Save Science

*Kia mau a tātou pūtaiao*

# Science under threat

## Cuts to public science funding and jobs in Aotearoa New Zealand

# The Save Science Coalition:


Report produced by the Save Science Coalition | Kia mau a tātou pūtaiao, July 2024

scientists.org.nz/save-science-coalition

# Foreword

As Co-President of the New Zealand Association of Scientists, it is hard for me to say that I am 'pleased' or 'excited' about the report that follows as might be conventional. Nevertheless, I regard it as highly necessary work and I am grateful to everybody who has contributed to it.

The public science system in Aotearoa New Zealand is currently facing a generational crisis, the scale of which is often hard to articulate to those who are not directly involved. While the science sector encompasses both private and public work, it is the public science sector that provides the foundation for all science and innovation in our country. It helps train future workers for the wider sector; it provides a foundation of expertise in areas crucial to our nation's success; it builds and maintains scientific infrastructure; and it is responsible for collecting and holding data about our people, our environment, and our industries which supports a wide variety of research and innovation. Perhaps most crucially, the public science sector performs research for the public good. To take one recent example, there is no immediate commercial incentive for anybody to assess the risk to human life in the event of a tsunami in Milford Sound (perhaps the opposite), but knowing this allows us as a country to make informed decisions about what activities we allow there. This will likely save lives in future.

Furthermore, there is ample evidence globally that a well-funded and stable public science sector is the platform on which a thriving private sector is built. If we want to see commercial revenue supporting public sector science, we have to be prepared to invest in the infrastructure and workers who can provide services that meet the needs of the private sector, as well as act as a springboard for the creation of new private companies.

Sadly, what we are seeing right now - as documented in this report - is a series of cuts to public science funding which threaten the ability of our public sector and the entities within it to continue to do any work at all. Organisations are having to make choices between maintaining infrastructure and jobs. In the coming years, we are likely to see many scientists leave the country as their jobs are cut and their paths to other local employment are few. While the Science System Advisory Group is currently working to report back to the Government on paths forward for the sector, any changes they recommend, let alone new funding, will not be available until well after these losses have begun to occur. And any new funding will not represent genuine investment in the sector until it has made up for the effective funding cuts (particularly the loss of the National Science Challenges) that have already occurred.

If something positive can be taken away from this report, I think it is this: we still have, despite everything, a science sector full of dedicated experts who are committed to using their hard-won expertise for the good of our whole society if they are given even the slightest chance to do so. Investment in our science sector is investment in our future. Like any investment, the best time to do it was yesterday but the second-best time - still open to us - is now.

**Dr Lucy Stewart**

**Co-President of NZ Association of Scientists, and Spokesperson for the Save Science Coalition**

# Executive Summary

Public science in Aotearoa New Zealand is under threat. Recent funding reductions across multiple areas, on top of a long history of insufficient resourcing, are resulting in cuts to jobs and programmes of work that put the viability of New Zealand's public science system at risk at a level not seen in a generation.

The fragmented nature of science funding and wide distribution of science expertise throughout the public sector obscure the cumulative impact of these cuts. That's why the Save Science Coalition - a group of 23 scientific societies and unions with an interest in supporting public science - has produced this report. It quantitatively describes the threats to funding and jobs within the sector, and provides insight from scientists within the sector about the impact these cuts will have on the valuable science work currently underway within the sector.

Public science funding over the last two decades has been acknowledged as insufficient. This was compounded in the last four years by the impacts of Covid on workforce and resources. In recent months pressures on the public system have increased significantly, with planned investment withdrawn, long term funding ending without replacement, other funding sources cut, and cost-cutting requirements on public service agencies leading to science jobs being lost and a reduced ability to attract new skills and capabilities.

This report documents a funding shortfall for the public science sector of:

- $64 million per year of expired National Science Challenge funding compared to 2023/24 levels
- $451 million of withdrawn capital funding that would have been spent on science infrastructure through Wellington Science City
- a net $7.15 million decrease in the Strategic Science Investment Fund over the next four years
- a $20.26 million decrease in geohazard information funding over the next four years compared to 2023/24
- a $9.75 million reduction in the Endeavour Fund over the next four years
- a $3.09 million reduction in the Marsden Fund over the next four years
- a $4.91 million reduction in the Health Research Fund over the next four years
- a $4.46 million reduction in government spending on policy advice and related services on science, innovation and technology in 2024/25
- a $4.8m reduction in Unlocking Curious Minds funding over the next four years
- a $3.6m reduction in the Participatory Science Platform funding over the next four years.

This report also documents job losses including:

- approximately 349-359 science roles lost or proposed to be lost across the sector, with more likely to follow
- wider reductions in funding and roles in wider areas of evidence, data, insights, research and intelligence that provide much of the evidence basis for decision-making within government.

The Save Science Coalition | Kia mau a tātou pūtaiao urgently wants to see the cuts to science funding and science staff across public science institutions halted and reversed. We call on the Government to acknowledge the wide value science and research more generally provides to the nation. We ask that the Government takes real steps to lift science investment to 2% of GDP which will require urgently introducing science funding to address some of the most significant gaps.

# Introduction

This report has been developed by the Save Science Coalition | Kia mau a tātou pūtaiao, a group of scientific societies and unions representing scientists and science sector workers with an interest in ensuring that New Zealand has a well-functioning and well-funded science and research system. The Save Science Coalition is quickly growing, but at the time of writing it is a group of 23 organisations, as listed below.

Through this coalition, science organisations and scientists have united to express our concerns about the state of New Zealand's public science funding. Recent reductions across multiple areas are resulting in cuts to jobs and programmes of work that put the viability of New Zealand's public science system at risk. In line with these concerns, the goals of the Save Science Coalition are to:

- oppose cuts to science funding and science staff across government institutions
- highlight and catalogue what is being lost through these cuts
- defend support for world-leading indigenous research including mātauranga Māori
- make the case for a foundation of support for public science and re-commit to a target of 2% of GDP to be invested in research and development in Aotearoa New Zealand.

The science system in Aotearoa suffers from fragmented science funding, institutes with primarily business drivers, and the wide distribution of science expertise throughout the public sector. This obscures the cumulative impact that cuts to investment, funding, and jobs across individual organisations are having on New Zealand's science system overall. In line with our second goal listed above, this report attempts to set out a fuller picture of the impact by looking across the system – at CRIs and other Crown-owned science organisations, universities, and the users of science in the public service and state sector – and setting out the funding streams being cut or reduced, the science roles being cut, the planned investment being cancelled. It also looks beyond science roles at the wider ecosystem of evidence and data that is being scaled back. It incorporates the perspectives of our members, scientists, researchers, and science support staff, on the value of our work and the potential impacts of reducing it, to make the case to the public and decision makers for more sustainable investment in the sector.

