

NAME**Bryan R. JENKINS****QUALIFICATIONS**

Bachelor of Engineering (First Class Honours),
University of Adelaide, 1969.

Master of Engineering, University of Adelaide,
1972.

Doctor of Philosophy (Environmental Planning),
Stanford University, USA, 1977.

Master of Administration, Monash University,
1983

PROFESSIONAL EXPERIENCE

Dr Jenkins has forty years' experience in natural resource and environmental management. He has recently retired from his position as Professor, Strategic Water Management at the Waterways Centre for Freshwater Management – a joint centre of the University of Canterbury and Lincoln University. He was formerly Chief Executive of Environment Canterbury. He has previously worked in government administration of environmental protection (Chief Executive of the Department of Environmental Protection in Western Australia), in a university as a professor of environmental management (Murdoch University), and as a Director of a consultancy (Kinhill) in the execution of multidisciplinary studies and environmental impact assessment programmes, including public works planning, feasibility studies and financial assessment. Currently based in Adelaide in South Australia, he has worked throughout Australia and in 14 countries principally New Zealand, India, China, Thailand and United States.

2017 to present

Environmental Planner and Sustainability Strategist

Dr Jenkins continues his interest in environmental planning and sustainable management in preparing books and papers. He has recently published a book: "Water Management in New Zealand's Canterbury Region: A Sustainability Framework" as part of the Springer series on Global Issues in Water Policy. He has also been elected President of the Environment Institute of Australia and New Zealand.

2011 to 2017

Professor, Strategic Water Management at the Waterways Centre for Freshwater Management, a joint centre of University of Canterbury and Lincoln University.

Prof Jenkins has introduced courses in water resource management at undergraduate and postgraduate levels and the Centre has established the first postgraduate degrees in water resource management in New Zealand. The Centre coordinates water management related research at the two universities and with the Crown Research Institutes. Prof Jenkins' fields of research include the sustainability of water resource systems, governance of common pool resources, integration of science into policy formulation and resource management, and, resilience and vulnerability of biophysical and socio-economic systems. He supervises doctoral and masters' candidates in these fields.

Courses developed and taught

- Postgraduate Course in Water Management, Policy and Planning (WATR 403)
- Third Year Course in Water Resource Management (WATR 301)

Masters Supervision

- Kendrick Chittock: The Management of Lake Ellesmere/Te Waihora: an assessment of the integration of co-governance and community agreements into a nested, statutory management plan.
- Craig Simpson: The Application of an Audited Self-Management Approach to Manage Nutrient Losses in the Hurunui River Catchment
- Estefania Artega: Groundwater resources management, a sustainable policy approach for the Purapurani Aquifer, Bolivia
- Phonesavath Khamvilay: Evaluation of the Nam Theun 2 hydropower and its community involvement approach with a theoretical framework for community engagement appropriate for Lao People's Democratic Republic

PhD Supervision

- Faiz Abdul Raheem: A Framework Legislation for Water – Will it be a more appropriate option for New Zealand?
- Lynda Weastall: Farming Practices in Canterbury: An Environmental History
- Olusegun Hayford Ahiadu: Analysis of the hydrological processes and estimation of nutrient loads in surface flow for the Waipara Catchment, New Zealand
- Shane Orchard: Ngā wāhi o te Tai: sustaining our coastal connections. Policy and pathways for coastal margins vulnerable to sea level rise with a focus on river mouths.

2003 to 2011

Chief Executive, Environment Canterbury, New Zealand

Dr Jenkins was Chief Executive for Environment Canterbury – the Regional Council for the Canterbury Region based in Christchurch. The prime role of the Canterbury Regional Council (known as Environment Canterbury) relates to its responsibilities for the management of the natural and physical resources for the Canterbury region on the east coast of the South Island of New Zealand from the Waitaki catchment in the south to Kaikoura in the north.

In relation to the activities of Environment Canterbury (ECan) the major achievements of the organisation with Dr Jenkins as chief executive have been:

- Sustainable Management

A major change driven by the chief executive has been the introduction of sustainability management concepts for resource management. This includes:

- the development of the Regional State of Environment Report in a sustainability framework based on a Resources-Processes-Outcomes-Response model;
- the introduction of groundwater allocation limits to cap extraction;
- the review of environmental flow regimes for instream values to limit extraction from rivers while maintaining reliability of supply;
- the management of gravel extraction based on regeneration rates, bridge and stopbank infrastructure protection and design flood capacity;
- the review of consents to incorporate cumulative effects; and
- the development of regional strategies to address sustainability management.

- Collaborative Governance

The introduction of collaborative governance to manage public resources at sustainable limits has been a significant shift in approach introduced by the chief executive. This is based on the “self-managed communities” concept of Nobel laureate Ostrom and the nested adaptive cycles of Gunderson and Holling. This has led to the development of a new paradigm for water management in Canterbury that involves the community at the geographical level appropriate to the issue and which is strategy-led rather than applicant-driven; outcomes-based rather than effects-based; resource-focussed rather than project-focussed; and, collaborative rather than adversarial.

- Contribution to Community Outcomes

The amendments to the Local Government Act in 2002 defined the role of local government authorities as contributing to community outcomes in partnership with the community, industry and other government agencies. The change added the role of facilitating community outcomes to regional councils’ primary role of regulator of natural resource management through their statutory responsibilities under the Resource Management Act and Biosecurity Act. Key activities to implement these changes include:

- establishing outcomes desired by the community for the Canterbury Region;
- defining ECan’s contribution to these outcomes and setting levels of service commensurate with the level of funding through Long Term Council Community Plans; and
- using collaborative, community-driven approaches with multi-stakeholder groups as a means of decision making.

A successful example of the changes has been the development of the Waimakariri Regional Park based on ECan floodplain reserve land. After two

years of community consultation with recreation and community interests a four-stage plan was developed for recreational use of the reserve land.

- Regional Strategies

There has been a major focus on the formulation of regional strategies for resource management. These are being developed using a collaborative rather than regulatory style. These include:

- the review of the Regional Policy Statement;
- the Canterbury Water Management Strategy which involves a paradigm shift to collaborative governance model of decision making to address water availability constraints and cumulative effects of water use;
- the Greater Christchurch Urban Development Strategy to integrate land use and transport planning for the three territorial authorities, regional council and central government transport agency;
- air quality strategies for Christchurch, and rural towns where woodheater emissions are compromising air quality standards;
- a gravel management strategy for the region with industry involvement models to meet subregional requirements;
- arising from public forums, two stages of a Canterbury Regional Energy Strategy has been completed;
- a new strategy for rabbit management has been developed to address increasing rabbit numbers as rabbit calici virus declines in effectiveness: the strategy is based on "user pays" with ECan coordination;
- the Natural Resources Regional Plan has advanced with the air quality chapters becoming operative and with commissioner decisions imminent on the land and water management chapters;
- a Canterbury Hazardous Waste Strategy was reviewed and published; and
- the Regional Coastal Plan was made operative with implementation of swing moorings and coastal access provisions.

- Water and Land Management

The issue of water management associated with land use intensification is the major challenge facing the regional council as natural resource manager for the Canterbury region. The region has 58% of New Zealand's water allocated for consumptive use and 70% of New Zealand's irrigated land. Under leadership of the chief executive water and land management is being approached at four geographical levels:

- at the regional level through a Water Management Strategy to address regional water availability and land use changes;
- at the surface catchment and groundwater zone scale to address sustainability limits on extraction, cumulative effects of water use, and reliability of supply for water users;
- at the stream reach scale through environmental flow requirements and land management for streams and riparian margins; and
- at the property level to address land use practices that influence water quantity and quality.

Addressing diffuse sources of pollution is a major challenge facing regional councils. The introduction of land use controls to protect the aquifer recharge area for Christchurch drinking water supply has been the first regional planning control of land use for water quality purposes.

There has been a major effort in community-based programme development including:

- community catchment plans through groups such as the South Canterbury Water Enhancement Group, the Lower Waitaki Water Quality Trust, Orari Catchment Group, Avon Heathcote Ihutai Trust, Waihora Ellesmere Trust;
- Living Streams, Land Care and Coast Care groups to address stream water quality and land management issues; and
- Water User Groups to manage abstraction during time of restrictions including the Te Ngawai Group where ECan trialled real time monitoring of river flow and offtakes, winning the Telecommunications User award for new technology developed with Scott Technical Instruments.

- Air Quality

Significant advances in addressing particulate discharges from woodheaters which compromise winter time air quality in Christchurch and rural towns have been achieved including:

- modifications to the council's Clean Heat Scheme in Christchurch through the introduction of a loan scheme and a marketing campaign to lift woodheater conversions from below 1,500 per year to more than 3,500 per year;
- making operative the air chapter of the National Resources Regional Plan to develop a regulatory regime to complement the incentives of the Clean Heat programme;
- the use of offsets to stay within airshed air quality limits; and
- establishment of "clean heat" programmes in rural towns using community advisory groups to develop their own strategies for.

- Public Passenger Transport

The major expenditure of ECan is in relation to its management of public passenger transport through setting routes and services and contracting service provision. There has been recognition of Christchurch as having a high performing and cost-effective bus system. The success of above-target increases in patronage, coupled with increasing congestion on major road routes has led to a number of major initiatives:

- the Greater Christchurch Urban Development Strategy to integrate land use and transport as well as improve major transport corridors;
- a new bus exchange with greater capacity to manage increased services and passenger numbers; and
- establishing bus priority on major routes to improve on-time service standards.

- Urban Development Strategy

A collaborative approach to managing the future growth of Christchurch has led to agreement on a strategy amongst the three territorial authorities, the regional council and the central government roading authority. The strategy defines:

- the distribution of future residential growth with a transition from urban sprawl as the dominant model of residential growth to concentration in Christchurch central area and around nominated activity centres;

- the setting of urban limits; and
- the designation of transport corridors.

This is now receiving statutory backing through the Regional Policy Statement with unanimous support from all participating authorities.

- Regional Land Transport

ECan has been working with all territorial authorities in the Canterbury Region and has developed a regional land transport package – the Transport Regional Implementation Plan. This provided a suite of projects for implementing the Regional Land Transport Strategy – a statutory requirement that ECan co-ordinates for the region. It also provided a platform to take a funding request to Wellington to benefit the entire region.

- Pest Management and Biodiversity

The major achievements for this portfolio comprise:

- the effective delivery of Canterbury's component of bovine Tb vector control programme responsibilities under the National Pest Management Strategy. The region is ahead of the target for reducing affected herds in Canterbury;
- the revision of the Regional Pest Management Strategy which introduced a new concept of Community Initiated Programmes. The first CIP is being implemented on Banks Peninsula to control possums in order to protect biodiversity values;
- the establishment of a new strategy to address increasing rabbit numbers which retains the landholders' preference for a user pays approach and adds an ECan co-ordination capability and authority to obtain a global consent for 1080 use; and
- the development of a biodiversity strategy for the region in a collaborative approach seeking adoption of the strategy by stakeholders rather than through a regulatory approach for this new responsibility of regional councils.

