

The TANK Plan – Allocation Limits & Minimum Flows

How we plan to allocate limits and minimum flows

The proposed TANK Plan makes significant changes to how the allocation of water is to be managed in the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments.

Groundwater

The Regional Resource Management Plan (RRMP) directs abstraction of groundwater to be in the safe yield for the aquifer and that rates of abstraction should not exceed recharge. However, the RRMP does not contain specific allocation limits for groundwater or establish the acceptable level of effect on connected rivers, streams or wetlands.

The TANK Plan introduces allocation limits for groundwater in each of the Tūtaekurī, Ahuriri, Ngaruroro and Karamū catchments.

For all groundwater resources, new allocation of water beyond existing actual and reasonable use is prohibited. Most existing permit allocations will be significantly reduced.

The most economically, culturally and socially important, and extensive aquifer for Hawke's Bay lies under the Heretaunga Plains.

This aquifer has been found to be much more interconnected and transmissive than previously thought. Recent research has identified that groundwater abstracted across the Heretaunga Plains has a cumulative impact on groundwater levels and on connected rivers and streams.

The TANK Plan responds to the findings that:

- much more water been allocated from this aquifer than can be sustainably taken
- the existing pattern of take has adverse effects on connected rivers and streams due to the stream depletion effect from pumping groundwater.

Stream Depletion

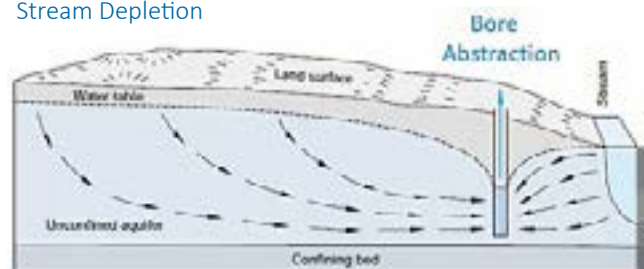


Figure 2: Water flows change with pumping

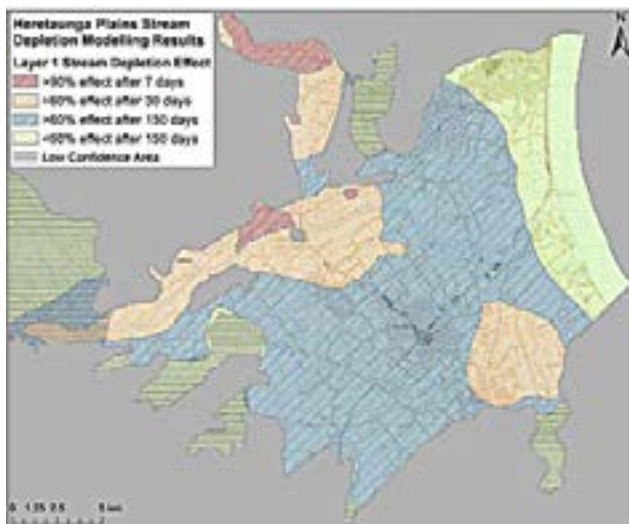


Figure 1: Groundwater abstraction has varying stream depletion effects across the Heretaunga Plains Heretaunga Plains.

More information

The pressures on the Heretaunga aquifer were shared by the Regional Council in 2017, when it publicly communicated that new applications for water were unlikely to be granted:

Radio New Zealand: Media release: [Heretaunga aquifer is at its limit. Regional Council puts freeze on HB water consents](#)

The TANK Plan has new management units to reflect groundwater connectivity. The allocation limits for ground and surface water on the Heretaunga Plains are separate. The allocation limit for groundwater means that Plan rules reduce allocations to meet historic water use prior to 2017, based on records of actual and reasonable use.

Groundwater takes are highly connected to surface water bodies

Groundwater is so connected to surface water flows in some places that it has been classified as a surface water take. These takes are in areas referred to as Zone 1 in the TANK Plan. Zone 1 takes are managed as if they are a surface water take and subject to a surface allocation limit and minimum flow restrictions. An exception to minimum flow restrictions has been made for some existing Zone 1 takes, where they contribute to a stream flow maintenance scheme or can demonstrate they are not as directly connected to surface water.

More information

Information about allocation and its effects on connected waterbodies in the Heretaunga Plains aquifer can be found in the full Heretaunga Aquifer Groundwater Model Development report at hbrc.govt.nz, search: [#documentsandforms](#)

An [Executive Summary](#) of the same report is also available.

