Source: Hughey, K.F.D., Baker, M-A. (eds). (2010b). The River Values Assessment System: Volume 2: Application to cultural, production and environmental values. LEaP Report No.24B, Lincoln University, New Zealand.

Chapter 8
Tangata whenua

Preamble

Application of a method developed for individual values to tangata whenua river values was always going to be challenging. There were three main challenges:

1. The need, primarily, to encompass the holistic Maori world view of resources, rather than to compartmentalise as the method does;
2. The need to translate a method and set of defined terms into a terminology and set of concepts and rules relevant and useful to tangata whenua;
3. The time needed to thoroughly work through, with local Maori, the complexities of the approach and how it might assist in terms of Maori resource management expectations and aspirations.

All of these challenges have been addressed and the chapter below, while different to others, is fundamentally consistent and certainly complementary and helpful in articulating priorities and ways of working with these priorities.

Consideration of a significance assessment method for tangata whenua river values

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8.1 Description of the Overall Project

8.1.1 Introduction

This chapter provides guidance for parties (iwi, councils) wanting to apply the RiVAS method **in order to assess tangata whenua river values**[1]. The chapter's purpose is to outline the results of one case study, to develop a framework and apply the method in Murihiku. However, rather than simply defining significance thresholds for application within national and regional planning under the RMA, the challenges of according significance from a cultural perspective are also introduced (albeit briefly) in section 5.

To this end, the modified method outlined in this chapter:

- Establishes criteria to assess the **total river value** from a tangata whenua perspective[2].

It does not:

- Identify thresholds for **individual taonga or individual sites** to rate their individual significance within a river system.
- Outline a means to determine whether a river is nationally, regionally or locally significant.

The final section of this chapter comments on the results of the case study. At present its construction reflects the structure and content of the *Te Tangi a Tauira*, the Iwi Resource

1 Although the project can be supported by Council only tangata whenua can assess significance to tangata whenua.
2 The method for use by tangata whenua to assess total river value will provide for subjective assessments.

Management Plan in Murihiku, and only incorporates comments from nga papatipu runanga o Murihiku (see Photo 8-1 – example of the Oreti, a river important to local iwi).

Photo 8-1
The Oreti River – one of the rivers assessed by representatives of Kai Tahu Ki Otago

8.1.2 Outline of the generic method

The generic method comprises three parts, and is outlined here in order to provide a context for tangata whenua modification:

- In Part 1 assessment criteria are defined;
- In Part 2 significance is to be assessed but as noted in the introduction to this chapter the challenge of according significance from a cultural perspective is discussed; and
- In Part 3 future data needs are considered.

Each part is divided into a series of steps (Table 8-1).

Table 8-1
Summary Method

	Step	Purpose
PART 1: ASSESSMENT CRITERIA		
1	Identify attributes	Listing all attributes ensures that decision-makers are cognisant of full scope of the river value
2	Select and describe primary attributes	A subset of attributes is selected to ensure the method is practical and implementable A synopsis is provided for each primary attribute, to inform decision-makers about its validity and reliability
3	Identify and apply indicators	SMARTA-criteria selected indicator(s) are identified for each primary attribute. Where quantitative data are not available, Expert Panel advice is used
PART 2: DETERMINATION OF SIGNIFICANCE		
4	Apply significance threshold	Thresholds are applied to combined indicator scores to facilitate recognition of significance at national or regional levels for the value
5	Determine significance	The significance of the river for the value in question is determined from the combined indicator scores for primary attributes. National significance is defined as combined indicator score ranking for the value in the top 10% of rivers nationally. Regional significance is

	Step	Purpose
		defined as a combined indicator score ranking for the value in the top 10% of rivers within the region, exclusive of nationally important rivers.
6	Outline other factors relevant to assessment of significance	Factors which cannot be quantified are outlined to inform decision-making
PART 3: METHOD REVIEW		
7	Identify information requirements	Following from 6, data desirable for assessment purposes (but not currently available) are listed, to inform a river research strategy and to determine future information requirements

In addition to trialling a particular process for identifying tangata whenua river values and assessing significance, this particular project may be of value to nga runanga o Murihiku as it is also a trial of how parts of their newly developed iwi resource management plan can be operationalised. In other words, although the project was initiated on the premise that the process would be of value to resource managers, there is potential for it to be of value to tangata whenua.

8.1.3 Limitations of the method

This whole chapter is premised on tangata whenua supporting an assessment of their rivers – in particular a significance assessment. This may be problematic. Many whanau, hapu and iwi choose not to assign numerical scores to values or attributes, arguing that such an approach is reductionist and in conflict with their worldview. While that perspective can be readily supported, there are many examples where tangata whenua willing reduce their arguments to one or a few key points that are then supported by some form of quantitative analysis.

Rather than debate a reductionist versus holistic perspective, it is sufficient to state that the approach we have adopted is to proffer a method then leave it for tangata whenua to choose whether or not they want to utilise the methodology.

8.2 Considering tangata whenua River Values

Without water no living thing, plant, fish or animal can survive. Water is a taonga and this taonga value refers to values associated with the water itself, the resources living in the water and the sites, resources and uses of in the wider environs that are sustained by the water. Further, water is a holistic resource. As a taonga it is the responsibility of tangata whenua as Tangata Tiaki to ensure that water is available for future generations in as good as, if not better quality. Water has the spiritual qualities of mauri and wairua. The continued well-being of these qualities is dependent on the physical health of the water.

8.2.1 Adaptation of the method as a starting point with tangata whenua

At the commencement of the project it was envisaged that the project with tangata whenua would involve the steps outlined in Table 8-2.

Table 8-2
Method summary for use with tangata whenua

	Step	Purpose
PART 1: ASSESSMENT CRITERIA		
1	Identify attributes	Listing all values and attributes to ensure that decision-makers are cognisant of full scope of the value of the river to tangata whenua
2	Select and describe primary attributes	A subset of attributes is selected to ensure the method is practical and implementable A synopsis is provided for each primary attribute, to inform decision-makers about its validity and reliability
3	Identify and apply indicators	SMARTA criteria selected indicator(s) are identified for each primary attribute. Where quantitative data are not available, Expert Panel advice (comprised of mandated members of mana whenua) would be used. At this stage links to other assessments can be identified (e.g., wildlife and native fisheries)
PART 2: DISCUSSION OF SIGNIFICANCE		
4	Outline other factors relevant to a consideration of significance	Factors distinct to tangata whenua which make it difficult to assign significance values.
PART 3: METHOD REVIEW		
5	Identify information requirements	Following from 3, data desirable for assessment purposes (but not currently available) are listed, to inform a river research strategy and to determine future information requirements

Please note: The method that we propose in the next section is for tangata whenua to apply to assess catchments within their takiwa.

8.3 Overarching principles and concepts - Te Tangi a Tauira[3]

There are many principles that collectively describe the worldview of Maori. Many iwi throughout New Zealand have articulated their values from their perspective. The proposed significance assessment method is being applied in Murihiku. A key part of the method is accessing available (and mandated) planning frameworks – in this case – the plans of relevance with Murihiku. This means the operative Iwi Resource Management Plan for the Murihiku region, *Te Tangi a Tauira*, is the starting point.

Within Te Tangi a Tauira, the four overarching principles and concepts are:
a. Te Wairua (Spiritual);
b. Maoritanga (Cultural);
c. Kaitiakitanga; and
d. Mahinga kai.

These four overarching principles are the starting point and each is discussed below, along with the attributes that are listed under each in the iwi plan.

8.3.1 Te Wairua

The cultural identity of Ngai Tahu stems from their relationship with maunga, roto and awa. Ngai Tahu identifies with the surrounding mountains and their awa as evidenced by their mihi. The

3 Because the intent of the method is to use readily accessible data, all the interpretations found in this section are extracted from the iwi plan.

spiritual health and wellbeing of Ngai Tahu whanui is dependent on the continued health and wellbeing of these mountains, the waterways of Murihiku and the resources supported by the waterways, ki uta ki tai. Adverse impacts represent a loss in the culture and identity of Ngai Tahu.

