

Making a difference

The growth and success of NIWA over the past six years is truly one of the untold success stories of New Zealand. Building on the legacy of NIWA's origins, our 730 people have positioned our company, and country, at the forefront of the world's knowledge about environmental science. The fact that many of NIWA's scientists are recognised globally for their expertise is testimony to that.



Knowing that they really can make a difference to the sustainability of New Zealand's, and the world's, resources and environment is what has driven NIWA people for decades. The fact that society in general has woken up to the importance of issues like climate change, managing water resources, and improving air quality is motivating NIWA scientists and support staff to continue to excel in their fields. We are well aware that the time has come where society is recognising and embracing the knowledge and solutions we can provide.

Strong financial results

NIWA has a proud record of providing excellent science whilst achieving strong financial results. 2006–07 was no exception. For the year to 30 June 2007, NIWA achieved a group operating surplus after tax of \$10.5 million (\$10.3 million in 2005–06). Gross revenue from research, consulting, vessel operations, and all other business activities was \$113.9 million (\$106.4 million in 2005–06). Shareholders' funds at 30 June 2007 stood at \$46.4 million (\$42.5 million in 2005–06). NIWA's after-tax return on average shareholders' equity was 22.6% for the year to 30 June 2007 (24.4% in 2005–06).

This year's revenue came principally from public good research (47%), commercial consulting (38%), and Ministry of Fisheries contracts (15%). Revenue increased in all three areas, and we continue to invest in our major research programmes even though pressure on public funding poses challenges in recruiting and retaining key staff. The Capability Fund is making a difference, and NIWA benefited from several specific funding initiatives, including short-term energy research. We were pleased to host the Prime Minister at Greta Point for her announcement of additional money for research in the International Polar Year, including a 50-day Antarctic marine biodiversity voyage by *Tangaroa* in early 2008.

This year's success is a direct reflection of the commitment and effort of staff, management, and the Board. I would like to thank them all for their contribution.

Sustainable development

As the leading environmental science provider, sustainability is what we are about. It always has been. This year, however, the company has sharpened its focus on sustainability. NIWA takes an integrated approach to sustainability, and in this year's Sustainable Development Report we have increased reporting in the social areas of community, people, and health and safety, along with our usual extensive reporting of environmental performance.

For the coming year, our commitment to sustainability includes providing advice to the public and government bodies on major sustainability issues, demonstrating alternative energy sources, investing in more energy-efficient systems at our regional offices, defining our carbon footprint, investigating and taking initiatives towards carbon neutrality, and continuously monitoring our performance.

Major investment in infrastructure planned

Strong operational and financial discipline will continue to be necessary as we implement major planned investment in core infrastructure. Over the next 3 years we have a programme to upgrade several of our research facilities, improve our working environments, strengthen our information technology platforms, and upgrade our equipment and skill base to keep our science leading-edge.

Our aim is to ensure NIWA is well positioned in the future to respond to the ever increasing thirst for knowledge and solutions in water and atmospheric research. Our vision is to provide a working environment and support infrastructure that will attract, retain, and inspire our people to excel, while our stakeholders continue to recognise NIWA as a world leader in environmental science.

Year of transition

In closing, I would note that 2006–07 was a year of transition. I would like to acknowledge the contribution of Dr Rick Pridmore, who resigned after 13 years in senior management roles at NIWA. With singular drive and vision, Rick helped transform the company from

a sector-based research organisation to one that is highly integrated and proactive in meeting stakeholder needs. I would like to thank Dr Bryce Cooper, who, with the support of the Executive Team, led NIWA ably as Acting Chief Executive until John Morgan took up the role on 1 May. John has an outstanding track record as a leader of innovative, science-based companies and will without doubt add significant value to NIWA's management team.

The Board itself has undergone change. This year we welcomed Wendy Lawson and farewellled Miranda Cassidy. David Sharp's term ended on 30 June 2007, and he is replaced by Craig Ellison, who has a similarly strong background in the fishing industry.

I would like to thank the departing Board members for their tremendous contribution to governance of the company.

To our collaborators and stakeholders: your partnership is vital and we don't take it for granted. And to NIWA staff: you are our greatest asset.

