



03 FEB, 2025

## Water crisis looms for thirsty Pilbara

Business News, Perth

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Concern is growing about water use in Australia's economic powerhouse, with another water-intensive industry on the way.



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EVERY year in the Pilbara, industry abstracts twice the amount of water consumed by the Perth, Goldfields, Wheatbelt and South West regions from underground.

Six-hundred-and-thirty billion litres.

In terms Sandgroppers prefer, that is enough to fill Optus Stadium 630 times.

Of that, 445 gegalitres was used in 2022. In 2008, 127GL was used.

It could be more.

In 2022, more than 1,500GL of water was approved by the state government for abstraction from the Pilbara's aquifers.

And of the 625GL of water that was sucked up, about a fifth was re-injected into groundwater.

Mining is, unsurprisingly, the biggest user.

Rio Tinto and Fortescue are the thirstiest companies, abstracting about 178GL and 94GL respectively in 2022, according to Department of Water and Environmental Regulation data.

Roy Hill's namesake mine (51GL), Fortescue's Cloudbreak (39GL) and Christmas Creek (38GL), and Rio Tinto's Yandicoogina (36GL) and Hope Downs 1 (28GL) were the biggest individual water users.

Fortescue and Roy Hill did the best job at re-injecting water – recording 52 per cent and 65 per cent recharge rates in 2022 respectively.

Traditional owners are starting to agitate for change. Watchdog submissions, public outcry and legal threats are growing.

"The mining is 24/7, it is not giving our aquifer a chance," Kuruma elder Arnold Bobby said.

The Department of Water and Environmental Regulation claimed water abstraction was commercially sensitive, in its refusal to provide water abstraction details for 2023 to *Business News*.

The WA parliament disagreed with that in 2023 when it published the data used at the top of this story, under questioning from Greens MP Brad Pettitt.

# 10<sup>GL</sup>/yr

LICENSED  
ABSTRACTION  
FROM BUNGAROO  
BOREFIELD



### Alarm bells

The Bungaroo borefield north-east of Karijini National Park has in the past year become one of the most contentious water sources in the state.

Robe River Kuruma Aboriginal Corporation has been taking Rio Tinto's investors to the borefield to show them first-hand the damage they allege the company is causing.

Of 10 monitoring points in the borefield, *Business News* understands nine triggered a yellow alert last year due to declining water levels.

That requires the operator to investigate the sustainability of continued water drawdown.

Four are understood to have triggered a red notice – one of those twice in a row.

Traditional owners told *Business News* red notices were breaches of licence conditions. DWER insisted no breaches occurred.

Consent was never gained from the Robe River Kuruma people to abstract water from the Bungaroo, and the matter is still a point of tension between the parties.

The borefield was developed by Rio and the state government in 2013 to ease pressure on the Millstream aquifer.

Water from it was to be used for dust suppression at the miner's Dampier port operations, and to supplement the West Pilbara Water Supply Scheme.

Rio Tinto for its part appears cognisant of the problem.

"We acknowledge water is a scarce resource, particularly in the Pilbara," a Rio spokesperson said.

"We value our relationship with the Robe River Kuruma people and are listening and responding to their concerns about the cultural and environmental impact of water abstraction from the Bungaroo Coastal Water Supply Borefield."



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Heavy rains fall over the Millstream catchment, near Karratha, in January. Photo: Tom Zaubmayr

### WATER ALLOCATION LIMITS (2013)

Aquifer	Limit (GL)
Lower De Grey	10.15
Yule	10.56
Broome Sandstone	10
Wallal	31
Lower Robe	5.09
Lower Turner	0.42
Lower Cane	1
Lower Fortescue	6.6
Millstream	6
Non-target resources	137.4

“The country is just dying, the creek has no water where we know there was water, and just nothing at all, the trees are dying.

“We definitely know it is because of the water that’s going out from our country.”

Ms Lockyer said the Kuruma people’s long-term fight was with Rio Tinto to prevent more mines sucking up water along the Robe River, but its immediate concern was with the state government.

“We have actually met the Department of Water and asked what they can do about it because our country was dying because of lack of water, and it was their fault that was happening,” she said.

“We didn’t get a good response from them.

“We need to start coming together with the Yindjibarndi people, maybe PKKP, start rallying.”

Rio’s second desal plant should be non-negotiable, according to Robe River Kuruma Aboriginal Corporation.

The native title body also wants the state government to treat Pilbara water as it would other sources.

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Rio Tinto started building a \$395 million 4GL desalination plant at Parker Point in 2024 and is considering doubling its capacity to 8GL.

The first stage is expected to come

online in 2026 and reduce demand on the Bungaroo to 3GL per year.

Kuruma elders don’t want to see their country parched for another year.

“Water was always there,” Kuruma elder Gloria Lockyer said.

“We would go down to the Bungaroo and fish, you know, catch our meals, we were happy, everything was good.

“Thinking on what Bungaroo looks like now, it is very, very sad.