The current Save Science Coalition member organisations are:

- New Zealand Association of Scientists
- Public Service Association Te Pūkenga Here Tikanga Mahi
- Te Hautū Kahurangi | Tertiary Education Union
- Academic Freedom Aotearoa
- NZ Society of Endocrinology
- NZ Ecological Society
- NZCTU | Te Kauae Kaimahi
- Physiological Society of New Zealand
- New Zealand Institute of Forestry
- Geoscience Society of New Zealand
- Aviation and Marine Engineers Society
- NZEI Te Riu Roa
- New Zealand Institute of Chemistry
- The New Zealand Freshwater Science Society – Ngā Kohinga Wai o Aotearoa
- Te Manatōpū Mātai Koiora Moroiti | The New Zealand Microbiological Society
- Genomics for Aotearoa New Zealand
- The Entomological Society of New Zealand
- Sociological Association of Aotearoa New Zealand
- France Aotearoa Science Technology and !nnovation (FAST!)
- New Zealand Society of Plant Biologists
- Association of Women in Sciences
- New Zealand Marine Sciences Society
- New Zealand Plant Protection Society

Learn more about the Save Science Coalition at scientists.org.nz/save-science-coalition. You can also find and support us on Facebook at Save Science Coalition.

# The background to Aotearoa New Zealand's current science funding crisis

A science system that can deliver both impact and excellence in research, to address risk and improve performance at an industry and societal level, requires adequate investment. New Zealand has been consistently under-investing in science over the long term. As a proportion of GDP, total R&D expenditure in New Zealand is low compared with the OECD and other small advanced economies.[1]

Successive governments have set the goal of increasing R&D spending to 2% of GDP; the most recent Labour-led Government set a goal to reach the 2% GDP goal over the ten years from 2017 to 2027[2], and reiterated this goal in its 2022 white paper as part of the Te Ara Paerangi reform process[3]; and government documents released this year indicate 2% of GDP is still the aim of government[4]. This target covers spending across the public sector, universities and business.

R&D spending has increased over the last decade, with business spending on R&D rising faster than public spending, but overall New Zealand's total investment in R&D has been well below the Government's 2% of GDP goal[5].

New Zealand's funding and institutions have internationally unusual structures which are a source of instability and excessive competition fuelling growing confusion and distrust. This includes the practice of including overheads into all contracts, a large proportion of which are contestable. With a lack of stable support for the foundations of research, the cost of overheads continues to swallow more funding leaving less for the research itself. Most troubling of all, investments generally do not receive adjustments for inflation so that as GDP grows, the same level of government contributions effectively provides less.

The inadequacy of funding overall, coupled with the contestable and temporary nature of most of New Zealand's major science funding sources, has created a system in which funding and therefore work is precarious. Capped funding over long periods limits investment in science infrastructure, makes projects unnecessarily

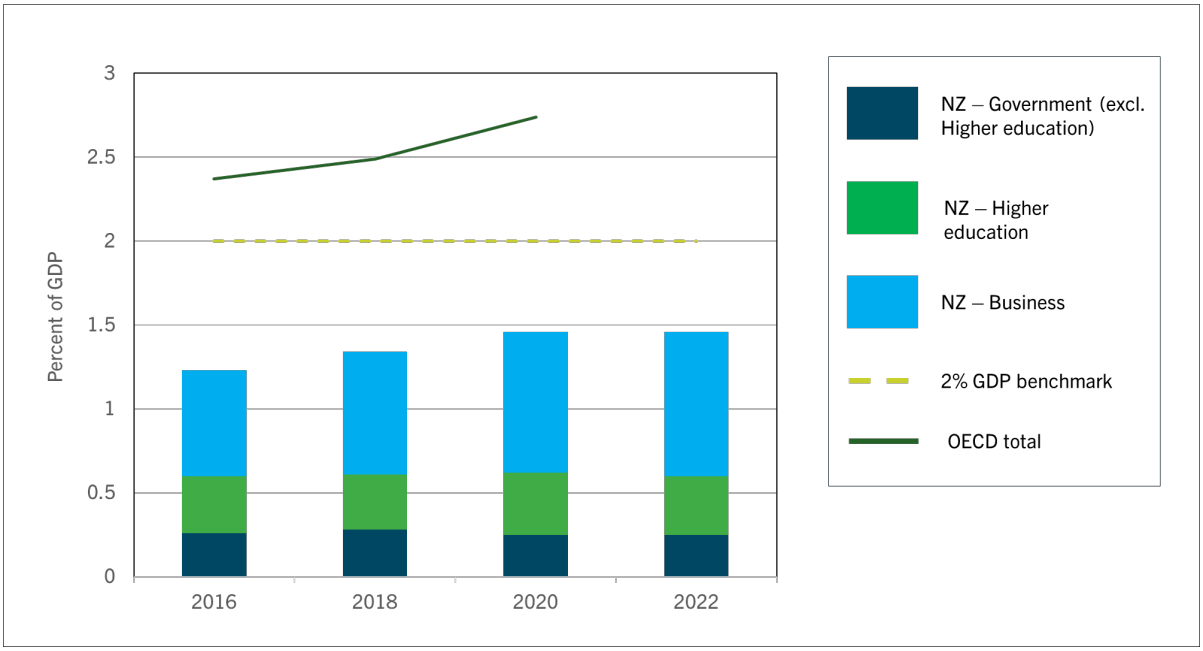


*Figure 1: New Zealand science funding as a percentage of GDP, by sector and compared to OECD total (Source: StatsNZ Research and Development Survey 2022)*

precarious, and forces institutions to cut valuable work to meet bottom lines. The time-limited nature of many funding sources makes it difficult to provide career stability or certainty and limits us from retaining our best scientists. Rising overheads that aren't met by rising investment mean doing less with the amount available. Within universities in particular, the normalising of temporary contracts has created an environment of insecure work.

Despite a rising overall spend as a proportion of GDP, driven largely by private rather than public spending[6], funding pressures on particular parts of the public science system have risen in recent years:

- The university funding system has suffered from declining operating revenues since 2020 caused by a combination of falling enrolments and falling government funding in real terms[7], leading to challenges the Tertiary Education Commission has described as unprecedented.[8]
- Rising costs have not been met by increases to funding, such as in the example of the Strategic Science Investment Fund.[9]
- In 2023 the Government put in place cuts to science funding of $115.3 million over a period of four years from 2023/24 to 2026/27 to respond to the cost-of-living crisis through public sector cost savings.[10]

Pressures in some areas were counteracted by investment in others: in Budget 2023 the Government set aside $451 million in new research infrastructure funding in the form of its 'Wellington Science City Proposal'. Through its reform process it also started the process of developing national research priorities to guide funding that was expected to replace the National Science Challenges expiring in 2024. The funding for the National Science Challenges was originally reallocated from elsewhere in the sector, so replacing them represented only maintenance of existing funding levels going back many years.

The state of public science funding has worsened significantly following the election of the National-led coalition Government in late 2023 due to:

- requirements for public service organisations to identify 6.5-7.5% reductions in baseline spending, which will leave them with less resource with which to commission research
- the cancellation of science infrastructure that would have been provided through Wellington Science City
- loss of direct science funding through the expiry of the National Science Challenges and through signalled reductions in other funds.