8.3.2 Maoritanga

Maoritanga is a general concept to describe the actions associated with being Maori and living according to Maori customs, values and cultural practices within modern New Zealand. These practices evolved over generations as Maori learned to live sustainably within the lands and waters within their natural environment - tikanga, kawa, and specialist matauranga have been passed down through the centuries.

- Kawa can be defined as the right way of doing things. It is usually specific to a whanau, hapu, or marae;
- Tikanga – are rights, customs, accepted protocol and rules. They encompass Maori traditions, lore, law, the Maori way; and
- Matauranga – knowledge held by tangata whenua, a blend of local, historical and indigenous knowledge.

8.3.3 Kaitiakitanga

The term “kaitiakitanga” derives from the verb tiaki. In a natural resource context, the term incorporates notions of guarding, keeping, preserving, fostering, sheltering and watching over resources. The responsibilities of kaitiaki can only be discharged by outcomes which sustain the spiritual and physical integrity of the resources and their relationship with the people, so that the resources and the cultural values they support are passed down to future generations. Given that objective, Maori are likely to measure the effectiveness of opportunities provided for the exercise of kaitiakitanga against the environmental outcomes that are achieved. Those outcomes will be represented by physical resource health and opportunities for continuing cultural usage according to customary preferences and priorities.

8.3.4 Mahinga Kai

Ngai Tahu had an intimate knowledge of the resources available to them, and utilised this knowledge to develop a seasonal cycle of harvesting of mahinga kai (see Photo 8-2). Ngai Tahu relied on extensive area of land and a myriad of water based food resources. Because of the way in which food was collected from different areas at different times, Ngai Tahu ensured the continued availability of the resource.

Ngai Tahu have lost a lot of their traditional food gathering places in the Murihiku region due to a variety of reasons including the introduction of pests, domestic animals, pastoral farming and modification to waterways most notably through damming, abstractions for irrigation and gravel extractions and draining of wetlands that would once have been a natural habitat to many plants and animals valued by Ngai Tahu.

Photo 8-2
Examples of kai available from Murihiku




8.4 Sorting attributes, primary attributes and indicators

The significance assessment method seeks to ensure a holistic understanding of the river value by comprehensively describing its attributes. Again, attributes are to be identified on the basis of an accepted planning framework. In this section, we describe how steps 1-3 of the process (as shown in Table 8-3) were implemented.

Table 8-3
Applying the method – Steps 1-3

Step 1: Identify values and attributes
8.5 **Output:** Attributes which attach to the river value are listed comprehensively. Wherever possible, an accepted planning framework should be used to
8.6 **Rationale**: Attributes are identified (including where possible at least one for each of the four 'well-beings') in order to describe the nature of the river value. The list should be as comprehensive as possible to provide a holistic 'picture' of the river value.
Step2: Select and describe primary attributes
Output: Attributes which will be used to represent the river value are selected and described (validity and reliability outlined).
Rationale: The method used to select the primary attributes must be practical, be able to be implemented, be explicit and therefore be defensible. Pragmatically, all attributes cannot be considered, therefore a subset of attributes is chosen.
Action: From the list of attributes outlined in Step 1, select those "primary" attributes considered most important. These will be used to best *represent* the river value within the assessment. Note the basis for selection (see the salmonid angling chapter for guidance). For each selected primary attribute, discuss its validity and reliability, in other words, its strengths and weaknesses as a means to represent the river value.
Step 3: Identify and apply indicators
Output: Indicators which will be used to measure each primary attribute are listed. Data are applied to each indicator
Rationale: This step responds to the question: How can the primary attributes be measured in a cost effective manner? A key component of this step is the assessment of available data. An alternative approach (an Expert Panel) is used where data are deficient.
Action: Choose the most relevant indicator(s) for each primary attribute. Some primary attributes may be best represented by several indicators. Decisions must be based on the availability of data and relevance to the site. If available data are deficient, use the best available information and/or an Expert Panel (see Appendix). Use SMARTA criteria to select the indicator.

Within the Iwi Resource Management Plan, Te Tangi a Tauira, the four overarching principles and concepts are accompanied by a series of "attributes".

8.6.1 Step 1: Identify attributes

The iwi plan uses the terms "principles, values and concepts". Consistent with the proposed method we have chosen to use as the attributes for each of the four overarching values[4]. These are presented in Table 8-4.

4 We note that other iwi may define these slightly differently.

Table 8-4
List of all attributes

MAORITANGA attributes	WAIRUA Attributes	KAITIAKITANGA attributes	MAHINGA KAI attributes
Ahi ka	Karakia	Kaumatua	Hapua
Kai hau kai	Ki uta ki tau	Kawanatanga	Kaimoana
Kawa	Kotahitanga	Manawhenua	Kainga nohoanga
Koha	Mana	Manamoana	Mahinga kai
Manaakitanga	Mauri	Manuhiri	Nohoanga
Marae	Maoritanga	Mo tatou a mo nga uri a muri ake nei	Taiapure
Rahui	Noa	Murihiku	Tauranga ika
Take raupatu	Rangatiratanga	Runanga papatipu	Waimataitai
Take tuku	Tangaroa	Tangata whenua	
Take tupuna	Tapu	Uri	
Takiwa	Wairua	Waiora	
Taonga	Whakanoa	Whenua	
Taonga pounamu	Waitapu	Waipuna	
Tauranga waka	Wai whakaheke tupapaku	Waitohi	
Tikanga	Whakapapa	Waiwera ngawha	
Topuni			
Turangawaewae			
Wahi ingoa			
Wahi tapu			
Wahi taonga			
Wahi taonga classes			
Wananga			
Whanau			
Whakatauki			
Whanaungatanga			
Wakawaka			

This level of specificity in the iwi plan is of value as it provides the "building blocks" from which a method can be developed, in consultation with tangata whenua.

8.6.2 Step 2: Select and describe values and primary attributes

The next step is to identify the primary attributes. These are a subset of the total list of attributes, and it is this subset that is to be to be used to represent the river value. The selected primary attributes are then measured using quantitative indicators wherever possible.

Table 8-4 listed the initial 63 attributes. The two questions when determining the final list of primary attributes are:

a. Why are some not counted; and
b. How was the final list of primary attributes defined?

In order to progress to a subset, each of the 63 attributes was assessed against four criteria:

1 The attribute can be used to distinguish between different catchments and different reaches of the catchment;
2 The attribute can be described by physical features of a catchment, in particular the waterway;
3 The attribute can be assessed by a quantifiable indicator or by an Expert Panel; and
4 The attribute relates to something tangible measured by a quantifiable indicator that can be aggregated with other primary attributes to enable assessment of values often dismissed as intangible.

Attributes that meet all four criteria are maintained as primary attributes unless they are discounted for any one of the following reasons.

- Attributes were discounted if they relate more to **implementation of the method** rather than being representative of the river. For example, *tangata whenua* with rights of *mana whenua*, *mana moana* (who are often represented within the rohe of Ngai Tahu by *papatipu runanga*) may see application of this method as an expression of their *rangatiratanga* and a tangible means of upholding their *ahi ka.* Within their *takiwa*, they are likely to seek a catchment approach to any assessment consistent with *ki uta ki tai.* By responsibly participating in activities (such as applying this method), they are protecting the waterways for *whanau*, *manuhiri*, *kaumatua* – consistent with the vision of *Mo tatou a mo nga uri a muri ake nei.*

- Attributes were discounted if they relate to a general practice or an activity (karakia, rahui, topuni, tikanga, kawa, wananga) rather than a water related or water dependent activity.

- Attributes that alone do not represent a measurable attribute but when considered collectively with other attributes are likely to lead to the protection of a tangata whenua value.

The final list of primary attributes is:

Hapua	*Taonga pounamu*
Kaimoana	*Waitapu*
Kainga nohoanga	*Waipuna*
Mahinga kai	*Tauranga waka*
Nohoanga	*Wai whakaheke tupapaku*
Marae	*Waitohi*
Tauranga ika	*Waiwera ngawha*
Waimataitai	*Wahi ingoa*
Waiora	*Wahi tapu*
Taonga	*Wahi taonga classes*
Whenua	*Whakatauki*

Although we assessed each attribute in order to reduce the list to those that can be considered primary attributes, we need to consider how we move from narrative – i.e., descriptions of values – to categories that can meaningfully incorporated in a method. At our third hui with representatives of the papatipu runanga they provided guidance as to how the primary attributes were to be ordered in an assessment of river values.