Finally, the Board noted with sadness the passing of former Deputy Chief Executive Dr Rod East.



Sue Suckling
Chair

Financial summary

	2007 \$'000	2006 \$'000	2005 \$'000	2004 \$'000	2003 \$'000
Total Revenue	113,911	106,414	91,137	84,631	84,200
– Public Good Science	53,418	50,374	43,729	39,591	39,780
– Ministry of Fisheries	17,183	16,060	16,626	14,602	16,705
– Commercial and Other	43,310	39,980	30,782	30,438	27,715
Net profit before tax	15,843	15,706	9,654	7,036	7,216
Net profit after tax	10,461	10,342	6,434	5,276	4,726
Capital expenditure	9,107	8,480	7,348	8,389	9,064
Return on average equity (%)	22.6	24.4	13.5	10.7	10.6

Providing solutions

Almost every week, outside the tiny township of Lauder in Central Otago, NIWA staff don flame-retardant overcoats, shelter near a massive concrete slab, and carefully fill a balloon with hydrogen. Then they attach a small package of scientific instruments to measure ozone in the atmosphere. When it's launched, the balloon is about 1.5 metres in diameter. It expands as it rises until it gets to about 30 kilometres above the ground, when the balloon reaches the size of a garage and bursts. A small parachute is then automatically deployed and the equipment descends gently back to earth. NIWA scientists watch the ozone readings come through line by line on a Lauder ground station computer.

Those ozone balloon measurements this year provided the first evidence of a recovery in southern mid-latitude ozone – a signal of the success of concerted international effort under the Montreal Protocol to combat a global environmental problem. NIWA scientists were part of that effort from the beginning, as they are now with the even more complex challenge of global climate change.

Meanwhile, at Bream Bay, near Whangarei, NIWA scientists are working on paua, kingfish, and hapuka (groper), with the aquaculture industry. After five years of investment, we are selecting for desirable genetic traits, and identifying optimal feeding and



Elliot Tuck, NIWA

Focus on climate change

breeding conditions. Breeding generation-upon-generation of animals with substantially improved performance is one factor behind the success of pastoral farming. We are attempting to do the same for aquaculture.

Every day, NIWA science makes a difference. Back at Lauder, for instance, we recently installed a massive dome. This high-speed X-band satellite receiver is the only system of its kind in New Zealand. It gives us real-time access to key satellite data streams, which we can plug into our supercomputer in Wellington to assist with accurate environmental forecasting. NIWA scientists in Wellington, Christchurch, and Hamilton are developing these forecast systems for key hazards including floods, high waves, and storm surge. We are confident our forecasts will ultimately help reduce property damage, save lives, and improve New Zealand's economic performance.

Focus on sustainability

As I read over NIWA's past Annual Reports I'm struck by the consistent theme of sustainability. The emphasis is twofold: NIWA's environmental science supports sustainable development; and NIWA itself is committed to operating in a sustainable manner.

NIWA's Sustainable Development Report has been independently verified since 2003. Each year the report has grown in substance, and from last year we published a summary of the report in the Annual Report, while the full, verified report was published on our website. Examples of our commitment to sustainability include simple measures like video-conferencing facilities at all major sites to reduce travel, and more significant measures like reduced cruising speeds on our research vessels, and regular energy audits of our buildings.

There are limits to how much we can shrink our environmental footprint, especially when it comes to operating research vessels, but we can – and will – do more. As I go around the company, I find deep, personal commitment to sustainability. In this Annual Report you'll find a strategically-focused summary of our sustainability activities in the front section, signalling our ongoing commitment to the issue.

Extensive collaboration

Another consistent theme which is addressed more explicitly in this year's Annual Report is collaboration. NIWA collaborates extensively with a vast number of research institutions, central and local government organisations and entities, Māori, non-governmental



High-value species for aquaculture

organisations, and private companies. Our Foundation for Research, Science & Technology-funded research programmes alone involved more than 770 working relationships in 2006–07. I thank all these organisations and individuals wholeheartedly and look forward to continued productive partnerships for the benefit of New Zealand and the wider world.