- Hazards and Emergency Management

ECan undertakes the following roles:

- provision of hazard information for territorial planning purposes, in particular, earthquake risk, flood risk and tsunami risk;
- managing 63 river rating districts where communities have sought regional council assistance in providing an agreed level of flood protection; and
- the provisions of civil defence and emergency management for the regional CDEM Group.

Of particular significance in flood hazard reduction has been the following tasks:

- the planning and designing of a secondary stopbank for a 1 in 10,000 year protection for Christchurch and Kaiapoi from flooding by the Waimakariri River; this innovative design, involving the return of flood flows to the river, received a NZ engineering design award;
- working with the Ashburton District Council to implement a combination of structural and planning measures to provide 1 in 200 year protection for areas of future expansion of Ashburton; and

- the construction of the Kaikoura Flood Wall on Lyell Creek: the project received the 2007 Ingenium Excellence Award.

- Coastal Management

ECan's role for coastal management is providing information on coastal ecosystem health, coastal hazards and coastal water quality for recreational use. In the past 5 years the addition of a marine ecologist has expanded the organisation's capability beyond oceanography and coastal erosion.

Coastal policy initiatives include the Regional Coastal Plan becoming operative, and, the definition of exclusion areas for aquaculture planning.

- Navigation Safety

ECan's role involves both managing the Harbourmaster responsibilities at Canterbury ports and managing recreational use of inland waterways. Recent developments have been:

- the reduction in oil spills with ECan taking a strong enforcement stance on this issue; and
- the expansion of recreational use of inland waterways requiring an upgrading of navigation safety bylaws, and increased surveillance and education of water users.

- Hazardous Waste Management and Contaminated Sites

ECan has responsibilities to manage the effects of use, storage, disposal and transportation of hazardous substances. Major initiatives have been:

- the collection of agrichemicals throughout Canterbury in partnership with territorial authorities and Ministry for the Environment;
- the introduction of Pollution Prevention guidelines and working with industry for their adoption; and
- the documentation of Hazardous and Industrial Land uses (HAIL sites) on the contaminated sites register.

- Energy

ECan's initial role in energy has been the documenting of energy use in the region. After running a series of public forums on energy, several work streams developed, including:

- the development of a regional energy strategy for Canterbury; and
- the trial of biodiesel in Christchurch buses.

- Climate Change

With changes to the Resource Management Act, regional councils have new responsibilities for adaptation to climate change. The implications of projections of climate change for Canterbury and regional council's responsibilities have been identified in a major report.

- Chatham Island Regional Council Services

ECan was successful in tendering for the provision of regional council services to the Chatham Islands using a strategy devised by the chief executive. This

service is being delivered to a high level of satisfaction by the Chatham Islands Council.

- Enforcement

A major role for ECan is the enforcement of resource management, biosecurity and navigation safety regulations. Some of the key enforcement actions have been:

- the prosecution of Christchurch City for breaching stormwater consent requirements on the Aidanfield subdivision: the matter was resolved by mediation prior to going to court. An extensive agreement was reached with City to integrate stormwater management and land use planning at multiple scales from the catchment to the housing lot;
- the annual monitoring report on dairy farm compliance with effluent disposal consent conditions;
- with the scarcity of water there have been a series of prosecutions in relation to illegal takes of water through irrigating at times of restriction; and
- in addition to the traditional enforcement approaches, ECan has been exploring the use of "audited self management" with Irrigation NZ. This approach involves those being regulated taking greater responsibility for monitoring compliance but in a way that can be independently audited. The use of real-time monitoring in the Te Ngawai to achieve audited self management won a TUANZ award for rural communications technology.

A strategic shift is being made to develop a "regulatory spectrum" which integrates the education and extension role of Resource Care Section with the compliance and enforcement role of the Regulation Group. This has included the introduction of restorative justice alternatives to enforcement where a superior outcome to what can be achieved through legal proceedings is possible.

Another strategic shift has been the introduction of an "Alternative Environmental Resolution Policy". This initiative seeks to meet the public interest in reconciling environmental offending by engaging both offenders, victims and the community in a non-adversarial forum where the offender is made accountable for their offending, and by conditions agreed to at a conference, the offender puts right any harm caused by their offending. Where the public interest is met by the offender putting right their offending, it may be appropriate for Environment Canterbury to exercise its discretion to discontinue a prosecution. The result is that the offender is still fully accountable for the consequences of their offending, but that they will not receive a criminal conviction.

- Financial Management

Overseen the financial management of the organisation to meet all requirements, including:

- unqualified audits achieved for financial accounts;

- introducing level of service performance measures to meet Local Government Act requirements upon which the Auditor General has commented favourably: "we think it is one of the better developed frameworks that we saw during our LTCCP audit work";
- regular reporting to Council on financial performance against budget;
- satisfactory service delivery within budget expenditure provisions; and
- introducing IFRIS accounting procedures one year in advance of requirements.

- Organisation Development

A series of initiatives have been led by the chief executive in relation to organisation development including:

- conducting biennial staff climate surveys;
- initiating leadership training for second, third and fourth tier managers;
- undertaking an Appreciative Inquiry event to establish a culture of working together across the organisation;
- introducing performance management;
- implementing an Organisation Design Review to establish a Regional Programmes Group to facilitate regional strategy development and implement the shift in direction to contributing to community outcomes; and
- establishing an ongoing organisation development programme targeted at cultural change, service excellence and process improvement.

- Governance

Three significant changes in regional council governance arrangements which have been made with a major role from the Chief Executive have been:

- the introduction of a Finance & Audit Committee to scrutinise the financial and non-financial performance of Council, in particular the management of work-in-progress for consents and the complex issues of placing Target Pest into receivership;
- the formation of a Maori Advisory Committee to provide advice to Council on Maori and tangata whenua issues; and,
- the focussing of the Canterbury Mayoral Forum on key regional issues including water management, regional land transport, and energy.

Appointments and national level policy involvement have included:

- Regional Affairs Committee Water Management Committee: part of the CEO support group for the RAC Water Management Committee to work with central government on the Sustainable Water Programme of Action
- Canterbury Water Forum: coordinated the two-day forum of all regional councils and relevant central government agencies to discuss water management issues (first of its kind)
- Advisory Council on Statistics: member of government appointed council to advise the Minister on statistics
- Regional CEOs' spokesperson on contaminated sites: nominated chief executive to monitor and represent regional council views in the development of central government policy on contaminated site management.

2002 to 2003

Director, Murdoch Environment, Murdoch University, Western Australia

Professorial appointment at Murdoch University to direct 'Murdoch Environment' as a campus-wide focal point for interdisciplinary consulting and research in environmental management and sustainability and professional training programmes.

Assignments undertaken by Murdoch Environment included:

- Global Centre for Sustainability: preparation of a business plan for the establishment of a Global Centre for Sustainability based in Perth.
- Management Guidelines for Water Supply Catchments in Sarawak: using a combination of a Murdoch masters program for 20 participating executives from the Sarawak Government and 16 Murdoch staff as consultants, Murdoch Environment established a programme to prepare water quality management guidelines for water supply catchments in Sarawak.
- Philippines Government Cleaner Production/Waste Management Action Learning Training Program: Customised training to prepare Action Plans for implementing cleaner production programs in Manila and Mindanao for 42 science and technology professionals.
- Update of Local Agenda 21 Manual for Environment Australia to incorporate regional sustainability strategies and natural resources management.
- Western Power Strategic EIA Advice: undertaking a review of transmission line assessment approaches and recommending strategies for improved practices.
- Biodiversity Monitoring: establishment of a biodiversity monitoring and benchmarking program for Placer Dome for its conservation strategy for Mt Weld pastoral station.
- Future Environmental Consulting Markets: identification of future markets for environmental consultant services for Halliburton KBR.
- Nutrient Reduction Effectiveness Monitoring: monitoring the effectiveness of nutrient reduction measures for the Wellard sheep yards in the Peel Harvey catchment.
- Short Courses in Environmental Management: ran a short course/seminar on Environment Protection: New Developments and Current Practices as part of a series of short courses for professional development and for obtaining credit towards postgraduate qualifications.

2001 to 2002

Director, Jenkins Environmental Management

Consultant to Murdoch University undertaking work to establish "Murdoch Environment" as a university-wide consulting and external education provider.

Tasks undertaken include a review of opportunities throughout Australia for generating energy from non-municipal solid wastes, such as industrial sludges and animal manures, and establishing professional short courses leading to postgraduate environmental qualifications at Murdoch.

1994 to 2001

Chief Executive Officer, WA Department of Environmental Protection

Dr Jenkins was head of the Department of Environmental Protection in Western Australia with responsibilities for preparing environmental policy, assessing the impacts of development proposals, preventing pollution from prescribed premises, developing management frameworks for environmental systems and waste management policy and regulation.

Key Achievements were:

- Established an integrated corporate strategy, business planning and performance management system for the department. This comprised:
 - a departmental corporate five-year strategy to define key issues, desired outcomes and organisational arrangements together with a funding strategy;
 - annual divisional business plans to meet the corporate strategy with quantifiable outputs, timeliness, quality and unit cost targets;
 - monthly reporting of business plan implementation against targets as a basis for corporate decision making;
 - periodic assessment of productivity of the department, both for evaluating performance and determining staff wage adjustments; and
 - annual reporting of outcomes and outputs as a measure of agency effectiveness.
- Introduced a new system of State of Environment Reporting for Western Australia that was based on:
 - broad stakeholder and public involvement to identify priority environmental issues for the state using a modified version of the OECD "pressure-state-response" model;
 - environmental indicators for the description of the current "state" of the environment and to monitor future changes;
 - involvement of relevant government agencies in relation to each issue to articulate current responses and formulate integrated future responses to address priority issues; and
 - development of whole-of-government management plans for implementing responses (e.g. Salinity Action Plan, Perth Air Quality Management Plan, Government Contaminated Sites Position Paper).
- Established a new Environmental Systems Division to provide integrated approaches for the sustainable management of airsheds, catchments and coastal ecosystems, in particular:

- the preparation of an Air Quality Management Plan for Perth involving 80 stakeholder groups and integrating programs across 14 agencies;
 - the development of an Environmental Protection Policy and Environmental Management Plan for Cockburn Sound – WA's most polluted marine water body;
 - the development, implementation and monitoring of a catchment plan for Lake Chinocup to change land management practices to reduce rising groundwaters and protect rare plant species;
 - the integration of existing information and further investigations to form the basis of a North-West Shelf Environmental Management Strategy (in partnership with CSIRO); and
 - the introduction of a Geographic Information System for the compilation and analysis of spatial data for policy development, impact assessment and community information.
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- Initiated and introduced the concept of “audited self management” as an alternative to “command and control” regulation, including:
 - best practice licences for companies achieving a high environmental performance standard and adopting environmental management systems, auditing and public reporting of performance;
 - load-based licensing where industries undertaking monitoring pay licence fees based on actual discharges which provides an economic incentive for reducing discharge levels;
 - quality assurance regulations for industry self monitoring of critical environmental performance requirements; and
 - one-off registration of small and medium industries to common regulations as an alternative to annual individual licences, thereby reducing administration without compromising environmental protection.
 - Developed enhancements of the environmental impact assessment process to encourage earlier consideration of environmental factors while facilitating more streamlined development approval decision making, comprising:
 - assessment of planning schemes and scheme amendments whereby subsequent development proposals which met environmental conditions on schemes do not require assessment;
 - strategic assessment of proposals and industrial estates to provide concept approvals and define environmental conditions at feasibility stage;
 - “environmental protection statements” which enable proponents who met environmental standards and accommodate the concerns of affected interests can have conditions set at the time of setting the level of assessment; and
 - “proposals unlikely to be environmentally acceptable” which gives early advice that a proposal is unlikely to be approved.
 - Established a contaminated sites investigations unit and a site remediation management capability including:

