

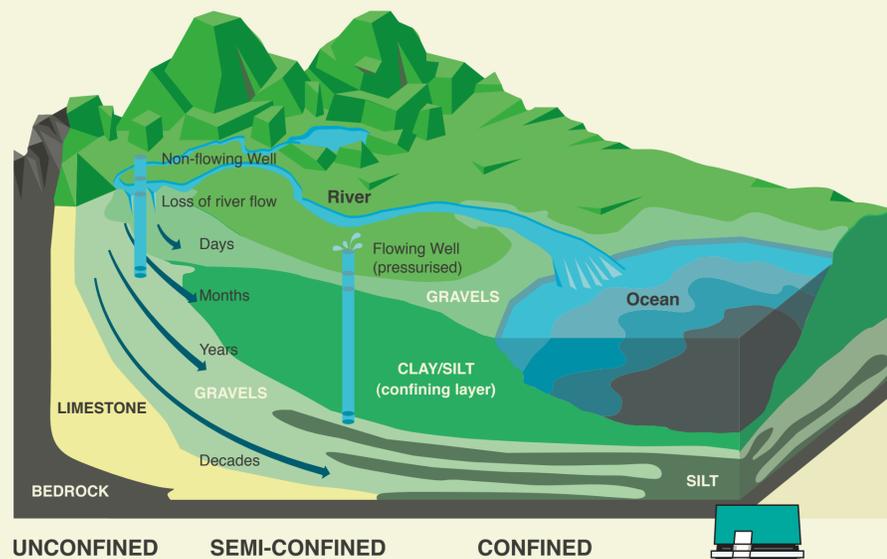
Understanding Our Aquifer

THE HAWKE'S BAY FRESHWATER RESOURCE, WATER USE AND BOTTLING PLANTS

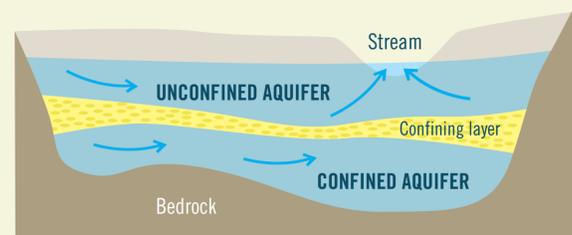
There has been plenty of discussion recently around the management of water, in particular who owns the water and should a royalty be charged for its use. This is a debate happening nationwide, but has been of particular interest in Hawke's Bay with the development of water bottling plants on the Heretaunga Plains. This information sheet explains how one of Hawke's Bay's freshwater resources functions - the Heretaunga Aquifer. It also outlines how Hawke's Bay Regional Council allocates consents for water use and the work being done to better understand our water resource.

THE HERETAUNGA AQUIFER: HOW IT WORKS

An aquifer is like a sponge, where water moves slowly through layers of gravels, sands and hard rock. Water comes into the aquifers from rainfall and loss from rivers. Our aquifers are a valuable resource which sustains our natural environment, provides water for drinking, irrigation and use by primary and manufacturing industries. Anyone who wants to take water from our aquifers - for anything other than a domestic use - needs a resource consent.



CONFINED AND UNCONFINED AQUIFERS

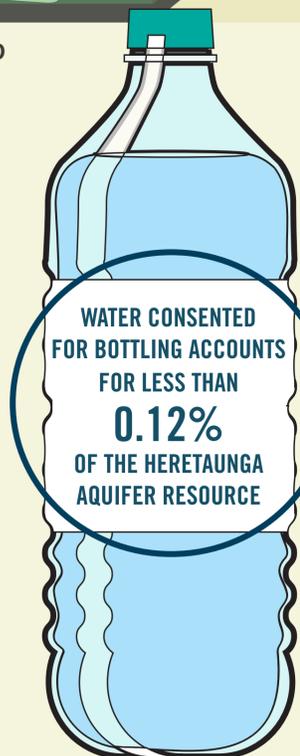


Unconfined Aquifers

An unconfined aquifer is connected to springs, streams and rivers, so taking water from them can reduce flows in the river or stream. This is why some groundwater takes are restricted by resource consent conditions.

Confined Aquifers

A confined aquifer is separated from the water on the surface by silt and/or clay that creates a watertight layer. Water takes from a confined aquifer do not affect river flows.