NIWA making a difference

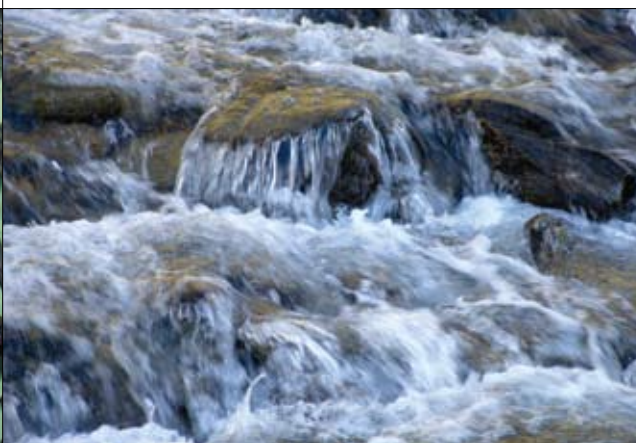
Science is a cumulative process. Discovery can be the product of both hard slog and inspiration. The diversity of our activities and the multifaceted nature of the scientific problems we tackle mean we have a responsibility to demonstrate to stakeholders that what we do adds value.

Contributing to global environmental management

In this Annual Report we have included feature-length case studies, highlighting NIWA's contribution to three current environmental issues. NIWA scientists this year played a significant role in the 4th Assessment Report of the Intergovernmental Panel on Climate Change, and extensively advised local government, engineers, planners, the insurance industry, and many other groups on how to adapt to climate change. We provide expert advice and solutions to vexed questions in the allocation of scarce water resources. And our scientists are leading the world in understanding the invasive alga didymo.

Contributing to economic growth

This year, *Tangaroa* completed surveys for the oil and gas industry, and mapped more of our Exclusive Economic Zone (EEZ) through the government-funded Ocean Survey 20/20. NIWA's climate database, 15-day probabilistic forecasts, and seasonal climate outlooks are used by a range of businesses from farmers to major retailers. We provide essential hydrological data every day to the electricity market, and expert advice and resource assessment for hydro, wind, and marine energy generation proposals. Our fisheries stock



Focus on water resources

assessments for the Ministry of Fisheries provide a basis for quota management decisions.

Contributing to environmental sustainability

In freshwater, NIWA is developing integrated solutions to improve the quality, management, and efficient use of water. Our Topnet model links climate, soil science, and hydrology to answer the question 'How much water can a catchment yield sustainably?' And we are part of the CLUES collaboration which integrates land,

water, and socio-economic research to help answer the question 'How do we manage land-use change and contaminants in waterways?' Equally, we integrate our freshwater and coastal research in projects such as developing models to predict the impact of river sediment loads on coastal erosion.

Contributing to better health for New Zealanders

NIWA's work on UV levels is assisting with advice on summertime sunsmart behaviour, and with the investigation of the effects of relatively low winter UV on vitamin D deficiency. Our air quality programme is helping regional councils reduce pollution. We are working with ESR on models which help quantify and rank the human health risks of sewage discharges. And we contribute to the assessment of the human health risk of illnesses which can be transmitted from animals to people, such as campylobacteriosis.

Contributing to New Zealand's national identity

NIWA's taxonomy team have boosted the number of known crustacean species from New Zealand and the Antarctic Ross Sea by 350%. The NIWA Invertebrate Collection at Greta Point is a recognised Nationally Significant Database. A joint New Zealand-US voyage on *Tangaroa* this year found the first record in the entire southwest Pacific of communities (including tubeworms and clams) living around cold methane seeps on the seafloor off the east coast of the North Island.

Contributing to protecting our wildlife

Understanding and minimising the potential impact of human activity on aquatic wildlife requires robust

scientists and international collaborators. This year, for example, we measured the wake of waves of the vessels of one Cook Strait ferry operator to check compliance with the Marlborough Sounds Resource Management Plan. And our Marine Invasives Taxonomic Service handles all identifications of marine species for MAF Biosecurity New Zealand.