- whole-of-government policy framework leading to the development of contaminated sites legislation;
 - review of about 60 voluntary site remediation proposals a year;
 - development of guideline series for contaminated site assessment based on National Environmental Protection Measure for which had role as project chair; and
 - managed remediation of “orphan” sites – Omex waste oil recycling plant (\$7 million), Vela Luka Park gas plant residues (\$2 million).
- Allocated the responsibility for the State's role in waste management and achieved the following:
 - changed septage management from one involving cost subsidies and illegal disposal to full cost recovery and comprehensive regulation through the introduction of GPS and level sensing devices on liquid waste tankers for transporting septage;
 - changed grease trap management to achieve regular servicing through bar coding and prepayments for waste treatment;
 - brought the government's intractable waste facility onto a full cost recovery basis both for disposal campaigns and ongoing maintenance and management;
 - introduced voluntary product stewardship and regulatory alternatives to achieve better management of solvents;
 - established an industrial waste exchange facility enabling the recycling or reuse of one industry's waste by another industry; and
 - established a Waste Management and Recycling Fund to facilitate the reduction of waste to landfill with the funds generated by a levy on waste disposed in landfills.
 - Involved significantly in the development of the State's Greenhouse strategy:
 - chaired the WA Greenhouse Council of government, industry and community representatives;
 - co-ordinated technical reports on the cost-effectiveness of greenhouse gas mitigation strategies;
 - compiled a State implementation plan of existing programmes to reduce greenhouse gas emissions;
 - was a States' representative in the Australian delegation to COP4 in Buenos Aires and represented WA at national greenhouse enquiries;
 - established a greenhouse trigger for the impact assessment of major projects and an assessment strategy consistent with the Kyoto protocol; and
 - developed a framework for carbon rights legislation for WA.

Dr Jenkins was Chair of the WA Greenhouse Council, the Air Quality Co-ordinating Committee, North West Shelf Joint Environmental Management Strategy, and the State of Environment Reference Group. Nationally, he has been Project Chair for National Environment Protection Measure for the Assessment of Contaminated Sites. He was part of the Australian delegation to COP4 in Buenos Aires for the UN Framework Convention on Climate Change.

Dr Jenkins was also a Commissioner of the Western Australian Planning Commission; WA's representative on the Standing Committee on Environmental Protection for Australia and New Zealand Environment and Conservation Council, (Chairman 1995-96); WA's representative on the Committee supporting the National Environment Protection Council (NEPC); ANZECC representative on the National Land and Water Resources Audit and the National Environmental Statistics Advisory Group; and, chair of the NEPC/EnHealth/NHMRC Liaison Group.

1989 to 1994

Director, Kinhill Engineers Pty Ltd, Adelaide

Dr Jenkins was Director Environment, Economics and Planning and Principal Planner for the organisation. He was the Director responsible for Kinhill's environmental studies both nationally and internationally. His direct project involvement included:

- Steel Authority of India Environmental Management and Pollution Control, Steel Authority of India Limited: Project Director for a twenty-person team evaluating four steel plants in India in relation to the control of pollution generated by the plants, as well as the social and ecological implications of the plants in their surrounding environments.
- Proposed new research reactor for Australian Nuclear Science and Technology Organisation (ANSTO). Director responsible for preparing environmental assessment and ANSTO's submission to the Research Reactor Review Commissioners.
- Environmental advisor to Australian International Development Assistance Bureau (AIDAB) for projects in China being considered for aid funding including water and wastewater treatment plants, a sludge incinerator for a tannery, and, a mineral sands dredge and processing plant.
- Sydney Airport Third Runway EIS (New South Wales), Federal Airports Corporation: Project Director for the EIS for the proposed third runway at Sydney Airport. (Won Institution of Engineers Award, Sydney Division, Reports and Procedures Category.)
- Technical reviews: Technical review responsibilities for industrial premises and site contamination audits and environmental assessments for the F6 Freeway augmentation near Wollongong, New South Wales; Apcel pulp mill expansion at Millicent, South Australia; Mt Weld rare earths project, Western Australia; and Mobil refinery modernisation environmental approval, Altona, Victoria.

1988 to 1989

Director Kinhill Engineers Pty Ltd Adelaide

Dr Jenkins was director responsible for managing Kinhill's Adelaide office of about 160 engineers and planners consulting in all disciplines of engineering (civil, mechanical, electrical and chemical), urban planning and environmental studies. Responsibilities included:

- direction of operations
- co-ordination of marketing
- accountability for Adelaide office performance to the Kinhill Board
- financial and personnel management.

1980 to 1988

Principal Consultant, Kinhill Engineers Pty Ltd

During this period Dr Jenkins was the Manager-Environmental Studies for South Australian operations, and Principal Planner for the organisation.

Project responsibilities have included:

- Olympic Dam Project Radiation Management Plans (South Australia), Olympic Dam Operations: Preparation of radiation management plans for the mining, metallurgical processing and waste management to meet Code of Practice (1987) requirements and the *Radiation Protection and Control Act 1989* (SA).
- Port Pirie Rare Earths Plant (South Australia), SX Holdings: Preparation of notice of intent, declaration of environmental factors and EIS for a monazite cracking plant for the proposed rare earths processing plant at Port Pirie. (Won Institution of Engineers Award, South Australia Division, Environment.)
- Olympic Dam Project Environmental and Radiation Superintendent (South Australia), Olympic Dam Operations: Consulting Superintendent to the Olympic Dam Project Manager in relation to environmental and radiation monitoring during the development stages of the project. This included design of monitoring programmes, preparation of Radiation Code approvals and government authority liaison.
- Planning and environmental technical reviews: Principal Planner responsible for technical review of Kinhill's planning and environmental studies including Mount Piper to Marulan Transmission Line Environmental Impact Statement; Second Sydney Airport Environmental Impact Statement; EIS for a rare earths processing plant at Lismore; Monsanto Ltd proposed glyphosate plant at West Footscray, Victoria; and the Majestic Hotel and marina in Perth.
- Pine Creek Gold Mine Environmental Impact Statement (Northern Territory), Renison Goldfields Consolidated Ltd: Project Manager for preparation of the environmental impact statement for a proposed open cut gold mine processing 1.0 Mt/a of ore at Pine Creek.

- Wasleys to Adelaide Pipeline Looping Project Draft Environmental Impact Statement for Southern Section (South Australia), Pipelines Authority of South Australia: Project Director for environmental impact statement preparation for three options to duplicate the southern portion of the natural gas pipeline supplying Adelaide.
- Radioactive Residuals Store Environment Effects Statement (Victoria), Department of Premier and Cabinet on behalf of the Victorian Health Commission: Principal author of a proposed storage facility for radioactive wastes from medical institutions and industries at Dutson Downs.
- European and Aboriginal Heritage Survey of Mound Springs (South Australia), Department of Environment and Planning: Project Manager for studies of the heritage significance of mound springs in the far north of the State. Work was undertaken covering European heritage and the archaeological and anthropological significance of Mound Springs.
- Supplementary Environmental Studies of Mound Springs (South Australia), Roxby Management Services Ltd: Project Manager for detailed biological and hydrological surveys, impact assessment and monitoring of the possible effects of groundwater drawdown from borefield development to supply water to the Olympic Dam Project.
- RAAF Base Tindal Master Planning and Environmental Studies (Northern Territory), Department of Housing and Construction on behalf of the Department of Defence: Study Manager for preparation of the Master Plan and Draft Environmental Impact Statement for the possible expansion of the Royal Australian Air Force base at Tindal, near Katherine, to become the home base for a squadron of F/A-18 fighter aircraft.
- Olympic Dam Project Environmental Studies (South Australia), Roxby Management Services: Project Manager for the baseline study programme and draft environmental impact statement preparation for the proposed copper-uranium-gold mine and processing facilities near Roxby Downs. Responsibilities included formulation of the programme, supervision of twenty subconsultants, liaison with government, and maintenance of technical quality and balance in the overall study.
- Northern Power Station Environmental Impact Statement (Port Augusta), Electricity Trust of South Australia: Project Director for the integration and compilation of input from the client and from Kinhill for the Environmental Impact Statement for a 250 MW expansion to the Northern Power Station.
- Review of safety hazards associated with proposed LPG facilities at Stony Point and Port Stanvac (South Australia): Co-ordination of technical input and reporting on the thermal radiation zones and flammable vapour cloud zones for LPG storage and jetty facilities.
- Moomba to Stony Point Pipeline Facilities, South Australia - Environmental Impact Statement, Pipelines Authority of South Australia: Analysis of environmental constraints in relation to alternative pipeline alignments; evaluation of alternative alignments incorporating economic and technical considerations with environmental factors; description of the impact associated with chosen routes; and formulation of mitigation measures.

1977 to 1980

Senior Consultant, Kinhill Engineers Pty Ltd, Melbourne

For the period 1977 to 1980 Dr Jenkins was a Senior Consultant in the Studies Group, based in the Melbourne office. His project responsibilities included the following:

- Petrochemical plant at Point Wilson—baseline studies (Victoria), ICI Australia: A three-year programme of baseline studies plus documentation of environmental considerations to obtain planning and government approval. The work commenced with studies to define environmental concerns and continued with more detailed programmes to aid plant layout and engineering design decisions. Of particular concern was the protection of the habitat of an endangered species – the orange-bellied parrot. The documentation included an Environment Effects Statement for the rezoning decisions, an environmental assessment of the Plan of Development and more than twenty reports on individual studies.
- Additional environmental studies covering:
 - Carborundum environmental requirements: a confidential assessment for a proposed electrometallurgical process industry;
 - Marine Science Laboratories Environmental Review, undertaken for the Public Works Department, Victoria;
 - Hillview Quarries, Victoria—Environment Effects Statement for a proposed quarry;
 - Euroa Flood Study, Victoria;
 - Byron Bay Environmental Impact Statement;
 - Geelong Regional Airport Environment Effects Statement.

1973 to 1977

PhD Candidate, Stanford University

Doctor of Philosophy degree, Stanford University, California, Dr Jenkins undertook studies in the environmental planning programme of the Civil Engineering Department. The main course work areas were water resources planning, environmental impact assessment and organisation theory. His PhD thesis was on the changes in institutional and organisational arrangements of flood control planning to include environmental impact assessment and public involvement.

1974 to 1976

Freelance consultant, part-time, Stanford, California

Dr Jenkins was a consultant on the following projects:

- San Mateo Educational Camp;
- Guadalupe River Flood Control Project;
- HUD Block Grant Programme for the City of Napa – Environmental Impact Statement;
- East Contra Costa Wastewater Management Study.