At the same time, through Budget 2024 the Government has made cuts to several sources of public science funding, or chosen not to extend time-limited funding sources that were due to expire, which anecdotally, appears to be leading to research and other science-related work commissioned from CRIs and universities being cancelled.

The combined result of these changes is that science organisations are cutting jobs, failing to invest in infrastructure, and scaling back the work they do for the good of New Zealand and the national economy. The details of these cuts are discussed in the following sections.

# Cuts to science funding

**This section sets out major funding pools that are being disestablished, expired or reduced (either in nominal or real terms). It also provides examples of the work these funding sources would have provided, their value to New Zealand and the potential impact of their loss.**

## National Science Challenges

The National Science Challenges were introduced in 2014, intended as a new strategic approach to mission-led science investment to respond to the most important, national-scale issues facing New Zealand.[11] Over ten years the National Science Challenges received around $680 million[12], ramping up more slowly than expected, reaching a stable investment of $97 million per year in 2021/22[13].

**"The National Science Challenges are the home of our biggest and most important mission-led research. Without replacement research funding, most of this research will stop or at best put progress back years. Without National Science Challenge funding scientists will lose their jobs, and because the whole science system is under significant financial pressure from these changes there will be no other employment available. It will mean nationally important capability will be lost from the system."**

Grant Rennie, PSA National Science Committee Chair

The Challenges are expected to have spent $64 million in 2023/24, reaching an abrupt end as the financial year ends in June. The Government's Budget announced in May 2024 contained no funding for Challenges, and all indications are that the complex initiatives will simply end in the areas deemed most important to the nation ten years ago. Some Challenges incorporated programmes of research that had been running for at least a decade.

For **New Zealand's Biological Heritage National Science Challenge**, the expiration of funding threatens work in areas such as:

- dealing with tree diseases affecting forests such as myrtle rust and kauri dieback, as well as new pathogens that test our borders
- implementation of new technologies to improve detection of weeds, pests and diseases across our biosecurity system (e.g. national DNA reference library and workflow supporting eDNA surveillance and monitoring, RNAi solutions for invertebrate pests)
- deployment of new efficient and effective plant pathogen detection tools (e.g. Phytophthora pocket diagnostic rapid tests) to aid discovery and containment of these diseases.
- strategic, spatial planning tools like Eco-index (eco-index.nz), needed by land owners, managers and decision makers for long-term biodiversity restoration and planning including on farms
- accelerating and supporting mātauranga Māori solutions for forest health (e.g. rongoā for kauri ora) and biosecurity surveillance and biodiversity monitoring (e.g. mātauranga based monitoring tools and platforms).

Though dedicated funding for myrtle rust and kauri dieback was known to be expiring, managing these diseases is a long-term issue, and the work needed to enable that management may not have a clear funding pathway from here. The types of research that are still needed (eg, resistance breeding programmes, development of control techniques, and ongoing monitoring) are what is often most challenging to fund, as these aren't necessarily 'novel' or 'breakthrough' science and lean toward operational and applied research.

For the **Deep South National Science Challenge**, funding reductions have the potential to mean a reduction in model-based, long-term climate change research in NZ using the NZ Earth System Model that has been developed exclusively by the 'Deep South' NSC. This decision to discontinue any funding in the areas has resulted in scientists leaving the country. We have lost expertise and capability in Earth System Model development and implementation, focussing on regionally specific issues in the NZ region, that has been advanced over the past 10 years. This will reduce knowledge input into the government's climate change adaptation and mitigation strategies that are informed by expertise in Earth System modelling.

A reduction of work in this area would also mean the loss of international and national collaboration and leadership opportunities by NZ as a responsible global citizen addressing the global problem of climate change; and the loss of our ability to make long-term (decadal-century) predictions of climate change impacts, especially for the sustainable evolution and enhancement of new and existing marine industries (e.g., fishing, aquaculture, renewable energy).

Research programmes in universities will lose support from the NZ Earth System Model (e.g., Canterbury University research on atmospheric processes, Otago University research on Antarctic sea-ice projections, VUW University research on ice sheet modelling), critical to future capability development of the next generation of NZ climate change scientists.

For the **Sustainable Seas National Science Challenge**, reduced funding could mean the loss of important work on:

- biodiversity and conservation decision support tools based on biodiversity and marine spatial planning modelling of coastal and shelf benthic ecosystems in relation to anthropogenic activities where there are many agencies endeavouring to manage multiple concurrent and often competing activities
- local Māori marine environment restoration projects and maintenance and future-proofing of new ongoing iwi partnerships and collaborations

## Case study: Investment in weed biocontrol

One recent example of the benefits of science investment is about biological control of weeds. Looking back over more than 90 years of weed invasion on production land (where the benefits of weed control are more straightforward to quantify in financial terms) and the investment in and success of biocontrol agents to manage these weeds, researchers calculated at least a $110 return for every $1 of investment into weed biocontrol research.[14]

These benefits continue long after the research into and release of the biocontrol agent has been completed and the investment no longer required. In these agroecosystems we can calculate millions of dollars' worth of benefits are still being realised decades after the last release of agents to control these problematic weeds.[15] Importantly, the research underpinning the safety and effectiveness of these successes has been funded entirely through central government mechanisms, while approximately two thirds of the resourcing for operational research to develop weed biocontrol agents has historically been from central government.

This example helps demonstrate why we need government funding for research to solve environmental problems. First, the benefits coming from that research are enjoyed by New Zealand Inc. as a whole, including by future New Zealanders long after the research has completed. Biocontrol agents move across property boundaries autonomously – they spread out to control everyone's weed infestation and we can show they keep going at it for decades, at least. Second, the research and its implementation need on average five years per agent to be done well and sometimes decades to fully realise the benefits. Consequently, the stability of funding needed to see these projects through to their outcomes can't rely on industries which are heavily exposed to boom-and-bust cycles of profitability and are therefore characterised by up and down cycles of investing in the research. To realise these collective benefits of science, we need to collectively and continuously fund the research.

There are still plenty of weeds that are threatening our native ecosystems and production land[16] and many of them make suitable potential targets for biocontrol.

- facilitating and securing the future potential for new Blue Economy start-up businesses; in particular, nurturing smaller industry partnerships, and creating an avenue for them to collaborate on research to support economic opportunities.

For the **Our Land and Water National Science Challenge**, funding reductions have the potential to impact public good science on ecosystem health and science that supports New Zealand agriculture to be successful.

Our Land and Water science challenge covered almost all of the mission led research to preserve the most fundamental treasures of our country – our land, water and associated ecosystems – while producing value from those same treasures. Without mission funding, land-based research that ensures productive farming and horticulture with better environmental outcomes will almost stop.

These are examples identified by Save Science Coalition members, but are by no means the full extent of the impact; across the 11 National Science Challenges there will be an extensive range of research areas where progress is halted and opportunities for expanding our knowledge base will be limited by the expiry of funding.

