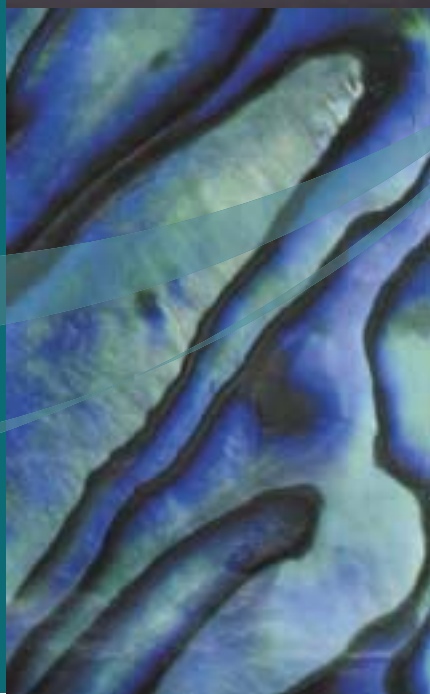
Kaimoana Survey Guidelines for Hapū and Iwi



Ministry for the Environment
Manatū Mō Te Taiao

Otaraua

Acknowledgements

Otaraua Hapū prepared these *Kaimoana Survey Guidelines for Hapū and Iwi* in partnership with Shell Petroleum Mining Ltd. The Ministry for the Environment has provided support to facilitate the accessibility and widespread implementation of these guidelines to hapū and iwi.

The guidelines have been developed in the main from lessons learned on a kaimoana survey undertaken in North Taranaki by a number of organisations in 2000-2001. The project team acknowledge those organisations and their representatives on that project:

- Fletcher Challenge Energy (FCE), (Subsequently acquired by Shell Petroleum Mining Ltd)
- Taranaki Regional Council
- Ngāti Rahiri
- Otaraua Hapū.

Importantly, the project team would also like to acknowledge the support of:

- Wellington Tenths Trust in undertaking a survey to trial a draft of the guidelines
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Ministry for the Environment
Manatū Mō Te Taiao

He Mihi

Whakataka te hau ki te uru

Whakataka te hau ki te tonga

Kia mākinakina ki uta

Kia mātaratara ki tai

Kia hī ake ana te atakura

He tio, he huka, he hauhu

Tihei Mauriora

Ko Otaraua Hapū e mihi atu nei ki te hunga i awhina kia puta tēnei pūrongo.

Ki te hunga kua mene ki te pō, rātou i kohikohi i ngā mātaitai o tēnei takiwā i a rātou e ora ana, kua mōhio ngā āhuatanga katoa o te moana moe mā rā koutou. Ānei o mokopuna e tiaki tonu nei ngā taonga o Tangaroa.

Kāti he rangahau tēnei kia whai oranga o tātou taonga moana ki roto i te ao hurihuri nei. E mihi atu ana ki ēnei roopu, Ngāti Rahiri hapū, Otaraua Hapū Management Committee, Ministry for the Environment, Shell Petroleum Mining Ltd, Taranaki Regional Council, Wellington Tenths me ētehi anō o te whānau whānui o Taranaki.

Ki te hoa whanaunga a Te Oranga Whareaitu nōna ngā whakaahua i tango tēnā koe.

Ko te tumanako ka mōhio o tātou tamariki ki te reka o ngā kai mātaitai o tēnei takiwā hei tō rātou wā.

Tēnā koutou tēnā koutou kia ora tātou katoa.

Our people have always collected kaimoana for the table, providing a staple and important source of nourishment. We learned the ways of the sea, the influence of the weather, when it was safe to gather kai and when it was not. Understanding the necessity for a sustainable supply, our tipuna monitored kaimātaitai reefs and developed management techniques to ensure the stability and sustainability of the kaimoana stocks. Active kaimātaitai reef management has always been integral to our kaitiaki responsibilities.

These management ways were localised, recognising and balancing the needs of the mana whenua, the mana moana, our communities and our environment. In extreme cases, temporary rahui, (gathering bans) were applied as a means of halting stock depletion and the consumption of contaminated kai.

It is just as important today that we maintain our ability and capacity to gather kaimoana for our hui and tangi and to provide for manuhiri. This reflects directly on the mana of our hapū. The day we are unable to thus provide, be it from the depletion of stocks or the pollution of our waters, will be a day of deep sorrow and whakamā for the hapū.

Our access and rights along the coastline have been eroded over the last century. First with the loss of our land and more recently from urbanisation and industrialisation. All bring the threat, or the reality, of pollution to our kaimoana reefs and a variety of pressures upon our coastal waters, on our way of life and on our ability to maintain our customary ways.

Whilst the direct discharges from dairy farms, industrial plant and sewage works have decreased significantly over the past 20 years, due to progressively more rigorous standards being set by of regional councils, our kaimoana reefs face, and will continue to face, threats arising from new developments in and around our coastlines. The Pohokura gas and condensate field development off the coast of Waitara and Motunui in North Taranaki is the present concern of our hapū and others within the iwi. This poses a risk of changing our environment significantly.

For us to continue to serve kaimoana at our tables, it is important that:

a) our rangatahi learn and understand the value of our traditional ways and are familiar with our environment
b) we adapt our tikanga moana and management techniques to meet the changing times, society and environment about us, and
c) we recognise that our environment is shared with many and that we need to share our concerns and develop a common understanding of monitoring, standards and management.

It is in the spirit of this sharing, that we have prepared these guidelines to assist other hapū and iwi, who may follow a similar kaupapa.

It is important to note that these guidelines are just that, guidelines. They are a sharing of our experiences gained principally from a kaimoana survey undertaken in North Taranaki in 2000/2001 and from many other activities undertaken by the hapū aimed at protecting our wāhi tapu and creating opportunities for our people. These have been as diverse as the regeneration of native bush around the marae, monitoring of the laying of gas transmission lines through the rohe and undertaking wānanga and tailoring education methods for our rangatahi. All have been approached in the same way, as opportunities for developing kōtahitanga (unity), whanaungatanga (kinship) and manaakitanga (hospitality and inclusiveness) in the context of our traditional ways and how they apply in today's world.

The task of preparing these guidelines has not been easy. To articulate on paper many of the benefits and aspects which we value has proved in the main elusive. However, our objective has been to share with other hapū our motivators and our experiences in surveying our kaimoana reefs in the hope that this will assist them to experience the benefits we have realised.

Ngā mihi ki koutou katoa

Tom Hunt
Otaraua Hapū

About these Guidelines

These guidelines seek to provide hapū and iwi with information and a suggested process for undertaking a survey of kaimoana resources. They also provide a template and guidance on how to create a constructive partnership with other organisations who have mutual interests.

The guidelines comprise:

A 15-minute Video
that depicts aspects of a kaimoana survey, highlighting the environment, training and hapū involvement.

A Guideline Package
that is the information you are reading now. The guidelines aim to help a hapū prepare, undertake and review their own survey.

A CD
containing an electronic version of the information in the package, including templates, and additional reference material.

The guideline package is structured into six basic phases:
Making a Start – focusing on the reasons for undertaking a survey and how to make a start and find help when it is needed.
Steering the Project – addressing the basic planning of what will be undertaken, when and who should do it and how to find the resources.
Reviewing Previous Surveys – taking a look at previous work and how this may be relevant.
Designing the Survey – deciding on the survey methods and the data to be collected.
Undertaking the Survey – resourcing, training and gathering information with hapū members.
Presenting and Reviewing the Data – involving the storage, integration and communication of your findings.

The logical sequence for undertaking the steps identified in these guidelines are illustrated in Appendix 1. We have prepared templates to assist in some of the key tasks of this project which are included in the appendices section and on the accompanying CD. We have indicated in the text where there is a template to assist you.

Audience
We call these a hapū and iwi guideline but there is no reason why these could not be used as a template for any roopu or wānanga. The fundamental premise upon which the guidelines have been prepared, is that they assist in the management of an important cultural resource, in a manner which respects traditional values and practices. To assist in this we have included in the appendices a reference and guide to aspects of tikanga hui and tikanga moana. See Appendix 2 and 3.

A note on terminology
Throughout these guidelines, we use both the words ***survey*** and ***monitor***, almost interchangeably. Generally we use the word ***survey*** to mean one study of the environment and the word ***monitor*** to mean the on-going study of the environment through a number of surveys taken at regular intervals. If you aim to study changes in your environment then it will be necessary to monitor it by undertaking a number of surveys. These guidelines provide the tools required to undertake one survey and as such provide a basic tool for monitoring your coastal environment.

Customary monitoring is a fundamental aspect of kaitiakitanga.

Photograph courtesy of Puke Ariki

Contents

Section 1

"Kua marino te moana"

The sea is calm, the time is right to start

Photograph courtesy of Puke Ariki

1. Agreeing issues, values and aims

Knowing why you want to undertake a survey is important. This will determine your whole approach. Your reasons will depend on your values, any issues that you may have and your aims.

What to do

Agreement on your values and aims will be achieved through discussion at one or many hapū hui. It is worth preparing for this. Ensure that all those who may be able to be involved, or wish to, are fully aware at the start.

Consider showing the introductory video accompanying these guidelines to provide a good overview.

Allow plenty of time for open discussion so there is common understanding and expectations. It is likely there will be much korero and discussion by hapū members who have previous experience in collecting kaimoana.

It is worth recording:

- peoples' frustrations with the status quo
- peoples' aspirations – where they want to see the hapū and their mokopuna in the future
- all accounts of what used to be – when, how, where and who used to gather kaimoana.

Fundamental values, concerns (or issues) and aims will become apparent from this information.

After reaching agreement on the fundamental values and aims, establish a basic agreement on whether or not it is worthwhile for the hapū to undertake a survey. Do not be concerned at this stage whether you have all the skills and resources within the hapū. See Appendix 4.

Some suggestions and examples

Values are usually quite general, **issues** are usually quite specific, and **aims** can be both general and quite specific. Some examples:

- Your **issue** may be that you are unable to collect sufficient kaimoana in or near your rohe. You may **value** the right for all to harvest kaimoana responsibly to maintain traditional practices. Your **aim** might be to accurately assess the current stock levels and explore management options for regeneration.
- Your **issue** may be that there are developments in your rohe affecting your ability to manage your resources. Tino rangatiratanga is an inherent **value** for the hapū and your **aim** may be to reaffirm this along your reefs and throughout your rohe.
- Your **issue** may be that some children in the hapū may have had little exposure to the coastal and kaimoana habitat. The tikanga regarding education on a traditional resource is a long established **value** for the hapū and your **aim** might be to support and strengthen these tikanga by involving rangatahi in the monitoring and management of the resource.

What has been done – North Taranaki Kaimoana Survey

For Otaraua Hapū, our values are tino rangatiratanga and kaitiakitanga over our rohe. Our aims were to:

- impart mātauranga kaimoana and tikanga to our rangatahi
- accurately determine the location, quantity and health of kaimoana on our reefs and establish a baseline for measuring the effects of offshore oil field operations on these
- incorporate contemporary technological information collection and presentation methods in the management of a traditional resource to make it appealing and relevant to our rangatahi.

Things to think about

- Take time to listen to everyone, talking about anything of relevance.
- Make sure you summarise at the end of your hui exactly what your common values, issues and aims are. It is essential you get a common agreement on these.
- Some key concepts about identity may need explaining with some younger members of the hapū such as: who we are and why this is important; where we are; and aspects of hapū tikanga. These provide the essential context for understanding why a survey and monitoring needs to be undertaken.

2. Assigning a project leader (rangatira)

Having decided to undertake a kaimoana survey, you will need someone to lead it who has the commitment to inspire others within the hapū, work with other organisations and to drive the project through to completion.

What to do

The hapū needs to consider the qualities and experience required to lead such a project. Draw up a list and description of the skills, attributes and qualities required.

Using this list, agree whether or not there is someone with these skills within the hapū or indeed someone who can undertake this role with the added support and commitment of hapū members and kaumātua.

Once agreement on the project leader is achieved, the terms of reference and agreement for the leader can be discussed and agreed. This will include:

- a description of what the hapū expect the project leader to do
- a clear understanding of the authority of the role (ie. when he/she can decide and speak on behalf of the hapū)
- what support will be provided by the hapū
- what reporting is required and when
- the time and commitment envisaged
- agreement on remuneration and support in kind if necessary.

Some suggestions and examples

Some typical attributes and skills for a project leader are:

- a good knowledge of hapū and Māori tikanga
- an understanding and driving commitment to the aims of the project
- an ability to work with people in a consultative way
- an ability to conduct and facilitate hui well
- good organisational skills, someone who is able to plan, progress and record experience in organising team projects
- experience in working with a number of organisations.

