

Against the flow

University funding woes threaten not just the security of outspoken researchers, but the specialised courses they teach.

by ANDREA GRAVES • photograph by MARTIN HUNTER

Mike Joy is the agriculture industry's least-favourite scientist. That's according to the man himself, who has pulled no punches for some 15 years when speaking about the harm to aquatic life caused by fertiliser nutrients entering waterways. In March, he told a conference that "business as usual in New Zealand is an ongoing pollution event". In 2019, he co-wrote a Tolkien-themed piece for the New York Times called "The Incontinent Cows of Middle-earth", describing how Canterbury's green pastures are plumped by "heroic levels of irrigation" and fossil fuel-derived fertiliser. The fertiliser's nitrogen, he wrote, is concentrated in cow effluent that washes into aquifers and rivers.

Joy reckons speaking out is the biggest achievement of his career as a freshwater ecologist. He's miserable about the ongoing decline of freshwater, and initially can't think of any big wins he's had. But he realises he's done a good job of raising the profile of the ill health of our rivers, aquifers and lakes – and potentially the health risk to people drinking nitrogen-enriched water. "For years, it felt like I was the only voice," he says. "I was on my own and everyone was saying, 'He's crazy.' It's like questioning rugby."

In May, Joy was given notice from his position at Victoria University of Wellington's Institute for Governance and Policy Studies. The institute, whose stated aim was "to lift environmental, social and economic outcomes for all New Zealanders via good public policy", is to close after its funding was reallocated. Its two permanent research fellows, Joy and prominent economist and social policy adviser Michael Fletcher,

lost their jobs along with director Simon Chapple.

A roll call of prominent thinkers and academics has been associated with the institute over the years including Jonathan Boston, Geoff Bertram, Colin James, Paul Callister and Alison Dewes, and not all are continuing their unpaid work within the university.

The institute's main funding source for the past decade was a \$10 million endowment from the Gama Foundation, the charitable trust of philanthropists Grant and Marilyn Nelson. However, in 2021 disagreement erupted over whether the charter delineating the institute's research areas was being followed.

The publicity surrounding its winding up felt odd, says Joy. "It was like being at your own funeral, everyone saying what a good job I've done when I'm on my way out"

You can't help wondering if this slightly scruffy scientist, who didn't begin his studies at Massey University until he was 33 and is now 63, wouldn't grab the opportunity to spend more time on his 91-year-old sailboat or enjoy peeks of sea from

the Paekākāriki cottage he shares with his partner, Allie. But the row attracted the attention of the Morgan Foundation, which stepped in to fund his role. Joy says it's a "hands-off" arrangement with the Morgans that will enable his continued independence.

He deplores industry influence over scientific research, and is particularly irked by the agricultural industry's ties with parts of Massey, where he formerly worked. "Is that what universities are for? ▶

"I don't think we should be labs for industry. We're supposed to be the independent critic and conscience."

Thrown back: Mike Joy has been given a research lifeline to continue to advocate for freshwater health.



Science challenged

“If you’re not teaching a subject, or not teaching a full programme in it, you’re not growing future researchers.”

Although Mike Joy’s job at Victoria University of Wellington has been salvaged, financial strife at several universities means hundreds of staff are likely to lose their jobs this year. At the time of writing, about 230 staff were proposed to be shed at Victoria, potentially hundreds at Otago, up to 245 at Massey and a handful at Waikato. Auckland University of Technology may trim a small number of roles.

The root cause was outlined by the vice chancellors of Victoria and Otago in a pleading open letter to the government in June that stated per-student funding has been dropping in real terms for years and in the past decade “has fallen 20% in real terms”.

The government responded with \$128 million in additional funding to subsidise tertiary tuition fees in 2024 and 2025, on top of a \$181 million funding boost in the May Budget to meet forecast demand until the end of 2025. But it won’t be enough for the most badly ailing institutions. It has also announced a review into how higher education is funded.

The universities’ main income source is bums on seats. The slow burn of shrinking real-term funding was ignited this year by a drop in student enrolments nationally. However, some universities, particularly Canterbury, have increased student numbers and are financially sound. But any university’s increased share means a smaller slice of the pie elsewhere.

The per-student funding system creates

a battle for students. Some have expanded into others’ territories: Massey into Wellington and Auckland’s North Shore, and Otago to Auckland, Wellington and Christchurch. They all market themselves aggressively, including social media ads and billboards. Waikato University was recently revealed to have paid nearly \$1 million in 2019 for marketing advice from former National Cabinet minister Steven Joyce’s consultancy to recruit students – in addition to paying its “Future Students” team of 11 staff. Success was evident in the university “increasing its market share of school-leavers”, vice chancellor Neil Quigley told RNZ.

Equally worrying – thanks to competition rather than co-operation – is the lack, so far, of a national strategy ensuring that less-patronised courses are retained at least somewhere. These are what gets slashed to rescue sickly operating budgets.

But slashed courses and staff perpetuate a decline by hollowing out fields of research and teaching. This is because prospective students often consider a university’s reputation in their chosen area. Freshwater ecologist Joy advises budding



Association of Scientists co-president Lucy Stewart, top, and Universities NZ CEO Chris Whelan.

prospective students in his field to consider Otago, Waikato or Canterbury, in that order. Reputation depends on the quality of academic staff and the help of support staff.

Universities are research organisations as much as teaching ones and researchers inspire students as they lecture. A strong freshwater ecology group, for example, will attract graduate students, visiting academics, high-achieving staff and research funding.