1972 to 1973

Kinhill Engineers Pty Ltd, Adelaide

Dr Jenkins' initial experience was gained as a consultant with the structural group of Kinhill Engineers, involved in the structural design and construction supervision of institutional, commercial and residential buildings.

PROFESSIONAL AFFILIATIONS

Fellow, Institution of Engineers, Australia
Fellow, Environment Institute of Australia and New Zealand

AWARDS

Harkness Fellow, 1973–1975, Stanford University, California
R.W. Parsons Prize. Institution of Engineers
Public Speaking Prize for Graduates and Students 1972
Commonwealth Postgraduate Award for Master of Engineering studies 1970–71
Humes Prize for Top Final Year Civil Engineering Student 1969
John Storey Prize for Top Student in Engineering Management 1969
Strength of Materials Prize (equal) 1967

EXTERNAL APPOINTMENTS

President, Environment Institute of Australia and New Zealand, elected October 2017.

Member, International Scientific Advisory Committee for the 4th International Conference on Environmental and Economic Impact on Sustainable Development, 20-22 June 2018, Naples.

Member, International Scientific Advisory Committee for the 9th International Conference on Sustainable Water Resources Management, 18-20 July 2017, Prague.

Member, Natural Resource Management Roundtable, Australian National University, 7-8 November 2016.

Member, Co-development Group supporting the Land Use Suitability Programme in the Our Land and Water National Science Challenge 2017 - present.

Member, Editorial Board of the Australian Journal of Water Resources which is about to become the Australasian Journal of Water Resources 2016-current.

Board member (Treasurer) of the Environment Institute of Australia and New Zealand, 2013-7

Member, Resilience Thematic Group, IUCN Commission on Ecosystem Management 2016-current

Expert Witness in the Waitangi Tribunal Wai 258: In the matter of the Treaty of Waitangi Act 1975 and in the Matter of the National Freshwater and Geothermal Resources Inquiry, 7-11 November 2016.

Member, Greater Wellington Regional Council, Science Advisory Group, 2013-7

Member, Strategic Science and User Advisory Panel, GNS, 2011-2014

Visiting Fellow, Regulatory Institutions Network, Australian National University, Canberra, Jan-Feb 2011.

Member, Dairy Environment Leadership Group, Dairy NZ, representing regional councils, 2008-11.

Chair, Advisory Board for Waterways Centre for Freshwater Management, University of Canterbury and Lincoln University, 2009-10

Member, Advisory Board for Civil and Natural Resources Engineering, University of Canterbury, 2005-17

Member, Ministerial Advisory Council of Statistics reporting to NZ Minister for Statistics, 2005-8

Chair of independent expert panel to undertake a quality assurance review of the proposed NIWA Air Quality Research and Development Programme, 2007.

Adjunct Professor, Murdoch University, 2001-2

Member Australian delegation to Framework Convention on Climate Change, Conference of Parties, Buenos Aires, 1998

Project Chair, Development of National Environmental Protection Measure for the Assessment of Contaminated Sites for National Environmental Protection Council, 1997-2000

Professorial Fellow, Flinders University 1996-1999

Member, National Land and Water Audit Advisory Council, 1997-2001

Commissioner, Western Australian Planning Commission, 1995-2001

Executive, Environmental Management Industry Association and Chairman Environmental Policy Group 1991-1994, elected Deputy Chairman 1993

Chairman, National Committee on Environmental Engineering for the Institution of Engineers, Australia, General College, 1990-1993

Member, Advisory Board of the Australian Centre for Environmental Law 1993-2001

Course Leader, Environmental Management Short Course, Association of Professional Engineers and Scientists Australia 1992, 1993, 1994. Courses in Sydney, Melbourne, Brisbane, Adelaide, Perth, Townsville and Darwin

Member of Executive Council (Treasurer) for the Environment Institute of Australia, 1988-1990

Chairman, Environmental Science Group (a multi-disciplinary forum for environmental issues), 1986-88

Member, Advisory Committee for the Natural Resources Management Course, Roseworthy College, 1985-89

Visiting Professor, Stanford University, California, presenting the postgraduate course 'Incorporating Environmental Factors in Engineering Decisions', winter quarter 1987

Guest lecturer on environmental impact statements to the University of Adelaide, the University of South Australia, the University of Western Australia, the University of Technology (Sydney), Sydney University, the Royal Melbourne Institute of Technology, the Institution of Engineers and the Hydrological Society

Guest lecturer, University of Melbourne Civil Engineering Department, on financing of large projects; Swinburne College of Technology Local Government Engineers Course on engineering applications of statistics; and Murdoch University on environmental forensic science

Member, South Australian Policy Council of the Systems Research Institute of Australia, 1980-83

PUBLICATIONS

Presentation and publication of academic, professional and community papers are listed below in the following order: books and book chapters; refereed journal articles; plenary presentations and invited addresses; conference papers; seminars and workshops; reports and blogs; public presentations; and theses.

Books and Book Chapters

Jenkins, B.R. (2018) Water Management in New Zealand's Canterbury Region: A Sustainability Framework. Global Issues in Water Policy Vol. 19. Springer, Dordrecht.

Jenkins, B.R. (2015) New Zealand water pricing, in Dinar, A., Pochat, V. and Albiac, J. (eds) Water Pricing Experience and Innovations, Springer New York.

Jenkins, B. R. (2015) Sustainable water management analysis using nested adaptive systems, Water Resources Management VIII (Brebbia C. A. ed) pp39-52, WIT Press, Southampton.

Jenkins B.R. (2011) Sustainability limits and governance options in Canterbury water management; Chap 6 in Old Problems, New Solutions: Integrative research supporting natural resource governance, Russell S, Frame B and Lennox J (eds) Landcare Research: Lincoln

Jenkins B.R. 2011. Development of collaborative governance approach; Chap 11 in Old Problems, New Solutions: Integrative research supporting natural resource governance, Russell S, Frame B and Lennox J (eds) Landcare Research: Lincoln

Morrison-Saunders A., Jenkins B.R. and Bailey J. (2004) EIA Follow Up and Adaptive Management, in Assessing Impact: handbook of EIA and SEA Follow Up, Morrison-Saunders A. and Art J. (eds). Earthscan: London.

- Jenkins B.R. (1999) Trends & Developments at the State Level: A Western Australian Perspective. pp136-146 in Environmental Outlook: Law and Policy, Issue 3, Leadbetter P., Gunningham N. and Boer B. (eds), Australian Centre for Environmental Law, Federation Press, Sydney.
- Jenkins, B.R. (1995) 'Assessment, Planning and Management Services', Chapter 8 in Australia - A Leader in Environmental Solutions. Hon R Kelly and M. O'Neill editors. Focus Publishing, Double Bay, NSW.
- Jenkins, B.R. (1989) Preparing environmental impact statements. Interdata Environmental Resource Management Handbook Second Edition 1991/2.
- Jenkins, B.R. (1988) Environmental factors in engineering projects: A booklet of case studies. Canberra: EA Books, The Institution of Engineers Australia.

Refereed Journal Publications

- Jenkins, B.R. (2017) Sustainable Water Management Analysis of the Selwyn Catchment using Nested Adaptive Systems, International Journal of Sustainable Development and Planning, Vol 12 Issue 6, p 1061-1072, DOI 10.2495/SDP-V12-N6-1061-1072.
- Jenkins, B.R. (2017) Avon-Ōtākaro Network Vision for Regeneration of the Avon-Ōtākaro Corridor Red Zone, Landscape Review Vol 17 (2) p 56-66.
- Jenkins, B.R. (2016) From mitigation to sustainability: the evolution of incorporating environmental factors into development decisions in Australasia, Proceedings of 3rd International Conference on Environmental and Economic Impact on Sustainable Development, 8-10 June 2016, Valencia, Spain.
- Jenkins, B.R. (2016) Sustainability analysis of the management approach for six New Zealand lakes, Lake and Reservoir Management, 32:2, 101-115, DOI: 10.1080/10402381.2015.1135491
- Jenkins, B. R. and Henley, G. (2014) Collaborative Management: Community Engagement as the Decision-Making Process, The Australasian Journal of Natural Resources Law and Policy, V 17 (2) pp 135-153.
- Jenkins, B.R., Russell, S., Sadler, B., and Ward, M. (2014) Application of Sustainability Appraisal to the Canterbury Water Management Strategy. Australasian Journal of Environmental Management v21 n1 pp83-101.
<http://dx.doi.org/10.1080/14486563.2014.880383>.
- Jenkins B.R. (2011) "A River Runs Through It", Planning Quarterly, Issue 182, Sep 2011, NZ Planning Institute.
- Jenkins B.R. (2011) "Milk & Water: The dairy industry can be sustainable with its resource demands – but only if there are big changes". AgScience V.38 pp 10-11, NZ Institute of Agricultural & Horticultural Science.

- Jenkins B.R. (2003) "Benchmarking for Best Practice Environmental Management" *Environmental Monitoring and Assessment*, V85 p115-134.
- Jenkins B.R., Annandale D. and Morrison-Saunders A. (2003) "Evolution of a Sustainability Assessment Strategy for Western Australia". *Environmental Planning and Law Review*. V20 No1 p56-65.
- Jenkins B.R. (2003) "The Comparison of Two Commonwealth/State Environmental Management Programmes in an Evaluation Framework" *The Australasian Journal of Natural Resources Law and Policy*. Vol 8 No 1 pp59-78.
- Jenkins B.R. (2002) "Organisation for Sustainability" *Australian Journal of Environmental Management* Vol 9 No 4 pp243-251.
- Jenkins B.R. (2001) "The Development of Environmental Criteria in a Risk Management Framework" *Australian Journal of Environmental Management*. Vol 8 No 4 pp227-232, December 2001.
- Jenkins B.R. (2001) "Experience with Environmental Forensic Science in Environmental Protection Act enforcement proceedings in Western Australia" *Environmental Planning and Law Review*. Vol 18 No 5 pp469-480, October 2001.
- Jenkins B.R. (1997) "Environmental Regulation of Perth's Groundwater" *AWWA Journal Water* November/December 1997 pp 42-46.
- Jenkins, B.R. (1993) *Environmental book-keeping reveals conflicting accounts*. Published in 21 C (Commission for the Future). Summer 1993/94, pp 62-67.
- Jenkins, B.R. (1992) *The Experience with Tradeable Emission Permits*. Australian Environmental Law News No. 3/1992 Edition. September 1992.
- Jenkins, B.R. 1993. *Economic Rationality and Sustainable Development – Conflicts and Implementation*. Economic Papers V. 12 No. 2 pp 69-84. Economic Society of Australia, June 1993.
- Jenkins, B.R. 1992. *Planning and evaluation techniques in relation to sustainable development*. Transactions of Multi-disciplinary Engineering, 1992.
- Jenkins, B.R. 1991. *Changing Australian monitoring and policy practice to achieve sustainable development*. The Science of the Total Environment Volume 108 pp 33-50 Elsevier Amsterdam 1991.
- Jenkins, B.R. 1988. *Ways environmental factors can influence projects*. Transactions of Multi-disciplinary Engineering Vol. GE12 No. 1, April 1988, p 1-5.
- Ortolano, L., Jenkins, B.R. and Abacosa, R.P. 1987. *Speculations on when and why EIA is effective*. Environmental Impact Assessment Review, Vol. 7, pp285-92.
- Jenkins, B.R. 1987. *Water and waste management for the Pine Creek Gold Mine*. Mine and Quarry Environment Supplement. January/February 1987, pp61-62.