If there is someone within the hapū with talent to undertake the project leadership but little experience, then this project may prove to be a good training opportunity for them. In recognition of this, additional support may need to be provided.

Consider identifying one or two kaumātua who could advise and mentor the project leader and ensure the values and aims of the hapū stay uppermost in the project leader's mind.

What has been done – North Taranaki Kaimoana Survey

Otaraua Hapū appointed a project leader to represent the hapū in all issues of hapū interest. It was the responsibility of the hapū appointee to ensure the values of the hapū were maintained and addressed throughout the project. The hapū appointee took a proactive role in defining and undertaking each stage of the project. He frequently consulted with hapū kaumātua and submitted reports to the hapū monthly hui.

Things to think about

Ideally it would be good for the project leader to be a hapū member but this is not essential. It will however need to be someone the hapū feel confident and comfortable with as this person is taking on the responsibility of ensuring hapū values and aims are met.

3. Involving others (kōtahitanga)

Many people and organisations have an interest in the coastline, its status, its resources, and how these are managed. Many of these will be interested in what you are planning to do and could potentially bring support, experience and practical help to your project. It is worth exploring whether they are interested in participating.

What to do

The project leader, together with other hapū members, needs to identify all those who could have an interest. Your regional council is certainly one of those organisations. They have a statutory responsibility to monitor and maintain the coastal environment, and they may be a good starting point for helping you identify others.

Contact each organisation either by phone or letter informing them of your intentions. You will need to provide clear information on:

- exactly what you wish to do and why
- why you are informing and/or offering this organisation or person the opportunity to be involved
- what it is you are wanting from the person or organisation at this stage, which may just be an indication or otherwise as to whether they are interested enough to meet.

A hui can then follow.

When you hold a hui with representatives from another organisation, prepare well and consider showing them the video and these guidelines. Be prepared to share your issues, values and aims or at least some of them. A collective hui is an advantage, in that all potential participants get to meet each other and ideas can be shared. Indeed it may be that at a collective hui you can move directly to the next stage – that of forming a steering committee. See Appendix 5.

Some suggestions and examples

Some obvious examples of organisations that may wish to get involved are:

- the regional and/or district councils
- other hapū/iwi with adjoining rohe
- local industry that may impact on the coastal area
- research and environmental organisations such as the National Institute of Water and Atmospheric Research (NIWA)
- the Department of Conservation
- local wānanga.

When contacting an organisation for the first time, consider contacting the head of the organisation. This makes the whole organisation clearly aware of your intentions and it offers them the courtesy of deciding how they can best be involved.

What has been done – North Taranaki Kaimoana Survey

Those involved were:

- Ngāti Rahiri Hapū o Taranaki
- Otaraua Hapū
- FCE
- Taranaki Regional Council.

Other hapū within the iwi and two other iwi were also invited to be involved.

Things to think about

Whether or not you involve other organisations will depend on your aims and objectives. If you need or wish to have your survey, or the information it generates, recognised by a particular organisation then it makes sense to involve them as soon as possible.

It is unwise to intentionally avoid the involvement of key organisations or groups that have a genuine interest.

4. Setting up your steering committee

Having established the interest and potential value of involving other organisations, it is important to establish a structure to manage how their representatives, the hapū and the project leader will work together. Forming a steering committee is one way of doing this.

What to do

It makes sense for the project leader to facilitate the steering committee. With or without the assistance of kaumātua, the project leader can then ensure the appropriate tikanga.

Call a hui of the representatives of organisations that have expressed a wish to have some involvement, with the purpose of agreeing:

- the representatives that will form the committee
- support for the overall aims of the hapū
- the way the committee will work such as: where and when it will meet; how often; agreement on the project leader as facilitator; and how decisions will be reached and the recording of the meetings.

Once the committee is formed you will need to define a common set of objectives. It would be worth asking the representatives to think about this and bring with them some of their ideas about what they would wish to get out of the project and the survey.

Give care and attention to the location, time and format of the meeting, making sure these are convenient for those participating. See Appendix 5.

Some suggestions and examples

- Consider having at least one other hapū representative who can speak on behalf of the hapū and support the project leader formally on the committee.
- Once the participating organisations and their representatives are identified and committed, it is worthwhile taking a partnership approach to running the project. This will ensure that all contributions are equally valued and responsibilities shared.

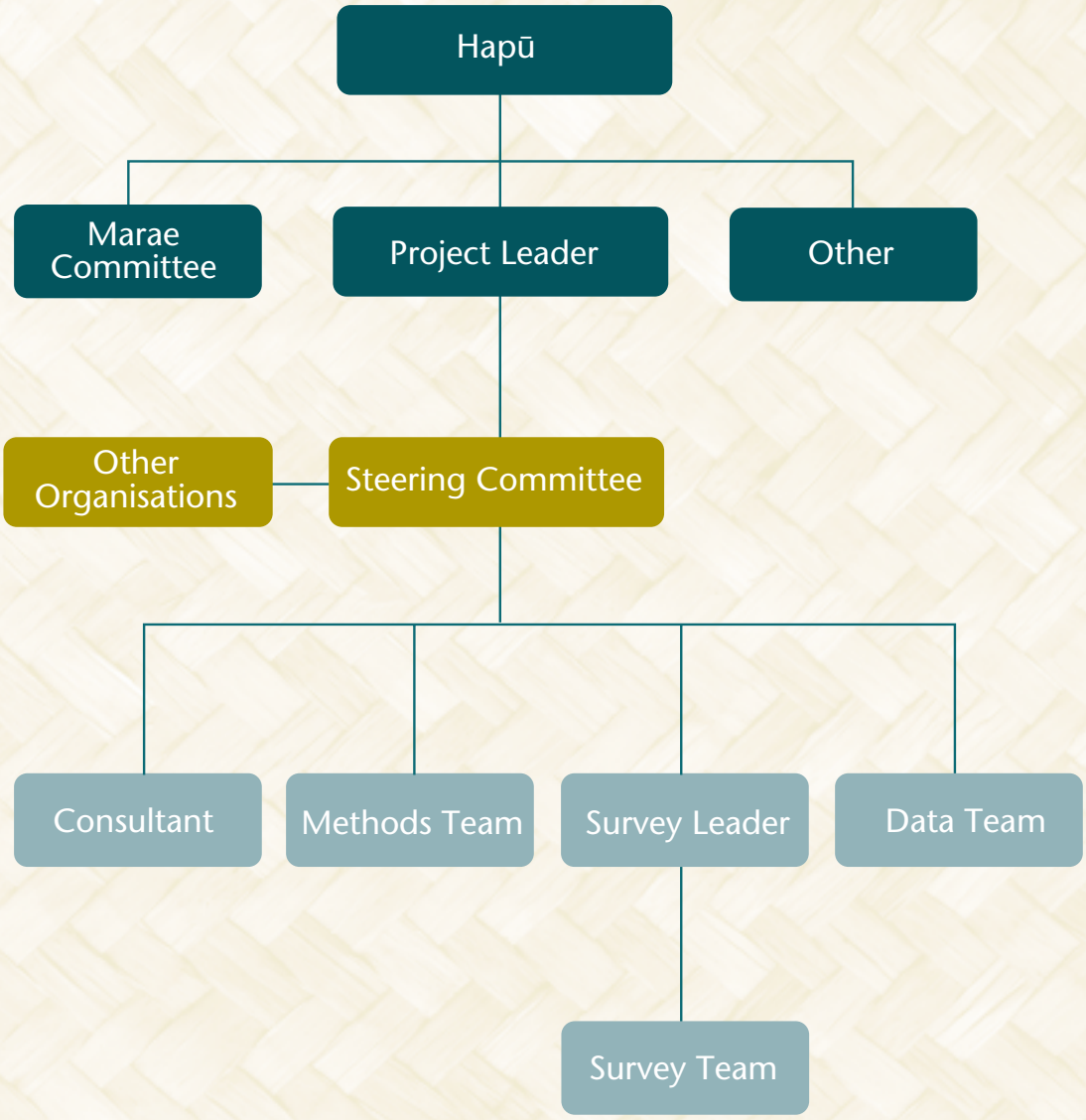
What has been done - North Taranaki Kaimoana Survey

- Each organisation provided two representatives, with FCE providing the facilitator.
- Each organisation tabled their concerns and their interests in the project, most of which were associated with the spill from a drilling rig. The Regional Council representative talked in general about the types of surveys that could be undertaken.
- Valuable time was spent understanding different perspectives.

Things to think about

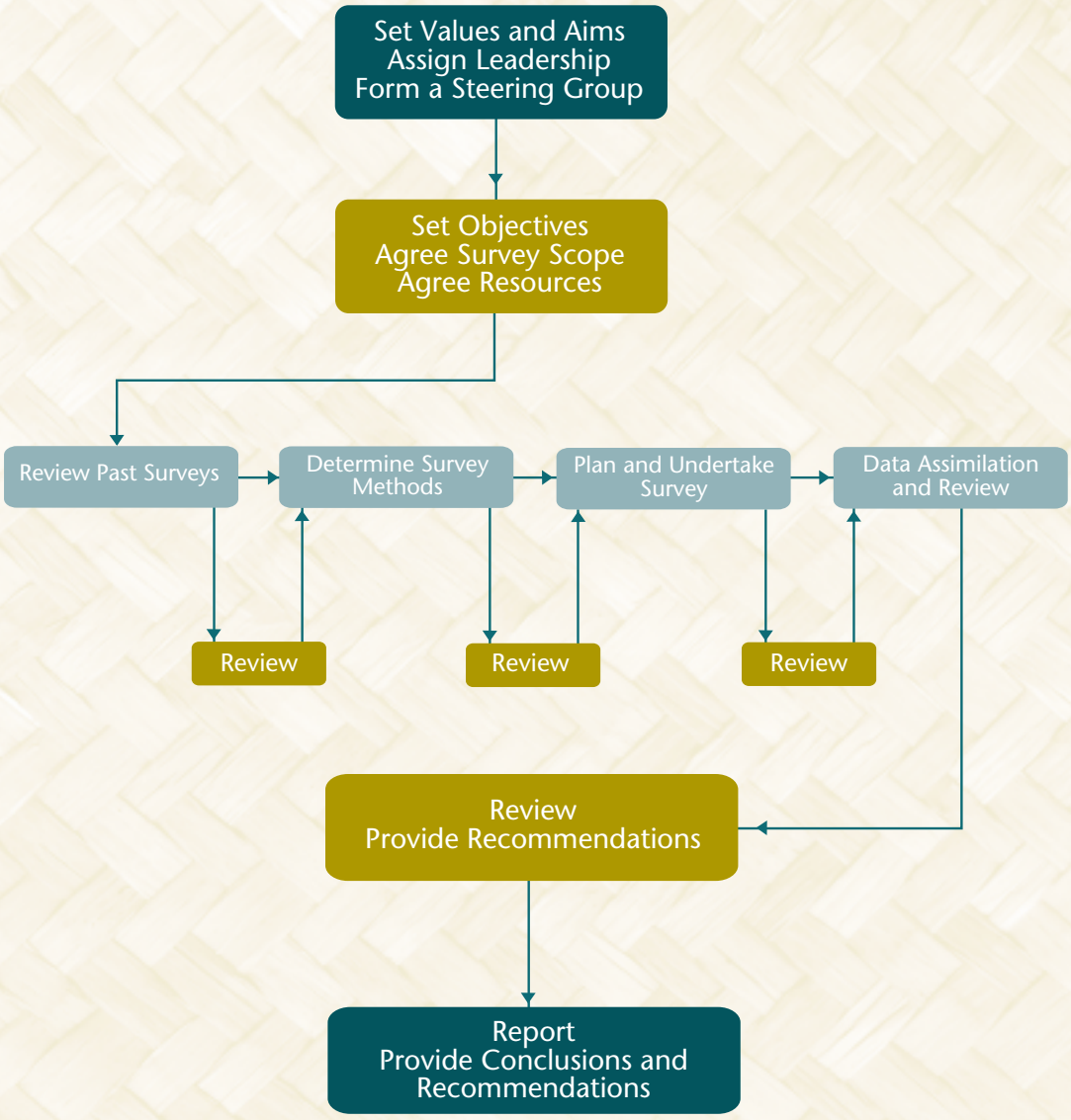
It is very important to develop respectful relationships between the participants and seek to find solutions by discussion and consensus, addressing all interests and concerns. For this reason it is important that representatives of the different organisations do not change during the project. Continuity of key representatives is essential for smooth progress.