## Wellington Science City

Wellington Science City was announced as part of Budget 2023 and involved a funding injection of $451 million to develop co-located science infrastructure for CRIs and Callaghan Innovation. This funding was subsequently withdrawn by the incoming Government.

Wellington Science City was seen as an opportunity to create a more integrated approach to property investment through taking a 'Crown perspective' rather than that of individual institutions, coordinating individual CRIs' existing investment intentions to build a stronger overall system.[17] Crucially, however, central government co-funding was also a source of financial support for institutions that needed to make urgent infrastructure investments. In the case of Callaghan Innovation, the removal of this source of investment by the incoming Government left the organisation without the means of addressing an urgent need for new buildings, contributing to the drastic staffing measures undertaken by Callaghan Innovation discussed later in this document.

## Geohazard information services

Funding for GNS to run GeoNet (New Zealand's earthquake, volcano, tsunami, and landslide monitoring), the National Seismic Hazard Model (a ground shaking model), and the 24/7 National Geohazards Monitoring Centre was provided by the previous government on a time-limited basis, beginning with $5.2 million in 2002/23 and rising to $31.8 million in 2023/24. Budget 2024 saw this funding continued, but at a reducing rate over the four-year period covered by the Budget[18], which will require GNS to do the work with less or make up a larger

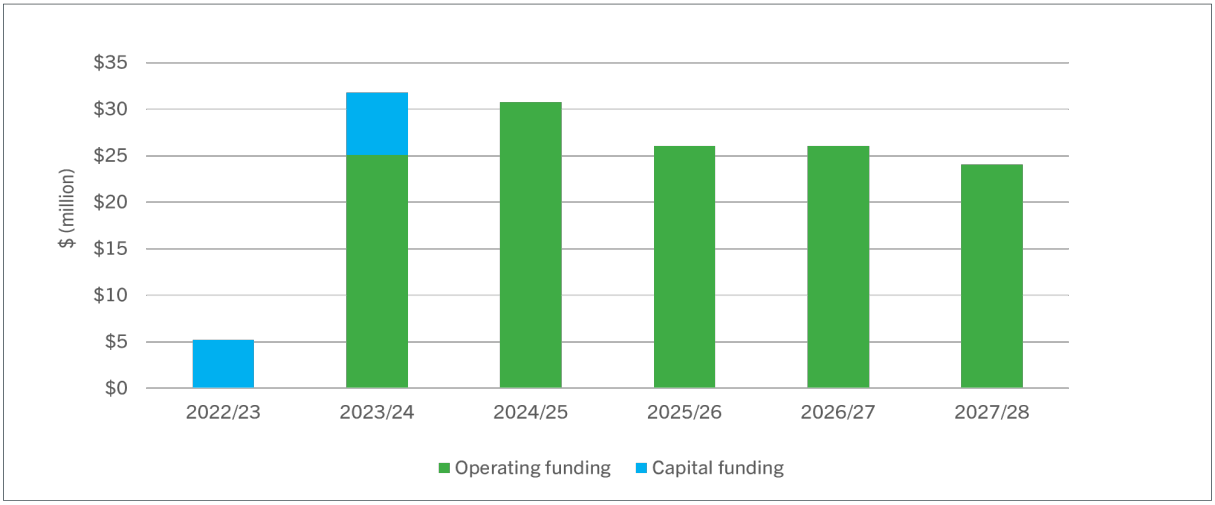


*Figure 2: Budget funding for geohazard information services funding 2022-2028*

proportion of the total funding from other sources from the 2025/26 financial year on. Subsequent to the budget announcement, the GNS CEO has announced to staff that the organisation will be looking at cutting costs, including considering reductions in staffing. No detail is yet known at the time of writing this report.

## Strategic Science Investment Fund

The Strategic Science Investment Fund (SSIF) is one of the key sources of funding for public science institutions, providing programme funding based around science platforms as well as large-scale research infrastructure. SSIF funding has been relatively stable and is budgeted to remain stable, but because it has failed to keep pace with rising research costs it represents a reduction in funding in real terms. It means that over time, and especially in years with high inflation, SSIF funding buys less and less research which requires the workforce delivering on the research to shrink.

Budget 2024 included a $10.6 million increase to the total SSIF funding available in 2024/25 (which represents around a 1.6% increase), but a $17.75 million decrease in 2027/28.

## Budget 2024 permanent savings from research fund reductions in 2027/28

In addition to savings from ending the National Science Challenges without a replacement, and $4.4 million forecast from job reductions, Budget 2024 set out savings initiatives from reductions to several funds to take effect from 2027/28, including:

- a $9.75 million reduction in the Endeavour Fund
- a $3.09 million reduction in the Marsden Fund
- a $4.91 million reduction in the Health Research Fund.

Budget 2024 provided information about the total allocation of these funds in 2024/25 and the savings from reducing these funds in 2027/28. Because of the lack of information about the total budgets it is not possible to clearly identify whether funding is intended to be static in the intervening years. However, we can see that funding for the Endeavour Fund is rising by around 1.4% in 2024/25 from what was Budgeted in 2023/24 (compared to around a 5.7% increase the previous year), and that the Marsden Fund and Health Research Fund are remaining static from previous year., This indicates that we can likely expect these funds to fail to keep up with inflation even before taking into account 2027/28 reductions.

## Budget 2024 spending on science policy and advice

Budget 2024's allocation for policy advice and related services to Ministers on science, innovation and technology in 2024/25 is reduced by around $4.46 million (around 37%) from the previous year. This allocation covers the provision of advice (including second opinion advice and contributions to policy advice led by other agencies) and services to support decision making by Ministers on government policy matters relating to science, innovation and technology.[19]

## Climate Emergency Response Fund

The Climate Emergency Response Fund (CERF) was established by the Government in 2021 with an initial $4.5 billion from recycling proceeds of the Emissions Trading Scheme into a dedicated fund focused on supporting initiatives aimed at delivering actions identified in the Government's first Emissions Reduction Plan.

The first round of CERF funding announced in 2022 included funding on research into forest carbon storage, woody biomass supply, innovation in native forest establishment, landfill gas capture, biofuel, and agricultural greenhouse gas mitigation.[20]

The current Government has returned the $1.5 billion remaining in the CERF to provide for tax cuts, making this money unavailable for future climate change response spending including research. This includes returning unallocated funding and ending other initiatives early.

## Other science and data cuts in Budget 2024

Budget 2024 made cuts to a range of public service projects with components related to science, data and evidence. Examples over the four-year budget period include:

- $9 million reduction in funding for Stats NZ's 3D coastal mapping, from reducing the scale of the programme from mapping 85% of the coastline to 40%
- $3.6 million reduction in funding for hydrographic surveys, through reducing the survey programme and updates to maritime charts
- around $158 million in cuts across the Ministry for the Environment's climate change, freshwater, partnerships and engagements, waste, and evidence and data programmes
- $22.8 million reduction in funding for the Hapori Māori - Increasing Community Resilience through Data Capability and Access programme by scaling down the programme.[21]
- confirming earlier-announced cuts to funding which builds community and youth engagement with science, including investments of $4.8m in Unlocking Curious Minds and $3.6m in the Participatory Science Platform over four years.