Jenkins, B.R. and Ortolano, L. 1978. The placement of environmental specialists in engineering organizations. ASCE Journal of Planning and Management 104/WR1: 6174.

Jenkins, B.R. 1974. Tests on a flat plate floor. Civil Engineering Transactions, Institution of Engineers, Australia. CE16(2) 1974:164-167.

Plenary Presentations and Invited Addresses

Jenkins, B.R. (2016) What's the impact of climate change on water management? Freshwater Management and Infrastructure Conference, 22-23 February 2016, Wellington.

Jenkins, B. R. (2015) From Mitigation to Sustainability: Going Beyond Reactive Approaches, Invited Plenary Address EIANZ Annual Conference, 29-30 Oct, Perth.

Jenkins, B. R. (2015) Institutional Arrangements for Managing Water – the RMA and the Canterbury Water Management Strategy. ECO Conference: Dialogues on Freshwater – Navigating Impasses and New Approaches, 28-30 Aug 2015, Christchurch.

Jenkins, B. R. (2015) The Avon Otakaro Network, The Sustainability Series, IPENZ/EWB, 21 May 2015, Christchurch.

Jenkins, B.R. (2014) Water is precious. Keynote address to International Highland Cattle Gathering 2014, South Island Conference 15 November 2014, Queenstown.

Jenkins, B.R. (2014) Progress of the Canterbury Water Management Strategy and some emerging issues. Freshwater Management Forum, 18-19 Feb 2014, Wellington.

Jenkins, B.R. (2013) Managing water quality at allocation limits. Freshwater Management Forum, 24-25 Feb 2013, Wellington.

Jenkins B.R. 2012. "Fresh Start for Freshwater Reform: The Interactions between the Interventions" Freshwater Management Forum, 13-14 Feb, Wellington.

Jenkins B.R. 2011. "Summary of main themes" Closing Address to Living Lake Symposium 3, Living Lake, Changing Catchment 2011, Lincoln University.

Jenkins B.R. 2011. "Canterbury Water Management Strategy: Turning Policy into Reality" Second Fresh Water Management Forum, Wellington 16 Feb 2011.

Jenkins B.R. 2008. "Water Issues in Canterbury". Keynote Lecture to the ICCE 2008 International Symposium. The International Commission on Continental Erosion, University of Canterbury, 3 December 2008.

Jenkins B.R. 2010. "Canterbury Water Management Strategy: A Different Approach to Freshwater Management" New Zealand Fresh Water Management Forum, Wellington 15-16 February 2010.

Jenkins B.R. 2008. Opening address Wai Wetlands Symposium, University of Canterbury, 14 February 2008.

Jenkins B.R. 2007. "What role for storage in Canterbury?" Invited presentation to the NZSOLD/ANCOLD Conference "Dams – Securing Water for Our Future", Queenstown, 19-20 November 2007.

Jenkins B.R. 2007. Opening address to the Te Waihora/Lake Ellesmere Symposium, Lincoln University, 31 October 2007.

Jenkins B.R. 2007. "Water allocation in Canterbury" Keynote presentation to the New Zealand Planning Institute, Palmerston North, 27-29 March 2007.

Jenkins B.R. 2005. Opening address to the Fonterra Dairy & Environment Committee Research Seminar, Christchurch, 20-21 October 2005.

Jenkins B.R. 1999. "National Council Approaches - Implications for Site Remediation" Keynote address 1999 Contaminated Site Remediation Conference, Fremantle WA.

Conference Papers

Jenkins, B.R. (2018) Changing water management practice in Canterbury to address sustainability limits, SIWI World Water Week 2018: Water, Ecosystems and Human Development, 26-31 August 2018, Stockholm.

Jenkins, B.R. (2018) Challenges in Cumulative Impact Assessment: Case Studies from Canterbury, New Zealand, Environmental Impact 2018: 4th International Conference on Environmental and Economic Impact on Sustainable Development, 20-22 June 2018, Naples.

Jenkins, B.R. (2018) Environmental Restorative Justice: Canterbury Cases, IAIA 2018: Environmental Justice in Societies in Transition, 16-19 May 2018, Durban.

Jenkins, B.R. (2018) Regional Water Strategy for Canterbury, New Zealand, IAIA 2018: Environmental Justice in Societies in Transition, 16-19 May 2018, Durban.

Jenkins, B.R. (2018) Sustainability Framework for Water Management in New Zealand's Canterbury Region, 20th International Conference on Sustainable Water Resources Management, London 15-16 Feb 2018 (voted best paper for the conference)

Jenkins, B.R. (2017) Making Sustainable Management Operational: The Application of Failure Pathways and Sustainability Strategies, EIANZ Annual Conference, 29 Oct – 1 Nov 2017, Wellington NZ.

Jenkins, B.R. (2017) Audited Self-Management: A More Effective Way for Achieving Compliance, EIANZ Annual Conference, 29 Oct – 1 Nov 2017, Wellington NZ.

- Jenkins, B.R. (2017) Evolution of Collaborative Governance in Canterbury Water Management, XVI Biennial IASC Conference Practicing the Commons: Self-Governance, Cooperation and Institutional Change, 10-14 July 2017, Utrecht, Netherlands.
- Jenkins, B.R. (2017) Translating Science into Policy: Setting nutrient limits for agricultural use, World Water Congress XVI, 29 May – 2 June 2017, Cancun, Mexico.
- Jenkins, B.R. (2017) The role of EIA in greenhouse gas mitigation, International Association of Impact Assessment Conference, 4-7 April 2017, Montreal, Canada. <http://conferences.iaia.org/2017/proceedings.php>
- Jenkins, B.R. (2016) The Avon Otakaro Network Vision for the Regeneration of the Avon Otakaro Corridor Red Zone, SOLA Research Symposium: Integrated urban grey and green infrastructure, 9-10 November, Lincoln University.
- Jenkins, B.R. (2016) Legislative changes in New Zealand: Do they provide an adequate basis for tomorrow's challenges. EIANZ Annual Conference, 3-4 November 2016, Brisbane.
- Jenkins, B. R. (2015) Sustainable water management in Canterbury: a transformation from regulatory to collaborative governance, Proceedings of the 29th Annual Conference Australian and New Zealand Academy of Management, 2-4 Dec, Queenstown.
- Jenkins, B. R. (2015) Collaborative Governance Transformation of Water Management in Canterbury, Poster, OzWater 15, 12-14 May 2015, Adelaide.
- Jenkins, B.R. (2015) Implications of climate change for water management in Canterbury, Proceedings of the World Water Congress XV, 25-29 May 2015, Edinburgh.
- Jenkins, B.R. (2014) Collaborative Governance and Accountability. Environment Institute of Australia and New Zealand 2014 Annual Conference, 30-31 October 2014, Hobart Tasmania.
- Kingham, S., van Looy, N., Jenkins, B., Goslin, H., Poynter, R., Twyman, B., Waller, B. and Yurejevich, M. (2014) Potential of an Active Transport Corridor Along Christchurch's Earthquake Damaged Avon Otakaro River, 2 Walk and Cycle: Communities on the Move 2014 Conference 29-31 October 2014, Nelson.
- Jenkins, B., Friend, J. and Midgley, G. (2014) Canterbury Water Management Strategy, Operations Research Society Open Event: Shaping Choices in Public Policy – a problem structuring approach, 5 June 2014, Royal Society, London.
- Jenkins, B.R. (2013) *Sustainability Analysis of the Approach to the Management of Six New Zealand Lakes*. Palmerston North, New Zealand: New Zealand Association of Impact Assessment (NZAIA) 2013 Conference: Freshwater - Fresh Thinking, 28-29 Nov 2013.

- Jenkins, B. and Henley, G. (2013) *Collaborative Management: Community Engagement Process as the Decision Making Process*. Melbourne, Australia: Environment Institute of Australia and New Zealand 2013 Annual Conference (EIANZ), 23-24 Oct 2013.
- Jenkins, B.R., van Looy, N. and Kingham, S. (2013) The Avon Otakaro Network. The First New Zealand Tertiary Engagement Summit, 30 Aug 2013, Christchurch.
- Jenkins, B.R. (2013) *Progress of the Canterbury Water Management Strategy and some emerging issues*. Lincoln University, New Zealand: New Zealand Agricultural and Resource Economics Society Conference 2013 (NZARES), 29-30 Aug 2013.
- Jenkins, B.R. (2013) *The Development of Sustainable Alternatives to Applicants' Proposals Using Collaborative Approaches*. Hamilton, New Zealand: New Zealand Planning Institute Annual Conference 2013 (NZPI), 30 Apr-3 May 2013.
- Webster-Brown, J.G. and Jenkins, B.R. (2012) *What will happen when none of the World's rivers reach the coast?* Christchurch, New Zealand: IPENZ Rivers Group 3rd Annual Symposium, 22 Nov 2012.
- Jenkins, B.R. (2012) *Water Issues in Canterbury*. Lincoln, New Zealand: Agronomy Society of NZ Annual Conference, 20-22 Nov 2012.
http://www.agronomysociety.org.nz/uploads/94803/files/Jenkins_Water_Issues_in_Canterbury.pdf.
- Jenkins, B.R. (2012) *Resilience Assessments for the Achievement of Sustainability*. Sydney, Australia: Environment Institute of Australia and New Zealand Annual Conference 2012, 24-25 Oct 2012.
- Jenkins B.R. 2011. "Strategic Planning and Assessment", Conference on Natural Disasters: Impact Assessment for Sustainable Recovery, NZ Association of Impact Assessment, Lincoln University, Nov 2011.
- Jenkins B.R. and Ward M. 2011. "Beyond EIA: Sustainability Appraisal of Resources at Environmental Limits", Environment Institute of Australia and New Zealand Annual Conference Sep 2011, Sunshine Coast Qld.
- Jenkins B.R. Russell S., Sadler B., and Ward M. 2011, "Sustainability Appraisal of Water Management Strategies for Canterbury, International Association of Impact Assessment Conference on Strategic Assessment, Prague, 21-23 Sep 2011.
- Jenkins B.R. 2011 "Progress towards a Paradigm shift in Canterbury water management". NZ Agriculture and Resource Economics Society 2011 Workshop 26 Aug 2011, Nelson.
- Jenkins B.R. 2011. "Collaborative Governance Arrangements for Water Management in Canterbury", 2011 NZ Planning Institute Conference, Wellington, 31 March 2011.