People Plan



This diagram illustrates how the kaimoana survey project team (the project leader and the survey team members) might sit within the hapū management structure. It also shows how this team might interact with other organisations through the steering committee.

Work Plan



This diagram suggests the basic work tasks that comprise a kaimoana survey project, how they inter-relate and who (by colour coding) would undertake the work.

Section 2

"Ki te hoe"

Let us paddle, let us get on with the job

Photograph courtesy of Rob Tucker

1. Agreeing objectives

Objectives provide a common understanding of what you are going to do, how you are going to do it and why. Your steering committee will work together well if they share the same objectives.

These objectives provide the 'backbone' to the project and will drive the planning, scope and execution of the survey. They will be invaluable in keeping the project on the agreed track.

What to do

Call a hui to develop your shared objectives.

Consider a brainstorming session to collect ideas using a flipchart or a whiteboard. A draft set of key objectives can then be distilled from all the ideas and suggestions. Make sure they are clear, achievable and contribute to the broader aim (of the hapū).

The draft objectives should be circulated to all the participants after the meeting, allowing time for these to be discussed within the respective organisations.

It is important that the project leader discusses these with hapū members and that there is common agreement that the objectives do help the hapū meet the aims they agreed at the outset.

If changes are suggested then these need to be discussed so that all representatives are in agreement.

Once finalised, it is worth having a flipchart-sized copy of the objectives displayed at every steering committee meeting to keep the direction clear. See Appendix 6.

Some suggestions and examples

Try to make sure that the common objectives have at least one objective that is important to each partner. If you do not, you risk losing the enthusiasm and contribution of that partner at some stage.

What has been done – North Taranaki Kaimoana Survey

It took two four-hour hui to discuss and agree the common objectives. These were:

- to survey between Onatiki and Mimi during the summer of 2000/2001 (what, when)
- to maximise involvement of tangata whenua (how)
- to respect cultural sensitivity in all aspects of the project (how)
- to ensure that education is the basis of the project (how)
- to make information available to tangata whenua and others in the community (what)
- to enable FCE to contribute to the community's understanding and knowledge of the biological status of the coastline (what, how).

Things to think about

Do not be surprised if this hui or process of agreeing a common set of objectives takes time. It is time worth spending. This is the process whereby you ensure that all participants are committed and have a common understanding. It could be that a participant organisation actually decides that they do not have sufficient interest and may respectfully cease active involvement.

2. Agreeing the scope and schedule

The project scope is the set of tasks which when complete will result in you meeting your objectives. Scheduling is important and will determine your ability to complete the project.

What to do

It is possible to scope the whole project in a steering committee meeting from scratch. However, it may be easier to start with some basic proposal that can be discussed and modified following discussion.

A basic proposal to base discussion on could either be:

- prepared by a partner with previous experience, or
- the initial project proposal scope for the North Taranaki Survey included in the accompanying CD.

Once a draft scope is agreed, the steering committee needs to check that each of the objectives relating to what you want to achieve, can be met by this proposed scope of work.

The important task of communicating your project and its results needs to be included, although it may not have been explicitly stated as an objective. This could include visual (photographic record), oral (tape recording) and/or written records. It may be that all are required for the range of likely audiences.

Document your project scope and schedule. See Appendix 7.

Some suggestions and examples

Key things to think about while discussing a schedule include:

- tide schedules and the timing of the lowest tides
- availability of people to help with the survey
- the realistic duration required to undertake each task
- whether tasks can be undertaken in parallel or sequentially
- having a contingency (back-up plan) for variable weather.

Plan and schedule your survey as a summer activity. Weather is an important factor with regard to safety, visibility and water conditions. It is not safe to attempt a survey in winter months.

What has been done – North Taranaki Kaimoana Survey

The Taranaki Regional Council produced a draft proposal for the North Taranaki Kaimoana survey. The committee modified this to address the objectives. The project schedule was developed around the two very low tides of January and February.

Things to think about

If the schedule is not realistic the project will start to slip. This can cause disillusionment amongst partners and participants, and may raise concerns about whether they can continue to contribute. It is always better to be generous in estimating the time needed to do a job.

3. Resourcing

Willing and experienced people, equipment and money will be required to undertake this project. Identifying what you need and where to find it is a key role for the steering committee.

What to do

The resources need to be identified and sourced for each task of your plan.

People

Access to marine biology expertise is key to the project. Your regional council may be able to provide assistance with this.

Keen and interested people can undertake most of the work of this project. The more skilled resources you have available to you, the greater the learning will be for others involved.

Equipment

While it is not imperative, the work, data storage and presentation would be easier to do on a computer. Basic Microsoft Office software is all that is required.

After the survey method has been decided and the survey leader appointed, the survey leader can determine the detailed equipment required.

Money

Some financial provision will be required for the project. The scale of this will depend upon what the partners can provide 'in kind'. It is important that this is discussed in the steering committee, a budget developed and agreement reached on how this will be provided.

Some suggestions and examples

Some of the key resources required are:

- a good survey leader able to manage resourcing, planning and undertaking the survey in a fixed timeframe
- hapū member(s) experienced in tikanga moana and knowledge of the local area and its history, who can provide support to the survey team
- a marine biologist who can provide advice on your coastal area, previous surveys, different survey methods and training
- office/administration support from someone who can input data into a spreadsheet and then recommend ways of displaying this data
- a photographer able to video or photograph aspects of the survey and the project
- access to experience and advice on safety management.

What has been done – North Taranaki Kaimoana Survey

- The hapū provided the survey teams and members experienced in tikanga moana.
- The Regional Council provided a marine biologist.
- FCE provided expertise in project management, safety management and financial support.
- A land surveyor provided significant practical and technical support.
- A professional photographer provided significant voluntary support.
- An environmental consultant was contracted to review previous surveys and to interpret the data of the survey undertaken.

Things to think about

Applying for external funding can take time and may bring with it additional reporting responsibilities. It may also necessitate the inclusion of the funding body as a partner onto the steering committee.

4. Agreeing upon a survey leader (rangatira)

The project leader for the hapū and facilitator for the steering committee has the role of overseeing the whole project. Undertaking the survey is a specific task that needs to be lead by someone experienced in working to a tight schedule. The leader needs to be able to work with a number of people and to make practical and timely decisions.

What to do

It is important that the steering committee members agree upon the survey leader. This may be undertaken by a sub-committee.

The steering committee members need to discuss and agree:

- the role, skills and qualities required of the survey leader
- the process of searching and selecting the survey leader.

If an obvious candidate exists If an obvious candidate exists and is available but they have had little previous experience, consider whether some support can be provided.

It is worthwhile appointing the survey leader as soon as possible, so that the survey leader can join the steering committee meetings and be involved in the process of deciding survey methods. The leader's understanding, enthusiasm and involvement of the whole project is paramount.

Some suggestions and examples

A survey leader who is confident, inspiring and genuinely identifies with the values and aims of the hapū will bring the greatest benefits to the survey team and hapū.

An example job description is included in the CD accompanying these guidelines.

What has been done – North Taranaki Kaimoana Survey

A sub-committee of the steering committee agreed upon a survey leader's job description and partners agreed to use personal contacts to look for likely candidates.

Two applications were made and the sub-committee finally agreed that the leader needed to be a hapū member, and therefore both applicants should take a leadership role, each representing the interests of their respective hapū.

Things to think about

If the survey leader and the project leader are one and the same person, then it is important that he/she recognises the two roles are quite distinct with different responsibility and accountability requirements and definitely different management styles.

The project leader is responsible for ensuring the whole project is executed and managed effectively through the steering committee and is answerable to the hapū. Responsibility for undertaking the survey and collating the data is delegated to the survey leader.

5. Reviewing progress

Once the project has started it is important that all partners are kept equally well informed on progress. As in most projects decisions may need to be based on the outcome of tasks as they are completed. By holding regular reviews, the steering committee can contribute to the project and ensure it stays on track, is seen to stay on track and meets its objectives.

What to do

A review hui involves the discussion of either a written or a verbal progress report or a task completion report. The person responsible for leading the task presents this.

The report needs to be considered by the committee in relation to the objectives, agreed scope and the expected outcomes.

If, as a result of the work, changes to the original project scope or schedule are required, then these should be agreed and the change recorded.

Other issues to review and discuss at these hui are:

- resources and their adequacy
- safety, and any concerns that may have arisen
- scheduling and possible rescheduling.

Some suggestions and examples

As a minimum it is advisable to have a review hui after each major task in the plan is completed.

Scheduling the review meetings early provides a target or milestone date for those undertaking the work.

What has been done – North Taranaki Kaimoana Survey

Four progress review hui were held after the project started. The detailed planning of some of the tasks evolved during these review hui.

The review meetings provided a good opportunity to keep all the partners involved, particularly those members of the steering committee who were not involved in the survey itself.

At each review hui more and more opportunities were identified to meet the objective of maximising the educational content for hapū members.

6. Final project review and completion

The final project review is the opportunity for all partners and the hapū to review and discuss the final outcome, ie. the results and achievements of the project.

What to do

Hold a hui to cover the following:

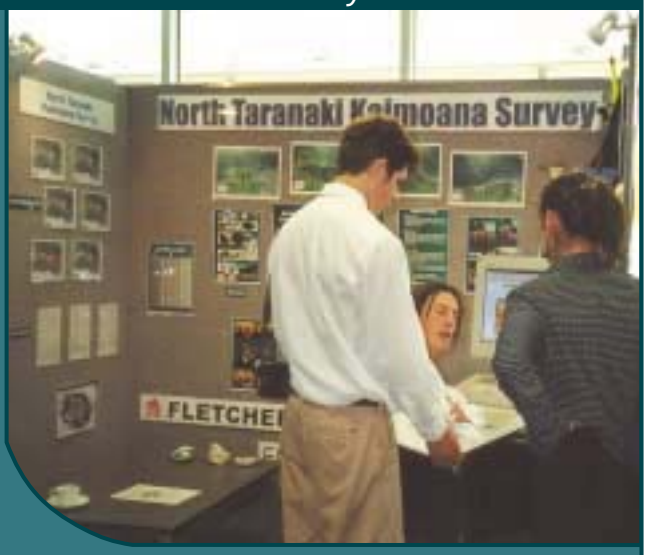
- a review of findings and reports of the project (verbal, written and photographic)
- a check of the outcomes of the project against common objectives set
- discussion and resolution of all financial issues relating to the project
- discussion and agreement on how to disseminate the information and reports
- discussion and agreement on whether you need to conduct further surveys or related work
- discussion and reflection on additional benefits the project has provided, such as stronger relationships, enhanced understanding and other opportunities.

Some suggestions and examples

It is important to regard this meeting as a celebration of achievement for all partners and the hapū. All hapū kaumātua and members may wish to attend.

Consider holding a similar review hui with hapū members only after the final steering committee hui to discuss the extent to which progress has been made towards achieving the aims the hapū set. The hapū may have interest in pursuing options of active management of their kaimoana resources which will be nationally recognised and respected. More information regarding this can be found on the Ministry of Fisheries website, www.fish.govt.nz.

What has been done – North Taranaki Kaimoana Survey



- The final steering committee review hui for the project was undertaken on Owae Marae.
- A full presentation was delivered using display material and photographs. The CD version of the project report was demonstrated and a draft version of the interpretation of the survey results was circulated for comment.
- The final version was produced after a two-week review period.
- There was agreement that all information would be open and made available to the public, except kina and paua population data. There was some concern over this data being available outside of the hapū as this may cause a threat to stocks.
- An evening presentation to all who had been involved on the project was arranged including photographs and video clips.
- The project was presented publicly at the State of Our Environment Conference at Te Papa in June 2001.

Things to think about

It is important to discuss and agree the degree of confidentiality to be placed on the material and data. In doing so, it is worthwhile asking the following questions:

- What are the advantages and disadvantages of keeping information confidential?
- What is the value of wide dissemination of the results?
- Who has access to the final information resulting from the project?
- Will any confidentiality requirements hamper further work by any or all partners?