Categories within our framework

We were still left with 22 primary attributes that we grouped into a number of categories each of which is discussed below.

Wai

Traditional water classifications, which draw on the classifications proposed by Douglas (1984: 1), Tau et al., (1990) Rochford (2003), and Williams (2003), offer another understanding the distinctive characteristics and values associated with different water bodies. Within this category we also include “wai tapu” which refers to waters that are tapu or sacred because of their special properties in relation to other waters, places, or objects. Other water bodies may be accorded taonga status, because of particular uses the waterway supports, which unlike wai tapu, are not prohibited by tapu. The framework needs to enable identification of distinct water bodies and reaches within a catchment.

This category captures the following primary attributes: waimataitai, waiora, waitapu, waipuna, waitohi, wai whakaheke tupapaku, waiwera ngawha. Wai is explicitly included in the assessment of attributes (Part C of the spreadsheet).

1. Wahi ingoa & Whakatauki

- The value attached to catchments is evident from the fact that every part of a landscape was known and named. Not only were the larger mountains, rivers and plains named but every hillock, stream and valley. Some place names are of particular value to this project as they describe the state, features, or relationships in a catchment.
- Whakatauki are of value with some also describing the state, features, or relationships in the environment.

This category, which captures the primary attributes wahi taonga and whakatauki is explicitly included in the assessment of attributes (Part C of the spreadsheet).

2. Mahinga kai

Ngai Tahu often distinguishes between kai awa, kai roto and kai moana. Foods and resources sourced from rivers, lakes and coastal waters respectively. Within Murihiku the koiora (diversity of life) assured always that somewhere, something was available to eat. As a result food gathering in the south saw the sequential utilisation of a great variety of natural resources as they occurred in widely scattered localities.

This category is accorded the status of being a primary attribute. It includes kai awa, kai roto, kai moana and tauranga ika. Mahinga kai is explicitly included in the assessment of attributes (Part C of the spreadsheet).

3. Settlements

Along river valleys of Murihiku are remains of camp sites, some permanent other seasonal. Many are believed to have been seasonal food gathering camps as it was only possible for people to live in permanent settlements, often on the coast, if there were sufficient resources available from the surrounding environment to sustain a resident population. Permanent settlements were supported by a number of seasonal food gathering sites, many of which are found along the sides of mainstem, near wetlands, or at the confluence of tributaries with the mainstem of rivers. Three types of settlements are distinguished in the iwi plan:

Traditionally:

- Kainga nohoanga,
- Nohoanga

And in a modern context:

- Marae

This category, which captures the following primary attributes: kainga nohoanga, marae, nohoanga is part of the assessment of attributes in Part C of the assessment

4. Nga Takiwa o Nga Awa (the catchment)

Different types of water bodies valued by Ngai Tahu and recognized as constituting the whole "catchment system" are described in the iwi resource management plan

Te Upoko o Nga Awa – refers to the source of the awa and includes -

- Roto (lakes) - Inland lakes are valued as receiving bodies collecting high quality waters sourced from maunga, and feeding downstream streams and rivers. They are also linked to the deeds of Rakaihautu who is credited with forming the great lakes of Canterbury, Otago and Southland. The good health of inland lakes seen as a prerequisite for the good health of the heavily utilized downstream waters.

- Maunga – with many streams being sourced from maunga including from the Takitimu (no nga maunga tapu).

Whenua (lands) and awa (rivers): *Catchments comprise lands that are linked by a series of rivers and streams that vary in character and support a range of ecosystems. Stream differences are reflected in their koiora or their biodiversity. The species present, their abundance and their condition are one of the measures of the health of waterways.*

Repo raupo (wetlands): Wetlands vary with the seasons – sometimes wet, sometimes dry, sometimes land, sometimes dominated by freshwater, sometimes brackish. To Ngai Tahu their wealth is represented by their koiora and their functioning providing flow regulation and sediment control (with fertile silts suspended in their waters).

Te Tai (the sea): Flowing rivers flow find their way to the sea. The coastal waters represent the end of the cycle – they were fed from the maunga, used by humans along the way, being degraded as a consequence, but are finally returned to Tangaroa.

Hapua refers to a type of lagoon, dominated by freshwater, that are shaped by river mouth and coastal processes that can be distinguished from other types of lagoons and estuaries.

Waipuna are natural springs, especially at the source, that are usually valued because of the high water quality.

Waiwera ngawha refers to the sources of hot water, highly valued and often used for healing purposes, bathing or recreation.

Takiwa captures the primary attributes of hapua, whenua (plus links to "Wai" above) and is explicitly included in the assessment of attributes (Part C of the spreadsheet).

5. Wahi tapu[5]

It is important to consider the location of wahi tapu in the catchment, specifically their proximity and dependence on the character and condition of the river.

This category is accorded the status of being a primary attribute. Tangata whenua are asked at the beginning of the assessment to identify wahi tapu and wahi taonga.

5 It is important to acknowledge that it is for tangata whenua to identify what is wahi tapu and similarly it is their role to manage information pertaining to wahi tapu.

6. Wahi taonga classes (listed in Te Tangi a Tauira)[6]

- Wahi tapuketia – buried taonga
- Wahi ana – important cave areas
- Tuhituhi nehera – rock drawing areas
- Wahi tohu – locators and their names within landscapes
- Wahi paripari – cliff areas
- Tuahu – sacred place for spiritual purposes
- Wahi rakau – area of important trees
- Pa tawhito – ancient pa sites
- Wahi raranga – sources of weaving materials
- Maunga
- Wahi rua – food storage areas
- Wahi kaitiaki – resource indicators from the environment
- Wahi kohatu – rock formations
- Wahi mahi kohatu – quarries
- Wahi pounamu – greenstone, jade sources

Within this grouping we have added
- Tauranga waka
- Ara tawhito

This category is accorded the status of being a primary attribute. It picks up taonga pounamu, tauranga waka. To reiterate, tangata whenua are asked at the beginning of the assessment to identify wahi tapu and wahi taonga.

7. Nga mahi (ahua o te awa)

This classification was introduced at the hui. It encompasses the functions that collectively represent the working ability of a river, including:
- Carrying nutrients and gravels to the coast;
- Providing homes (habitats);
- Building the coastline;
- Building plains; and
- Providing floods to cleanse and rejuvenate the system.

This category links to "wai" and "takiwa" above.

8. Management mechanisms

There are now a number of legislative mechanisms that accord "value" to waterways. These were not reflected in the framework.

8.6.3 Step 3: Identify and apply indicators

By drawing on the narrative found in the Iwi Management Plan, the statements by manawhenua that have been included in statutory plans, CIAs and other documents prepared for whanau in Murihiku, discussion at the first two hui, and a paper prepared by Te Ao Marama a number of indicators were developed. These are shown in Table 8-5. Indicators used by tangata whenua in other processes, especially monitoring, are shaded blue.

6 It is for tangata whenua to distinguish between wahi tapu and wahi taonga.

Table 8-5
Categories, Attributes and Indicators

Takiwa	Variable flow
	Source protected
	• Connections – groundwater/surface water • Continuous flow source to sea
	Natural river mouth
	Ecosystem integrity
	Passage / movement of sediment
	Mostly native / little or no invasive species
Wai	Character of different water bodies protected
	Continued utility of different water bodies
	Connections – riparian to water
	Quality of waters in different water bodies protected
Settlements	Nohoanga, kaika, marae have a safe water supply
Mahinga kai	Presence of mahinga kai species – known sites
	Healthy condition of target species and fit for use,
	Passage throughout catchment
	Abundance populations of target species,
Wahi ingoa	Place names as indicators of condition of awa
Access	Satisfactory physical access for tangata whenua

Having identified the pieces that we were to work with, the next stage was to structure them within a framework and present in a spreadsheet.

8.7 Constructing the Framework

Having come up with a list of attributes and indicators we had to think how these were to be structured within the overall framework. The challenges and concerns expressed by tangata whenua are summarised in Table 8-6 along with a description of our response.