Managing stream depletion is complex and challenging

The management of *stream depletion* is a complex and controversial issue. Read more about how this is managed in the factsheet on “*The TANK Plan and Stream Depletion*” search: [#tankreports](#)

Allocating water to the Heretaunga Plains

In addition to managing stream depletion, the Proposed Plan also aims to reduce how much groundwater is allocated from the Heretaunga Plains. It will do this in several ways:

Only actual and reasonable water use will be provided for:

- according to water meter and land use records in the ten years up to 2017
- using a consistent approach to calculate water demand – only using the Irricalc irrigation water demand model search: [#tankreports](#)
- applying a consistent reliability standard – Irricalc applies a 95% reliability standard
- allocating water for a minimum efficiency standard of 80%- the Plan allows time for upgrades where extensive infrastructure improvements are necessary
- not allowing site-to-site transfers of unused but allocated water
- not re-allocating any “returned” water
- calculating the stream-depletion effect of each groundwater take on the basis of the total allocated – this must be offset by a stream flow maintenance and habitat enhancement scheme or be subject to a ban when trigger flows are reached.

Groundwater in the Heretaunga Plains will be allocated as an annual amount.

This gives water users the flexibility as to how they use water over a season and to plan water use more carefully in a dry year. The TANK Plan also fosters a more flexible approach to water management. It supports water user initiatives that direct allocatable water to high value end uses, especially during drought periods.



Groundwater in other areas

In other aquifers, a similar restriction to the allocation of new water will apply. No more groundwater from Ahuriri or Poukawa will be provided for until there is more definitive information available about the actual sustainable yield of the aquifers in these areas.

New groundwater takes are also restricted in the Tūtaekurī and Ngaruroro catchments. These catchments are connected to the Heretaunga Plains aquifer. Groundwater in these catchments also contributes to river flows. No new water will be allocated from these resources until more information is available about the extent of these aquifers and how they contribute to connected waterbodies.

Surface Water – Allocation limits and flow management regimes

The TANK Plan proposes changes to the existing allocation limits to take water during low flow periods, and minimum flow rules currently in the Regional Resource Management Plan.

The Plan also introduces new policies and rules to manage the harvesting and storage of water at times of high flow.

Allocations and minimum flows protect the environment and give water for abstraction

An allocation limit establishes the maximum amount of water that can be taken from a river. The combination of allocation limit and minimum flows means that the river ecosystem and other in-stream values are protected from significant bad effects, such as when too much water is taken at any one time – especially when flows are already low because of droughts.

The allocation limit and minimum flow trigger also affect reliability of supply for different levels of drought or low-flow periods. In some drought years, allocated water will not be available because of low flows.

The TANK Plan proposes these changes due to concerns about the effect of the existing water takes and minimum flows on in-stream values.

The potential impacts of a range of possible management combinations were considered. These included being sure to retain enough flow and aquatic habitat to protect threatened native fish, such as torrent fish and important species for recreation such as trout. The effects of changes to water access on social and economic wellbeing were also considered.

The impact of changes to security of supply relative to allocation limits and minimum flows was also tested through a number of modelled scenarios using actual river flow data.

Surface Water Allocation Limits

Tūtaekurī Catchment

The allocation limit for surface water from the Tūtaekurī River has been reduced to 1,140 litres per second. The previous allocation limit was expressed in cubic metres per week, equivalent to 1,536 litres per second. This management unit was not previously fully allocated but with the reduced allocation limit the river is now fully allocated.



Allocation limits for the Mangaone and Mangatutu tributaries are also included in the proposed TANK Plan.

The minimum flow – at which time surface water abstraction must cease – has been increased. While it means restrictions apply sooner, the impact on existing users' reliability is not expected to change.

Ahuriri Estuary

Existing restrictions continue to prevent any new permitted takes from surface or groundwater in the smaller catchments of the Ahuriri. No new ground or surface water is available and the Ahuriri is fully allocated.



Ngaruroro Catchment

The allocation limit for surface water abstraction from the Ngaruroro River has been reduced from 1,581 to 1,300 litres per second. Previously over-allocated, this new allocation limit increases the over-allocation even further. Limits are also established for the Maraekakaho and Tūtaekurī- Waimate tributaries.



Karamū Stream



Amendments to the Heretaunga Plains groundwater allocation affect allocation limits for the connected surface waters in that catchment. Surface water abstraction will reduce to 30 litres per second as a cumulative total for all of the Karamū Stream tributaries, with no new water available from the Lake Poukawa catchment.

Permitted water abstraction

Across all of the TANK catchments, a small amount of water can be taken without needing to apply for a resource consent.

Less water can be taken as a permitted activity. The permitted amount will reduce from 20 cubic metres per day to 5 cubic metres per day from all management units.

The existing additional restrictions continue. These prevent any new permitted takes from surface or groundwater in a number of small catchments including Ahuriri and Lake Poukawa, Maraekakaho, Louisa, Awanui and others.

More information

A report on fish habitat modelling contains details about the river ecosystem and aquatic habitat needs: “Addendum to fish habitat modelling for the Ngaruroro and Tūtaekurī rivers” is at hbrc.govt.nz, search: [#documentsandforms](#)

Mana whenua values are described in an overview [presentation](#) for the Ngaruroro and Tūtaekurī Rivers and in the [Ngaruroro Values to Attributes report](#).