## Commercial arrangements between science institutions and government customers

Cuts within the public service and wider public sector have the potential to reduce available science funding further in ways that are difficult to quantify. Public service organisations that have been instructed to make 6.5-7.5% cuts by the Government, as well as state sector organisations have been instructed by the public service organisations overseeing to make cuts to contribute to an overall reduction in spending for their Vote, will be likely to seek cost savings by cutting back on science work they contract out to public science institutions using commercial contracts.

It will take some time for the full impact of this to be clear. Anecdotally, though, Save Science Coalition members are already hearing of examples of government contracts with universities and CRIs being cancelled. Uncertainty about funding is also contributing to science institutions' rationale for cost cutting proposals.

A significant proportion of CRI funding comes from commercial sources – ranging from as low as around 23% in the case of Manaaki Whenua to around 89% in the case of ESR.[22] We are not able to estimate the proportion of commercial contracts that are from public service and state sector organisations, but it is reasonable to assume that a significant reduction in agencies' ability to enter into contracts would have a significant impact on CRIs relying on those contracts.

# Cuts to public science roles

**This section sets out our best estimates of science roles being reduced across the public sector.**

Funding pressures are pushing many of New Zealand's science institutions, as well as public service and state sector organisations with science capability, to cut (or propose to cut) science roles at an alarming scale.

Table 1 sets out an estimate of science roles we are aware of that have been cut in 2023/24 or are proposed to be cut at the time of writing this report (June 2024) across the public sector, including universities.

Figures are of roles, including vacant roles. In counting and categorising roles we have primarily attempted to identify roles that could reasonably be considered 'science roles' or 'science-related' roles. These are the figures that are quantified in Table 2. However, we have also identified a wider set of roles that we believe are important to highlight as they provide the data and evidence basis for public sector decision-making, including fields such as insights, intelligence, data analysis, research, evaluation, and GIS. These are also described in this report (both in the summaries of individual organisations, and in the section on 'Cuts to the wider ecosystem of evidence-based decision-making in government'.

The numbers we've identified will be approximate and incomplete, given that:

- the information is primarily gathered from organisational change proposals supplied to unions, so may not include all change processes across all relevant organisations, and may not have enabled us to identify all roles that should be in scope
- the inconsistent and uncoordinated nature of change processes across the public sector, with roles quantified and described differently across different change proposal documents, makes it difficult to consistently identify which roles should be in scope
- change proposals may be revised following consultation, in which case proposed role reductions included in our assessment at the time of writing may differ from the role reductions in final decisions after the printing of this report.

You can find out more about the assumptions we've used in Appendix One.

*Table 1. Science-related role reductions (proposed and confirmed) across the public sector including universities*

| Organisation | Estimated number of science-related roles* reduced (or proposed to be reduced) | Description of roles disestablished or reduced (or proposed to be) |
|---|---|---|
| Callaghan Innovation | 26 roles | Reductions to applied technologies and Protoshop teams. |
| National Institute of Water and Atmospheric Research (NIWA) | 85-90 roles | Science and technical roles across air quality, ocean science, climate science, freshwater hydrology (including lake research), marine biology, marine ecology, marine geology, fisheries modelling, meteorology, atmospheric emissions, social science; and technical support roles in instrument systems development, health and safety, IT and Māori partnership staff. |
| Scion | 28 roles | Scientists, technicians, support staff and Māori partnership staff. |
| Department of Conservation (DOC) | 14 roles | Chief Science Advisor role, as well as science and technical roles in biodiversity, science investment, social science research. |
| Ministry for Primary Industries (MPI) | 21 roles | Science and technical roles in animal health, forestry, food science, biosecurity data science, epidemiology, diagnostic readiness, and plant health. Science engagement and science policy roles. |
| Ministry of Business, Innovation and Employment (MBIE) | 20 roles | Reduction of around 19 roles in teams responsible for science and innovation policy and investment. Disestablishment of the Chief Data Scientist role. |
| Ministry for the Environment (MfE) | 2 or more roles | Proposed reduction to Principal Scientist, Senior Scientist and Data Scientist cohorts. |
| Waka Kotahi New Zealand Transport Agency (NZTA) | 10 roles | Proposed disestablishment of its eight-member behavioural sciences team, and reduction of four data science roles. |
| Massey University | 105 roles | 70 disestablishments in the School of Natural Sciences and School of Food and Advanced Technology academic and technician positions as of early 2024; 30 voluntary redundancies across the Colleges of Health and Science; 5 job losses in the Infogenes division. |
| Otago University | 28 roles | 13 roles in biomedical sciences, and another 15 across science disciplines over the past 12 – 18 months. |
| Victoria University | 10 – 15 roles | Roles in environmental science, geography and the closure of the luminescence laboratory. |

* See Appendix 1 for assumptions and definitions regarding identified roles.

The following sections provide more detail about some of the role reductions and their impact.

## Callaghan Innovation

Funding cuts at Callaghan Innovation are prompting the organisation to disestablish 26 roles across its Protoshop and Applied Technologies teams.[23]

The Protoshop provides design, manufacturing and precision prototyping services to Callaghan's science teams. This is a key science support function and it will substantially impact the other science work at Callaghan Innovation. Particularly impacted will be the Measurements and Standards Lab (MSL). The standards that MSL develop and calibrate are used by businesses and other organisations every day to ensure their quality and reliability. Six roles are being disestablished from this team.

In addition Callaghan Innovation is scaling down its Applied Technologies teams by 20 FTE (from 66 to around 46) in areas that include advanced mechatronics, advanced engineering and materials science, microsystems and polymers, and information technology.

The scientists lost to Callaghan brought expertise to New Zealand firms in chemical and biological sensors, automation and control systems, wireless communications, electrical engineering, AI and machine learning, and advanced manufacturing. They worked across the medical technology, aerospace, biotechnology, food and beverage and consumer product sectors.

Fewer scientists and engineers working in these areas will mean fewer new inventions, fewer new products and services, and a slower growth of the New Zealand economy. It will make it harder for New Zealand to keep up with international competitors.

Callaghan Innovation initially proposed disestablishing its Protein Science and Engineering (PSE) team, affecting four roles. The PSE team has established NZ's most comprehensive platform for recombinant protein production, which, in addition to a considerable commercial benefit, makes PSE a key part of our pandemic preparedness. During the COVID-19 pandemic, the PSE team played an essential role in NZ's response by providing core SARS-CoV-2 proteins to companies for the development of New Zealand-based COVID-19 diagnostic tools, allowing NZ to overcome worldwide supply chain disruption. They are also a leading provider of synthetic biology tools and knowledge, provide a suite of biochemical, biophysical, immunological, and cell-based assays to aid in the commercialization of many medical, biotech, agritech and food and beverage ventures. Due to worker feedback Callaghan Innovation's leadership now propose to retain but relocate the team; however this will depend on Callaghan Innovation's ability to set up the lab and the feasibility of existing worker relocation, meaning that a loss of jobs in this area is still a possibility.