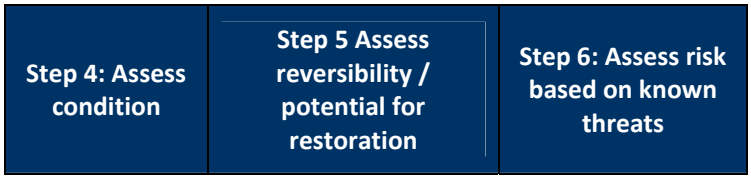
Table 8-6
A summary of concerns

Mauri, whakapapa, whanaungatanga, maanakitanga		
Categories in the assessment method	**Concerns with respect to quantitative measurement**	**How incorporated in the assessment method**
Part A: ASSESSMENT OF WAHI TAONGA / WAHI TAPU	• This was seen as the crux of the significance challenge. We need to recognise wahi tapu and wahi taonga in a catchment. • However it may not be appropriate to rate the significance of individual wahi tapu/ wahi taonga • How could we recognise but not rate individually? • Also we had to incorporate a historical perspective alongside contemporary reality. For example a kaika for a rangatira could be found at a river mouth but the site is now modified and no trace is evident. It is still of historical significance however. • Also increasingly sites are being restored. A degraded condition need not be permanent. • However, the converse is also true; a site may still be at risk.	Identifying wahi taonga and wahi tapu in the framework is the first part of the assessment. This identification process accommodates historic values. But the assessment for Part A also contains: • An initial overall score for significance based on the total range of wahi taonga present • An assessment of current condition. This brings cotemporary realities into the discussion of values and ratings. • an assessment of the ability to restore is undertaken. • An assessment of risk is also included.
PART B: ASSESSMENT OF CULTURAL USE	Wahi taonga and wahi tapu are important for cultural identity – as is the continuity of use at a particular site which may be renown for certain resources	As a second assessment (Part B), tangata whenua rate their ability to use the river as they aspire to. This also captures economic use. It also can include historic as well as contemporary uses.
PART C: ATTRIBUTE ASSESSMENT 1. Wai 2. Mahinga kai 3. Settlements 4. Takiwa o Nga Awa	• We need to consider the working ability of a river – in others words the processes and functions associated with a healthy river. • But we need to consider the cultural dimensions	The final assessment (Part C) asks tangata whenua to assess indicators for the characteristics of the river / water that tangata whenua believe reflect a healthy working river.

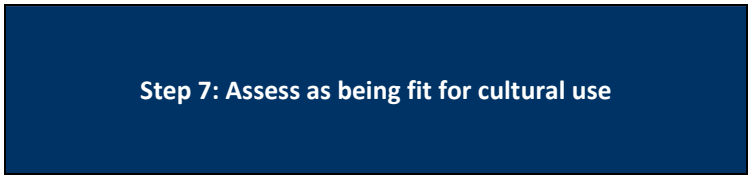
The steps that fall under each Part of the assessment process are as follows:

Preparation – Identify wahi tapu and taonga (Steps 1 and 2)

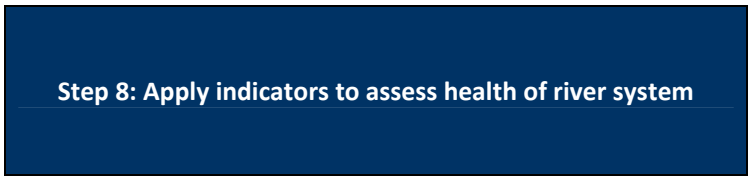
Part A – Assessment of taonga (Steps 4, 5 and 6)



Part B - (Step 7) Assessment of use



Part C – (Step 8) – Assessment of indictors of attributes



It is the scores from each part of this 3 part assessment (A, B and C) that are used to assess overall significance.

The spreadsheet that contains all the parts of the framework that we propose is shown in Table 8-7.

Table 8-7
Decision Support System for deciding tangata whenua priorities

Part A: Assessment of taonga (Steps 2 - 6)

Step 1: Define river segments			Step 2: Identify wahi tapu / wahi taonga		Step 3: Assign significance of river / reach	Step 4: Assess condition	Step 5 Assess reversibility / potential for restoration	Step 6: Assess risk based on known threats	SIGNIFICANCE OF CULTURAL VALUES COMPRISING RIVERSCAPE
River code	Reach	River	Wahi tapuketia Wahi ana Tuhituhi nehera Wahi tohu Wahi paripari Tuahu Wahi rakau Pa tawhito Wahi raranga Maunga Wahi rua Wahi kaitiaki Wahi kohatu Wahi mahi kohatu Wahi pounamu Tauranga waka Ara tawhito		Tangata whenua assess level of significance for total catchment based on range of wahi taonga	Level of modification - for unit being assessed (catchment or reach)	Tangata whenua assess the opportunity to restore wahi taonga and / or reverse level of modification	Tangata whenua assess the current risk to wahi taonga	**Average the scores from Step 3 to 6 to get an overall score between 1 - 3**
			1= few wahi taonga present in catchment/ reach ; 2= moderate representation of taonga in catchment; 3= extensive range of taonga in catchment,		1= minor significance ; 2= moderate significance; 3= high significance	1= highly modified; 2= some modification; 3= substantially unmodified	1= irreversible, no chance to restore; 2= some opportunity to restore; 3= substantially unmodified, can fully restore	1= high level of risk; 2= moderate level of risk; 3= no or minimal risk	
Scores for the assessment of wahi taonga can range from a total of 5 - 15									
River									
River									
River									

Part B: Sustains cultural use	Part C: Assessment of indicators of attributes							Part D: Significance				
Step 7: Assess as being fit for cultural use	Step 8: Apply indicators to assess health of river system							Step 9: Component scores				Step 10: Assessing overall significance
Assign a 1 - 3 score as to whether or not the river sustains uses as desired by tangata whenua - including economic use	Takiwa	Wai	Mahinga kai	Settlement	Wahi ingoa	Access	Divide the total scores for the assessment of indicators by 19 to get an overall score between 1 - 3	A. Significance	A. Presence and condition of wahi taonga in the catchment	B: Ability to sustain cultural uses	C: A healthy functioning river system	Add the three thresholds scores and divide by 3
	Score 1 (No) or 3 (YES) for eight indicators - source waters protected, integrity of whenua and awa, connections maintained ground-surface, connections riparian to surface, movement sediment throughout system, natural river mouth, mostly native plants - few introduced, variable flow.	Score 1 - 3 for four indicators - continuity of flow source to sea, character of different water bodies protected, quality of waters in different water bodies protect, and continued utility of different water bodies	Score 1 -3 for four indicators - presence / absence of key kai species, abundance of key kai species, condition of key kai species & fit for use, access to gather and use	Score 1 (No) or 3 (YES) for one indicator - marae, kaika or nohoanga in catchment have access to safe water supply	Score 1 (No) or 3 (YES) for one indicator - wahi ingoa in catchment still relevant to condition of awa	Score 1 - 3 for one indicator - satisfactory physical access to wahi taonga		1= low; 2= medium; 3= high	1= low; 2= medium; 3= high	1= low; 2= medium; 3= high	1= low; 2= medium; 3= high	1.0 - 1.50 lesser significance 1.51 - 2.50 moderate significance 2.51 - 3.0 higher significance
	TOTAL SCORE CAN VARY FROM 19 - 57							TOTAL SCORE VARIES FROM 1 - 12				

In response to the discussions with tangata whenua we have added restoration after a participant noted that most sites, reaches or indeed catchments could be restored. Similarly we added in a risk assessment after another participant commented that sites in a healthy state may be at risk of degradation.

8.8 Applying the Framework to Rivers in Murihiku

The assessment panel of experts involved representatives from

- Hokonui Runanga;
- Waihopai Runanga;
- Oraka Aparima Runaka;
- Awarua Runanga;
- Te Ao Marama[7]; and
- Environment Southland[8].

The location of each runanga is shown in Figure 8-1.

Figure 8-1
Papatipu runanga

Te Ao Marama and Environment Southland helped facilitate the hui.