- Jenkins B.R. 2011. "Planning for Liquefaction Risk in Greater Christchurch", 2011 NZ Planning Institute Conference, Wellington, 31 March 2011.
- Jenkins B.R. 2010. "Is the Dairy Industry Sustainable with respect to Resource Demands?" NZIAHS Forum: Where do we want our dairy industry to be in 20 years' time? NZ Institute of Agricultural and Horticultural Science, Lincoln University 3 September 2010.
- Jenkins B.R. 2010. "Canterbury Water Management: The Need for a New Paradigm", Leadership NZ Water the New Gold Rush, Christchurch, 24 June 2010.
- Jenkins B.R. and Ward M. 2010. "Sustainability appraisal and regional water planning in NZ", Sustainability Assessment Symposium 2010: Towards Strategic Assessment for Sustainability, Fremantle, Western Australia, 25-26 May 2010.
- Jenkins B.R. 2010. "Applications of the strategic assessment approach", Sustainability Assessment Symposium 2010: Towards Strategic Assessment for Sustainability, Fremantle, Western Australia, 25-26 May 2010.
- Jenkins B.R. 2009. "Climate Change in Canterbury and its Implications for Water and other Resources in Canterbury". 8th Australasian Conference on Social and Environmental Accounting Research. Christchurch, 6-8 December 2009.
- Jenkins B.R. 2009. "Canterbury Water Management Strategy" 14th Annual National Water 2009, Melbourne, 18-20 August 2009.
- Jenkins B.R. 2009. "Best Practice Partnerships at the Local Government Level for the Environment" 2009 Community Boards' Conference, Christchurch, 19-21 March 2009.
- Jenkins B.R. 2009. "Strategic Assessment in Canterbury" Environmental Defence Society Conference, Auckland, 8-9 June 2009.
- Jenkins B.R. 2009. "Are Regional Councils past their use-by date?" Environmental Defence Society Conference, Auckland, 8-9 June 2009.
- Jenkins B.R. 2008. "Water Allocation at the regional council level – the Canterbury approach going forward" Irrigation NZ Conference, Christchurch, 14 October 2008.
- Jenkins B.R. 2008. "Our Water – Regulatory Impediments". NZWWA 50th Anniversary Conference, Christchurch, 24 September 2008.
- Jenkins B.R. 2008. "Organisation Design Review at Environment Canterbury" SOLGM Top of the South meeting, 18 July 2008.
- Jenkins B.R. 2008. "Demand management pressures and responses in Canterbury" National Water NZ 2008, Auckland, 25-29 February 2008.
- Jenkins B.R. 2006. "Future directions for water management in Canterbury. Resource management under stormy skies: water allocation at the crossroads?" presentation to the New Zealand Hydrological Society, New Zealand

- Association of Resource Management and the Meteorological Society of New Zealand, University of Canterbury, Christchurch, 20-23 November 2006.
- Jenkins B.R. 2006. "Short-term desires versus long-term needs: the implications of long-term council community planning" presentation to the SOLGM "Taking Care of Business" Conference, Nelson, 3-5 September 2006.
- Jenkins B.R. 2005. "Giving statutory backing to non-statutory strategies through Regional Policy Statements; a case study of the Urban Development Strategy for Greater Christchurch" presentation to the Resource Management Law Association Conference, Christchurch, 6-8 October 2005.
- Jenkins B.R. 2004. "Regional planning and sustainability" presentation to ECOPOLIS – Vision and Means, NZILA Conference, Christchurch, 4-6 April 2004.
- Jenkins B.R. 2002. "Sustainable Development in the Pilbara Region" Pilbara Natural Advantages Conference, Karratha WA 2-3 Sep.
- Jenkins B.R. 2002. "The Multiple-Use Planning and Management of the Resources and Environment of the North-West Shelf" Australian Marine Sciences Association 2002 National Conference Fremantle 10-12 July.
- Jenkins B.R. 2001. "Improving the Government Framework for Sustainability" Sustainability Conference Perth February 2001.
- Jenkins B.R. 2000. "Legislating for Waste Management" Waste Management and Recycling Conference 11 August 2000, Perth WA.
- Jenkins B.R. 1999. "Accreditation and Enforcement of an Emissions Trading Scheme", Emissions Trading Conference, 13 July Sydney NSW.
- Jenkins B.R. 1999. "Beyond End-of-Pipe Controls: New Directions in the Attack on Diffuse Pollution" International Conference on Diffuse Pollution, 20 May Perth WA.
- Jenkins, B.R. 1997. Solution to Environmental Regulation of Groundwater - the Western Australian Approach. Paper presented at the WasteTECH Conference Melbourne, March 1997.
- Jenkins, B.R. 1997. Overview of NEPC Activities Relating to Contaminated Land. Paper presented at the WasteTECH Conference Melbourne, March 1997.
- Jenkins, B.R. 1997. Waste Management Infrastructure in Western Australia. Paper presented at the Infrastructure 1997 Conference, Sydney. July 1997.
- Jenkins, B.R. 1997. "Trends and Developments at State Level - A Western Australian Perspective", ACEL Environmental Outlook Conference, Sydney 1997.
- Jenkins, B.R. 1995. Achieving ecologically sustainable development. Paper presented at the Urban Development Institute of Australia, 24th National Congress. Adelaide, February 1995.

- Jenkins, B.R. 1995. Achieving best practice environment management (BPEM). Paper presented at the AIC Conference, Towards achieving effective Environmental Management Systems and understanding the potential impacts of ISO14000. Sydney. April 1995.
- Jenkins B.R. 1998. "Changes in Regulations and Incentives for Waste Minimisation" WA Waste Management and Recycling Conference 25 September 1998 Perth.
- Jenkins B.R. 1998. "Perth Bushplan" Panel presentation to Urban Development Institute Conference, 4 September 1998 Dunsborough.
- Jenkins, B.R. 1995. Commonwealth EIAs: Changes to the Administrative Process – The New Review Procedures – National Environmental Law Association, 14th National Environmental Law Conference, Sydney, 14-16 September 1995.
- Jenkins, B.R. 1995. Cleaner production approach to waste management. Paper presented at the Department of Environmental Protection/Health Department of WA Medical Waste Management Conference. Perth, 30-31 October 1995.
- Jenkins, B.R. 1994. Pressures for achieving cleaner population. CSIRO/UNIDO Conference 'Economic growth and clean production', World Congress Centre, Melbourne, 7-10 February 1994.
- Jenkins, B.R. 1994. Trends in environmental management. Paper presented at the Fourth Annual Directions for Industry Conference, Perth, 5-6 October 1994.
- Jenkins, B.R. 1994. How green are your accounts. Paper presented at the 1994 International Accounting Conference. Adelaide, November 1994.
- Jenkins, B.R. 1993. Commentary on regional trends: Environmental law and policy development in the Asian and Pacific region. Australian Centre for Environmental Law Environmental Outlook Conference, 10-11 November 1993. Sydney.
- Jenkins, B.R. 1993. Australian environmental expertise in Asia Pacific region. Environment Institute of Australia National Conference, September 1993. Sydney.
- Jenkins, B.R. 1993. Sydney Airport third runway EIS – Coverage of marine ecology issues. Australian Institute of Biology Proceedings, December 1993.
- Jenkins, B.R. 1993. Viewpoints on the precautionary principle: The precautionary principle as an information and environmental management strategy. Precautionary Principle Conference, UNSW, September 1993. Sydney.
- Jenkins, B.R. 1992. Standards and liability for contaminated sites. RACI Conference on Remediation of Contaminated Sites: Environmental Standards and Health Risk Assessment, 23-24 November 1992. Perth.
- Jenkins, B.R. 1992. International Marketing of Technology Services where Australia has a Competitive Edge. NSTAG meeting in ANU Canberra 13 November 1992.

- Jenkins, B.R. 1992. The role of information in environmental assessment from technical, political and media perspectives. National conference on Environmental Engineering. Institution of Engineers, Australia, Gold Coast.
- Jenkins, B.R. 1992. Integrating environmental considerations into the development of major projects. Conference on facilitating major projects, Sydney, April 1992.
- Jenkins, B.R. 1991. Environmental Technologies in Chemical and Mineral Processing. Paper presented to Adding Value to Natural Resources. United Nations Industrial Development Organization Conference, Adelaide, December 1991.
- Jenkins, B.R. 1991. Emerging Trends in Water Resources Planning and their Implications for Project Managers ANCOLD 1991 Conference on Dams, Wirrina SA, 18–21 November 1991.
- Jenkins, B.R. 1991. Technical Approaches to the Resolution of Development Environment Conflict in Infrastructure Projects. Paper delivered to Infrastructure '91, Asia Pacific Conference, Bali, Indonesia, November 1991.
- Jenkins, B.R. 1991. Environmental Audit, how to do it. Paper presented at Conference on Environmental Protection – Striking the Balance, Adelaide. Presented 27 August 1991.
- Jenkins, B.R. (1991). The definition and concept of sustainable development, National Engineering Conference 1991 Development and the Environment, Institution of Engineers, Australia, Barton ACT.
- Jenkins, B.R. 1991. Preparation and review of environmental impact statements. Paper presented to National Chemistry Week Symposium 'Chemical Technologies for a Cleaner Environment', Perth, 25 July 1991.
- Jenkins, B.R. 1991. Environmental Audits. Paper presented at the conference on Minimizing Your Exposure to Prosecution under Environmental Law, Melbourne, Brisbane and Sydney. March 1991.
- Jenkins, B.R. 1990. Sydney Airport Proposed Third Runway Environmental Impact Statement. Presented at Boma Special forum on Sydney Airport needs, 16 October 1990; 1991 Aviation Industry Conference, IIR Sydney, 18-19 March 1992; Institution of Engineers, Australia, Canberra, October 1991; Environment Institute of Australia, Canberra, November 1991; and CPLI Conference on Environmental Assessment of Major Projects, Sydney, November 1992.
- Jenkins, B.R. 1990. Environmental management as a commercial opportunity. Paper presented at the Multi-Function Polis conference on opportunities in the growth industries in the future. Sydney, 1 October 1990. Also presented to University of Adelaide, 9 August 1991.
- Jenkins, B.R. 1990. Australian planning and assessment techniques in relation to sustainable development. Paper presented to International Association of Impact Assessment Conference on Science, Assessment and Sustainability, Vancouver, 24 March 1990.

