past and present information collected through a variety of sources, both internal and external, including regional council and national monitoring data.
- **MONITORING:** including the ongoing gathering of information for selected sites, indicators or target species. This is the crux of the system – where the actual information and data comes from. It also includes selecting indicators and collecting information from existing monitoring databases.
- **ANALYSIS:** including the ways in which data and information gathered through monitoring is made into understandable and accessible information. This can be done through GIS or similar database systems.
- **REPORTING/POLICY DEVELOPMENT:** the final product of the monitoring cycle. This can include an initial baseline report, then annual or five yearly reports. These inturn inform policy direction and development.

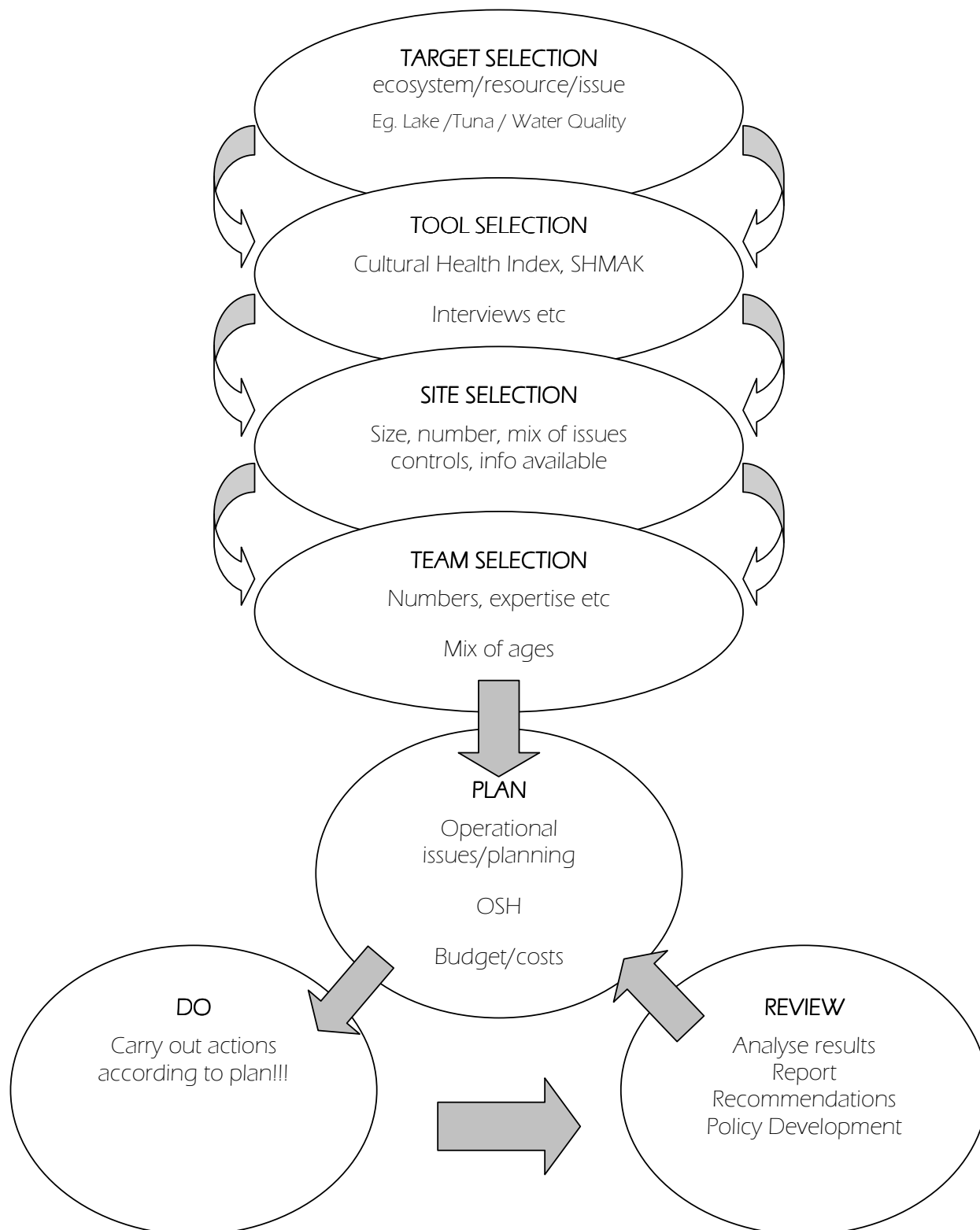


3.3 A Potential Process for State of the Takiwā – Designing a monitoring system

The diagram on the following page shows the major steps in designing and carrying out a monitoring system. These steps can be used to help design an appropriate monitoring system for State of the Takiwā in different locations.

The major steps are:

- **TARGET SELECTION:** The first step to undertake in any monitoring system is to select the ‘target’ of the monitoring. This is often called an ‘indicator’. In other words, “What do you want to find out about”. It can be a resource (such as a Tuna), an issue (such as water discharge) or an ecosystem (such as a Lake). It can also be a general survey as well as finding existing data from regional council monitoring for example, to complement monitoring findings. The important thing is having a clear understanding of the target being aimed at.
- **TOOL SELECTION:** Once a target is selected, the right tool for the job can then be selected. There are a number of tools currently available to choose from which have particular targets in mind. There may also be a chance to adapt and/or re-design tools if they are not quite suitable. It may also involve matching any tool selected with existing monitoring undertaken. However, it is important to have a good think about the tools needed and to seek advice and support on doing this.
- **SITE SELECTION:** Another important consideration is the actual location or site at which you will choose to undertake monitoring. This will have a close relationship with the target as well as the tool selection and may require various sites in one location, a range of sites in different locations and or a set number of sites in specific locations (such as upstream, downstream and at source). Matching these with existing regional council or other monitoring sites can also be worthwhile. Again the important thing is to have a clear idea of the sites required/desired to achieve results.
- **TEAM SELECTION:** Choosing the expertise you will need is also important. In most cases it will be important to have a range of skills available and involved, including both old and young. It may also be important to think about any external expertise that might be needed.
- **PLANNING:** This is where the logistics of the exercise are sorted out, such as, how often sites will be monitored, by who, how will data be recorded, how much will it cost and when will it take place. A simple and concise record of these in a written plan will go a long way in ensuring success of a monitoring programme and assist in keeping it on track.
- **DOING:** Go to it!! Carry out your programme according to the plan (where possible and practical)!! Do note however, that there may be things that will need to change – nothing is perfect. Recording progress is very important and noting any observations is also essential.
- **REVIEWING:** Have a good look at what took place. What was good about it? What wasn’t and what would you do different next time? Undertake an analysis of the results, write up a report and record recommendations. You will now probably be ready to go back and do more monitoring!!