Section 3

"Titiro tui muri, haere whakamua"

Look backwards to move forward

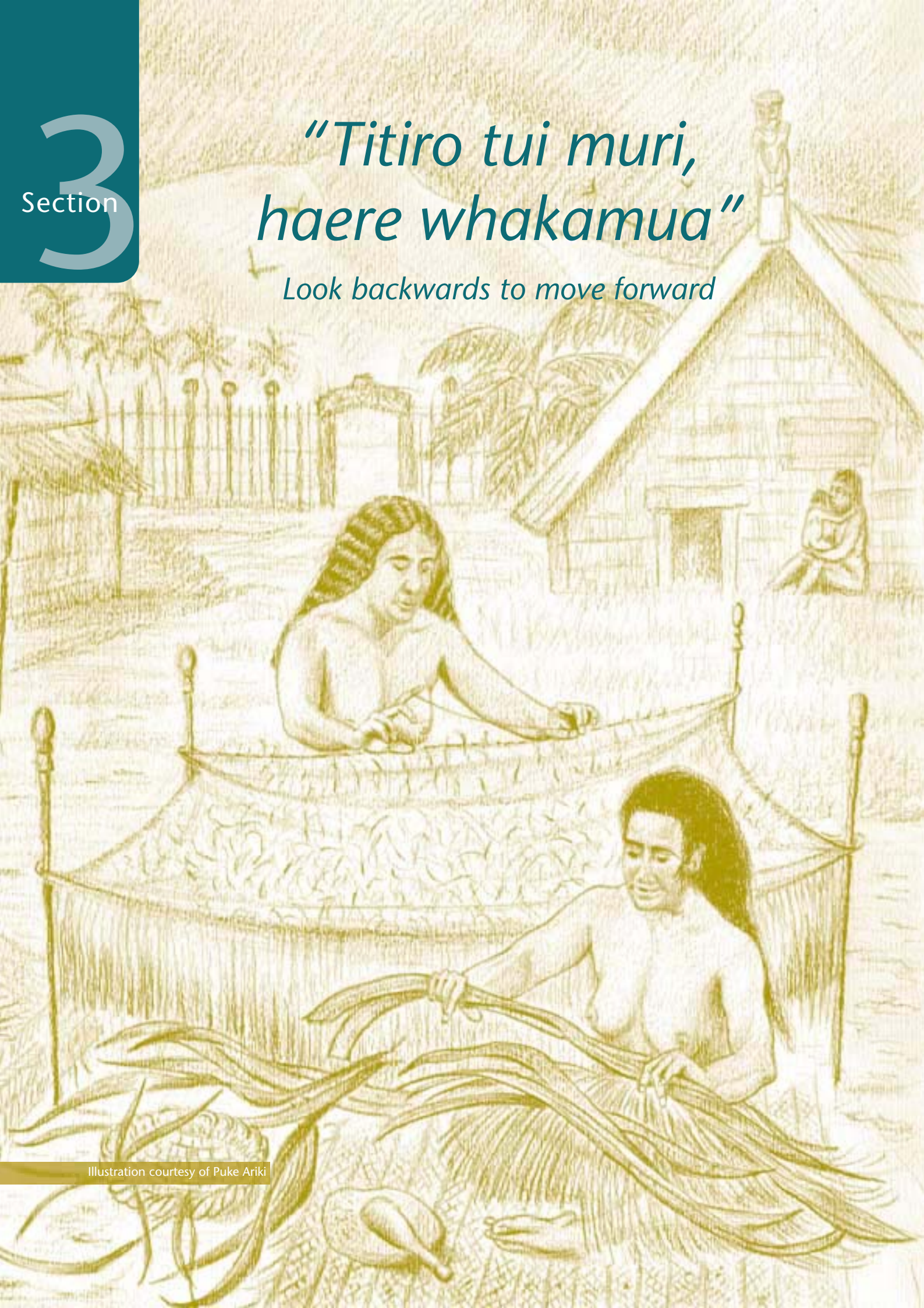


Illustration courtesy of Puke Ariki

1. Reviewing previous surveys

Most of New Zealand's coastline has been subject to some sort of survey or investigation over the past 20 to 30 years. The results of some of these earlier surveys can be extremely valuable, either as sources of information and data or in terms of helping you design your survey.

Where to find survey information

For traditional practices and monitoring techniques, your whānau and hapū kaumātua may have experiences or memories of gathering kaimoana, including where certain shellfish can be found and how these stocks vary during a year or over the years and why this may be the case. Such knowledge is generated from regular monitoring.

For western scientific survey practices, the best organisation to ask for records of earlier surveys is your regional council. More often than not, they will have detailed records of:

- the coastline, coastal waters and how these have changed over time
- the types of shellfish and sea life that live in the inter-tidal zone
- surveys carried out by other organisations.

Often this work will have been carried out as background information or monitoring for consents to use the seabed, water or land in the coastal area (eg. a sewage outfall, development of a marina, drilling). If you know of any such activities in your coastal area, ask the council to see these specific files and the reports they contain.

How do you review this information and what do you record?

Your review needs to be undertaken in a way that assists future plans.

the following information from previous surveys:

- organisation undertaking the survey
- location and date of the survey
- objectives of the survey and the summary conclusions
- species monitored
- survey method used and nature and quality of data collected.

Tabulated, this will allow a relatively quick assessment of which surveys are of relevance to you and which have useful data upon which you can build.

Some suggestions and examples

Survey reports tend to be technical in content and language and they are difficult for a non-scientist to read and to find relevant information. This is a good project for a keen university student or a consultant marine biologist or environmentalist.

If kaumātua are willing to share their knowledge and experiences with the steering committee, it would be worth considering a wānanga on the subject, including hapū members.

What has been done – North Taranaki Kaimoana Survey

A number of previous surveys had been undertaken in the area over the previous 30 years. The steering committee approached a consultant to review the council's historic and recent records and reports, prepare a summary of this information relevant to their objectives and include recommendations on possible survey methods to adopt.

Video recordings of interviews with local kuia made 20 years previously were shown. These kuia described vividly the ways of the old people in collecting and managing kaimoana in Taranaki.

Photograph courtesy of TGM Design

Section 4

"Me hanga te waka"

Building the canoe - A good canoe requires good planning

Photograph courtesy of Puke Ariki

1. Survey methods

What is a survey method?

A survey method is the process by which data is gathered. The process is well understood and it is commonly agreed that the method is a suitable one for generating good consistent data.

It is completely acceptable for a new method to be defined, *so long as all those people whom you wish to believe the data and the conclusions you draw from the data are, or can be, convinced that the method is a sound and robust one.*

A method is defined by the following:

- location of sample points and the size of the sample area (where)
- randomness or regularity of sample points and their frequency (where and when)
- the species to be gathered and the method of measuring the size of species (what)
- the equipment required to gather data and the method of recording this (how).

Traditional methods may include all these. The information on these may be found in waiata, karakia and kōrero of the hapū and region.

There are two distinct types of survey: a stocktake monitoring survey and an impact assessment and monitoring survey.

Briefly, a kaimoana **stocktake survey** is a study aimed at understanding what kaimoana lives on the shoreline, where it lives and how abundant it is. This is generally a 'one-off' study. However, if the survey is repeated several times, then a picture can be built up of changes in kaimoana stocks and the state of the environment over time. Be aware that such surveys will not explain why these changes have occurred but they can trigger the need for closer investigation.

An **impact survey** is designed to detect changes in kaimoana distribution over time and to explain these changes. This is done using control sites and repeated sampling in the area of concern before and after impacts occur. The design of such monitoring surveys requires careful consideration if valid inferences are to be made. Most Resource Management Act consent monitoring is impact monitoring.

Where to access information on survey methods

Most regional councils have extensive experience in designing and undertaking surveys. This information is available to everyone in the region.

Your regional council will be able to advise as to how and why general methods may need to be modified for your region and in particular how to do this for your specific objectives.

In addition, the National Institute of Water and Atmospheric Research and many environmental organisations will have employees who are familiar with designing surveys to meet specific needs and objectives. Some of these have been developed as education packs and are easily available. See Appendix 12.

If one of your objectives is to reaffirm customary knowledge and practice then this needs to be explored with kaumātua within the hapū or iwi or with a wānanga.

If you are looking to compare data from another survey, then it is imperative that you look to replicate the methods adopted in the previous survey. These methods should always be documented in the reports of the survey.

Some suggestions and examples

Consider creating a sub-committee of the steering committee to determine the survey method. Ideally this would include your survey leader and a suitably trained person from your regional council.

What has been done – North Taranaki Kaimoana Survey

The Taranaki Regional Council recommended three basic scientific survey methods. These were:

- an unbiased qualitative stocktake survey in which information was recorded at regular 10 metre intervals along a stretch of coastline. The surveying was undertaken at spring low tides in knee-deep water
- a quantitative stocktake survey in which transects down the seashore were used at various locations and randomly placed quadrats were used to assist in determining species present
- a biased qualitative stocktake survey in which information was recorded on the presence or otherwise of the chosen species at locations defined by previous gathering experience.

The hapū integrated traditional aspects of tikanga moana into these methods including interviews with local people.

2. Survey design

Discussing and agreeing the survey design is important. The design is a statement of the process and activities that creates the unity of purpose for the hapū survey team.

What to do

Those in the committee responsible for the design need to agree the following:

Where to survey

- Use maps and aerial photographs to identify the coastal extent and particular reefs or sites of interest.
- Decide on the location of survey sites; these can be randomly or regularly spaced.
- For comparisons with a previous survey, match the sites with those of the previous survey.

When to survey (time of year, month and day)

- If yours is a baseline one-off survey, identify the date of the lowest summer tides.
- Look for a 4-6 day window to work over the lowest tide.

What to survey

- Which kaimoana species you are interested in, and why.
- Information to gather on species, eg. abundance, size and density of each species.
- Additional information, eg. the substrate, vegetation, and/or water quality.

How to collect this data and undertake the survey

- Your method of collecting distribution and abundance data, eg. whether it is a qualitative or quantitative survey.
- The randomisation of sites and their spatial extent.
- If it is a quantitative survey, the size of your quadrat and length of your transect.
- Consistent methods for measuring the size of each kaimoana species.
- The method for recording and describing habitats and locations.

See Appendices 8, 9, 10 and 11.

What has been done – North Taranaki Kaimoana Survey

Three types of survey methods were adopted because of the ample resources and time available:

- the first was qualitative in which data was recorded at 10 metre intervals along the coast
- the second was quantitative to compare data with that obtained several years previously
- the third survey exercise was a repeat of the first survey method in more selected areas.

They were undertaken in the low tides of January and February 2001. They covered eight large reefs spanning about a 15 km stretch of coastline.

Things to think about

It will be important in the future for you to keep this description of your survey methods with your data. The methods validate and qualify the conclusions you make when interpreting your data.

If your objective is to monitor Resource Management Act resource consent conditions, then a specific impact monitoring programme is needed. Your regional council will have a monitoring programme designed for that purpose.

3. Data collection and quality

The quality of data collected from the survey will be an important factor influencing the value of your survey.

What to do

Design practical data sheets to be used on the survey that detail exactly what information and data needs to be recorded. The layout of each data sheet is important. They need to be clear and easy to follow. Include in the data sheets entry spaces for:

- the date, time and name of person entering the data
- sample point grid location
- type of species, species size and species numbers (quantity)
- substrate type
- any other information agreed.

In addition to the data sheet it will be useful to prepare information sheets for reference on:

- details of the species to be recorded – include pictures if you can, and
- details of substrates (rocks, pebbles, sand) and their descriptors.

See Appendix 9 and 11.

Some suggestions and examples

To make sure the data sheets are clear and easy to use, it would be worth checking them with someone who has not been involved in the design.

You will need to summarise your data at some stage into table format or a spreadsheet. It is worthwhile preparing the summary record spreadsheet at the same time. See Appendix 10.

What has been done - North Taranaki Kaimoana Survey

The species identified for recording/surveying were: paua, kina, mussels, pupu, starfish, octopus, rori and crab.

It was agreed that substrates and seaweed/vegetations should be recorded.

The marine biologist at the Taranaki Regional Council assisted in the design of the data sheet and information sheets. Space was provided for the survey team members to include their own comments or observations.

Things to think about

Kaimoana species may be known in some areas by different names. It is important for those on your project to agree on what name you will use for a species.

Your data sheets should be clear about the units of measurement for each piece of data. In addition, if qualitative data is being collected, there will need to be a common understanding by all involved on the interpretation of qualitative terms such as few and abundant.

Section 5

"Me hoe tahi"

Let us row together
The need to work in unison

Photograph courtesy of TGM Design

1. Scheduling and planning

The survey leader needs to undertake detailed and careful planning to ensure that all preparation is completed before the agreed date of the survey. A good plan will be comprehensive but flexible.

An important part of planning is the integration of tikanga moana, safety and environmental considerations into all activities. This will ensure that those involved are able to work safely, and that their activities are undertaken with due respect to the environment and hapū traditions.

What to do

Identify all the tasks included in the preparatory work, the collection of data along the reefs and management of the information collected. Consider undertaking a brainstorming exercise with others who will be involved in the survey, the project leader and preferably someone who has organised or helped to organise one previously.