7 Participating staff members are mana whenua.
8 The participating staff member is mana whenua.

As this project seeks to develop a relatively efficient method for assessment, the time commitment of our tangata whenua "Expert Panel" was as follows:

- The purpose of the first hui was to meet with staff of Te Ao Marama and Environment Southland to discuss the project;
- The next hui with representatives of nga runanga was to discuss to how rivers are valued and used by Ngai Tahu whanui and how we might accord significance.
- The third hui, again with representatives of nga runanga, was to present a draft of a framework that had been developed in response to the conversations and the provisions of the Iwi Management Plan. At this hui the rivers that could be assessed were also identified.
- The results of the first three hui that led to development of the framework are described in Sections 2-3.

It is the results of the final hui – applying the framework in Murihiku - that are now presented and discussed. Each participant had a worksheet for the river that was to be assessed (an example is appended). As a collective the panel worked through the worksheet. Each river assessment, because of the discussion that accompanies each indicator, is expected to take 2.5–3 hours.

With respect to wahi taonga, it was a case of the panel members identifying – via a simple yes / no – accompanied by a discussion – the wahi taonga within a catchment. Given the list of wahi taonga identified, at this early stage they were asked to accord a significance rating to the catchment solely on the basis of presence or absence of taonga. This also has the effect of according a significance value to historic or traditional value. **This is the first rating that informs our overall assessment – as Part A.**

However, the need to incorporate contemporary realities meant that panel members were then asked to collectively score the

- The current condition of these wahi taonga;
- The potential for their restoration / rehabilitation; and
- The risk of further degradation to wahi taonga.

The ratings for these criteria were averaged to give an overall rating. **This is the second score that informs our overall assessment – as Part B.**

As the relationship of tangata whenua with catchment is usually an active one, tangata whenua then were asked whether or not they could use the catchment as they aspired to. This can include an assessment of economic aspirations. **This is the third score that informs our overall assessment – as Part C.**

The next step was to assess the indicators of attributes that tangata whenua believed represent a healthy functioning system. Again scores were determined as a collective and where there was disagreement for the rating to be accorded an indicator, the ratings were averaged. **This is the final score that informs our overall assessment as Part D.**

The results of the assessment in Murihiku are shown in Table 8-8.

Ultimately, however it is the right of manawhenua to determine every waterway within their takiwa to be of the highest significance.

Table 8-8
Decision Support System applied in Murihiku

Part A: Assessment of taonga								
Step 1: Define river segments			Step 2: Identify wahi tapu / wahi taonga		Step 3: Assign significance of river / reach	Step 4: Assess condition	Step 5 Assess reversibility / potential for restoration	Step 6: Assess risk based on known threats	SIGNIFICANCE OF CULTURAL VALUES COMPRISING RIVERSCAPE
River code	Reach	River	Wahi tapuketia Wahi ana Tuhituhi nehera Wahi tohu Wahi paripari Tuahu Wahi rakau Pa tawhito Wahi raranga Maunga Wahi rua Wahi kaitiaki Wahi kohatu Wahi mahi kohatu Wahi pounamu Tauranga waka Ara tawhito		Tangata whenua assess level of significance for total catchment based on range of wahi taonga	Level of modification - for unit being assessed (catchment or reach)	Tangata whenua assess the opportunity to restore wahi taonga and / or reverse level of modification	Tangata whenua assess the current risk to wahi taonga	**Average the scores from Step 3 to 6 to get an overall score between 1 - 3**
			1= few wahi taonga present in catchment/ reach ; 2= moderate representation of taonga in catchment; 3= extensive range of taonga in catchment,		1= minor significance ; 2= moderate significance; 3= high significance	1= highly modified; 2= some modification; 3= substantially unmodified	1= irreversible, no chance to restore; 2= some opportunity to restore; 3= substantially unmodified, can fully restore	1= high level of risk; 2= moderate level of risk; 3= no or minimal risk	
Scores for the assessment of wahi taonga can range from a total of 5 - 15									
Mataura			Y		3.00	1.40	2.10	2.00	**2.13**
Oreti			Y		3.00	1.10	2.00	2.00	**2.03**
Waikawa			Y		3.00	2.00	1.95	2.00	**2.24**
Clutha			Y		2.30	1.25	1.80	2.00	**1.84**
Tautoko			Y		2.16	3.00	2.80	3.00	**2.74**
Waihopai			Y		1.80	2.40	2.40	2.00	**2.15**

Part B: Sustains cultural use	Part C: Assessment of indicators of attributes							Part D: Significance				
Step 7: Assess as being fit for cultural use	Step 8: Apply indicators to assess health of river system							Step 9: Component scores				Step 10: Assessing overall significance
Assign a 1 - 3 score as to whether or not the river sustains uses as desired by tangata whenua - including economic use	Takiwa	Wai	Mahinga kai	Settlement	Wahi ingoa	Access	Divide the total scores for the assessment of indicators by 19 to get an overall score between 1 - 3	A. Significance	A. Presence and condition of wahi taonga in the catchment	B: Ability to sustain cultural uses	C: A healthy functioning river system	Add the three thresholds scores and divide by 3
	Score 1 (No) or 3 (YES) for eight indicators - source waters protected, integrity of whenua and awa, connections maintained ground-surface, connections riparian to surface, movement sediment throughout system, natural river mouth, mostly native plants – few introduced, variable flow.	Score 1 - 3 for four indicators - continuity of flow source to sea, character of different water bodies protected, quality of waters in different water bodies protect, and continued utility of different water bodies	Score 1 -3 for four indicators - presence / absence of key kai species, abundance of key kai species, condition of key kai species & fit for use, access to gather and use	Score 1 (No) or 3 (YES) for one indicator - marae, kaika or nohoanga in catchment have access to safe water supply	Score 1 (No) or 3 (YES) for one indicator - wahi ingoa in catchment still relevant to condition of awa	Score 1 - 3 for one indicator - satisfactory physical access to wahi taonga		1= low; 2= medium; 3= high	1= low; 2= medium; 3= high	1= low; 2= medium; 3= high	1= low; 2= medium; 3= high	1.0 - 1.50 lesser significance 1.51 - 2.50 moderate significance 2.51 - 3.0 higher significance
	TOTAL SCORE CAN VARY FROM 19 - 57							TOTAL SCORE VARIES FROM 1 - 12				
3.00	2.04	2.00	3.00	2.00	2.00	2.50	2.26	3.00	2.13	3.00	2.26	2.60
2.17	2.10	2.00	2.35	2.00	2.00	2.00	2.08	3.00	2.03	2.17	2.08	2.32
2.30	2.50	2.00	2.30	2.00	3.00	2.00	2.30	3.00	2.24	2.30	2.30	2.46
2.00	2.15	2.00	2.00	3.00	3.00	2.00	2.36	2.30	1.84	2.00	2.36	2.12
1.00	3.00	3.00	1.00	3.00	2.00	2.00	2.33	2.16	2.74	1.00	2.33	2.06
2.70	1.60	2.27	2.70	2.70	3.00	2.50	2.46	1.80	2.15	2.70	2.46	2.28

8.9 Review of the Framework

This section reflects on:

- The application of the process in Murihiku;
- The ongoing challenge of identifying significance; and
- The question of "thresholds".

8.9.1 Questions raised in Murihiku

Concern was expressed about the whole concept of "significance". Some comments were:

1 Do we assess all the rivers?
2 All waters are important. They are all of high significance. Therefore a method is not required.
3 How can we class a waterway as being of low significance?
4 What does it mean if we say a river is of low significance?
5 If we have to make distinctions, we can't use a 1-3 scale. It needs to be 1 – 5 or 1 - 10
6 How will this sort of rating be used? Who will use the rating?
7 We will rate the river closest to home, that we use the most, as the most significant. We will always be biased.
8 How do we balance historical significance and today's significance?
9 How do we recognise a site and use that has been destroyed but still remains significant to us?
10 Are we going to visit these sites? How can we assess without visiting each catchment?
11 What do we do when a catchment is made up of a lot of different parts, e.g., *"the tributaries are munted, but the upper reaches are okay"?*

These questions are discussed briefly in the paragraphs that follow.

It is important to note that in response to the queries about according significance indirectly or by default Ngai Tahu might have accorded significance by some of its recent decisions.