There are two further reports on [Ahuriri Estuary Cultural Values](#) and the [Tūtaekurī Awa](#).

“The Surface water quantity scenario modelling in the Tūtaekurī, Ngaruroro and Karamū catchments” report has more information about the surface water quantity management scenarios used to develop the TANK Plan, available at hbrc.govt.nz, search: [#documentsandforms](#)

The economic implications of the various management scenarios are described in the [presentation](#) summary and report on [Economy-wide Impacts of Proposed Policy Options for the TANK Catchments](#), at hbrc.govt.nz, [#tankreports](#)

More information cont'd

A "TANK Catchments Social and Cultural Assessment" presentation studies the TANK communities and how they are impacted by the way in which water is allocated, at hbrc.govt.nz, search: [#tankreports](https://twitter.com/tankreports)

Managing over-allocation

Based on allocations in existing water permits, a number of management units are over-allocated including the Ngaruroro River and the Karamū Stream and its tributaries.

The TANK Plan proposes to prohibit new applications of water from these water bodies, and subject any re-application to more stringent assessments of actual and reasonable water use and reductions in unused allocations. Over-allocation will be managed through new measures:

Only actual and reasonable water use will be provided for:

- according to water meter and land use records
- using a consistent approach to calculating water demand – only using the Irricalc irrigation water demand model
- applying a consistent reliability standard of 95%
- allocating water for a minimum efficiency standard of 80%- the Plan allows time for upgrades where extensive infrastructure improvements are necessary
- not allowing site-to-site transfers of unused but allocated water
- not re-allocating any "returned" water.

More information

The Irricalc model is being upgraded to reflect Hawke's Bay's climate and soil types in more detail as well as providing irrigation demand information for a greater range of locally grown crops. Keep up to date on progress at hbrc.govt.nz, search: [#tankreports](https://twitter.com/tankreports)

Minimum flows reviewed

As well as new allocation limits the TANK Plan proposes to revise the existing minimum flows for some rivers.

Ngaruroro River minimum flow

There was significant debate during the plan preparation process over whether to make changes to the Ngaruroro River minimum flow trigger. No changes were made to the current minimum flow. The management focus for this river is on reducing current levels of allocation.

One of the reasons for not changing the minimum flow was due to the limited effect on river flows as a result of abstraction restrictions with a higher minimum flow.

Ngaruroro River flows are also significantly affected by stream depletion from groundwater abstraction in the Heretaunga Plains. The TANK Plan proposes new policies and methods to address this. See the factsheet on "The TANK Plan and Stream Depletion" search: [#tankreports](https://twitter.com/tankreports).

Tūtaekurī River minimum flow

The minimum flow trigger for rationing water abstraction from the Tūtaekurī River has been raised from 2,000 to 2,500 litres per second.

This is a slightly-higher level of habitat protection for aquatic species than previously provided. This is not expected to change security of supply for existing water users. The modelling showed no changes to the number of days users would be subject to a take ban and no changes to the number of consecutive days on a take ban.

High Flow Allocation Limits

The TANK Plan introduces new policies and rules to manage how much water can be taken at times of high flow. The proposed plan recognises both the positive and negative effects of taking water for storage.

Allocation limits are set for when the rivers exceed certain flows. These limits protect the river's natural hydrological functioning, including its shape and to ensure flushing flows can keep the aquatic ecosystem and water quality healthy.

Allocation limits for the Ngaruroro and Tūtaekurī Rivers are now established, based on keeping the change to the frequency of flushing flows to a minimum- less than 10% change.

The TANK Plan proposes to allow up to 8,000 litres per second to be harvested from the Ngaruroro and 2,500 from the Tūtaekurī Rivers. Any application to abstract this water will need to consider the impacts of potential land use change as a result of this water storage and use as well as any effects on aquatic ecosystems.

More information

The analysis describing how these limits were developed is in the TANK low and high flow management discussion document at hbrc.govt.nz, search: [#tankreports](https://twitter.com/tankreports)

Reserving water for Māori wellbeing

As a result of how water has been managed and allocated and its consequential impacts on the wellbeing of Māori, the TANK Plan now proposes to reserve some of the high

flow allocation limit for activities that contribute to the wellbeing of Māori. Twenty percent of the allocation limit is reserved for this purpose. This means that any water storage proposal must consider whether this allocation can be provided for.

Prohibiting damming on some rivers

The TANK Plan proposes to recognise the high natural character and in-stream values of some of the rivers. The Plan proposes to prohibit the construction of dams on the main stem of the Ngaruroro and Tūtaekurī rivers and the following tributaries:

Ngaruroro River	Omahaki Stream	Tūtaekurī River	Mangaone Stream
	Taruarau Stream		Mangatutu Stream