There are seven main stages to your plan and these are:

- familiarisation of the area to be surveyed
- ensuring that all work will be safe for those involved
- finding the people and equipment you need
- training those who will be involved
- surveying – collecting data
- managing the data
- reporting on the work and the data.

The plan and schedule on the following page may act as a prompt in identifying your specific tasks. The schedule in this plan is quite compressed. Your schedule will depend upon the availability of people, their knowledge and familiarity with this type of activity.

In addition to the plan and schedule, make a list of other key information that will be recorded during the preparation and undertaking of the survey. This might include:

- an equipment inventory list
- a survey team members list and contact details
- a record sheet of the training that each survey team member has received.

Some suggestions and examples

There is a reasonable amount of administrative work needed to ensure the survey runs smoothly. Consider some assistance in this area, particularly if the schedule is relatively tight.

The Sample Survey Preparation and Implementation Plan on page 41 is an example that could be used as a basis for your plan and schedule.

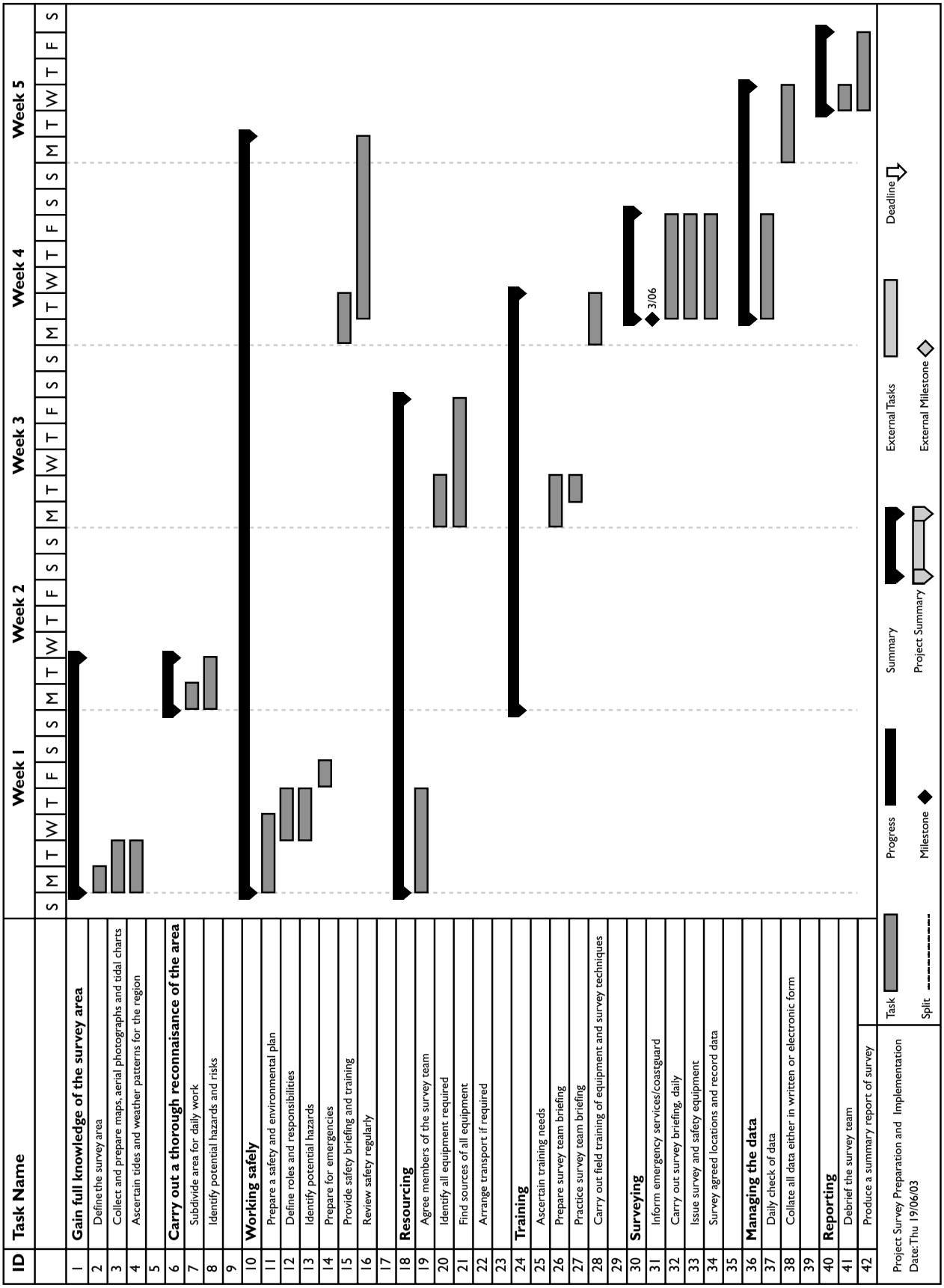
What has been done – North Taranaki Kaimoana Survey

The survey leaders together with the marine biologist and the FCE Safety and Environmental Adviser drew up a plan that involved a month of intensive preparation.

Things to think about

Allow plenty of time for planning and preparation. The time required to source equipment and personnel and to complete planning and training can easily be underestimated.

Sample Survey Preparation and Implementation Plan



2. Bringing the resources together

What to do

The survey team

By this stage the project leader, survey leader, hapū and the steering committee may have a very clear picture of candidates for the survey team. It is the job of the survey leader to recruit these members.

When discussing the survey with potential members, the survey leader may find it helpful to have a written list of the tasks the team members will undertake, when the survey will take place and the value of their participation. The basis of involvement also needs clarification. This may be voluntary, involve a koha or some payment for their time.

If the hapū and steering committee have agreed that a photographic record of the survey is required, the survey leader will need to find a photographer with the appropriate skills, equipment and time.

Keep a list of team members and their contact details.

Equipment

Identify the clothing, equipment and vehicles required to complete the survey. The type of survey and the area in which the survey will be carried out will determine these. Identify possible suppliers and sources for these and check the availability and cost.

If anything is to be hired, book them for the required survey duration.

A list of equipment that is likely to be required is included on page 44.

Financial

Once the manpower and equipment resources have been identified, the survey leader is in a position to estimate a budget to cover these. This needs to be agreed with the steering committee and/or the project leader before further progress can be made.

Some suggestions and examples

The task list for a survey team member should include the following:

- attending training sessions
- assisting in preparation of survey equipment and attending the briefing each day
- undertaking the field survey and cleaning equipment after the survey
- checking the data recorded for omissions or mistakes.

If you are thinking about undertaking a number of surveys or a regular monitoring programme, consider buying equipment rather than hiring it.

What has been done – North Taranaki Kaimoana Survey

Each hapū provided a team of four people for the survey. This number allowed for quite an ambitious survey programme. There were several rangatahi experiencing an activity of this nature for the first time.

An experienced photographer offered support throughout the survey.

The survey used the list of clothing, equipment and vehicles included on page 44.

Things to think about

The time required to identify, trial, approve and acquire the necessary clothing, equipment and vehicles is easily and frequently underestimated.

While wetsuits may seem rather unnecessary for a reef survey, the weather can change rapidly and the survey team can easily find themselves in an exposed situation.

Make sure you have a good system in place for keeping track of the equipment being used and its care and maintenance.

Equipment List for North Taranaki Survey

Item	Amount	Source	Comments
Diving masks/snorkels	10	Purchased	Can be hired, for deep water survey
Wet suits & booties	10	Purchased	Can be hired, for deep water and bad weather
Flippers/fins	6	Purchased	Can be hired, for deep water survey
Gloves	50 prs	Purchased	
Weight belts	6	Purchased	Can be hired, for deep water survey
Emergency throw rope	4	Hardware store	Can be made up, for deep water
Brightly coloured safety jackets	10	Borrowed	To identify team members on beach
Cell phones	2	Borrowed	For emergency calls only
Garmin 12 Global Positioning Systems (GPS) units	4	Purchased 2 Borrowed 2	To locate survey points
Calipers	4	Hardware store	To measure kaimoana size
Secants	4	Made from metal frame	To section off an area of reef to survey
Data record sheet folders	6	Purchased	To contain all data sheets, background information, maps and emergency information
Four wheel drive vehicle	1	Owned by hapū member	To transport teams to beach
12 seater van	1	Hired	To transport teams to beach
Safety boat	1	Owned by hapū member	For emergency rescue
First aid medical kit	1	Owned by hapū	For emergency or accidents
Drink containers	4	Owned by hapū	To avoid dehydration
Video camera	1	Hired	
Digital camera	1	Borrowed	
Computers	6	Owned by hapū	For data input, construction of data sheets
Printers	2	Owned by hapū	
Photocopier	1	Owned by hapū	

3. Safety planning and preparation

It is essential that your survey is carried out safely and with due care and attention to the environment. Preparing well and being aware of hazards and how these can be avoided will ensure that there are no accidents.

What to do

Design a Health, Safety and Environmental plan that provides for any event that you can reasonably expect to occur. Whilst preparing the plan give due consideration to the following:

- the purpose of the activity you are carrying out
- recognition of any potential hazards that there may be and how these may be avoided
- the specific safety responsibilities of each team member
- preparation for possible emergencies
- the training that the survey team should receive to ensure they work safely and are aware of potential hazards
- contingency planning – such as what to do in poor weather conditions and who to notify before you start
- equipment and clothing that is necessary to ensure safety
- how safety will be reviewed and checked during the survey.

Begin and complete your work with the tikanga of your hapū (karakia, waiata). Working with hapū kaumātua, consider tikanga aspects of the survey that will influence the work and how this is conducted during the survey.

Document your plan and distribute it for discussion within the survey team.

Some suggestions and examples

Consult with experts on matters which you are not sure about, particularly with respect to local sea weather conditions. It is always worth advising relevant authorities and safety organisations of your intentions and ensure their contact details are part of the plan. Those with whom you might consult are: the Coast Guard, Search and Rescue, local harbour board, local residents, whānau and hapū.

Aspects of tikanga moana are included in the appendices and a Health, Safety and Environmental plan guideline and example are included on the accompanying CD.

What has been done – North Taranaki Kaimoana Survey

- A committee made up of the two survey leaders and the FCE Health, Safety and Environmental Adviser formed to discuss safety issues and formulate a Health, Safety and Environmental plan.
- A basic FCE Health, Safety and Environmental template was modified to suit the project.
- All aspects of the survey were analysed to identify potential hazards and basic safety procedures were agreed.
- The plan was referred to during training and the daily briefing (see the video).
- Elements of the plan that were found to be impractical during the first days of survey were modified.
- Aspects of tikanga moana were documented within the Health, Safety and Environmental plan, while others were discussed and emphasised verbally.

Things to think about

People have differing appreciations of potential hazards and safety. A discussion on how you may deal with a potential serious accident should be enough to encourage the whole team to take this seriously.

It may be that family members decide to join the survey team for some of the time. Who is responsible for supervising and looking after the safety of children must be clear to all from the start as it cannot be assumed that the survey leader or any of the survey team members will be able to take on this responsibility.

4. Training

Training ensures that all those involved in the survey can contribute to their maximum. The more effort spent on training, the better the overall quality of your survey, the data, and the experiences of those participating.

What to do

Design the training sessions to ensure all team members understand:

- the objectives of the survey
- the importance of undertaking all work safely and in a way which respects tikanga and the environment
- safe working practices, including the potential hazards and what to do in an emergency
- the survey method being adopted and the information they are required to collect
- how to identify, measure and count the species
- how to handle and care for the equipment they use
- that they will have the opportunity to raise questions and concerns before starting work.

Consider providing the training in a number of short sessions to keep the team's attention.

Session 1: History of the area, relevant aspects of tikanga moana, karakia and waiata.

Session 2: The objectives and purpose of the survey and a description of the location.

Session 3: Safety and environmental considerations.

Session 4: Familiarisation with equipment to be used and data sheets.

Session 5: Field practice – identification of kaimoana, seaweeds and substrates and practice using the equipment.

Session 6: Data collection and how it will be used.

Prepare notes for each session, making sure that the material covered is suitable for the skills of those involved. Ask questions to check the level of understanding and encourage team members to ask questions whenever they wish.

Some suggestions and examples

- View the training and briefing sessions on the video provided with these guidelines.
- Involve kaumātua and the project leader in the session on history, tikanga, kawa and the relevance of these to the survey and the learnings we take from this.
- Keep the training as interactive as possible; this will encourage confidence, active participation and team building.
- During training the survey leader can assess the relative proficiencies of the team members. This can help when deciding how to pair up the team members to collect the data.

What has been done – North Taranaki Kaimoana Survey

A full day was dedicated to the training as listed above.