- It has supported Water Conservation Orders that confirm that a river is "outstanding" for defined values.
- Ngai Tahu has agreed to Statutory Acknowledgements as part of the Ngai Tahu Claims Settlement Act 1998. But not all rivers in regions across the South Island were given this status.
- A third indication of differentiating between rivers is seen in the case of the Mataura, where Hokonui Runanga applied for a mataitai, in part, because of the mahinga values the river sustains.

As explained earlier, these mechanisms are negotiated with the Crown and other parties so arguably do not represent a strictly cultural determination of significance. They do however remain valid examples of how Ngai Tahu has appeared to differentiate between rivers on the basis of significance or status.

8.9.2 A catchment assessment

The participants believed that there needed to be flexibility built into the assessment to consider particular river reaches and sites within a catchment. In the case of the Mataura we have a breakdown of different reaches and will separately analyse the data and means of aggregation before our feedback hui with tangata whenua.

8.9.3 The Expert Panel of Assessors

Manawhenua also incorporates the concept of the land as the source of all knowledge, history and kinship ties (Jull, 1989, p11).

The assessment method is to be applied by those who know the river. It is therefore necessary to understand the context of Matauranga Maori. Manawhenua rights are accompanied by responsibilities. Matauranga Maori constrained the rights of manawhenua to sustain themselves and economically prosper through the use of natural resources by imposing obligations not to use resources in ways that would damage them beyond restoration.

It is fundamental to Ngai Tahu that resources were available to meet the needs of present generations of people in order that whanau, hapu, and iwi would survive into the future. The assessment methods we propose are dependent upon the engagement of manawhenua but they must know the river systems. It is also necessary to understand the knowledge that is held within whanau, hapu and iwi.

While matauranga emphasises continuity and long term practices it is important to note that this does not mean static and unchanging. Matauranga is rooted in and informed by a traditional or customary lifestyle but it adapts to change and incorporates contemporary information and technology. New information is continually added as the environment is transformed. For example, in our discussion of the Mataura River whanau provided examples of valued species intolerant to shallow, warm water, that is polluted from herbicides, pesticides, in particular the nitrates and phosphates found in the runoff from intensive agriculture. Dairying was a concern for all participants. Members of our Expert Panel were able to describe in detail the effects of land uses on the different parts of the river system.

Internationally there are ongoing discussions about the loss or erosion of traditional knowledge as indigenous communities become more integrated into regional or national economies. It is recognized, however, that just because resource uses have changed with consequent changes to the type and frequency of cultural activities, it does not necessarily mean that matauranga held by whanau and hapu is lost or is irrelevant. In respect to this project, it enables us to link to the other work-streams.

It is also critical to understand the political context of matauranga. The expression of matauranga is also seen as an expression of rangatiratanga – in effect greater control over natural resources.

Contemporary discussions of matauranga often focus on the antiquity of knowledge and invariably make reference to the often broad generalised value statements derived from oral histories. To understand rivers, one must participate in the real life processes of hunting, fishing, gathering and processing kai and other cultural materials, and continue to interact with sites of significance. This is a form of pragmatic knowledge that is dynamic and responsive to changes within the environment. In other words whanau with a history of use and those who continue to use waterways and resources are those that retain and continue to generate the matauranga. In this way, directly or indirectly the whanau is the main perpetuator of the Ngai Tahu way of life and stories.

If matauranga is to be understood and valued as anything more than culturally specific stories it is imperative that resource managers recognise that ecological knowledge is dynamic and emerges from locally specific interactions between people and their surrounding environment in the context of their everyday livelihood practices. Indeed dimensions of matauranga now include ideas about relations between nutrient runoff from agriculture on water quality, or the impact of climate change on rivers lakes and the species inhabiting them. It also helps explain how whanau are likely to have detailed knowledge of the “local river” and accord it greater significance because it is their awa. This helps explain why it may be difficult to define local, regional and national significance – as in effect every **local** river that is used by whanau could to that whanau be the most important – i.e., **nationally** significant.

The settlement of Murihiku and the alienation of lands and resources has had significant impact on Ngai Tahu. The mahinga kai practices of Ngai Tahu have been transformed during the generations since the Treaty was signed and therefore the knowledge generated by cultural usage of various sites has been impacted. It must be recognised that due to colonisation, the application of Matauranga has been disrupted and subject to interference. Nevertheless for some whanau, for some resources, in some areas, there has been regular, relatively uninhabited resource use through the generations. Many Ngai Tahu continue to gather kai awa, kai roto and kai moana. Settlement, however, precluded the existence of a system of use unchanged by external forces. Ngai Tahu now operate within a highly politicised context and against several different levels of opposing claims. Matauranga is therefore framed by the broader struggle for recognition of customary and Treaty rights.

A fundamental question to enable this assessment method to be applied in a region is to identify who holds the knowledge of rivers. Matauranga is generated, held and transmitted by users. Detailed knowledge is gained through ongoing contact with the rivers and resources. Guidance in the initial stages will be necessary to ensure that the participants are those that know the rivers.

Tipa and Teirney (2003) and Synexe (2009) describe the information held within fishing whanau, including:

- Species found within the system;
- Abundance;
- Spawning/breeding grounds;
- Fishing sites;
- Access sites;
- Patterns of vegetation & habitat;
- Levels of water flow – low flows as well as the magnitude and frequency of floods;
- Withdrawals and discharges;
- Sediment deposition and conversely erosion;
- Areas of blockage;
- Farming and industrial activities;
- Sites of cultural and spiritual significance; and
- Habitation sites including settlements and burial grounds.

Synexe (2009, p.18) also cautions, however, that “there may be resistance to the use of this type of knowledge among scientists”). This method assumes that there is acceptance for the application of the method by tangata whenua.

8.9.4 The question of thresholds

At this stage of developing a method, it is recommended that the terms low, medium and high significance not be used. We have simply used the phrase of moderate significance – scores below that can be of lesser significance, while others can be of higher significance.

This also avoids the use of the terms, local, regional and national significance.

To reiterate, ultimately, it is the right of manawhenua to determine that every waterway within their takiwa to be of the highest significance.

This method is proffered as a tool available to help tangata whenua and regional councils. However, it would not be appropriate for a significance rating to be imposed. Tangata whenua need confidence in how the method and the results of its application could be used in resource management.

This is an area that needs to be discussed more widely among tangata whenua.

8.9.5 Will the assessment method complement other iwi initiatives

A central tenet of this project was to develop a method that used available information. The assessment method proposed can link to some of the initiatives that whanau, hapu, and iwi already have underway. Some examples are presented in Table 8-9.

Please note the Table is illustrative as we acknowledge that there are many other initiatives underway. The intent of this method is to complement whanau, hapu and iwi initiatives.

Table 8-9
Links with initiatives that tangata whenua have underway

Categories in the framework	Iwi initiatives that can inform this stage
Wahi taonga / wahi tapu	**Resource inventories** – Harmsworth (2002) describes inventories as a "stock take" of tribal resources". Many whanau, hapu and iwi are in the process of preparing inventories, some of which form part of a GIS (Geographic Information Systems) and computerised database. These inventories can help with the identification of wahi taonga and wahi tapu. **Cultural mapping** encompasses a wide range of techniques and activities from community-based participatory data collection and management to sophisticated mapping using GIS. Many of the approaches being adopted by tangata whenua are participatory and encourage tangata whenua to identify, record, and investigate cultural assets – both tangible or intangible and that form the foundations of the culture. **Cultural values reports** (CVR) are used in assessing or providing background information as they can identify and describe values of tangata whenua pertaining to a particular area or resource. Cultural values reports can provide direction as to the relevant issues and how these should best be addressed. They are useful for facilitating discussion.
Cultural use	A range of initiatives are underway to record customary fisheries data. Catch records are available from Tangata Tiaki and MAF. Matauranga Maori is being recorded to support applications for mataitai and/or taiapure, or is being recorded to inform management strategies of fisheries managers, including Tangata Tiaki. Cultural values reports also document use.
Nga mahi (ahua o te awa) • Wai • Mahinga kai • Settlements • Takiwa o Nga Awa	Some of the indicator programmes of tangata whenua already being implemented include: • Development of cultural indicators for wetlands (Harmsworth 1999). • Development of a cultural health index (Tipa & Teirney 2003, 2006). • Development of State of Takiwa (see www.ngaitahu.iwi.nz) • Adaption of the cultural health index by Tiakina Te Taiao for their own use and application in the Upper South Island (Young et al 2008). • Development of a coastal marine health index (underway). • Development of cultural indicators for lakes (underway by Ngai Tahu).