Lucy Stewart, co-president of the New Zealand Association of Scientists, says once programmes are lost or reduced to a very small number of academics, they’re difficult to revive. “If you’re not teaching the subject or not teaching a full programme in it, you’re not

growing future researchers. And researchers from overseas are going to be much less willing to move to work somewhere that doesn’t have a vibrant, well supported research programme in their area.”

The vice chancellors’ letter agreed: “It will take generations to rebuild high-quality capability,” and decades of detrimental social, economic and cultural consequences are likely from the impending loss.

Stewart says there's a pattern of cuts in fundamental sciences: mathematics, physics and chemistry. "These subjects underpin more applied areas of study for students not majoring in them, just as research in these areas underpins applied research in areas such as engineering and medicine."

Overall, science departments are crumbling less than the humanities. Chris Whelan, chief executive of Universities New Zealand, says that

The universities' main source of funding is bums on seats. Per-student funding creates a battle for students.

bench science students pay higher fees and attract more government funding partly because they need laboratories and staff to run them. "The cost of tuition is roughly [met] one-third from student fees and the government pays the other two-thirds." There's a cap on fees universities can charge domestic but not international students, who haven't returned in high numbers post-Covid and were lucrative.

Covid ripples have also increased building costs. Some universities recently borrowed large amounts to construct new buildings and are servicing repayments at much higher interest rates. Whelan says many university buildings date from the 1960s and 70s. "They've spent a lot of time delaying projects and they have to ensure the environment they offer for tuition and staff to work in is reasonable. They need student accommodation."

Union representatives say staff whose jobs are at risk, or whose salaries are dropping in real terms, feel awful watching multimillion dollar buildings emerge. Some universities have paused all possible building projects.

Sir Peter Gluckman, a past dean of Auckland Medical School, would welcome fresh thinking and new policy work around universities. "There's a completely passive approach so that everyone competes with everyone else. Do we really need eight universities doing the same thing?"

◀ I don't think we should be labs for industry. We're supposed to be the independent critic and conscience that questions stuff, not be a part of it"

Joy is an effective critic, says New Zealand Association of Scientists' co-president Troy Baisden, who was not surprised to hear of his new funding. "I think people know this stuff needs to be supported." He says Joy came from the perspective of native fish – his academic research initially focused on their habitat needs and on ways to model fish-habitat suitability – to become a "relatively extreme voice for protection. And his commentary on freshwater has proved to be very sound."

Joy also comments on climate change issues, advocating degrowth over green growth. There, Baisden thinks Joy is "a little more extreme. He's a purist around stuff like that. I don't always agree with him, but he's an important voice, and it's important to have the spectrum."

ADVICE REJECTED

When Joy moved to the institute from Massey in 2018, he'd spent years publishing in scientific journals and had won several awards. But freshwater decline continued. Institute researchers were expected to "engage with New Zealand's policy-making process" and "deliver independent, high-quality, high-impact scholarship and discussion". Environmental sustainability was a strong focus. Joy began to contribute to policy formation – or tried to – becoming a member of an advisory group for the Ministry for the Environment's (MfE) 2020 freshwater reform package. Despite most of the group advising a drastic cut in how much dissolved nitrogen should be allowed in streams, MfE eventually announced a bottom-line limit that's more than double the recommended one.

Although nitrogen won't directly poison creatures at the revised limit, they are "already dead", says Joy. That's because nitrogen fuels algal growth, which consumes the oxygen they need, particularly in the presence of the other key fertiliser nutrient, phosphorous. Many waterways still exceed the revised limit.

Joy made it known he thought the reform package, which contained other changes such as a cap on fertiliser use, was inadequate, and says MfE made plans with industry groups before the advisory group's report was finalised. He believes freshwater scientists should decide the allowable nutrient load. "If you were flying in a plane, you'd want the engineers to decide the plane's

maximum loading. You wouldn't let freight companies argue to add more weight over the safety limit because it would increase their profit. But that's exactly what's happening with our rivers."

He felt vindicated at the end of May when MfE released its Ōtūwharekai/Ashburton Lakes lessons-learned report, which noted multiple system failures allowing the continued decline of the lakes, caused mostly by fertiliser run-off from pastoral land use.

"It was such a shock for me for MfE to be so honest. They admitted the stuff they've been pushing is wrong. Farm environ-

"He's a purist. I don't always agree with him, but it's important to have the spectrum."

ment plans don't work. Good management practice is meaningless. We also know the fertiliser cap isn't being enforced, and often that data isn't collected."

FARMING BACKGROUND

Having lost faith in working through government channels, Joy is turning to the courts. His new university role is half-time, so he can also prepare evidence. "It seems to be the only place we win now, which is why I'm putting time into it." He's assisting Ngāi Tahu and the Environmental Law Initiative in cases that could improve freshwater health.

He denies he's on a crusade against farmers – though he has no sympathy for the industry bodies behind them. He drinks milk, but doesn't eat meat. "Producing milk is a legitimate thing to do. The problem is the way it's done now. I was a dairy farmer back in the 80s. We put no synthetic nitrogen fertiliser on in those days. Stocking rates were a third or a quarter of what they are now. The picture people have in their minds of what farming is ... it ain't anything like that now, and neither are the waterways."

Would things be okay if we reverted to less-intensive dairying? "They'd be a hell of a lot better. The harm goes up exponentially; it doesn't just double when you double stocking rates."

And unfortunately for farmers, he says, the prices they get don't rise proportionately as production ramps up. Regardless, intensification is indefensible, he thinks. "I still hear my mother saying, 'Just because it makes money doesn't mean it's right.'"