19.7 BILLION
CUBIC METRES OF RAIN FALLS IN HAWKE'S BAY EACH YEAR*

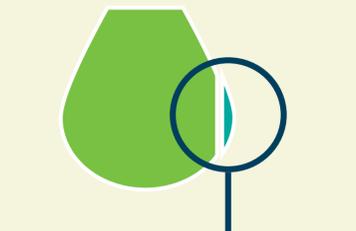


OVER HALF OF THIS GOES STRAIGHT OUT TO SEA
THE REST MOVES THROUGH THE HAWKE'S BAY AQUIFERS

ONE OF THOSE IS THE HERETAUNGA AQUIFER (ABOUT 3.4 BILLION CUBIC METRES)**



OF THIS RESOURCE, ABOUT 5% IS CONSENTED FOR USE

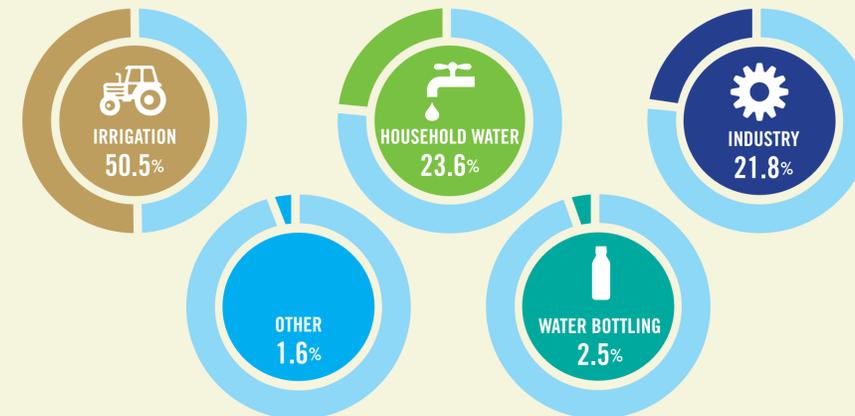


AND OF ALL CONSENTED USE, ONLY 2.5% IS CONSENTED FOR WATER BOTTLING

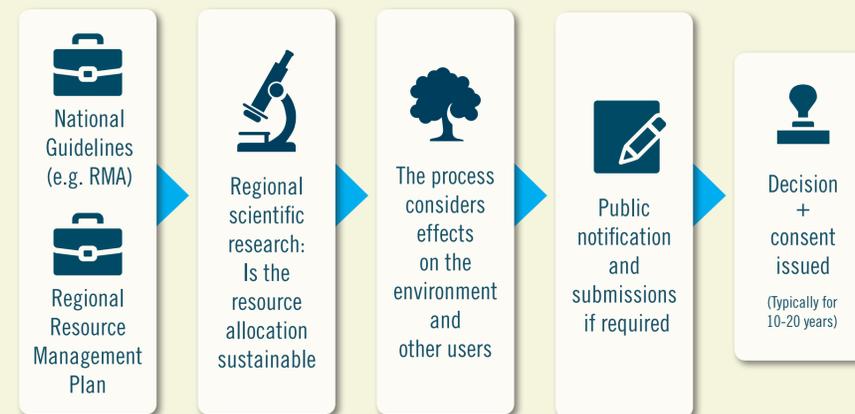
*Source: www.lawa.org.nz **Current available estimate

A BREAKDOWN OF WATER USE

AS A PERCENTAGE OF ALL CONSENTED USE



THE CONSENTS PROCESS



OFTEN ASKED QUESTIONS

HOW CAN WE ALLOW WATER BOTTLING WHEN OUR IRRIGATORS HAVE THEIR SUPPLY CUT OFF IN DRY SUMMER MONTHS?

Our aquifer system is a network of confined and unconfined pockets of underground water. Taking water from a confined area does not directly affect river levels or flows. However, water taken from an unconfined aquifer does. That is why, in severely dry conditions, consent holders are sometimes not allowed to take water from an unconfined aquifer. All the operational bottling plants in Hawke's Bay are drawing water from confined areas of the aquifer system.

I'VE HEARD WE DON'T REALLY KNOW HOW MUCH WATER IS UNDER THE GROUND?

HBRC has a good understanding of our freshwater resource. Our aquifers have been studied for many decades and monitoring continues today. In Hawke's Bay we have a network of 104 water level monitoring bores. We draw historical information from a further 184 monitoring bores. We also collect water quality data from 54 bores. We use computer models to 'fill in the gaps' between the monitoring sites. We monitor rainfall and river water entering/leaving the aquifers, and human use of groundwater and surface water.

CAN WE CHARGE ROYALTIES ON WATER USE?

No we can't. The Resource Management Act only allows councils to charge water users for the costs of managing the resource, such as scientific research, monitoring and consent administration. Right now, around a third of these costs (\$1.7 million) sit with water users and the rest with general ratepayers (\$3.4 million), recognising public interest in managing the resource. It would only be possible to charge royalties if the law was changed but, to date, central government has resisted calls for change, saying 'no one owns water'.

IT SEEMS ANYONE CAN GET A CONSENT FOR AS MUCH WATER AS THEY LIKE?

No that's not true. A resource consent application to take water is assessed against the rules set by central government, the Regional Resource Management Plan and local scientific research that shows how much water is available for use and where. The council also makes sure the applicant only receives what they actually need, that they are using it efficiently and are not affecting neighbouring bores, or nearby rivers, lakes or wetlands.



CREATING NEW LIMITS

Hawke's Bay Regional Council is reviewing the way land and water resources are managed in the Greater Heretaunga and Ahuriri area - where 85% of the Hawke's Bay population live and work. The area encompasses the Tutaekuri, Ahuriri, Ngaruroro and Karamu catchments (TANK), plus the Heretaunga Plains aquifer system. Council is working with a collaborative stakeholder group to determine how these water bodies should be managed. From this a Plan Change will be developed that will set out revised rules and limits for the catchments.

THE SCIENCE BEHIND IT

Extensive investigations have been undertaken to understand the Greater Heretaunga aquifer and how the water flows through it. We know that much of the surface and groundwater is connected, so if you take water from the ground it affects the river. A surface - groundwater interaction model is being developed to help inform the process. Further deep drilling work is being considered in the future to better understand the deep groundwater.

CONTINUAL IMPROVEMENT LOOP

Decision making is part of a continual improvement process where scientific research informs policy. If the science reveals an issue, that is immediately considered in the consenting process, with the ability to change existing consent conditions if needed.



*MONITORING + EVALUATION + REVIEW+ IMPROVEMENT



www.hbrc.govt.nz/aquifer

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