The cuts at Callaghan Innovation are the result of seven years of RDS appropriation and commercial revenue being less than the overall running costs of the organisation, along with direction from the Government that cost pressure bids have been ruled out for three years. As a result its Board "has directed management to reduce science capability... and to do the reduction in such a way that critical mass can be retained across selected areas to ensure [they] can viably grow commercial revenue."[24]

An open letter from over 90 Callaghan Innovation workers to the Science, Innovation and Technology Minister argued that "there will be narrower expertise, and fewer research teams to carry our overhead costs... Callaghan Innovation will struggle to stay useful to industry going forward if it has no space set aside to grow and develop its expertise... It will struggle to achieve its goals of generating new high-tech businesses and industries if it is no longer mandated to provide any public science goods."[25] The PSA's submission on the strategic reset noted that 86% of its members at Callaghan Innovation didn't believe the proposed reset – based around pivoting away from public good science towards commercial revenue – would help Callaghan Innovation become financially viable in the long term.[26]

## NIWA

NIWA has indicated that it will be disestablishing 85-90 roles, including 30 vacant roles. This restructuring has occurred without a clear, articulated science strategy, focusing mainly on operational imperatives to produce a 'financially sustainable' result at the end of the financial year and targeting staff with low budgeted billable hours in what appears to be a group-by-group manner, even though many of the groups in NIWA are operationally rather than science-based units. The reductions are being rolled out over around three months, with a dramatic decline in morale. An open letter signed by over a third of the staff expressed a lack of confidence in the company's executive. To date this includes proposals to disestablish roles in the following areas:

- **Urban Air and Water quality science:** Five of a team of seven have been disestablished. Their work includes research on monitoring pollutants transported in the air and water in urban environments. Regional councils have expressed collectively a strong case to retain this research as they rely on it to direct their instrumented monitoring techniques.
- **Ocean science:** NIWA is proposing to disestablish roles in ocean-atmosphere processes, ocean physics, oceanographic systems, fisheries modelling and marine ecology (including coastal satellite remote-sensing). These areas cover a multitude of research areas of critical importance given the climate change impacts, such as marine heat waves, we are already experiencing on marine ecosystems and physical processes.
- **Social science:** NIWA is proposing to disestablish (or end fixed term funding of) two out of five social scientist roles in its socio-economics group. This group was recently celebrated on NIWA's intranet for its valuable work taking our research out to Māori communities and playing an important role in many research bids that are focussed on the impact of research on the ways that communities operate.

## Scion

Scion has recently completed a change process that has resulted in the loss of 25 roles across its workforce. This includes twelve science and technical roles, in addition to roles in facilities and accounts, operations, and Māori partnerships. Science capability is already thin and further losses in the areas of wood quality, molecular biology, water quality, silviculture and chemistry further limit its ability to deliver impact for Aotearoa/New Zealand. This was in addition to an earlier process that resulted in a loss of three roles.

In consultation material distributed to staff Scion noted it had anticipated "more diversity in government funding, through initiatives funded through the Climate Emergency Response Fund to support the Emissions Reduction Plan and the Forestry and Wood Processing Industry Transformation, which has since been halted."[27]

## Department of Conservation

Government direction to reduce funding at DOC is resulting in an overall reduction of 124 roles across the organisation. This includes around 15 science or science-related technical roles that contribute crucial environmental and species data.

**"Proposed role disestablishments at DOC are likely to undermine the important body of research and advice that DOC provides to the wider ecosystem of conservation organisations and volunteers - this ensures that volunteer and other conservation work is done to a high standard using the best scientific evidence."**

Dr Lucy Stewart, New Zealand Association of Scientists)

In addition to these science and technical roles DOC is also reducing its GIS capacity by around four roles.

## Ministry for Primary Industries

The Minister for Primary Industries is reducing science roles across animal health, forestry, food science, biosecurity data science, epidemiology, diagnostic readiness, and plant health. It is also reducing a small number of science engagement and science policy roles. This includes a number of technician roles.

In addition to these science-focused roles, MPI is reducing a range of evidence-related roles including in forestry and ETS insights; research and evaluation; biosecurity data, intelligence and surveillance.

## Waka Kotahi New Zealand Transport Agency

At the time of writing Waka Kotahi has proposed to disestablish its behavioural sciences teams and reduce its data science team by four roles.

In addition there are a range of evidence, insights, GIS and research and evaluation roles that have been proposed to be reduced.

## Ministry for the Environment

The Ministry for the Environment has proposed cutting roles by around a third over the next two financial years, which would mean a net reduction of around 300 roles from its current state as at May 2024. Reductions to its two named science cohorts (the Principal Analyst / Analyst – Science cohort and the Senior Scientist cohort) only total two by the end of its phased change process; however, approximately 16 roles are to be reduced from its evidence, data and insights teams, and three from its Science and Data Systems teams. These teams include a wider range of analyst, advisor and manager roles that are not easily classified as science jobs, but contribute to MfE's science, evidence and data capability.

## Ministry for Business, Innovation and Employment

Alongside Budget 2024's reduced allocation for policy advice and related services to Ministers on science, innovation and technology in 2024/25, MBIE have indicated a reduction of

around 19 roles in MBIE teams responsible for Science, Innovation and Technology; Future Research System; Science System Investment and Performance; and Science, Innovation and International.

## Massey University

In order to address "financial challenges" the College of Sciences at Massey University disestablished 66 scientist positions early in 2024. These were driven by the closure of the undergraduate and postgraduate science and engineering courses, largely on the Auckland campus. 50 academics and 16 technicians who contributed to research and teaching into disciplines across engineering, food technology, chemistry, molecular biology, ecology and zoology. A highly disruptive process was applied that focused primarily on undergraduate teaching income and costs, that ultimately had greater impact on the Auckland campus. Many affected staff had active research grants which allowed some to secure either full or partial positions at neighbouring institutions. In those cases, the disruptions, time wasted and mental burden of navigating this change have taken a toll on their research productivity, on their students, and on their ability to contribute to New Zealand science.

The final toll that these losses will have on science capacity nationally are not yet known. To date 20% of the academics (4/19) who formerly worked in the School of Natural Sciences have left research entirely to retrain. This number is likely to increase as FTE from grants run out and individuals decide to retrain or leave the country for greener pastures.

There were also 30 voluntary redundancies and 5 job losses in the university's Infogenes division.

There are several follow-on effects to this level of disruption. One of the roles of the Universities in our science sector is training scientists for the future. The interruption of research by the postgraduate students caught up in this is not easily captured or contained in the change proposal documents, but it is significant. The loss of undergraduate training on the Auckland campus is also substantial. In addition, this

continues to take a toll on the academics and technicians who remain. Research capacity continues to be reduced as workload models

increasingly emphasise undergraduate teaching. Massey University is not over the financial challenges that brought this about and the change proposal makes their intentions to continue along these lines, perhaps with the New Zealand Institute for Advanced Studies. Whether these changes will solve the problems they were set out to rectify are not clear.

