

Interim report on the impacts of the bottled water industry on groundwater resources

Groundwater has been bottled for commercial use in the Northern Rivers region of NSW for a number of years at approved facilities. Members of the Northern Rivers community have expressed concern about the potential growth and impact of the water bottling industry on local groundwater supplies.

What the NSW Chief Scientist & Engineer is reviewing

In November 2018, the Minister for Regional Water requested that the NSW Chief Scientist & Engineer undertake an independent review of the impacts of the bottled water industry on groundwater resources in the Northern Rivers region of NSW.

A team from the NSW Chief Scientist & Engineer's office, including independent experts in hydrology and statistical analysis, conducted two visits to Tweed and Alstonville in December 2018 and January 2019.

In accordance with the Terms of Reference, the NSW Chief Scientist & Engineer provided an interim report in early February, which includes information on the groundwater systems of the Northern Rivers region, the bottled water industry and the associated regulatory framework, as well as issues raised during local consultations.

The interim report reflects data collected to date and preliminary consultations with local residents, community groups, primary producers, industry, local government councillors and staff, and state government officers. The interim report sets out the regulatory framework that governs water allocations and permissible extractions in NSW.

The NSW Chief Scientist & Engineer is undertaking further work that will inform the content of the final report, due mid-2019.

The Terms of Reference and interim report can be found at:

chiefscientist.nsw.gov.au/reports/independent-review-of-impacts-of-the-bottled-water-industry-on-groundwater-resources-in-the-northern-rivers-region-of-nsw

How water is shared among different users in NSW

Groundwater (in aquifers) and surface water (such as rivers, lakes and dams) in NSW is managed under the *Water Management Act 2000* and statutory water sharing plans (WSPs). WSPs set the sustainable limits of water 'take' by defining long-term average annual extraction limits and setting the rules for managing and trading access licences. These plans share water between users and the environment, and between different categories water licence categories.

To take either surface water or groundwater for purposes other than those allowed for as 'basic landholder rights' (which include harvestable rights, native title rights and some rights to extract water for domestic and stock purposes), water users require a licence, which entitles them to a specified amount of water or shares in available water. Water users also need an approval for a work (for example, a pump or bore), to take water from a particular location. The NSW Department of Industry and WaterNSW examine licence and work applications for possible impacts on water resources, dependent ecosystems such as springs and wetlands, and other users.

Groundwater in the NSW Northern Rivers

The majority of groundwater reserves in the Northern Rivers region are not considered to be under stress by the NSW Department of Industry. The exception to this is the Alstonville Basalt Plateau groundwater source, which is considered to be 'fully allocated'. The groundwater of the North Coast coastal sands aquifers, and the alluvial sediments associated with the Northern Rivers, are not considered to be likely targets for bottled water extraction.

Alstonville Plateau

The Alstonville Basalt Plateau groundwater source is more heavily utilised than any other groundwater system in the Northern Rivers. During the Millennium Drought, this system experienced significant localised drawdown.

As a result, the water sharing plan for this area does not allow for any new licences to be issued. However, licences can still be obtained by purchasing existing entitlements from other licence holders under rules established by the water sharing plan.

The Alstonville Plateau is considered to be fully allocated; meaning the volume of entitlement is close to the calculated sustainable level of extraction for this system. The total authorised extraction is less than 20% of the water entering the system, on average, each year. Total current and proposed extraction by the bottled water industry in the Alstonville Plateau area is 1.2% of the total rights to take groundwater in the area.

New England Fold Belt, North Coast Volcanics, Clarence Moreton Basin

In the New England Fold Belt, North Coast Volcanics and Clarence Moreton Basin groundwater sources, the amount of water being extracted is estimated by the NSW Department of Industry to be significantly less than the amount that these groundwater sources can support. It is estimated that the total take currently authorised from these groundwater systems is less than 2% of water entering the system each year. The current level of extraction by the water bottling industry is small in comparison to the sustainable extraction limit.

Overall, these groundwater sources are under-allocated. The NSW Department of Industry is making water available in these areas through a controlled allocation process. You can find more information on the controlled allocations process at:

industry.nsw.gov.au/water/allocations-availability/controlled

How recharge rates are determined

Groundwater systems are complex. Recharge to groundwater is estimated in these areas and in many other parts of NSW as a percentage of rainfall falling onto the exposed areas of the aquifer. This percentage of rainfall that recharges the aquifer varies depending on the geology of the aquifer.

A proportion of this recharge is reserved for the environment, and the remainder is known as the sustainable extraction limit. Limits on extraction established by the water sharing plan may be less than the sustainable extraction limit calculated using this method.

More information on how recharge and sustainable limits were set can be found at:

industry.nsw.gov.au/__data/assets/pdf_file/0004/166873/nth-coast-fractured-porous-rock-gw-background.pdf

Monitoring the groundwater and its use

The NSW Department of Industry is responsible for managing groundwater in NSW. In areas of high groundwater use or where there are specific management requirements, the department and WaterNSW install and monitor groundwater monitoring bores. With the exception of the Alstonville Plateau area, the assessed level of risk for groundwater sources in the Northern Rivers region is extremely low, in comparison to other water sources around the state.

The higher level of entitlements to take water in the Alstonville Plateau is reflected in its existing monitoring bore network of 12 key sites and 31 bores that are being monitored in this water source.

There is no current state government monitoring program for groundwater in the Tweed area. The NSW Department of Industry has assessed the Tweed areas as low risk, as the level of authorised groundwater extraction within these water sources is very low compared to their sustainable extraction limits.

Even in those systems where the overall level of extraction is considered to be low, the management framework recognises that localised impacts could occur. This risk is managed through local restrictions imposed on the location of new bores by the water sharing plan, together with individual assessments undertaken by the department's hydrogeologists prior to granting bore approvals. Local councils also have the power to require proponents to install monitoring infrastructure as a condition of development consent.

The take of groundwater in the Northern Rivers must be measured, either by way of meters attached to the bores, or by licence holders recording their extraction in logbooks. Licence holders must produce records for inspection by the Natural Resources Access Regulator (NRAR) on request.

The NSW Government is implementing a new metering regulation that improves the standards of metering for all users across the state. The regulations commenced on 1 December 2018. You can find more information on the metering regulation at:

industry.nsw.gov.au/water-reform/metering-framework

Monitoring and enforcing compliance

The NRAR recently investigated four NSW water-bottling operations in the Northern Rivers and found that all operations took water within their water licence limits. The NRAR also found that the method used to measure water take for three of the four operators could be improved. These three operators have installed accredited water meters on individual extraction bores, making for a more transparent and consistent water monitoring practice.

The NRAR is actively monitoring compliance of other similar water take activities in the area.

More information

More information is available on the NSW Department of Industry website, industry.nsw.gov.au/water

To make a confidential report on suspected water misuse, contact the NRAR Hotline on 1800 633 362 or email nrar.enquiries@nrar.nsw.gov.au