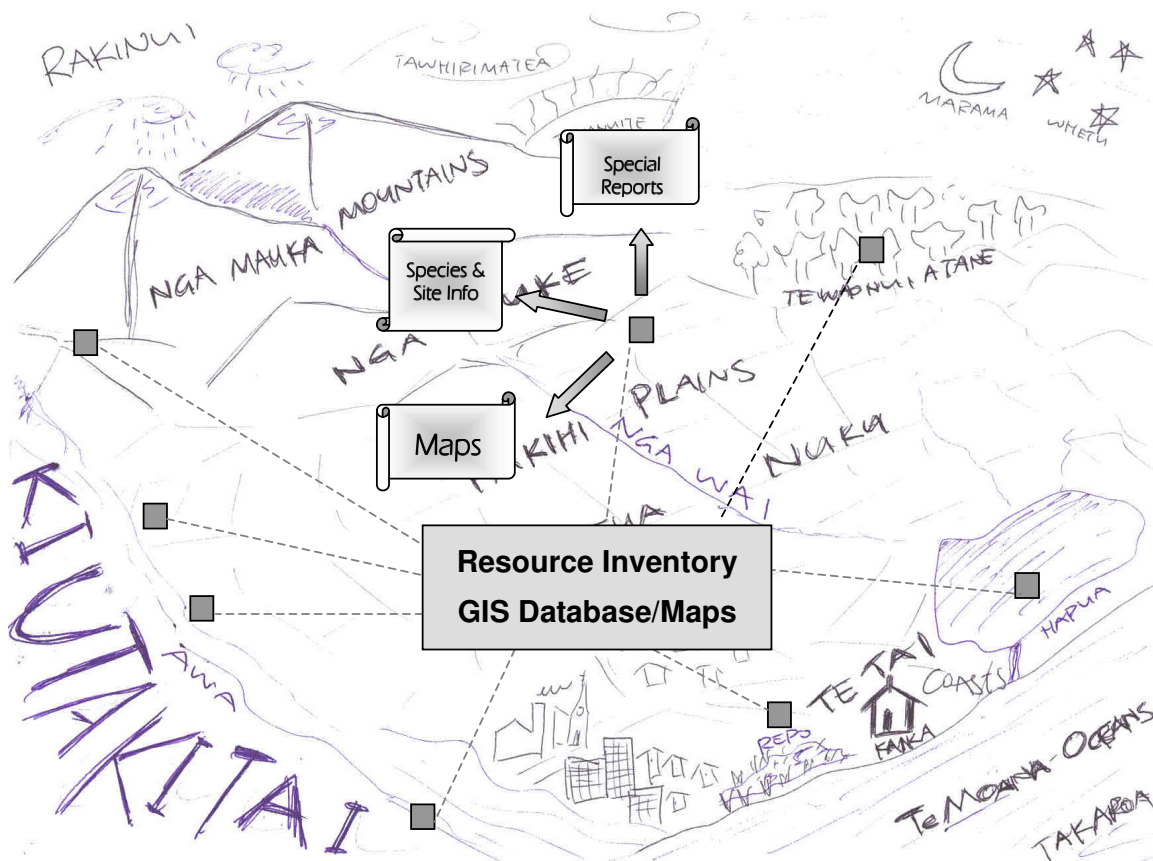
A Process for State of the Takiwā Monitoring

3.4 Resource Inventory/ Information Databases – storing and accessing our information

An important part of the State of the Takiwā system as highlighted earlier is having a place to store, access and analyse the information you collect. Resource inventories and information databases are basically the ‘libraries’ where we can store this environmental information. Most simply they are ‘filing systems’ for storing, accessing and utilising information as well as being a tool that can guide natural resource policy development and decision making.

Whether these databases are in a hard copy format (such as a conventional filing system) and/or within a digital based system like Access or GIS – the important thing is that valid and defensible information on important natural resources and sites is ‘at your fingertips’. The key is putting time into designing systems that are easy to organise and use. It is also crucial that the information being inputted into the system is relevant, robust and defensible (this comes down to your monitoring system design).

Resource inventories and information databases are strongly integrated with State of the Takiwā and Ki Uta Ki Tai Plans as the information gathered through monitoring and reporting will form the foundation for the inventories/databases. In turn, after a plan is created, a resource inventory can be used to support natural resource work by providing information, including maps and reports on sites and species of significance. The diagram below again illustrates the potential way resource inventories and databases can work within the ‘Ki Uta Ki Tai’ landscape. Again, the small boxes represent selected monitoring sites and the scroll shaped boxes represent the types of information that could be an output of the system.



3.4.1 Geographic Information Systems

Geographic Information Systems (GIS) are basically digital libraries of geographic information. They are digital maps that can display a variety of spatial and temporal information about the landscape. They have a huge potential to assist our natural resource work, however currently we know very little about them and they can be expensive to create and implement. Te Rūnanga also has no expert or specialised staff member at present to assist in this area.

An alternative is to begin to gather and store information in hard copy form in the same way as it would be inputted and stored in a computer system. This however is time and space consuming and not as easy to store and access as digital information.