- Jenkins, B.R. 1990. Policy on sustainable development of the Institution of Engineers, Australia. Paper presented to Globe '90, Vancouver, 19-23 March 1990.
- Jenkins, B.R. 1989. Economic rationality and sustainable development. Paper presented to Environment Institute of Australia 1989 National Conference, Environmental Practice/Sustainable Development, Melbourne, 9-11 October 1989.
- Jenkins, B.R. 1989. Preparing environmental impact statements. Paper presented to IRR Conference on New Environmental Laws, Sydney, 19-20 September 1989.
- Jenkins, B.R. 1989. Changing Australian monitoring and policy practice to achieve sustainable development, Paper presented to conference on Sustainable Policies and Making Them Work, University of New South Wales, Kensington 9-10 November 1989.
- Jenkins, B.R. 1989. Planning and evaluation techniques in relation to sustainable development. Paper presented to Institution of Engineers Australia 1989 National Environmental Engineering Conference, Sydney, 20-22 March 1989; and to International Conference on Solid and Hazardous Waste Management, Singapore 27-28 June 1991.
- Jenkins, B.R. 1988. RAAF Base Tindal environmental studies. Paper presented to International Association for Impact Assessment Conference, Brisbane, 5-9 July 1988.
- Jenkins, B.R. 1988. Managing the environmental process. Paper presented to Engineering Management Branch, Institution of Engineers, South Australia, May 1988. Also presented to Mount Gambier Group, November 1988 and Whyalla Group, October 1988.
- Jenkins, B.R. and Thomas, R.I. 1987. Underwater pipeline in an estuarine aquatic reserve. Paper presented to 8th Australasian Conference on Coastal and Ocean Engineering, Launceston, December 1987.
- Jenkins, B.R. 1987. Management of environmental and radiation data – The Olympic Dam project. Paper presented to Australian and Mining Industry Workshop, Adelaide, September 1987.
- Jenkins B.R. 1987. Integrating environmental factors into mining projects. Paper presented to Conference on Mining and Environment – A Professional Approach, Australian Institute of Mining and Metallurgy, Brisbane, July 1987. Also reproduced in The AUSIMM Bulletin and Proceedings, March 1988.
- Jenkins, B.R. 1986. Data management in environmental impact statements. Paper presented to Royal Australian Chemical Institute Environmental Science Group, Seminar on Environmental Impact Statement Management, Roseworthy, July 1986.

Jenkins, B.R. 1986. Environmental planning and engineering decisions. Paper presented to the 1986 Annual Engineering Conference, Adelaide, May 1986.

Jenkins, B.R. 1984. Environmental constraint mapping for the Moomba to Stony Point pipeline. Paper presented to the 1984 Transportation Conference, Institution of Engineers, Australia, Perth.

Jenkins, B.R. 1983. Benefit-cost analysis as a component in evaluation of alternatives. Paper presented at Conference on Engineering Management, Institution of Engineers, Australia, Brisbane 6-7 July 1983.

Jenkins, B.R. and Fuller, T.G. 1981. Appraisal of road-rail separation schemes using a planning balance sheet approach. Paper presented to the First National Conference on Local Government Engineering, Adelaide, 24-27 August. Institution of Engineers, Australia, National Conference Publication 81/7: 41-44.

Jenkins, B.R. and Woodhead, W.R. 1980. The role of environmental impact statements in engineering and planning decisions. Paper presented to The Engineering Conference, Institution of Engineers, Australia, Adelaide. 14-18 April. Conference Publication 80/2: 66-69.

Jenkins, B.R. and Ortolano, L. 1978. The placement of environmental specialists in engineering organizations. presented at Institution of Engineers Environmental Engineering Conference, July 1978.

Jenkins, B.R. and Sved, G. 1972. Multiple-panel flat plate analysis by finite element method. Paper presented to International Symposium on Computer-Aided Structural Design, University of Warwick.

Seminars and Workshops

Jenkins, B.R. (2018) Key Findings of Sustainability Analysis of Water Management in the Canterbury Region, Environment Canterbury, Christchurch, 6 April 2018.

Jenkins, B.R. (2018) Sustainability Analysis of Water Management in the Canterbury Region, Environment Institute of Australia and New Zealand, Christchurch, 5 April 2018.

Jenkins, B.R. (2018) Problem Structuring for Decision Making in Complex Systems: The Application of *Strategic Choice* to Water Management in Canterbury, Centre for System Studies Seminar Series University of Hull, 13 Feb 2018, and OR Society Public Policy Design Group, London, 14 Feb 2018.

Jenkins, B.R. (2016) The use of Lidar and remote sensing to reveal the urban form and water management of the Khmer civilisation (9-14th century), Geography Seminar Series, University of Canterbury, 11 July 2016.

- Jenkins, B. R. (2015) The Relevance of Archaeology to Current Water Management Issues, Far Horizons Tour: Cambodia and Vietnam, 18 Nov 2015 Preak Kdame, Cambodia.
- Jenkins, B. R. (2015) Sustainability analysis using nested adaptive systems: the application of panarchy to assess the effectiveness of management regimes of six New Zealand lakes, University of Hull, Centre for Systems Studies Seminar, 11 June 2015, Hull.
- Jenkins B.R. 2011. "Cross Tasman reflections on regional NRM planning", Workshop: Integrated Natural Resource Management and Regional Policy and Planning, HC Coombs Policy Forum ANU, Canberra, 4-5 May 2011.
- Jenkins B.R. 2011. "Canterbury Water Management Strategy: A Collaborative Governance Approach to Achieving Sustainable Water Management", Centre for Water Economics, Environment and Policy Workshop – Emerging Policy Issues in Water, 30 March 2011, ANU, Canberra.
- Jenkins B.R. 2011. "Regulatory Innovations in New Zealand Water Management". Australian National University, Regulatory Institutions Network Seminar, 3 Feb 2011, Canberra.
- Jenkins B.R. 2010. "Success of the RMA to Deliver Sustainable Outcomes" lecture to Resource and Environmental Management class University of Canterbury, 3 May 2010.
- Jenkins B.R. 2008. "Water Management in Canterbury" Ngai Tahu / NIWA Workshop on Water Resource Issues, Christchurch, 12-13 March 2008.
- Jenkins B.R. 2007. "Culture and Sustainability with particular reference to Water Management in Canterbury" presentation to the Ngai Tahu Water Forum, Christchurch, 3-5 February 2007.
- Jenkins B.R. 2005. "Code of ethics for environmental practitioners" presentation to EIANZ Ethics Seminar, Christchurch, 18 November 2005.
- Jenkins B.R. 2005. "Improving PM10 monitoring: the role of monitoring in management" presentation to NIWA Workshop on Monitoring Particulate Matter in Air", Christchurch, 10 October 2005.
- Jenkins B.R. 2005. "The increasing significance of measurement in water management" presentation to the Hydrological Society Technical Workshop, Timaru, 9 March 2005.
- Jenkins B.R. 2006. "Clean Air – Canterbury Experiences" presentation to the South Island Regional Councils Forum, Wanaka, 15-16 June 2006.
- Jenkins B.R. 2004. "Recent West Australian Experience – Management of Resources and Sustainable Development – Implications for the RMA" presentation to RMLA and NZPI members at the RMLA Canterbury Branch Seminar, Christchurch, 23 February 2004.

- Jenkins B.R. 2000. "Environmental Management Systems from a Regulator's Perspective" Royal Australian Chemical Institute Seminar on Environmental Management Systems Perth WA 18 October 2000 and Quality Assurance Services Breakfast Seminar 14 March 2000.
- Jenkins B.R. 2000. "Multiple-Use Planning and Management of the Resources and Environment of the North-West Shelf" Proceedings of the Workshop: Towards the Development of Options for an Integrated, Ecosystem-based Management Framework for the North-West Shelf 1 August 2000 Perth WA.
- Jenkins B.R. 1999. "Contaminated Sites Legislation" Contaminated Sites Public Forum, 11 December 1999 Perth WA.
- Jenkins B.R. 1999. "Monitoring and Quality Assurance Regulations" National Measurement Act Ministerial Working Group Stakeholder Forum 12 November 1999 Perth WA.
- Jenkins B.R. 1999. "The Role of Western Australia in the National Greenhouse Strategy" National Australian Gas Association Seminar 19 October 1999 Perth WA.
- Jenkins B.R. 1999. "Environmental issues for Future Perth" WA Planning Commission Future Perth Workshop 13 October 1999. Perth WA.
- Jenkins B.R. 1999. "Assessment Changes Proposed in the Amendments to the Environmental Protection Act" presentation to the Environmental Consultants Association Seminar 7 October 1999. Perth WA.
- Jenkins B.R. 1999. "Environmental Risk Assessment for Offshore Developments – Its Usefulness, Pitfalls and the Way Forward". Risk Engineering Society Seminar 16 September 1999.
- Jenkins B.R. 1999. "Risk Assessment – Its Pitfalls and its Potential" Australia – Japan Environmental Forum, 10 May Osaka, Japan.
- Jenkins B.R. 1999. "WA Greenhouse Strategy" Paper presented Chamber of Minerals and Energy Seminar - Responding to Climate Change" 23 March 1999, South Perth.
- Jenkins B.R. 1998. "Perth Bush Plan: Environmental Protection Features" Presentation to Phillips Fox Client Seminar, Perth.
- Jenkins B.R. 1998. "Bushland and the Environmental Protection Act" Paper presented to Urban Bushland Seminar "Managing our Wetlands" 16 October 1998 Perth.
- Jenkins, B.R. 1997. "Future Directions for Policy Relating to Bushland Retention" Save our Bushland Seminar, Wildflower Society of WA Perth, November 1997.
- Jenkins B.R. 1998. "Best Practice Environmental Regulation - WA Approach" Presentation to Australian Institute of Management Seminar 19 June 1998 Perth
- Jenkins B.R. 1998. "Current Issues in Environmental Management" Seminar, University of Western Australia Soil Science and Plant Nutrition.

- Jenkins, B.R. 1995. Environmental Impairment – the Regulator's View – paper Insurance Institute Seminar - Environmental Impairment, Perth, 26 July 1995.
- Jenkins, B.R. 1995. Options for the management of contaminated land and groundwater. Paper presented at the Mallesons Stephen Jaques Contaminated Land Seminar. Perth, 12 September 1995.
- Jenkins, B.R. 1995. Federal/State Policy Issues. Keynote address, Minerals Council of Australia 20th Annual Environmental Workshop – Managing Environmental Impacts – Policy & Practice, Darwin, 2 October 1995.
- Jenkins, B.R. 1995. Options for the management of contaminated land and groundwater. Paper presented at the Blake Dawson Waldron Seminar on Contaminated Sites Discussion Paper. Perth, 16 October 1995.
- Jenkins, B.R. 1993 Greening engineering graduates – is there a need? 4th Annual Faculty of Engineering Symposium, Environmental Issues in Engineering Education, UNSW, September 1993. Sydney.
- Jenkins, B.R. 1991. Changes for managers of engineering projects and Challenges of Sustainable Development for the Profession. The Chapman Association Seminar on Engineers and the Environment, Adelaide, 23 October 1991.
- Jenkins, B.R. 1986. Ways environmental factors can influence projects. Paper presented to the 1986 Environmental Engineering Conference in Melbourne, March 1986. Also reproduced in Transactions of Multi-disciplinary Engineering Vol. GE12 No. 1, April 1988, p 1-5.
- Jenkins, B.R. 1984. Environmental impact assessment for lignite mines and power stations: Australian case studies. Paper presented to the Seminar on the Role of Environmental Impact Assessment in Planning and Development, Ministry of Physical Planning, Housing and the Environment, Athens, Greece, October 1984. Also presented to the Australian Institute of Energy 1985 National Conference, Melbourne.
- Jenkins, B.R. 1984. The environmental impact assessment for the Olympic Dam project: a copper-uranium mine in the arid lands of South Australia. Paper presented to the seminar on Strategies for Environmentally Sound Development in the Mining and Energy Industries, Chania, Crete.
- Jenkins, B.R. 1976. Some organizational aspects of water resources planning organizations. Paper delivered to Seminar on Environmental Impact Assessment, Stanford University.