The training was conducted in a community resource centre as a number of short sessions. The group then travelled together to the beach for practical training, demonstration and practice at using equipment.

Training was given by the survey leader, the FCE Health, Safety and Environmental Adviser and the Taranaki Regional Council marine biologist, with many more contributing their experiences.

Things to think about

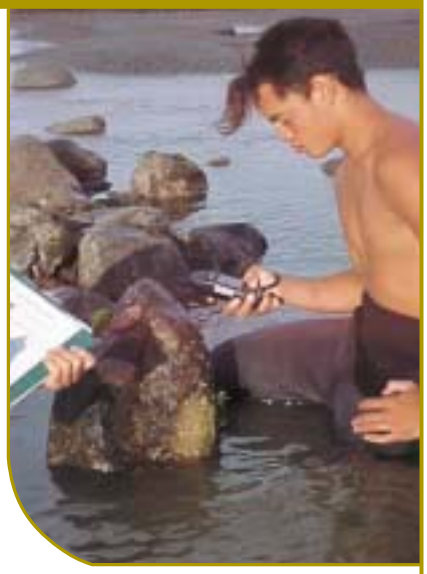
Allow plenty of time for training. The time required for team members to reach a reasonable standard of proficiency can be easily and frequently underestimated. It is the time when all team members start to work together and its kotahitanga value cannot be underestimated.

Consider whether these training sessions may actually be a significant part of meeting an objective, as was the case in the North Taranaki Survey, and make sure sufficient attention is given to this.

5. Implementation of the survey

On the day the survey is scheduled to start you should be ready, ensuring that no valuable survey time is lost. It is likely that you will be undertaking the survey on a number of consecutive days for an approximate four-hour period spanning the time of lowest tide.

What to do



Each day there are three distinct activities to be undertaken: the preparation, the survey, and the check and review.

Preparation

- Check the weather conditions and decide whether it is safe to survey that day.
- Check that all clothing, equipment and vehicles are ready.
- Check the photographer has all the information they need.
- Deliver a pre-survey briefing to the entire team. Use aerial photographs, maps and other aids to cover all aspects of the briefing. Cover the following:

  Situation – the terrain to be covered

  Mission – tasks for the day

  Execution – a step-by-step description of how the exercise will be conducted

  Administration and logistics – allocation of equipment, clothing, food and drink

  Safety and emergency procedures – emphasise safety and tikanga moana.

Survey

- Following the briefing, go to the start point above the beach.
- Karakia timatatanga.
- Brief on former inhabitants, pā, papakāinga, urupā, tauranga waka.
- Carry out the survey for the day according to the survey methods procedure.
- Survey leader to monitor the survey's progress and the weather.
- After completion of the day's work assemble together. Karakia.
- Leave the survey area together.

Check and review

- Recover and secure all clothing, equipment and data record sheets.
- Debrief and advise team members of the location and start time for the next day.
- Check the daily data record sheets for obvious errors and omissions.
- If possible check through the photographic records for the day.
- Prepare the data sheets, clothing, equipment and vehicles ready for the next day.
- Prepare the pre-survey briefing for the next day's surveying.
- Karakia whakamutunga.

Some suggestions and examples

The success of the survey depends upon the team working well together so consider finishing off each survey session with a meal or a social session and encourage survey team members to talk over their experiences of the day.

What has been done – North Taranaki Kaimoana Survey

The daily briefing was undertaken in a local community resource centre.

At the end of each survey session there was an optional barbecue or meal for the survey team at which time the day's video footage was shown, providing the opportunity for comment and feedback.

The marine biologist from the Taranaki Regional Council accompanied the survey teams each day, moving from one pair to another ensuring that the survey methodology was being implemented successfully and consistently.

There was also plenty of opportunity for survey members to question and learn about many aspects of marine and coastal life and local history.

Things to think about

Carefully prepare the briefing paper and rehearse its delivery as professionalism and thoroughness will set a high standard for all to follow; it will also boost the confidence and enthusiasm of the survey team.

6. Data collection and checking

The survey data recorded each day needs to be checked for consistency and to ensure it makes sense. It is then stored in a systematic way. The amount of data collected will be such that it is worthwhile checking and filing this each day as soon as the recording is completed.

What to do

Before any data is gathered, the survey teams should have been briefed on how to fill in the data sheets. It is worth discussing where errors can easily be made in entering data.

At the end of each survey session all the data sheets need to be collated and checked thoroughly and corrected where possible. Checks should be made on:

- any missing entries
- inconsistent Global Positioning System (GPS) recording modes and readings
- incorrect GPS entries, beyond the boundaries of the area being surveyed
- inconsistencies between the substrate and kaimoana recorded (eg. sand and paua)
- the units for recording the size of differing species
- any freehand comments made on the sheets.

Ideally it would be good to transfer the data onto the computer spreadsheet as soon as possible. This transfer itself will need to be checked to ensure no errors have been generated.

If a photographer is involved then storage of the video footage and/or photographs needs to be discussed and agreed, ensuring that these are correctly labelled.

If audio recordings have been taken during the surveying, or interviews have been recorded, then these too need to be labelled and stored.

Some suggestions and examples

During the first day of data gathering it is advisable for the survey leader to check on team members while they are surveying to ensure the sheets are being entered correctly.

What has been done – North Taranaki Kaimoana Survey

The data sheets were collected each evening. However, it was not until the end of the first five day survey period that these were checked thoroughly. There was found to be some data omissions and some obvious mistakes in recordings of GPS readings. By the end of five days of recording there were over 200 data sheets to check, while omissions could not be addressed, GPS recordings were relatively easy to correct although this was very time consuming. In hindsight, a daily checking would have been more advisable.

Things to think about

Obtain a folder that will protect the data record sheets during surveying activities.

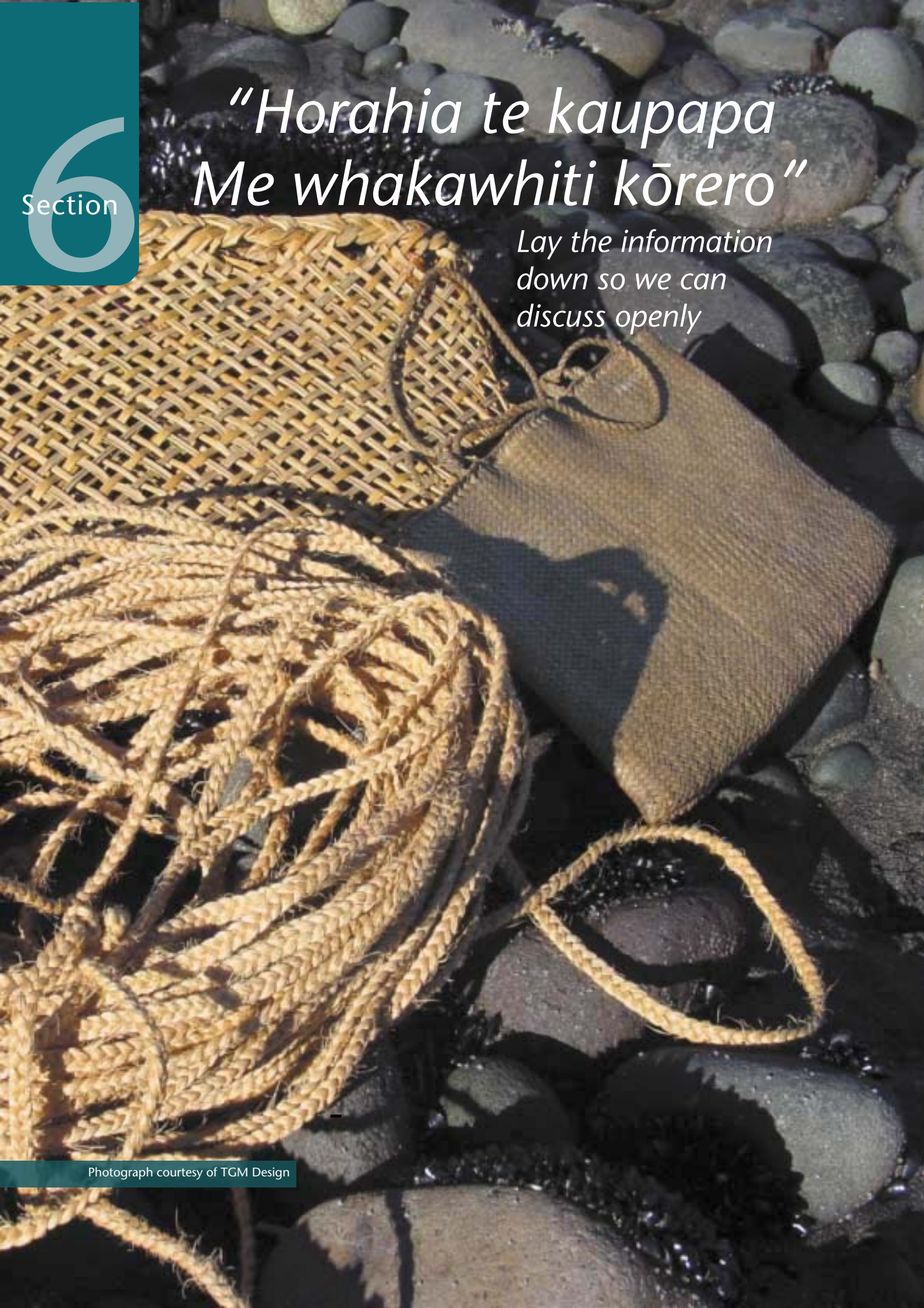
Attention to detail and data accuracy is essential and this is worthwhile highlighting at all relevant briefings.

Do not let survey team members take the data sheets away afterwards.

Section 6

"Horahia te kaupapa Me whakawhiti kōrero"

Lay the information down so we can discuss openly



Photograph courtesy of TGM Design

1. Assimilating all the data

All your collected data is important and represents the many hours of time and effort put in by your survey team. These all need to be collated together and the information summarised. Once summarised, thought can be given to presentation.

What to do

- Keep your data safe. Copy the data sheets and store the copies in a different place than the originals.
- Construct a simple summary spreadsheet. See Appendix 10.
- Create a back up of your spreadsheet on disc or on another computer.
- Enter all the data from the data sheets onto the spreadsheet.
- Systematically check each entry for data entry errors (verification).
- Make a copy of the checked spreadsheet and destroy all previous copies.

Some suggestions and examples

Designate one person to undertake data entry and storage of the data.

Designate one person to be responsible for data entry verification. This person needs to be clearly briefed as to the importance of the task.

See additional information on data on the accompanying CD.

What has been done – North Taranaki Kaimoana Survey

The field data sheets were inspected.

Any amendments or alterations made to the data were done on the copies that were then used to enter data into the computer. The survey team members entered some of the data into the spreadsheet as part of a training exercise in Microsoft Excel.

A second team checked the computer-entered data to ensure consistency between the data sheets and computer data.

Another hapū member undertook a final data check.

The completed spreadsheet had over 200 complete data entries, representing over 200 locations surveyed.

Things to think about

At any stage you need to be clear as to the prime source of data and what is a copy. If corrections are made to some data, create a new working file, copy it, and make sure old copies are destroyed.

Incorrect data is worse than no data, therefore take time to check, check and check again.

2. Deciding on display options

Once you have all your data summarised, consider how it can be used to best meet the objectives defined by the steering committee.

What to do

First collate your information. The information you have available by this stage will be quite considerable consisting of:

- the data spreadsheet
- photographs and video footage
- audio material
- the experiences of the survey leader and team members.

Given that your audiences may be quite broad, it is worth seeking a number of different views on how to present the data.

There are a number of ways of assessing whether your presentation is effective:

- involve as many on your team as possible during the planning of the display. Anyone from your team should then be able to explain the display and the information it is conveying
- give the presentation to someone and ask them to tell you what it conveys to them
- give your presentation and data to someone familiar with such surveys and ask them if this is the most effective way of presenting your data to meet your objectives.

Check and list all your options for presenting and communicating the results, and if necessary discuss with the project leader and the steering committee members how to resource this work.

Once finalised, label the displays clearly to identify the information they contain.

Some suggestions and examples

Comparisons between your data and that of a previous survey can best be displayed in graphical or tabulated form.

If your intent is to obtain a general understanding of the distribution of kaimoana along the coastal area, then a plot of results on a map or aerial photograph is a good way.

If your aim is to establish knowledge in the kōrero of the hapū and present a record of how the survey was undertaken and who was involved, then photographic and videographic record and the creation of waiata are potentially effective ways of doing this.