Another key issue is to be careful to not replicate information that can be sourced externally. The key is to have references and easy access to such external information where it exists, and even copying this information into our databases. For example, Land Information New Zealand (LINZ) has a database of land tenure, Local Authorities and DoC have databases of consents, conditions, species and protected areas and Crown Research Institutes and Universities have databases on soils, ecology and other resource specific information.

Any Ngāi Tahu system created (whether tribal or rūnanga based) should focus on information that is important to us such as the location and traditional names and uses of sites and species as well as any State of the Takiwā information we may gather on past and present health of sites and species as well as our policies and processes for sites and species.

Major issues for inventory and database creation are the security of, and access to, information as well as where the actual system is based. A central tribal system may be desirable but the everyday users and source of information would be rūnanga. Therefore it may be important for Te Rūnanga to simply create the 'template' for doing so with rūnanga building their own systems based on the same principles.

It is important to note that some rūnanga already have GIS systems in place or are planning to do so. Learning from their experiences will be important.

4 Conclusion

State of the Takiwā monitoring and reporting has been identified by ngā Papatipu Rūnanga and Te Rūnanga o Ngāi Tahu as an essential tool to assist and continue to develop our natural resource management mahi. It is a way of gathering the type of information we want about our taonga, in a way that makes sense to us and empowers us to carry out our role as kaitiaki. It is also a strong way to assess the progress we are making with our work and to be able to better advocate for improvements in policy and management from local and central government agencies.

In saying this, there is a lot of work to be done until we make such a system a reality. We need to work out what we want to find out and why, how we can undertake the monitoring, analysis and reporting and who is going to do it. We will also need to understand what the costs will be and find ways of building synergies with existing programmes or research being undertaken.

Below is a list of actions and needs identified by Kaupapa Taiao staff that could get things moving, these are:

1. Undertaking a desktop exercise for a past baseline

This would include gathering information from the following sources:

- ↳ Literature Review of texts/info on Ngāi Tahu/Te Waipounamu
- ↳ Types of species present/used/where etc – 1880 reports/manuscripts etc
- ↳ Quality of species/how much was present/used – interviews of kaumātua/pakeke
- ↳ Forest cover Maps/core or pollen samples – Manaaki Whenua/CRI's
- ↳ Historical records/pictures/photographs etc – literature/CRI's

2. Assessment of settlement areas & other sites for a present baseline

This could involve a project to assess that state of significant sites with a need to pick the right tools for each site/ecosystem present. Sites could include:

- ↳ Tribal properties
- ↳ Nohoanga
- ↳ Statutory Acknowledgements
- ↳ Tōpuni
- ↳ Significant rivers, lakes, forests and other wāhi tapu/taonga.

3. Gathering all relevant information from both internal and external sources for the present environmental baseline (filling info gaps)

Relevant internal information could come from:

- ↳ Tribal and Rūnanga Policy documents – Te Whakatau Kaupapa, Kai Tahu Ki Otago, Taumutu Natural Resource Plan, Pounamu Management Plan
- ↳ Claim Evidence/Ngāi Tahu Claims Settlement Act
- ↳ Forest Values
- ↳ Tenure Review
- ↳ Customary Fisheries Catch Records
- ↳ NTDC Mō Tātou Survey

Relevant external information could come from:

- ↳ Statistics New Zealand
- ↳ Water and Air quality/quantity records – Regional Councils
- ↳ Resource Consents – Regional and District Councils
- ↳ Species Population and Distribution – DoC, MfE, Mfish, CRI's
- ↳ State of the Environment Reporting – Councils and MfE
- ↳ Land area/ownership – LINZ, Māori Land Court
- ↳ Land cover/land use/protected areas/soil types – CRI's, DoC

4. Undertaking an assessment of existing monitoring tools and databases and developing a recording kit for rūnanga

This includes existing tools such as:

