

Why a Cultural Health Index?

He Aha te Take o te Kuputohu Hauora Ahurea?

Healthy waterways have always been prized by tangata whenua. Ensuring the mauri of the waterway is not diminished, gathering mahinga kai for sustenance and maintaining the mana of the tribe are all fundamental cultural values. As the country was settled, the kaitiakitanga role of tangata whenua was downgraded.

More recently, the right of tangata whenua to take part in managing freshwater resources has been formally recognised and legislated for. [The relationship Māori have with the environment is referred to in Part 2 of the Resource Management Act, particularly sections 5, 6(e), 7(a) and 8. Here resource management agencies are required to recognise and provide for the culture and traditions of Māori relating to ancestral lands, *water*, sites, waahi tapu and other taonga. They must also have particular regard to kaitiakitanga and take into account the principles of the Treaty of Waitangi. Māori expect that they will be included and will be actively involved in environmental management processes given these provisions in Part 2 of the RMA.] The issue now is to find meaningful ways of incorporating cultural perspectives and values into current water management decision making.

The challenge for both Māori and resource managers is how to satisfy these obligations and expectations in the absence of knowledge, tools and processes that provide resource managers with access to a Māori perspective. Without these, resource managers will have trouble incorporating Māori values in the planning and application of environmental management and working in partnership with the iwi and hapū who share a responsibility for the areas in question.

The Cultural Health Index is such a tool. Based on cultural values and knowledge, the Index provides a means by which iwi can communicate with water managers in a way that can be understood and integrated into resource management processes.

The Cultural Health Index (CHI) was developed to help Māori participate meaningfully in the management of freshwater – specifically stream health. The Cultural Health Index aims to achieve two main goals:

1. **To provide a way for Māori to take an active role in managing fresh water resources.**
The index does this by providing a framework for Māori to apply traditional methods and perspectives in assessing the overall health of waterways in their area.
2. **To provide an opportunity for resource management agencies to discuss and incorporate Māori perspectives and values for stream health in management decisions.**
The CHI recognises and expresses Māori values and links this cultural knowledge to western scientific methods in a way that satisfies the needs of iwi/hapū and resource managers.

What is the Cultural Health Index?

The CHI is a tool that Māori can use to assess and manage waterways in their area. It is an index that allows iwi/hapū to assess the cultural and biological health of a stream or catchment of their choosing. These guidelines outline how to identify areas that need to be evaluated and how to set the programme up. They then direct how to collect data and analyse it so that changes at a site are identified and the site can be restored or enhanced if necessary. The CHI can also be used to monitor changes after restoration work has been carried out at a stream site.



All aspects of the CHI are grounded in an iwi perspective of stream health and apply cultural values determined by the iwi/hapū.

How does the Cultural Health Index work?

The CHI is made up of three linked components. Each component is assessed separately by the iwi/hapū and then all three are combined to provide a Cultural Health measure. Combining the three components – status of the site, mahinga kai values and stream health – gives a comprehensive assessment of the Cultural Health of the river site.

Component 1 – Site status

Site status is a statement of whether or not the site is an area of traditional significance to tangata whenua. The status of the site can be assigned by tangata whenua independently of the on-site assessment of the stream. A traditional site is assigned an **A**, a non-traditional site a **B**.

A second measure making up the site status is an evaluation of whether tangata whenua would return to the site in future. **1** is assigned if tangata would return to the site, **0** if not.

Component 2 – Mahinga kai

The second component of the CHI allows the mahinga kai values of a site to be evaluated and expressed. Examining mahinga kai values recognises that the mauri of a waterway can be tangibly represented by physical characteristics, indigenous plants and animals, productive capacity and whether mahinga kai is suitable for cultural use.

The mahinga kai measure is made up of four elements:

1. Identification of mahinga kai species present at the site. The productive capacity of a site includes the ability of the waterway to support mahinga kai species.
2. Comparison between the species present today and the traditional mahinga kai sourced from the site.
3. Assessment of access to the site. Mahinga kai implies that tangata whenua have physical and legal access to the resources they want to gather.
4. Assessment of whether tangata whenua would return to the site in the future as they did in the past.

The four mahinga kai elements are then combined to give a single mahinga kai measure between 1–5.

Component 3 – Cultural stream health

The cultural stream health measure is made up of an assessment of eight individual stream health indicators. These indicators result from research carried out in four catchments across New Zealand where the CHI was developed. Tangata whenua identified a list of indicators that made up overall cultural stream health. At stream sites each of the indicators were assessed, as well as the overall stream health. Of the tested indicators, eight were found to best describe how tangata whenua assess overall stream health. Together, the eight indicators make for a robust cultural stream health measure.

The following descriptions of the indicators show how each indicator can impact on stream health.