## Other Universities

All New Zealand universities are facing a very constrained financial environment that makes strategic investment difficult, due to the unexpected loss of income from overseas students not starting degrees during 2020-21 combined with a lack of government support to cover this gap and recent inflation.

In addition to Massey, Auckland University of Technology, Otago University, the University of Waikato and Victoria University of Wellington are all facing what appear to be significant losses of staff and capability. A pattern has developed in which restructuring occurs in relatively small units, making it difficult to track impacts on national capability.

## Further CRI staff reductions

In addition to the staff reductions at Scion and NIWA discussed above, at the time of writing both AgResearch has asked for expressions of interest for voluntary redundancy, and Manaaki Whenua has engaged with staff about facilitating early retirement in some situations. GNS have also announced a fiscal sustainability change programme which will look at staffing levels.

# The consequences of a weakened science sector

**This section describes some of the impacts that we believe cuts in funding and jobs will have on Aotearoa New Zealand's science sector.**

## The research that doesn't happen

Underfunding science means important research doesn't happen, either because existing programmes are stopped or scaled back, or because research that could be done to meet needs or create opportunities never gets the opportunity to start.

In some research areas, such as applied technologies, the lack of funding means that New Zealand industry misses out on opportunities to grow and improve its economic performance through innovation. Reduced funding also forces institutions to focus on revenue generating research or commercial activities instead of public good research or research with wider, longer-term benefits

**"The benefits that we get from scientific research are often hard to quantify – especially when we're talking about environmental research. We can't easily put a dollar value on preventing an endemic species from going extinct, hearing the songs of birds as we walk through the bush, or ensuring future generations can have happy, productive livelihoods on the land."**

CRI scientist

In some research areas, such as plant disease research, ecological health and species protection, the lack of work will increase New Zealand's exposure to risk.

## The people we lose from the science system

The unstable nature of science funding already makes public science jobs precarious, and the current scale of reduction in science funding is already leading to large scale losses to science jobs.

The highly specialised nature of skilled science jobs mean that when highly qualified experts lose work they are very unlikely to find similar roles elsewhere in the system, which can cause them to leave the sector or the country. This means that even if reduced funding recovers relatively fast, when it does return we may no longer have the capability within the system to undertake it.

**"Science jobs are never lost based on inefficient working or for poor performance, they are lost because an area has not been funded, therefore losing the 'best and brightest' for no other reason than their funding cycle ended during a tight year."**

Grant Rennie, PSA National Science Committee Chair

It also damages our capacity to train and maintain local expertise – if there are no jobs to move into, trainees will move overseas or leave the sector, and if there is nobody to train them, then we will have no local experts. This is a particular problem when it comes to areas such as biodiversity and natural hazard research.

A degraded science system further limits our ability to recruit and retain leading scientists, including Early Career Researchers, from overseas and risks further isolation from the global science community. Our international

scientists have helped Aotearoa/New Zealand to punch above its weight for many years; that is now seriously at risk. Why move to Aotearoa/New Zealand when the security of tenure and funding environment is so uncertain?

We not only lose individual scientists from the system, but often see the break-up of high impact teams at the end of funded programmes as Government and Institutional priorities move elsewhere. All too often, they fail to reach their full potential as a result.

It is also a problem when it comes to maintaining connections within the system and with local communities, and building connections between the traditional science system and mātauranga Māori. Collaborations between scientists are still frequently developed through personal relationships rather than institutional connections, and connections between the science system and communities they engage with to do and share their work take years to develop. When individuals are lost from the system, so too are those connections – and the work has to start again. In particular, te ao Māori places a great deal of importance on engaging kanohi ki te kanohi – in person – and the history of bad behaviour on the part of both Western science and the Government when engaging with te ao Māori means trust takes time to develop.

Finally, science work can take a long time to bear results, which means the problems from reducing science investment might not be felt immediately, but will show up years down the track and take a long time to recover from.

## The science infrastructure that degrades

Long term underfunding prevents science institutions from investing in the infrastructure and equipment they need to keep delivering science excellence. This can include physical infrastructure, such as aging laboratory equipment that needs to be replaced or upgraded over time or investment in new technologies needed to support innovation. It also includes long-term permanent field trials, experimental sites, databases and collections of international importance to science which public institutions are required to maintain but are not funded to do, or are underfunded for the amount of work it actually takes to responsibly hold these collections – let alone achieve goals such as digitisation and allow public access.

## The increased risk and limited opportunities for New Zealand

The New Zealand Government has identified 42 risks to the nation in a National Risk Register[28], which includes (among other categories) natural and environmental hazards, biological and human health hazards, and technological hazards. The Department of Prime Minister and Cabinet notes that "evidence and expertise, including science, research and data, underpins our understanding and assessment of national risks."

If we do not fund the organisations and the people who provide evidence, expertise, research and data, the New Zealand Government, businesses and communities cannot be adequately prepared to face these risks and hazards. This degrades the resilience of the economy, the environment and communities to gradual negative changes and sudden shocks. Business and communities will have reduced capability and knowledge to make the best decisions. Public trust in the institutions that are guardians of the nation's well-being will erode. Scientific research must be funded so that we may be prepared for possible harm but to also capitalise on opportunities.

## The impact of cuts on the pipeline of future scientists

Cuts to science and research institutions, universities, the public sector and the education system more broadly combine to impact the pipeline of future scientists from students through to early career researchers.

New Zealand's public spending on education per Equivalent Full Time Student (EFTS) at both the tertiary level and overall, has been low for at least a decade compared to the OECD average, and low compared to countries with similar

education funding models (except Australia in the case of tertiary funding).[29]

The pipeline of future scientists starts well before tertiary study, and the performance of New Zealand's primary and secondary education system will be crucial in giving students the foundational knowledge to pursue a career in science. Anecdotally, we hear that secondary school careers advisors are already guiding students away from pursuing higher education in science and technology based on the perception of poor employment opportunities. Diminishing the flow of students from primary and secondary education into tertiary study has flow-on consequences at the tertiary level. With decreasing enrolments in science subjects we will face further threat of staff reductions in science departments, especially in our smaller institutions, further harming the capability of our science system and losing the special characters these institutions offer.

Concerningly, Budget 2024 gave schools only a 2.5% increase in the operational funding bulk grants schools use to fund scitechs and other technical and support staff in schools. Given this is below CPI it creates a risk of losing these people from the sector.

**"Almost every person who has made amazing contributions through science points to someone who inspired them that science was something worth doing. We have reached a point where the community cannot recommend a career in science."**

CRI scientist

# Cuts to the wider ecosystem of evidence-based decision-making in government

**This section looks at the impact of funding and job cuts on a wider range of public sector 'evidence- related' roles that contribute to the evidence base for government decision-making.**

The public sector relies on science to inform good decision-making that's informed by evidence. This extends much more broadly than the undertaking of scientific research; the system also relies on scientific and technical expertise within the public sector agencies advising the Government, monitoring and regulating activity, and providing the evidence basis to inform the design of infrastructure and services. Beyond the specific cuts to science roles we have outlined above, cuts to a much broader range of evidence-focused roles across the public sector put evidence-based decision-making at risk. These include roles like research and evaluation, data and insights, behavioural insights, and intelligence.