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Kuruma elders Arnold Bobby and Gloria Lockyer with Robe River Kuruma Aboriginal Corporation chief operating officer Nicholas Haney.  
 Photo: Tom Zaubmayr

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“The country is just dying, the creek has no water where we know there was water ... just nothing at all

– Gloria Lockyer

“You say we have a drought, you decrease water use.” RRRKAC chief operating officer Nicholas Haney said.

“You cut back to two minute-showers ... you’re not watering your lawns for dry years; you’re doing necessary things to make changes.

“What we have is a pattern of continued water extraction, despite the statements and the claims that there’s climate change, drought.

“It is important for everybody who has contributed to doing damage to country, it’s an opportunity and a time for them to step forward and actually do something about it.”

Further north, the Yindjibarndi Nation is mounting a similar challenge.

The Millstream aquifer gives life to Yindjibarndi Ngurra (country) and many of its songlines and sacred sites, which also happen to be areas of natural beauty.

Traditional owners are certain the waterholes that are central to their ancient traditions are under stress in a way they have never been before.

Climate change is part of the problem.

But Yindjibarndi Aboriginal Corporation’s immediate concern is the West Pilbara Water Supply Scheme, which draws from the Millstream aquifer, Bungaroo, and Harding Dam for residential, commercial and industrial use.

Water trigger levels at five of nine monitoring bores on the aquifer have been consistently breached since 2022, according to YAC records.

Elsewhere, 120GL per year abstraction limits over the Ashburton-Hamersley-Fortescue aquifer on the boundary of Karijini National Park were removed by the Barnett government in favour of a case-by-case allocation.

There are vast quantities of water underground in the Pilbara, but its use is fast becoming a major flashpoint between industry, government, Aboriginal groups and communities.

### Approved excess

According to its own water allocation limits, the state government knows it can only draw an average of 6GL per year from the Millstream aquifer to protect the health of the national park that depends on it.

Yet the Department of Water and Environmental Regulation is letting Water Corporation draw up to 9GL per year from the aquifer until 2027.

Central to this decision has been Harding Dam’s unreliability.

The state government destroyed Yindjibarndi Ngurra without their consent in 1984 to build the 64GL dam for the West Pilbara Water Supply Scheme.

The dam is dependent on good wet season rains falling in the right place and requires more than 14GL of stored water to work effectively.

It has not filled up since 2020 and was at 30 per cent capacity at time of print, despite record January rainfall on the Pilbara coast.

“In recent years, reduced rainfall recharge has necessitated greater reliance on Millstream to maintain drinking water supply to homes and businesses across the region,” a Water Corporation spokesperson said.

“We recognise that rainfall in the West Pilbara has been below average in recent years.

“For this reason, we are actively working with the community, industry and high-water users to reduce demand and increase water efficiency.”

Those waterwise endeavours saved about 1.5 million litres of water in 2023. But the problem of sustainable supply remains.

Late last year, Yindjibarndi Aboriginal Corporation made a submission to the Environmental Protection Authority through its in-house water management arm, Yindjibarndi Water.

That submission pressed the case for abstraction to be limited to 4GL/year and offered several interim solutions, including spreading the borefield out further to limit impacts on individual sites.





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YAC chief executive Michael Woodley said in December the state government had ignored the warning signs of Ngurra.

“There has been a level of irresponsibility when it comes to listening to the Yindjibarndi that dates back to when our elders led these discussions and highlighted the concerns about the water levels at Millstream (Nhangganguna),” he said.

“Our request for an inquiry by the Environmental Protection Authority into Millstream water extraction is likely to be a game-changer for our community.

“If approved, this will challenge the state government’s authorising an expansion of water extraction at Millstream and, hopefully, work with the Yindjibarndi in securing the appropriate and sustainable drawdown.”

YAC has warned legal action will follow should the government not respond constructively to the submission.

### Kicking the can

In 2008, the state government was told in a 20-year Pilbara water plan it needed to secure a new supply source by 2012 for the West Pilbara Water Supply Scheme.



Yindjibarndi Aboriginal Corporation chief executive Michael Woodley has warned legal action is possible.  
 Photo: Tom Zaubmayr

In 2010, the government was warned again, this time by the Department of Water.

“The existing water supplies for Karratha are at capacity due to increasing demand from residential and industrial growth and because

the reliability of supply from current sources is highly variable,” the DoW report into the Millstream aquifer found.

“If there is no recharge for two to three years, water levels will decline to the point where the scheme cannot

meet the current level of demand.

“This report confirms the need for a third source for the West Pilbara Supply Scheme and can be used in assessment of future source options.”

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# \$395m

COST OF  
RIO TINTO'S  
DESALINATION  
PLANT



Water Corporation is placing water saving messages around Karratha. Photo: Tom Zaubmayr

A 2013 state government water strategy based its long-term assumptions on water use increasing to nearly 700GL per year by 2042 – close to what the Pilbara has already reached.

Desalination was mooted, but the Barnett government instead opted in 2013 to allow Rio Tinto to abstract up to 10GL/year from the Bungaroo.

The government was also urged in 2008 to secure a new water source for Port Hedland by 2015 and for Onslow in the near term.

In 2024, the government announced a \$94 million 1.5-million-litres-per-year desalination plant for Onslow.