8.9.6 Does the assessment method enable linkages to other assessment methods (e.g., wildlife, native fisheries)

In addition to the proposed assessment method for tangata whenua being responsive to their beliefs, values and practices, it needs to link with other assessment methods that comprise the RiVAS Process and not be seen as merely an 'add on'. Identifying an interface with other parts of RiVAS enables linkages with stakeholders, communities, scientists and resource managers (Table 8-10).

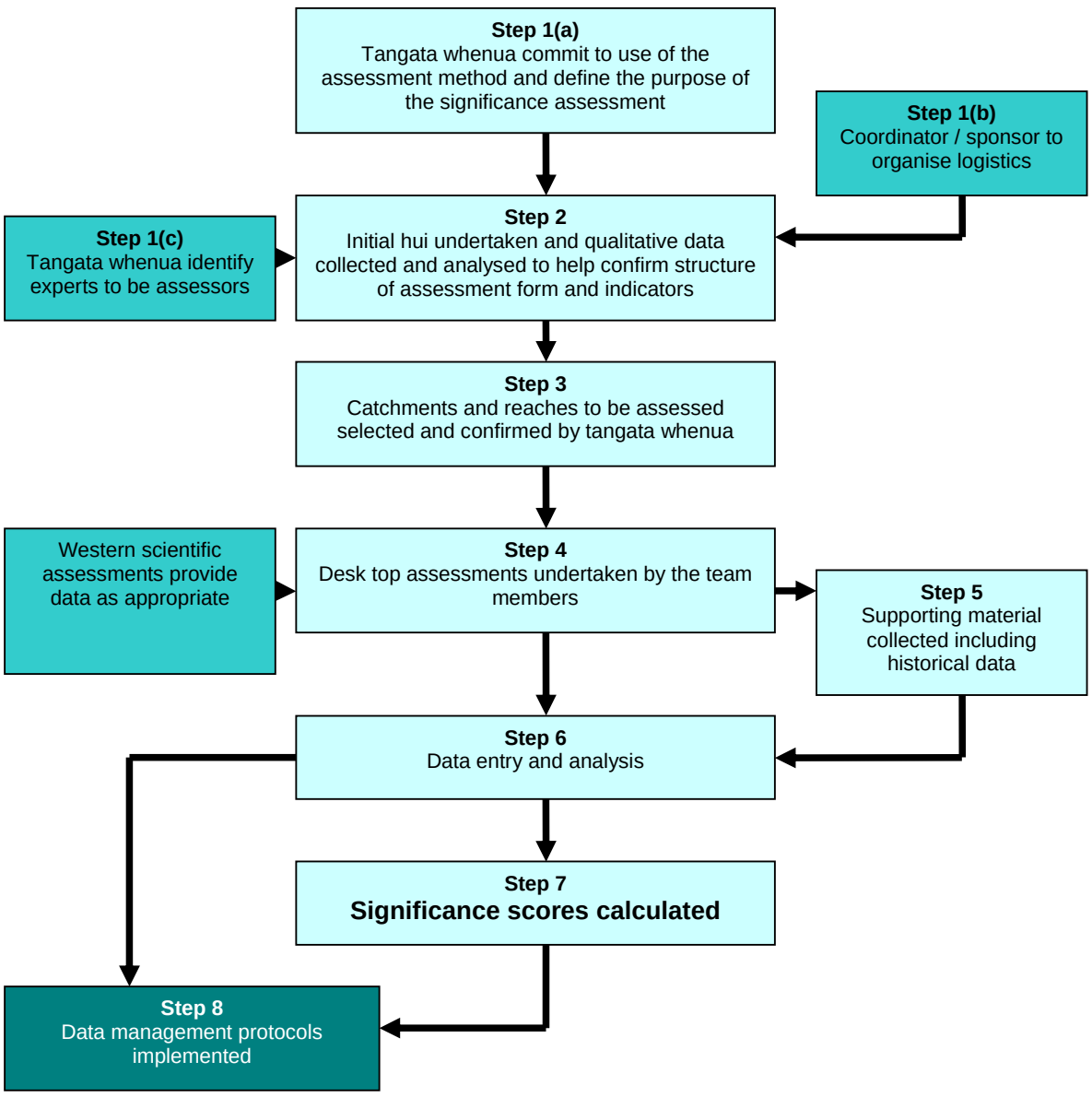
Table 8-10
Links with other RiVAS Assessments

Categories in the framework	Assessed in the framework via indicators	Links to other significance assessment methods within the RiVAS framework
Nga mahi (ahua o te awa) • Wai • Mahinga kai • Settlements • Takiwa o Nga Awa	Continuous flow source to sea	
	Variable flow	Native birds, native fish Natural character (?)
	Mostly native / little or no invasive species Source protected	
	Connections – groundwater/surface water	
	Connections – riparian to surface water	
	Natural river mouth	Natural character (?)
	Ecosystem integrity	
	Passage	
	Character of different water bodies protected	Natural character (?)
	Quality of waters in different water bodies protected	
	Continued utility of different water bodies	
	Connections – riparian to water	Natural character (?)
	Nohoanga, kaika, marae have a safe water supply	
	Presence of mahinga kai species,	Native birds Native fish
	Abundance populations of target species,	Native birds Native fish
	Healthy condition of target species & fit for use	Native birds (?) Native fish (?)
	Passage throughout catchment	
	Place names as indicators of condition of awa	
	Satisfactory physical access for tangata whenua	

8.9.7 Moving forward - Applying the Significance Assessment Method

Once it has been decided that a significance assessment is to proceed, a number of steps are to be implemented (see Figure 8-2). Managing the logistics of a significance assessment study will be a factor critical to its success. The following paragraphs simply describe the steps that need to be considered. Once the method has been validated a more substantive guide can be developed.

Figure 8-2
Steps to Implement a Significance Assessment



8.9.8 Step 1: Choosing the team

Tangata whenua appoint the Expert Panel:

- It is recommended that team members have a strong connection with the catchment being assessed, especially an appreciation of customary fisheries, together with people with knowledge of the kind of changes that have taken place over time.
- It is important that there is consistency in the people involved throughout the duration of the assessment.
- The inclusion and involvement of kaumatua will ensure that different life experiences and perspectives are represented and incorporated.
- A significance assessment is a learning experience and environment. It may be appropriate to include rangatahi to observe the assessment process.

8.9.9 Step 2: The initial hui

The purpose of the initial hui is to discuss the appropriateness of the recording form and the spreadsheet with tangata whenua. Any alterations need to be recorded with the reasons for change.

8.9.10 Step 3: Selecting catchments and reaches for your significance assessment

Catchment, reaches and sites are chosen from any part of the region. The final number of catchment for the assessment will be determined by tangata whenua in collaboration with the regional council (if they are the ones wanting the assessment). Once the catchments have been agreed, a visit to each site may be necessary to record its GPS reference and the physical boundaries of the reach. During this initial visit it is recommended that a description of the reach be prepared and photo points established.

Once all reaches have been identified, the hui and any necessary field visits can be planned. If field visits are considered necessary vehicles; travel time; access (legal access, talking with land owners and physical access); equipment; food and drink for the team; and other relevant logistics must be considered. It is recommended that a health and safety plan be prepared with all team members briefed on the plan before fieldwork actually starts.

8.9.11 Step 4: The data collecting hui

Through hui, data specific to the rivers being studied will be collected. Tangata whenua will identify people with the knowledge and right to speak about their rivers for the panel. Ideally the panel would include kaumatua, those who have lived and used the rivers for a long period, those who fish and gather kai in the area, and those who are active in resource management, customary fisheries etc.

The purpose of the hui with tangata whenua is threefold – to identify:

- Wahi taonga within the catchments;
- Why sites were valued and how they have been used by tangata whenua – historically and today; and
- How sites and their uses have changed over time.