More than $150 million cut from various agencies through the Government's fiscal sustainability programme is connected with data collection and insights; this is a conservative estimate as funding for many of the jobs cut in this area is not disaggregated from other operational cuts. The identifiable funding includes:

- $18m from the Digital Data and Insights functions at MBIE
- $9.6m for evidence and data at the Ministry for the Environment
- a downscaling of the programme within Te Puni Kōkiri to improve the data and evidence available to Māori communities about climate change, adaptation, and the resilience of Māori communities.

The Budget also confirmed reduced investment on in-house data and insights for the Ministry of Women, and reduced funding for the Climate Data Infrastructure initiative which was to bring climate data together from organisations across the country. The Living in Aotearoa Survey has been cut from StatsNZ's budget and the future of Auckland University's Growing Up in New Zealand study involving several thousand children and their families is uncertain after the Government did not renew its contract in February.

**"In more general terms, we are seeing a broad de-prioritisation of evidence-gathering and analysis capacity across government. This does not appear to be systematic, in the sense that scientific capability is under attack on purpose - but it does appear to be systemic, in that these roles are high on the list for the chopping block because they are easier to frame as 'not frontline'."**

Dr Lucy Stewart, New Zealand Association of Scientists

In addition to the role reductions discussed earlier in this document, the following public sector organisations have cut (or proposed to cut) data and insights roles:

- **Oranga Tamariki:** includes reduction of research and evaluation, analytics, insights and management roles in its Evidence Centre
- **Department of Internal Affairs (DIA):** includes a reduction in intelligence and data analysis roles
- **Ministry of Social Development (MSD):** roles in insights, research and evaluation, modelling, intelligence and analytics

- **Kainga Ora:** includes roles in business intelligence, which provides data and GIS insights
- **Ministry of Health (MoH):** roles in GIS, research and evaluation, analytics, health surveys, public health intelligence
- **Ministry of Education (MoE):** roles in research and evaluation, data and insights, forecasting and modelling
- **Statistics NZ:** roles including design and collection analysts, data technicians and quality assurance specialists.

This is almost certain to be an incomplete list. It also excludes an even wider range of workers within the public sector who are tasked with providing the advice and analysis necessary for decision-making (such as policy advisors/analysts), who would be situated outside of what we have categorised as 'evidence-related' teams but would often have a data, research or evidence component to their role.

This matters. The government has emphasized it will make decisions based on evidence, but is cutting roles of people who have the experience and skills to both generate evidence and work out what it means. Without these skills, we risk decisions being made on the basis of anecdote, bias and vested interests.

# The future we want for public science funding in Aotearoa New Zealand

Cutting funding and jobs isn't the only option available. Investment in the science sector benefits the entire country. Through the Save Science campaign a coalition of organisations representing scientists and science sector workers is calling for the Government to take action to:

- **Stop the cuts:** We urgently want to see the cuts to science funding and science staff across public science institutions halted and reversed, before it's too late to undo the damage of workers leaving the sector.
- **Support public science:** We want to see the Government re-commit to a target of 2% of GDP to be invested in research and development, and back up that commitment through active measures to increase overall science funding, including by raising public investment in science. This needs to be a sustained, cross-party commitment to ensure it is achieved and maintained over the long term. It also needs to include sufficient public investment in public good science delivered by public institutions rather than focusing exclusively on the role of science in raising business productivity.
- **Support world-leading indigenous research:** We want to see the Government prioritise investment in areas where Aotearoa can make a unique contribution, including mātauranga Māori.

You can find out more about the Save Science Coalition and our asks for the Government at scientists.org.nz/save-science-coalition. You can also find and support us on Facebook at Save Science Coalition.

Increased funding alone will not address all the barriers to top quality science and research in Aotearoa. We need a system that provides more stability, better infrastructure, less competitive pressure and more certainty. Many members of the Save Science Coalition have provided valuable feedback to the Science System Advisory Group, and earlier to the Te Ara Paerangi Future Pathways process, about how the science system could be approved to achieve this, and we hope that sector feedback will lead to positive change.

No matter what the future public science system looks like and how it's organised, however, it cannot function without adequate funding. Right now we urgently need to save science funding and science jobs before the damage to the sector becomes any worse.

# Appendix 1. Assumptions and definitions

Compiling and categorising roles for this report has required us to make decisions about which roles are in and out of scope, generally based on limited information. The following section sets out the assumptions we've used when considering how to identify and categorise relevant roles.

## What's included in our description of science roles

In talking about role reductions in **science roles** we have included the following types of roles, and categorised them based on the following basis:

- Any roles within an organisation that is solely responsible for delivering science (eg, all roles within a CRI)
- Any roles within a university science faculty
- Any roles with 'Science' or 'Scientist' in the role title
- Any role title in a team that is primarily science-related (eg, 'Analyst', 'Technician' or 'Advisor' roles within a team that's role is specifically related to science)
- Managers of teams that are primarily science-related
- Any roles with titles that specifically reference science investment, science policy or science procurement
- Laboratory technician roles
- Any social science and data science roles where identifiable (eg, where they are specifically described as 'social science', 'behavioural science' or 'data science').

## What we've included in our description of evidence-related roles

When talking about role reductions in the wider range of **evidence roles** we have included the following types of roles:

- Roles that specifically reference evidence, insights or intelligence
- Roles that are specifically described as being about data or GIS, except for where they clearly are internally focused (eg, internal organisational performance monitoring)
- Non-specific role titles (eg, 'Analyst', 'Technician' or 'Advisor' roles) in teams that are primarily responsible for insights and Intelligence
- Monitoring and reporting roles, except for where they clearly are internally focused (eg, internal organisational performance monitoring)
- Research and evaluation roles where it isn't clear that the research and evaluation necessarily fits within the core science category above
- Specific roles in fields that relate to social sciences, evidence and analysis (eg, Economists, Behavioural Insights roles) where they aren't specifically described as science roles
    - Roles that are specifically described as being in research and/or evaluation.

## What's not included

Our analysis does not count:

- General Analyst / Advisor roles (for example policy analysts) unless something else about the roles (eg, the team they're in or the subject matter of their role) suggests a specific relationship to one of the areas listed above
- Technical roles in particular identified fields that would generally be considered outside of science (eg, engineers and project managers) unless the organisation or team is clearly science-related
- Business analysts, unless they are in an organisation or team that is clearly linked to science
- Roles in service improvement, internal performance and improvement, IT
- Information services such as archiving and knowledge management
- Insights roles in relation to stakeholder and customer engagement.

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# The Save Science Coalition:


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scientists.org.nz/save-science-coalition