The Pilbara regional water plan itself was meant to be revised in 2020. *Business News* could find no evidence that had occurred. DWER did not respond by time of print.

The plan will reach its expiry date in 2028, during the next term of government.

### More pressure

Green hydrogen is a water-intensive industry, and an industry the WA government is promoting heavily to diversify the Pilbara.

Production of some 3 million tonnes per year of green hydrogen in the Pilbara has been mooted by 2035.

The consensus is you need 9 litres of water to produce a kilogram of green hydrogen.

Desalination plants do appear on the plans of two hydrogen proponents.

*Business News* has been told one proponent, which intended to build a desalination plant, may ditch the option because Water Corporation said it could use scheme water.

That scheme water being from the same source the Yindjibarndi and Robe River Kuruma people argue needs a reliance reduction.

As you would expect with the Pilbara, there are plenty of mine projects in the works that will abstract water, too.

The government granted Fortescue permission to use nearly all the Wallal aquifer's 21GL licensable allocation for its Iron Bridge magnetite project.

That decision has left pastoralists in the area seething.

BHP set itself a target in August last year to ensure at least half of surplus water from its dewatering activities at Mining Area C was used to benefit the environment by 2030.

The company is doing so because it plans to increase dewatering four-fold by 2040 as it increasingly digs below the water table.

At Mining Area C, BHP returns 87 per cent of abstracted water to the aquifer.

BHP's 2030 target would allow this recharge to be reduced by up to 37 per cent to extend the life of its mines.

The company is conducting technical studies and seeking regulatory approvals to stand the surplus water management project up by mid-2030.

BHP has no plans to follow Rio Tinto's lead and build a desalination plant for its port operations.

### Problem solvers

Unless governments can magically draw more rain out of the atmosphere or solve climate change, there are only two viable solutions to the Pilbara's water quandary – build desalination plants or reduce industrial groundwater reliance.

Ngarluma Water wants to do the former.



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The new company is a partnership between Ngarluma Aboriginal Corporation, water infrastructure developer Legacie and French wastewater firm Suez to build a

### PILBARA WATER EXTRACTION, 2022 (GL)

Company	Allocation	Abstraction	Reinjection (GL)	Reinjection (%)
Rio Tinto	362.7	177.7	17.5	10
Fortescue	237.9	94.5	48.9	52
BHP	162.8	79	5.4	7
Hancock Prospecting	90.2	52.2	34	65
Consolidated Minerals	63.6	10.4	0	0
Mineral Resources	42	17.9	0	0
Citic Pacific	19.3	11.1	0	0
Pilbara Minerals	6.9	2.7	0	0
Global Advanced Metals	5.6	1.3	0	0
Millenium Minerals	2	1.7	0	0
<b>Total</b>	<b>1023</b>	<b>450</b>	<b>105</b>	<b>23</b>

desalination plant near the mouth of the Balla Balla River, halfway between Karratha and Port Hedland.

The proposed 150GL plant could account for about 10 per cent of current licensed use, or 20 per cent of actual use.

Legacie managing director Daniel Lambert said the project's capacity could already be met more than twice over.

"To date we have identified over 370GL per annum of demand for water from off-takers ... for a range of both existing sites-projects and for future planned projects," he said.

"The significant demand is driven by both the increase in mining in the region but also the drive for delivering other decarbonisation projects.

"For off-takers, the benefit is that they will not have to develop their own project, they won't have to fund the capex or operate a scheme that is not their core business.

"In addition, it will enable them to support a scheme that delivers benefits to First Nations communities and doesn't adversely impact the environment."

Vysarn is another company with an eye to solving water woes.

The ASX-listed water specialist is working with Kariyarra Aboriginal Corporation to supply water from the Kariyarra paleo-channel for industry, mostly those moving into the Boodarie Strategic Industrial Area.

"Vysarn's corporate and technical knowledge around water management, water use and water extraction, along with Kariyarra's knowledge and understanding of Kariyarra country come together really nicely to be able to get a sustainable outcome that really does serve both the people, the industry and the country itself," Kariyarra chief executive James Gibson said.

"We are in preliminary discussions with industry leaders who have indicated that their usage would be 100 per cent of what we could produce in a sustainable way."

Rio Tinto's desalination plants should end the use of groundwater for dust suppression in Dampier and Cape Lambert.

Water Corporation is also crunching the numbers on what role it needs to play.

It is looking for up to 13 extra gigalitres per year of water capacity for

the West Pilbara scheme and appears to have settled on desalination.

That will need time and state government funds.

In the meantime, Water Corporation is trying to squeeze more efficiency out of existing infrastructure.

"Planning is under way for a new water source to meet future demand and reduce reliance on groundwater from Millstream," a spokesperson said.

"In the interim, work is also under way to upgrade treatment processes at Harding Dam during 2025-26.

"This will allow us to process and treat a higher volume of water more efficiently.

"We expect these works will increase daily supply from Harding Dam, which will allow us to reduce groundwater abstraction, however, this is dependent on adequate rainfall."

On that point, this wet season could provide welcome reprieve to strained aquifers and water sources.

It has already been a good year for rain in the Pilbara, and the forecast is for this to continue through to May.

The rain just must fall in the right places.