- ↳ The Cultural Health Index
- ↳ Stream Health Monitoring and Assessment Kit
- ↳ Lake SPI
- ↳ NIWA KAIMOANA monitoring kits
- ↳ MFISH COCKLE monitoring
- ↳ Modified TANGATA TIAKI CATCH RECORDS

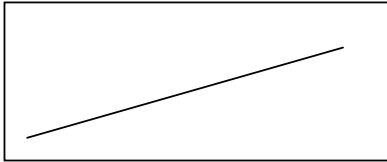
5. Developing a tool (GIS) for central coordination of:

- ↳ Running monitoring programmes
- ↳ Training rūnanga members
- ↳ Analysis
- ↳ Reporting
- ↳ Database/GIS storage/access to info

6. Having input into Conventional Monitoring/Research undertaken by

- ↳ Ministry for the Environment (MfE) - State of the Environment
- ↳ Regional and District Council
- ↳ Ministry of Health
- ↳ Crown Research Institutes such as Manaaki Whenua Landcare Research, National Institute of Water and Atmospheric Research (NIWA) and Environmental Science and Research (ESR)

Possible design for a State of the Takiwā Report

<p>State of the Takiwā Report 2005</p> <p>PAST</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>PRESENT</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>Aoraki Site 1</p> <p>Water Quality</p>  <p>Issues/Actions</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
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4.1 Where to from here?

Because developing a monitoring programme, such as State of the Takiwā, that produces the cultural information we need while being 'scientifically' defensible requires some sort of scientific input, gaining external funding and collaborating with researchers will be necessary.

To this end, over the past few years Kaupapa Taiao have been slowly developing relationships with the major Crown Research Institutes (CRI's) to gain their assistance and opportunities for developing appropriate monitoring and research programmes.

Most recently staff at Kaupapa Taiao have meeting with staff from ESR (Environmental Science and Research) and through these discussions identified the possibility of developing a project to make State of the Takiwā Monitoring and Reporting' a reality. One option for this is to pursue an application to the next round of the Ministry for the Environments Sustainable Management Fund (SMF) - for further details see: www.smf.govt.nz

The initial thoughts are to undertake a review of existing monitoring indicators, standards, tools and databases and make this available for use by rūnanga, hold hui with rūnanga to select monitoring sites and targets, design a simple recording system and database for information, collecting information and completing a State of the Takiwā report. This would use a pilot study based in one region initially then extend to cover all regions.

These ideas are in a very early stage of development however and Kaupapa Taiao are interested in any feedback rūnanga have. Therefore, we are keen to here from rūnanga as to what they think about this idea including:

- ↳ Whether this is a worthy project?
- ↳ In what ways rūnanga would like to be involved?
- ↳ The ways in which the research could be carried out?
- ↳ What links it has to existing or upcoming work?
- ↳ How this could be built in/support existing work? and
- ↳ Any concerns that may exist.

Therefore, if you have any comments please feel free to fill in the following questionnaire and/or send any comments to the address shown on the bottom of the questionnaire.

5 He pātai – questions for feedback?

Complete as many questions as you like and return to Kaupapa Taiao.

Rūnanga Name:

State of the Takiwā Monitoring and Reporting

1. Is there a need to undertake an '1840' and present day baseline report on the State of the Ngāi Tahu Takiwā? If so, how would you see it taking place, what sites could be monitored, how could it be funded and is 1840 the right date to start with?

2. Have you heard about or used the SHMAK Kit or Cultural Health Index or had involvement in any other form of monitoring? *If so please explain.*

3. What monitoring tools would your rūnanga find most useful?

4. In what ways would rūnanga would like to be involved in the development of a State of the Takiwā system? What are the ways in which the monitoring could be carried out?

5. Are there any links of this work to existing or upcoming work your rūnanga are involved with?

6. If so, how could this work be built in or support the development of SoT?

7. What are your general comments about the proposed system and actions outlined in this document?

Thank you for taking the time to answer these questions.

Ngā mihi.

Please return to:

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Kaupapa Taiao
PO Box 13-046
ŌTAUTAHI / CHRISTCHURCH

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