What has been done – North Taranaki Kaimoana Survey

Geographic Information System (GIS) software was used to mark the survey location points and the data gathered at each point on maps of the reefs. The data was presented in such a way that a comparison could be made between the substrate, the algae type and the kaimoana habitat. It took some experimentation to optimise the quantity of information that could be displayed on one map and the clarity of this through the use of colour coding. These data maps were then used in the written reports, included in the CD report and displayed in the poster presentation.

A 15-minute video was prepared which provided a summary of the training and surveying of the coastal environment. This video has been shown at conferences and many hui. It provides a memory jogger for hapū members who were involved.

Things to think about

If the survey was undertaken as part of a consent monitoring process, the regional council will have clear requirements on how the data needs to be presented and reported to the consent holder.

Data displays and presentations do not have to be complicated. The simplest forms are often the best. Aim for simplicity as much as is possible.

The data produced by your survey and its presentation is only meaningful in the context of the objectives set, the methods used and the accuracy of your measurements. Therefore ensure your results are reported and retained together with this other essential information.

3. Presentation and review

The presentation, review and the conclusions drawn from your survey is the culmination of all the work put in and will be a significant measure of your survey's success.

What to do

To review the data you could ask a series of questions such as:

- Does your data show a relationship between sea bed and algae type, and the type of kaimoana present?
- Does this result agree with the traditional knowledge of your hapū and whānau?
- Are there reasons why kaimoana is in one location and not another?

There may be more questions asked than can be answered by the data measured and presented. Record these questions though, and consider them when a repeat survey is carried out in the future.

Involve your kaumātua in the review of your data noting any comments regarding differences or similarities with their own information.

Deducing and inferring information from data, particularly making a comparison with earlier data or relating your findings to changes in environmental conditions, needs to be undertaken with care. It is worth seeking assistance from someone experienced in survey methods and such data analysis.

The project leader and survey leader, together with the steering committee need to agree the most effective ways of presenting your survey and project in its final form. Consideration needs to be given to the objectives of the project and the audiences you are wishing to reach.

Some suggestions and examples

It is a good learning process, and an enjoyable one, to involve as many people as possible in discussing the data. Ask questions about what it is telling. Encourage your review team to ask questions. Involve the survey team in this exercise and explore whether their experiences match up with the results.

For your project presentation consider options which allow you to encourage others to undertake a similar survey.

What has been done – North Taranaki Kaimoana Survey

The data confirmed the common knowledge of those familiar with collecting kaimoana.

The environmental consultant assisted in comparing the data with those previous surveys. He also reported on the information that further surveys and monitoring could generate and the options available for protecting and regenerating kaimoana stocks.

The purpose of this survey was not to measure or assess impact and no conclusions were drawn from the information presented, although there was considerable speculation!

A poster display presentation depicting the objectives, maps of the area surveyed, methods adopted and the qualitative results of the survey was produced. This has been used at three conferences and several hui with regional councils and other iwi.

A CD web page-style report on the whole project was created. It included photographs, written reports, video clips and other documents prepared throughout the project. The rangatahi found this method of presentation most appealing.

The final summary video has proved to be the most effective medium for general communication.

Section 7

"Ngā hoe tautoko"

Supporting paddles

Photograph courtesy of Jamesfoto and Stevie-Rei Poukaia

Appendix 1: Task Sequence Sheet

Project Chart			Time Sequence
Project Stage	**Responsibility**	**Involvement**	
Making a Start	Hapū/iwi		
Agreeing isues, values and aims	Hapū		
Assigning a leader	Hapū		
Involving others	Project Leader		
Setting up your Steering Committee	Project Leader		
Steering the Project	Project Leader		
Agreeing objectives		Steering Committee	
Agreeing scope and schedule		Steering Committee	
Resourcing		Steering Committee	
Agreeing the Survey Leader		Steering Committee	
Reviewing progress		Steering Committee	optional / optional
Final review		Steering Committee	
Reviewing Previous Surveys	Project Leader	Committee member/consultant	optional
Designing the Survey	Project Leader		
Survey methods		Methods team/Consultant	
Survey design		Methods team/Consultant	
Data collection and quality		Methods team/Consultant	
Undertaking the Survey	**Survey Leader**		
Scheduling and planning	Survey Leader	Members of Steering Committee	
Bringing resources together	Survey Leader	Project Leader, Steering Committee	
Training	Survey Leader	Experts in marine biology, safety, tikanga	
Safety planning	Survey Leader	Safety and environmental consultant	
Implementation of the survey	Survey Leader	Survey team members	
Data check and verification	Survey Leader	Survey team members	
Presenting and Reviewing the Data	**Project Leader**	Survey Leader	
Assimilating all the data and checking		Data team/Consultant	
Deciding on display options			
Presentation and review			

This chart suggests the logical sequence for undertaking the steps identified in these guidelines.

Appendix 2: Aspects of Hui Tikanga and Good Administration

It is extremely important that your first consideration and consultation on matters of tikanga of the rohe be with your hapū and kaumātua of the area. Tikanga are the values and practice of the tangata whenua, and as such will differ from place to place.

Hui Preparation

1. Have a clear objective and agenda before calling a hui.
2. Consider all those that should attend and ensure they are invited.
3. Choose a time and venue for the meeting that is convenient to those that should attend and is appropriate for the purpose of the meeting.
4. Ensure all attendees have a copy of minutes from previous meetings and any pre-reading material at least a week before the date of your hui.

Hui Process

1. It is appropriate for the hui to commence with karakia, mihimihi and waiata conducted by hau kāinga.

   Karakia will focus the gathering on the kaupapa and all of the elements that will make it successful. Mihimihi will settle the people in appropriately while waiata will continue the tradition of passing on our histories orally.
2. Ensure all attending the hui are fully introduced before the hui starts.
3. When in discussion ensure all attending have the opportunity to contribute and speak without interruption and this is given value.
4. Seek to reach consensus on all key actions and agreements.
5. At meeting close, confirm agreements and actions made throughout the hui.
6. Mihi whakamutunga, karakia.

   This is an acknowledgement of the contributions of all who attended and their tautoko (support) of the kaupapa (topic, subject matter).
7. Sharing of kai.

Hui Record

1. After the hui, prepare a record of the hui and formal minutes if this is required.
2. Circulate the record and/or minutes to all those who attended the hui and those who were invited but unable to attend.

Appendix 3: Aspects of Hui Tikanga Moana and Respectful Practices Relevant to a Survey

It is extremely important that your first consideration and consultation on matters of tikanga moana be with your hapū and kaumātua of the area. Tikanga is a reflection of the values and practice of the tangata whenua, and as such will differ from place to place.

The following are offered for consideration:

A fundamental principle determining your behaviour and conduct on the beach and in the intertidal zone, is the respect to be afforded to all aspects of life, moana and whenua and the intricate and delicate balance between these. Maintaining this respect provided for our tūpuna and will provide for our mokopuna. Adhering to this principle is paramount for the sustainability of our environment and our source of kai.

It is customary that karakia is given by a kaumātua or someone from the local area.

A karakia can acknowledge the environment as a whole, the elements (wind, water, air, land) and the deep respect held of these. Recognition may be given to tūpuna, tangata whenua, and mokopuna and commitment to all these values during the work in hand.

Preparation

1. Seek advice from the hapū and local kaumātua as to whether or not there is a rāhui.
2. If there is a rāhui consult as to the nature of this rāhui and make a judgement call about the appropriateness of continuing with your survey.
3. If you intend to gather a significant amount of kaimoana for a hui or tangi, seek advice and confirmation from your hapū kaitiaki.

At the beach

1. On arrival, karakia.
2. Kōrero on the history of the area, its people, how they gathered kaimoana and events that happened in the area.
3. If rocks are moved or disturbed, ensure that this is temporary and return them to the position you found them in, to avoid disturbance and change in status of the locality of the rock.
4. If kaimoana is taken, ensure that the first is offered back to maru in thanks for the kai to be taken.
5. When collecting kai, only collect sufficient to satisfy your needs and ensure there is enough left for regeneration.
6. Consumption of kaimoana and the discarding of waste on the beach or reef is inappropriate. This disturbs the balance, attracting scavengers and creates a local stress situation.
7. Before leaving the beach or coastal area, congregate for karakia whakamutunga.

Appendix 4: Issues/Values/Aims Template

Issues/Values/Aims

Issue	Value	Aim
Example: *There is so much coastal development in our rohe, we are concerned the reefs are being over fished and stock is declining.*	*We value sustainable kaimoana stocks so that the hapu may have sufficient for hui and tangi.*	*1. Assess the kaimoana stocktake in our rohe and establish whether this is in decline.* *2. Agree methods for ensuring a sustainable kaimoana stock for our mokopuna.*

Appendix 5: Hui Record Template

Hui Record

Date:	Venue:
Attendees:	
Purpose:	
Agenda:	
Discussion Points:	
Agreements:	
Agreed Action:	

Appendix 6: Objectives Template

Objectives

Date:
Organisations Involved:
Objective 1:
Objective 2:
Objective 3:
Objective 4:

Note: Ensure you have covered 'what, where, who, why and when'.

Appendix 7: Timeline Template

Task	Who	Responsibility	Month 1				Month 2				Month 3				Month 4				Month 5			
			W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4

Appendix 8: Kaimoana Species and Common Substrates in Coastal Regions

Kaimoana Species

The following are some kaimoana species common to many coastal areas in New Zealand.

Paua

The black-foot paua lives in rocky areas immediately below the low tide mark, but sometimes is found in pools left behind at low tide. It eats algae, especially the paint and crusting algae on rock surfaces. Paua are very susceptible to sand inundation and will move away from any area where sand becomes a long-term problem.

Kina – sea egg

Kina inhabit the same kind of areas as paua and actively compete with them for both space and food to the extent that they can prevent paua from co-habiting with them.

Kuku – green-shelled mussels

These animals are found attached to rocks, often in large clumps and beds, and feed by filtering particles of food from the water. They are commonly found low down on the shore and in areas where there is a significant influence of fresh water such as river mouths, waste and stormwater outfalls. The green-shelled mussel is common in some areas, whereas the smaller blue mussel is common in others – both share the same characteristics.

Rori – the black sea slug

This animal is generally found in the same areas where you might find paua or kina. It eats the soft, broad-frond red and green algae.

Wheke – octopus

This animal occurs below the low tide mark, generally individually and not in patches. They often have a seasonal abundance.

Pupu

Pupu are the various species of smaller shellfish which occur all over the shore but especially lower down and in rock pools. Catseyes, top shells, turban shells and limpets are all species of pupu that graze on microscopic algae or eat other species such as barnacles, whereas cockles (sometimes called pipi) occur in sandy shores and feed by filtering food from the water.

Papaka – crabs

Papaka especially the large red, purple and hardshell crabs are commonly found in rocky areas lower down the shore and in rock pools. Paddle crabs may be found in sandy or other soft-bottomed areas. Crabs are either scavengers or active predators.

Peka peka - starfish

Some species of starfish are taken for food, particularly the larger reef species.

Oysters

In some areas of New Zealand there are either native rock oysters or the introduced Pacific oyster, both of which inhabit the same sorts of low-shore rock areas and filter food from the water.

Substrate

This is the type of environment you are in. It could be rocky (gravel, rocks or boulders), sandy, muddy or a lahar platform with rock pools. It is not uncommon to get mixtures of these – for example a gravel beach with the occasional large boulder and clumps of rocks and the occasional patch of sand. The general descriptions used are:

sand	as on a good swimming beach, with particles up to 2 mm in size
gravel	smaller stones and cobbles, 2 – 160 mm in size
rocks	larger again, 160 – 650 mm in size
boulders	larger than rocks
mud	obvious
lahar platform	a volcanic, cemented rock substrate with pools cut into it by wave action.

Substrate can also change over time, sometimes very quickly – for example a rocky area can become buried with sand, and this will have a major impact on what you may or may not find.

Seaweed/Algae

Algae provide food, habitat and shelter for many kaimoana species. Again, it is very important to note the dominant types of algae present, as the presence or absence of a particular type of algae can mean the presence or absence of a particular kaimoana species.

There are three main types of algae that need to be recorded:

- ***encrusting*** – these form a thin crust over the rock surface, like paint or like the rock needs a shave. They can be pink, red or brown. White crusting algae generally are dead, and baked/bleached by the sun.

- ***foliose*** – has blades or leaves that rise up above the rocks to which they are attached and float in the water. They can be red, brown or green. Some are edible, eg. the common green sea lettuce.

- ***Neptune's necklace*** – long chains of brown or sometimes greenish 'bubbles' linked together like a necklace and found around the edges of rock pools.