1. Catchment land use – relates to the land use or land cover in the wider catchment that can be seen from the site being assessed. Heavily used land can impact on stream health.
2. Riparian vegetation – is the vegetation, indigenous or exotic, that is visible along the margins (100 m either side) of the waterway. A lack of vegetation along the margins can impact on stream health.
3. Use of the riparian margin – is the extent the margins of a stream are being used. Heavy use of the margins can impact on stream health.
4. Riverbed condition/sediment – the state of the riverbed can be assessed by the amount of sediment that has built up. Sediment impacts on the habitat of invertebrates ('bugs on the bottom') – a critical source of food for many stream inhabitants.
5. Channel modification – refers to the river channel shape and whether that has been modified by work in the channel or other similar types of activities such as gravel abstraction. A modified stream channel can impact on stream health.
6. Flow and habitat variety – refers to how variable the rate of flow is in the river. It also examines what variety of flow-related habitats such as pools, runs and rapids are present. Little or no current and a

- lack of flow-related habitat variety can impact on stream health.
7. Water clarity – should water clarity be low the stream might be carrying sediment or some form of effluent that can impact on stream health.
 8. Water quality – is the most important indicator of cultural stream health. Degraded water might be discoloured and carry films and scum, all of which impact on stream health.

Assessments of the eight indicators are combined for each site to give a single measure of cultural stream health between 1-5.

This measure provides a reliable appraisal of the cultural health of the stream, and the individual indicators provide detail about features which might be responsible for maintaining or downgrading stream health. This information can be very helpful in deciding the most effective management action to improve stream health.

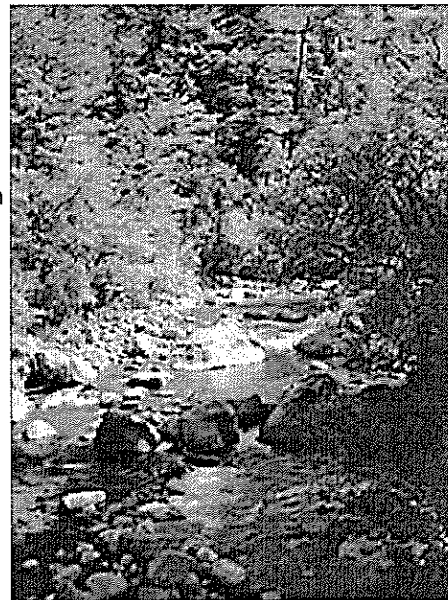
Cultural Health Index score

The overall Cultural Health Index score is made up of the three linked components – site status, mahinga kai and stream health.

When the CHI is put together for a specific site the score is presented in the form:

A-1/3.25/4.87

Component 1:	Component 2:	Component 3:
Site status	Mahinga kai measure	Stream health measure
A-1	3.25	4.87



This example is the CHI score for Bowyers Stream (Sharplin Falls) on the Hakatere (Ashburton) River.

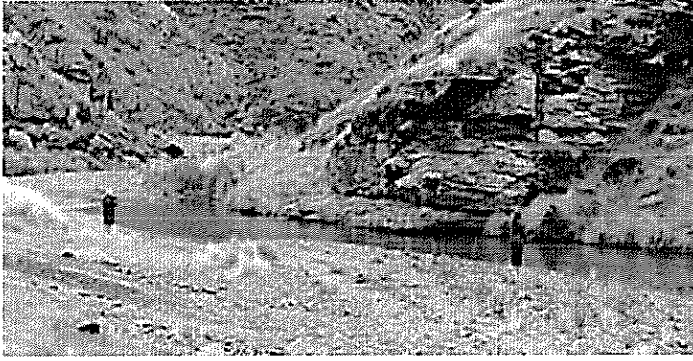
The CHI score for Sharplin Falls describes a site of traditional significance that tangata whenua will return to/the mahinga kai values are above average/and the overall health of the stream is exceptionally high. The Sharplin Falls site was one of the best in the entire study of 107 stream sites.

Where was the CHI developed?

The Cultural Health Index was developed from research undertaken on the Taieri, Kakaunui, Hakatere (Ashburton) and Tukituki rivers. Two iwi (Ngāi Tahu and Ngāti Kahungunu) were involved in identifying indicators and undertaking field assessments.

The Taieri and Kakaunui rivers within the Ngāi Tahu rohe and the Tukituki river in the rohe of Ngāti Kahungunu are all single channel, rain-fed rivers. The Hakatere in the Ngāi Tahu rohe is a braided rain and snow-fed river.

This research was supported by the Ministry for the Environment's Environmental Performance Indicators Programme. Under this programme the Ministry worked to develop environmental indicators that would express Māori values for the environment and their relationships with it.



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