To reiterate it is essential that the panel members have an active relationship with the rivers being assessed. In the course of the interview the interviewer should discuss every part of the recording form (in Appendix 1). It is recommended that the hui be informal in nature, carried out in a conversational style and free of jargon or technical language. Wherever possible corroborating material should be identified and where possible collected (e.g., maps, evidence, manuscripts, cultural impacts assessments (CIAs), cultural values reports, etc).

8.9.12 Step 5 - Collecting supporting material including historical

It is recommended that supporting material identified by tangata whenua should be collected to support the results of the assessment.

8.9.13 Steps 6 & 7: Collating and analysing the data

Once hui are completed the data have to be analysed. Scores are to be entered into the spreadsheet. The spreadsheet automatically calculates the significance ratings.

8.9.14 Step 8: Managing Data

During the course of a significance assessment various types of data will be collected including:

- Tapes and transcripts;
- Maps;
- Photographs and diagrams;
- Lists of reaches and wahi taonga;
- Species data;
- Record and assessment sheets; and
- Various other notes, planning papers and reports.

The significance assessment has been designed to accommodate and incorporate the knowledge of tangata whenua. In fact, the significance assessment score cannot be calculated without access to this knowledge. There is often, however, concern about the disclosure of sensitive information. There are a number of ways that data and information can be handled to minimise risks. It must be stressed that tangata whenua manage data throughout a significance assessment.

Decisions about where and how to store data will need to be made before starting the assessment. For example, questions to be answered include:

- How will records be protected from physical degradation or computer failure?
- Where will multiple backup copies of data get kept?
- Who can access information and how is it accessed?
- How is information to be protected when hapu members move away or pass on?

8.10 Thoughts on presenting the data to tangata whenua

For the purpose of presenting the significance assessment results to tangata whenua and enabling a simple yet effective comparative assessment in order to test if the results "make sense" colour coding could be used. Each component of the assessment plus the overall score can be colour coded as suggested below.

Ratings	Key
1.0-1.5 Lesser	
1.51 - 2.50 moderate	
2.51 – 3.0 higher	

To reiterate:

Initial – Significance of range of wahi taonga

Step B: Presence and condition of wahi taonga in catchment

Step C – Cultural use

Step D - Indicators of a healthy system
These four parts of the significance assessment would be shown along with the overall significance score between 1 – 3.

Visually depicting the results helps explain how the scores for the different components affect overall significance ratings. Three examples are presented over the page.

Mataura

Significance	Step B Presence and condition of wahi taonga	Step C Cultural use	Step D Health of the river system
3.00	2.13	3.00	2.26
OVERALL 2.60			

Oreti

Significance	Step B Presence and condition of wahi taonga	Step C Cultural use	Step D Health of the river system
3.00	2.03	2.17	2.08
OVERALL 2.32			

Tautuku

Significance	Step B Presence and condition of wahi taonga	Step C Cultural use	Step D Health of the river system
2.30	2.74	1.0	2.33
OVERALL 2.06			

Please note, that this form of presentation is only a suggestion to try and make the results from easily understood by tangata whenua. A spreadsheet and a table of numbers may be difficult to understand.

8.11 Going Forward: Recommendations

It is recommended that:

Within Murihiku:

1 The tangata whenua Expert Panel in Murihiku complete the **technical** assessment of other rivers in Murihiku;
2 The overall significance scores are discussed with the tangata whenua working group to see if they “make sense”;
3 The results of the Murihiku assessment are discussed with the respective runanga in Murihiku to see there is **political** buy-in to the method; and
4 That we visit three sites from one of the catchments to “ground truth” the assessments of the Expert Panel.

Outside of Murihiku:

1 Trial the assessment method in another region with an iwi that has all the “building blocks” in place, e.g., an iwi plan, a resource inventory, an identifiable Expert Panel;
2 Trial the assessment method in another region with a hapu or an iwi that has none of the “building blocks” in place, e.g., an iwi plan, a resource inventory, an identifiable Expert Panel but a commitment to the method. This may require the use of a number of participatory methods, e.g., cultural mapping;
3 Convene a hui to discuss the value of a significance method for their wider freshwater management aspirations; and
4 Choose a region and link the assessment method with other iwi initiatives as a tool not only for assessment but to advance the aspirations of tangata whenua.

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Appendix 8-1
Assessment Forms

ATTRIBUTE	PRESENCE / ABSENCE IN CATCHMENT	ASSESSMENT			SIGNIFICANCE	
	Y/N	Current condition	Risk	Ability to restore	Existing value	Historically
Wahi Taonga						
Wahi tapuketia – buried taonga						
Wahi ana – important cave areas						
Tuhituhi nehera – rock drawing areas						
Wahi tohu – locators and their names within landscapes						
Wahi paripari – cliff areas		Wahi taonga are to be identified during discussions with tangata whenua. Discussions may be complemented by mapping, by the sharing of reports, etc. It is necessary to get the following outputs – • Identification of wahi taonga within a catchment with site specificity wherever possible. • Identification of any difference in the status or significance of sites, e.g., wai tapu are likely to be accorded a higher level of significance • Identification of other data sources that could be accessed to provide additional data to support the identification by tangata whenua, e.g., historical maps, manuscripts, Tribunal evidence, historical text, inventories, oral histories etc.				
Tuahu – sacred place for spiritual purposes						
Wahi rakau – area of important trees						
Pa tawhito – ancient pa sites						
Wahi raranga – sources of weaving materials						
Maunga						
Wahi rua – food storage areas						
Wahi kaitiaki – resource indicators in the environment						
Wahi kohatu – rock formations						
Wahi mahi kohatu – quarries						
Wahi pounamu – greenstone, sources						
Tauranga waka						
Ara tawhito						
Wahi tapuketia – buried taonga						
Wahi ana – cave areas						
Tuhituhi nehera – rock drawing areas						

ATTRIBUTE	DATA COLLECTED
Takiwa	
1. Source protected	
2. Variable flow	Discuss basic hydrology – low flows, freshes, floods etc
3. Productive ecosystems – integrity of whenua and awa	• Identify formal assessments undertaken • Record observations of tangata whenua and context in which observation made.
4. Mostly native / little or no invasive species	• Identify formal assessments undertaken • Record observations of tangata whenua and context in which observation made. • Links to other assessment methods • Links to other monitoring initiatives
5. Connections – groundwater/surface water	• Identify formal assessments undertaken • Record observations of tangata whenua and context in which observation made. • Map if necessary
6. Connections – riparian to surface water	• Identify formal assessments undertaken • Record observations of tangata whenua and context in which observation made. • Map if necessary
7. Passage / movement of sediment through the system	• Record observations of tangata whenua and context in which observation made. • Map if necessary
8. River mouth	Record observations of tangata whenua and context in which observation made.
Wai	
9. Different utility of different water bodies	• Discuss & map if necessary • Record discussions
10. Character of different water bodies protected	• Discuss & map if necessary • Record discussions
11. High quality water protected	• Discuss & map if necessary • Record discussions
12. Continuous flow source to sea	Record observations of tangata whenua and context in which observation made.
Settlements	
13. Kaika nohoanga, marae – all have safe water supplies	• Discuss & map if necessary • Record discussions
Mahinga kai	
14. Presence / absence of target kai species	• Record historical • Identify expected species composition • Identify formal assessments undertaken • Record observations of tangata whenua and context in which observation made. • Map if necessary • Links to other assessment methods
15. Abundance of target kai species	• Identify formal assessments undertaken • Record observations of tangata whenua and context in which observation made • Links to other assessment methods
16. Condition of species – fit for use	• Identify formal assessments undertaken • Record observations of tangata whenua and context in which observation made
17. Access for tangata to gather and use	• Identify formal assessments undertaken • Record observations of tangata whenua and context in which observation made
Wahi ingoa	
18. Place names as indicators	Record observations of tangata whenua and context in which observation made
Access	
19. Access to wahi taonga	Record observations of tangata whenua and context in which observation made

Appendix 8-2
Terms Used

Key species

Although other assessments are targeting native fish, salmonids, and birds, it is for tangata whenua to identify the species that they regard as kai or taonga. This means that the assessments made by tangata whenua could differ from scientific assessments.

Surface waters

Once again it is for tangata whenua to highlight tributaries, mainstem, puna or wetlands that are a particular focus of their activities.