NIWA is justly recognised for the excellence of its science and its strong financial performance. The magnificent science examples and the detailed financial information included in this Annual Report attest to that. But we do need to continually evolve as we face the challenges of an increasingly competitive environment for resources and services.

Building on NIWA's success

The success of NIWA will continue to be driven by the high performance of its science, operations, and support infrastructure. However, the substantial growth of the company and the increasing demand for its services require a more focused leadership of strategic science directions, stakeholder management, and operational management. Accordingly, we have reorganised the company's senior leadership into three key management teams to better reflect the size and breadth of the science and associated activities we undertake:

The Executive Management Team, which is responsible for NIWA-wide strategy and performance.

The Science Executive Team, which is responsible for identifying and leading the company's research strategy, stakeholder management, and the



Robert Stuart, IRL

Renewable energy

science-based monitoring and research. We are using electronic tracking and monitoring devices to monitor the activities of important species like great white sharks and white-capped and Buller's albatrosses.

Contributing to keeping New Zealand safe

NIWA now has an all-hazards forecasting capability thanks to several years' intense work by a team of 25



Alan Blacklock, NIWA

Environmental forecasting

development of services, products, and market opportunities. We expanded this team in 2006 with a General Manager, Environmental Information & International, and we have just appointed a General Manager, Climate Change, reflecting the strategic importance of this issue to NIWA and to New Zealand.

The Regional Management Team, which is responsible for the operational performance and effective delivery of NIWA's science, products, and services.

Investing in science for New Zealand

Many of NIWA's core science areas are highly capital intensive, and in recent years we have invested about \$10 million per annum to keep our science at the leading edge and to ensure we continue to contribute substantially to New Zealand's economy and the welfare of its citizens.

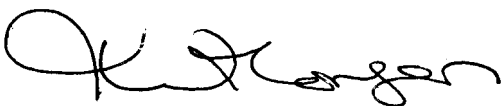
Over the next three years, however, we will be lifting our game significantly with capital investments of nearly \$60 million. Those investments will help transform our infrastructure and facilities so we can more rapidly advance our science and commercialisation opportunities, and improve the work environment of our staff.

These exciting plans include:

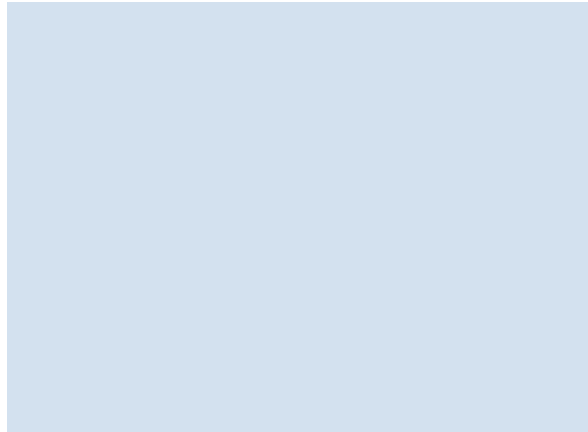
- upgrading our information technology infrastructure and supercomputer to model nationally important areas such as the impact of climate change, water resource allocation, and real-time hazard forecasting;
- upgrading our environmental monitoring networks to allow real-time data capture and information transfer;
- increasing capacity at our Bream Bay Aquaculture Facility to accelerate commercialisation of high-value aquaculture species;
- purchasing a dynamic positioning system for *Tangaroa* to improve our oceanographic research capabilities and support the future needs of the oil, gas, and mineral exploration sector;
- upgrading our research and operational facilities in Auckland and Hamilton to meet expanding demands for our services.

One cannot help but be tremendously proud of NIWA's contribution to New Zealand, and of the part the company plays in solving global environmental problems. Even this full Annual Report can only provide 'tasters' of what we do.

NIWA has added immense value to its stakeholders over the years ... somehow I think the best is yet to come.



John Morgan
Chief Executive



Alan Blacklock, NIWA



Alan Blacklock, NIWA

The Prime Minister, Rt Hon Helen Clark, at NIWA's Wellington site with CRI Minister Steve Maharey and CEO John Morgan, announces additional money for Antarctic research in the International Polar Year.