Water quality

Make notes of any unusual observations or things that you see, such as *the water looked murky and brown*, or *the water in the rock pools smelt like sewage*, or *a lot of sand in the water and on the bottom of pools*. All of these observations may be very important if we are trying to explain why some kaimoana occur where they do, and not in other similar places.

Appendix 9: Sample Data Record Sheet for a Qualitative Survey

Site #	Reef:			Time:			
Species	Abundant	Common	Rare		Species	Present	Absent
Paua					Starfish		
Kina					Octopus		
Mussel					Black slug (Rori)		
Pupu					Crab		
Dominant seaweed #1	Dominant seaweed #2	Dominant seaweed #3		Dominant substrate #1	Dominant substrate #2	Dominant substrate #3	
Observations and Comments							

Sample Data Record Sheet for a Quantitative Survey

Counters Name: Recorders Name:

Transect#		Quadrat#		Date:		Time:		Reef:	

Species	Size of Individual	Species	Size of Individual
Paua		Red Crab (Plagusia sp.)	
Kina		Cats Eye (Pupu)	
Mussel (Green Lipped)		Cooks Turban Shell (Pupu)	
		Black Slug (Rori)	

Seaweed#1 (please circle)	Seaweed#2 (please circle)	Seaweed#3 (please circle)	No seaweed present		Dominant substrate#1	Dominant substrate#2	Dominant substrate#3
A C R	A C R	A C R					

Observations and Comments

Electronic Data Sheet (using Microsoft Excel)

Site	GPS1	GPS2	DATE	TIME	REEF	PAUA	KINA	MUSSEL	PUPU	STARFISH	OCTOPUS	BLACK SLUG	CRAB	S-weed 1	S-weed 2	S-weed 3	Subs 1	Subs 2	Subs 3	Comments	Team no.	Names
1	E-2630274	N-6245666	13.01.01	7.33pm	Urenui	0	0	3	3	1	0	0	1	2	0	0	2	0	0	Anemomies,lots mussels 2"-4"	2	Leroy&Nick

Appendix 11: Survey Identification Sheet: Kaimoana Survey 2001

Algae

1

Encrusting algae – forms a crust over the rock. Can be coloured pink, white, red or brown.

2

Foliose algae – has blades/leaves that rise greater than 5mm above the rock/substrate. Coloured brown, green or red.

3

Neptune's necklace – long chains of green to brown bubbles linked together, quite often found around the edge of rock pools.

Substrate

1	Sand – particles like you would find on a swimming beach	0 – 2mm
2	Gravel – small stone, cobbles	2 – 160mm
3	Rocks	160 – 630mm
4	Boulders	630mm+
5	Lahar platform – naturally cemented material	

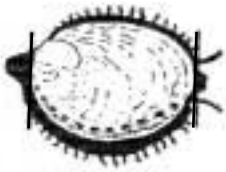
Number of Individuals/Area

Species	Abundant	Common	Rare
Paua	>5 per m^2	1-4 per m^2	<1 per m^2
Kina	>5 per m^2	1-4 per m^2	<1 per m^2
Mussel	50% coverage	1-50% coverage	<1% coverage
Pupu	>200 per m^2	10-200 per m^2	<10 per m^2

Species

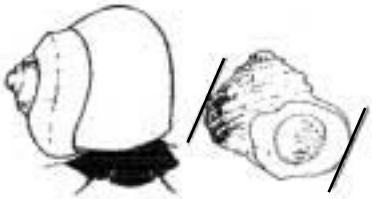
Kuku

Kina



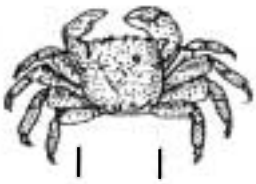
Paua

Papaka ura



Pupu

Karaka



Papaka nui

Ngaeo

Kotare moana

Hopetea

Neptune's necklace

Peka peka

Note: Lines in above pictures indicate measuring points for the species to ensure consistency.

Appendix 12: Additional Resources

Additional marine kaimoana monitoring resources

The Kaimoana Monitoring Kit

The Kaimoana Monitoring Kit has been developed by the National Institute of Water and Atmospheric Research, under contract to the Ministry of Fisheries, for use by the community to assess stocks of paua, kina, rock lobsters and reef fishes. The field kit includes three 50-page guidebooks that present practical methods, as well as tools to undertake the monitoring of kaimoana species. The Kaimoana Monitoring Kit provides an additional resource to complement this guideline.

For more information about the Kaimoana Monitoring Kit, contact:
Dr Alison MacDiarmid by emailing: a.macdiarmid@niwa.co.nz or
Dr Charlotte Severne by emailing: c.severne@niwa.co.nz

Additional community environmental monitoring resources

Stream Health Monitoring and Assessment Kit – Stream Monitoring Manual Version 2K, a Tool for Kaitiaki

The Stream Health Monitoring and Assessment Kit (SHMAK) has been funded by the Ministry for the Environment's Sustainable Management Fund and designed by the National Institute of Water and Atmospheric Research for farmers, community groups and hapū and iwi to monitor the ecological health of streams. It provides practical tools and advice that enables the keeping of records of long-term trends (whether streams are improving, degrading or staying the same) and also of short-term impacts.

For more information contact:
Lisa Miller
NIWA Instrument Systems
PO Box 8602, Christchurch
tel: 03 343 7890; fax: 03 343 7891
email: l.miller@niwa.co.nz

There are many community groups and organisations around the country that provide information and guidance on taking care of your local streams. To find out about orgainisations and initiatives are happening in your region contact your local regional council.

Te Raranga A Mahi: Developing Environmental Management Plans for Whānau, Hapū and Iwi

This is a clear and practical guide for assisting tangata whenua to prepare environmental management plans. The guidelines complement this work well and provides useful additional information on project management.

Te Rananga a Mahi was prepared under the Ministry for the Envionment's Sustainable Management Fund.

For more information contact:
The Maruwhenua Team at the Ministry for the Environment by emailing maruwhenua@mfe.govt.nz or phoning (04) 917 7400. Copies are available on the Ministry for the Environment's website: www.mfe.govt.nz/publications/treaty/

Māori indicators/tohu for environmental monitoring and reporting

Visit the Ministry for the Environment's environmental indicators website at www.environment.govt.nz/info/techdocs.html for a full list of technical reports relating to the development of Māori indicators.

Key environmental government agencies

Many government agencies have responsibilities when it comes to looking after the environment. They include:

Regional councils

Regional councils are responsible for managing the natural environment (land, water, air and coast) with a long-term view to making sure these are used sustainably. This means ensuring that they are as available and in as good a shape (if not better) in the future as they are today. They also have responsibilities of communicating this to the residents of the region.

There are 16 regional councils around New Zealand that manage environmental issues, resource management and public transport:

- Northland Regional Council
- Auckland Regional Council
- Environment Waikato
- Environment Bay of Plenty
- Manawatu-Wanganui Regional Council (horizons.mw)
- Gisborne District Council
- Taranaki Regional Council
- Hawkes Bay Regional Council
- Greater Wellington – The Regional Council
- Environment Canterbury
- Marlborough District Council
- Nelson City Council
- Tasman District Council
- West Coast Regional Council
- Otago Regional Council
- Environment Southland.

To contact the regional council in your area visit www.localgovt.co.nz.

The Ministry for the Environment

The Ministry for the Environment advises the Government on New Zealand's environmental laws, policies, standards and guidelines, monitors how they work in practice and takes any action needed to improve them.

Crown Research Institutes

Crown Research Institutes undertake a wide range of research, technology development and consulting for a range of organisations within New Zealand and overseas. They also undertake public good science for government.

There are ten Crown Research Institutes in New Zealand:

- AgResearch Limited (AgResearch)
- Industrial Research Limited (Industrial Research)
- Institute of Environmental Science and Research Limited (ESR)
- Institute of Geological and Nuclear Sciences Limited (GNS)
- Landcare Research New Zealand Limited (Landcare Research)
- National Institute of Water and Atmospheric Research Limited (NIWA)
- New Zealand Forest Research Institute Limited (Forest Research)
- New Zealand Institute for Crop and Food Research Limited (Crop and Food Research)
- New Zealand Pastoral Agriculture Research Institute Limited (AgResearch)
- The Horticulture and Food Research Institute of New Zealand Limited (Hort+Research).

Department of Conservation

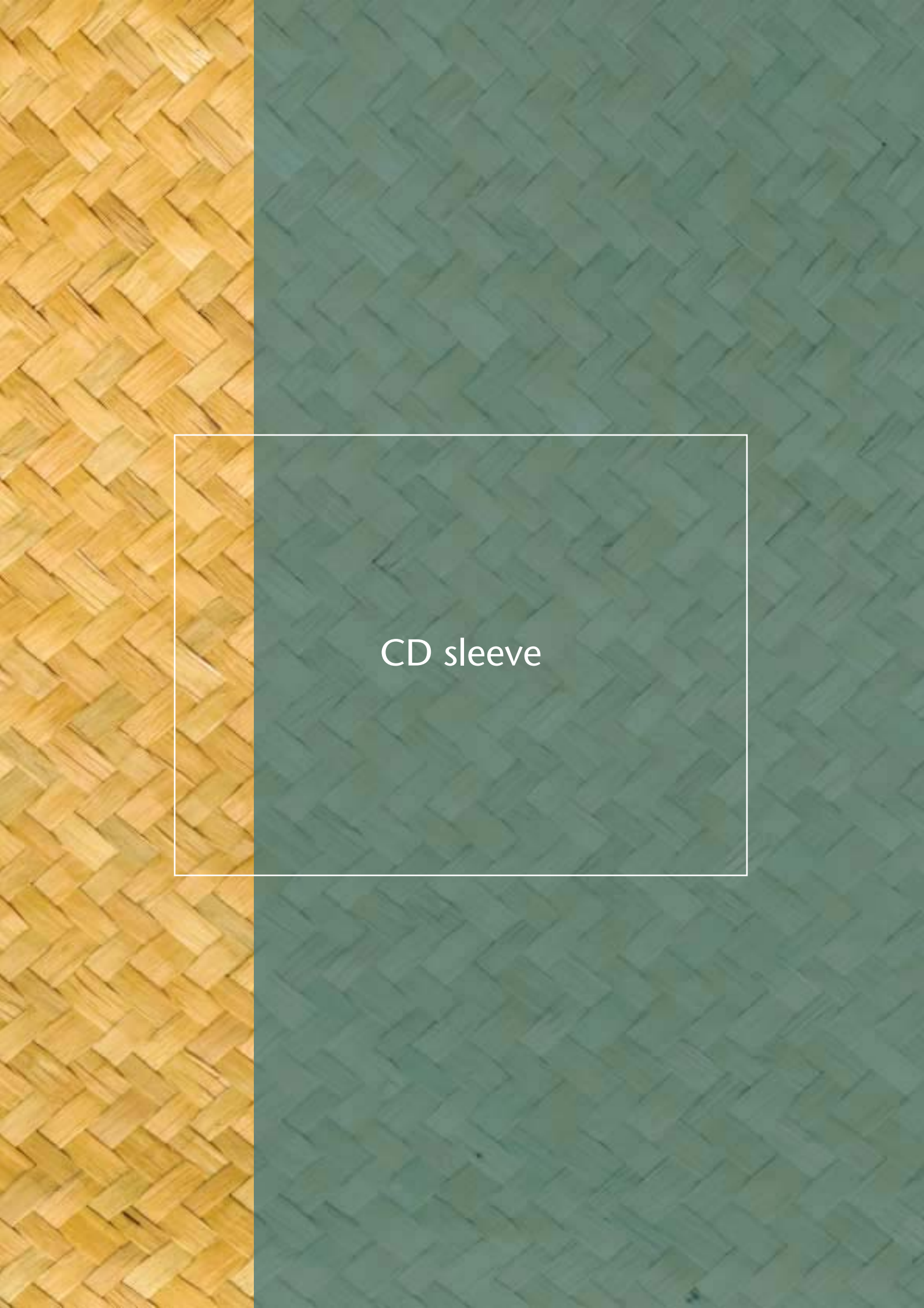
The Department of Conservation is the central government agency responsible for the conservation of New Zealand's natural and historic heritage. They also administer the Marine Reserves Act 1971 that provides for the setting up and management of areas of the sea and foreshore as marine reserves.

Ministry of Fisheries

The Ministry of Fisheries is the government agency responsible for the conservation and management of fisheries.

They work with Māori to set up management systems such as mataitai and taiapure. Tangata whenua or tangata kaitiaki (tiaki nominated by tangata whenua) can apply for a mataitai reserve in any part of their rohe moana.

For more information visit the Ministry of Fisheries website: www.fish.govt.nz.


CD sleeve