Reports and Blogs

- Jenkins, B. R. (2015) Sustainability analysis of five lakes in Greater Wellington region, WCFM Report 2015-005, University of Canterbury, Christchurch.
- Jenkins, B.R. (2013) Evolution of water governance models in New Zealand. Waiology NIWA's freshwater blog 27 March 2013,

<http://sciblogs.co.nz/waiology/2013/03/27/evolution-of-water-governance-models-in-New-Zealand/>.

Jenkins B.R. and Morrison-Saunders A. 2003. Review of strategic options for environmental approvals of transmission lines. Report to Western Power, Perth. School of Environmental Science, Murdoch University, Perth.

Public Presentations

Jenkins, B.R. (2016) Implications of Climate Change for Water Resources in Canterbury, presentation to Board of Directors Rangitata Diversion Race Management Limited, 3 May 2016, Christchurch.

Jenkins, B. R. (2015) Sustainable Water Management: Lessons from the Past, Issues for the Present, Prospects for the Future, U3A Rutherford, 11 September 2015, Christchurch.

Jenkins, B. R. (2015) Water: What it means to us and our environment on the east coast of the South Island, South Island Rotary Convention, 2 May 2015, Blenheim.

Jenkins B.R. 2010. Evidence to *Inquiry into the Environmental Effects Statement Process in Victoria*. Parliament of Victoria, Melbourne, 2 June 2010.

Jenkins B.R. 2009. "Water Quality in Christchurch Streams" Joint Public Meeting of Christchurch City Council and Environment Canterbury, 7 April 2009.

Jenkins B.R. 2009. "Proposed Funding Policy Changes" Presentation to Opuha Irrigators, Pleasant Point, 6 April 2009.

Jenkins B.R. 2008. "Brooklands Lagoon". Brooklands Community AGM, 1 September 2008.

Jenkins B.R. 2008. "The Natural History of Canterbury" Book Launch, University of Canterbury, 29 May 2008.

Jenkins B.R. 2007. "Ground and surface water issues in Selwyn District" presentation to the Environment Canterbury/Selwyn District Council Liaison Meeting, Darfield, 29 August 2007.

Jenkins B.R. 2007. "Regional Land Transport Strategy" presentation to Transit NZ Board, Christchurch, 2 August 2007.

Jenkins B.R. 2007. "Water wars – the challenges for town and country" presentation to Lincoln Hot Science Series Forum, Christchurch, 23 July 2007.

Jenkins B.R. 2007. "Climate change in Canterbury and its implications for water and other resources" presentation to the Christchurch East Rotary Club, Christchurch, 2 July 2007.

- Jenkins B.R. 2007. "Climate change in Canterbury and its implications for water and other resources" presentation to the Rangiora Rotary Club, Rangiora, 31 May 2007.
- Jenkins B.R. 2007. "Climate change – providing a local perspective and discussing Local Government's role and possible actions" presentation to Zones 5 & 6 of Local Government, Christchurch, 1 May 2007.
- Jenkins B.R. 2007. "Future direction for water management in Canterbury" presentation to the Belfast Rotary Club, Belfast Rugby Clubrooms, Christchurch, 3 April 2007.
- Jenkins B.R. 2006. "Water – lifeblood of the Canterbury Region" presentation to U3A, Christchurch, 18 December 2006.
- Jenkins B.R. 2006. "The role of Environment Canterbury from a Redcliffs resident's point of view" presentation to the Redcliffs Residents' Association, Moncks Bay Yacht Club, Christchurch, 6 December 2006.
- Jenkins B.R. 2006. "Future direction for water management in Canterbury" presentation to the Water Wisdom Society, Christchurch, 4 October 2006.
- Jenkins B.R. 2006. "Current Environment Canterbury activities/Annual Plan outline 2007/08" presentation to Canterbury Federated Farmers, Ashburton, 19 October 2006.
- Jenkins B.R. 2006. "The Styx and beyond - Environment Canterbury's role in water management" presentation to the Styx Living Laboratory AGM, Christchurch, 18 October 2006.
- Jenkins B.R. 2006. "Clean air and warm homes – are they both possible?" presentation to Engineers for Social Responsibility & the Institute of Professional Engineers, Christchurch, 10 October 2006.
- Jenkins B.R. 2006. "Environment Canterbury's role and position with water quality" presentation to the Upper Waitaki Water Quality Trust Water Quality Workshop, Twizel, 29 September 2006.
- Jenkins B.R. 2006. "Management of water issues in Canterbury" presentation to Te Runanga o Ngai Tahu Wananga, Christchurch, 17 September 2006.
- Jenkins B.R. 2006. "Environmental management issues and decision-making" presentation to members of the Management of Physical Earth Systems course, University of Canterbury, 11 September 2006.
- Jenkins B.R. 2006. "Future directions for water management in Canterbury" presentation to the Otago Regional Council Water Forum "Watering the Future - It's in our hands", Cromwell, 16-17 August 2006.

- Jenkins B.R. 2006. "Management of water issues in Canterbury" presentation to the Lincoln Hot Science Series Forum, Christchurch, 24 July 2006.
- Jenkins B.R. 2006. "Environment Canterbury's vision for Canterbury and dairying" presentation to Dairy Holdings Ltd, WestPac Sharemilkers' & Farm Managers' Conference, Ashburton, 1 July 2006.
- Jenkins B.R. 2006. "Regional management of water quantity and quality" presentation to Ilam/Upper Riccarton Residents' Association, Christchurch, 14 June 2006.
- Jenkins B.R. 2006. "Regional Water Information Day" presentation to Water Rights Trust and Irrigation NZ, Christchurch, 20 April 2006.
- Jenkins B.R. 2005. "Regional management of water quantity and quality" presentation to the North Canterbury Forest & Bird Protection Society, Christchurch, 12 October 2005.
- Jenkins B.R. 2005. "Funding the management of water" presentation to South Canterbury Federated Farmers, Timaru, 3 October 2005.
- Jenkins B.R. 2005. "Community involvement in storage proposals and Central Plains Water Scheme" presentation to the Malvern Hills Protection Society AGM, Coalgate, Canterbury, 25 August 2005.
- Jenkins B.R. 2005. "Irrigation issues" presentation to Mid-Canterbury Federated Farmers, Ashburton, 18 August 2005.
- Jenkins B.R. 2005. "Water for all?" presentation to the Southern Environmental Trust Public Forum, Christchurch, 17 August 2005.
- Jenkins B.R. 2005. "Biosecurity and pest management Canterbury style" presentation to the In Your Neighbourhood Seminar on Biosecurity, Christchurch, 27 July 2005.
- Jenkins B.R. 2005. "What is ECan doing?" presentation to the Rotary Club of East Christchurch, Christchurch, 27 June 2005.
- Jenkins B.R. 2005. "Regional management of water quantity and quality" presentation to the New Zealand Institute of Agricultural & Horticultural Science Convention, Lincoln University, 23 June 2005.
- Jenkins B.R. 2005. "Environment Canterbury water charging strategy" presentation to the SOLGM Top of the South Branch Meeting, 12 May 2005.
- Jenkins B.R. 2005. "The significance of water nationally and globally" presentation to U3A, Christchurch, 11 May 2005.
- Jenkins B.R. 2005. "Progress towards a performance-managed organisation delivering community outcomes" presentation to Directors and Managers Meeting, Environment Canterbury, Christchurch, 4 April 2005.

- Jenkins B.R. 2005. "Achievements of Community Outcomes" presentation to the Policy and Planning Group, Environment Canterbury, Christchurch, 17 March 2005.
- Jenkins B.R. 2004. Presentation to the Environment Canterbury Strategy Workshop, Christchurch, 8-9 November 2004.
- Jenkins B.R. 2004. "Management of water in Canterbury: release of PCE report "Growing for Good"" presentation, Christchurch, 5 November 2004.
- Jenkins B.R. 2004. "Direction of Environment Canterbury" presentation to the Association of Consulting Engineers, Christchurch, 20 October 2004.
- Jenkins B.R. 2004. "Achieving sustainability: partnerships for community outcomes. Travis Wetland and beyond" presentation to Travis Wetland Trust AGM, Christchurch, 19 October 2004.
- Jenkins B.R. 2004. "Water in Canterbury" presentation to the Rotary Club of Christchurch, Christchurch, 12 October 2004.
- Jenkins B.R. 2004. "Where is Local Government going?" presentation to the Local Government Customer Services Conference Christchurch, 7 October 2004.
- Jenkins B.R. 2004. "My first twelve months as Chief Executive of Environment Canterbury – what I learnt about water" presentation to the Ashburton Rotary Club, Ashburton, 5 October 2004.
- Jenkins B.R. 2004. Welcome address to delegates to Hazdent Expo 2004, Christchurch, 21 September 2004.
- Jenkins B.R. 2004. "Where do our Environment Canterbury rates go?" presentation to the Russley Probus Club, Christchurch, 23 August 2004.
- Jenkins B.R. 2004. "Sustainability framework for Environment Canterbury community outcomes" presentation to Directors' & Managers' Meeting, Christchurch, 10 August 2004.
- Jenkins B.R. 2004. "Environment Canterbury's role in pest management and bovine Tb control" presentation to Pest Management Liaison Committee Chairmen, Christchurch, 10 June 2004.
- Jenkins B.R. 2004. "Best Practice: facilitating better management" presentation to Section Managers' Meeting, Christchurch, 8 June 2004.
- Jenkins B.R. 2004. "Environment Canterbury's role in pest management and bovine Tb control" presentation to Council Workshop, Christchurch, 2 June 2004.
- Jenkins B.R. 2004. "Environment Canterbury's role in protecting rivers in Canterbury" presentation to the Orari River Protection Group, Geraldine, 25 May 2004.

- Jenkins B.R. 2004. "Water allocation" presentation to the Mid-Canterbury Federated Farmers Annual Conference, Ashburton, 14 May 2004.
- Jenkins B.R. 2004. "Water allocation" presentation to the South Canterbury Federated Farmers Annual Conference, Timaru, 6 May 2004.
- Jenkins B.R. 2004. "Waitaki management options" presentation to the Waitaki River Users Liaison Group, Oamaru, 6 May 2004.
- Jenkins B.R. 2004. "Draft Environment Canterbury Community Plan" presentation. April 2004.
- Jenkins B.R. 2004. "Environment Canterbury's approach to water management" presentation to Grasshoppers, Ashburton, 5 April 2004.
- Jenkins B.R. 2004. "The Regional Government's role" presentation to the Creating Livable Communities Course, University of Canterbury, 10 March 2004.
- Jenkins B.R. 2004. Presentation to the Probus Club of Burnside, Christchurch, 9 March 2004.
- Jenkins B.R. 2004. "Performance management and the Local Government Act" presentation to the Canterbury Quality Forum, Christchurch, 4 March 2004.
- Jenkins B.R. 2004. "Environment Canterbury's role in Project Aqua" presentation to open forum, Washdyke, 1 March 2004.
- Jenkins B.R. 2004. Presentation to the Kaikoura Area Environmental Flow Public Meeting, February 2004.
- Jenkins B.R. 2004. "Sustainable development issues in South Island water management" presentation to Mayors and MP's of the South Island, Rolleston, 20 February 2004.
- Jenkins B.R. 2004. Presentation to the Motunau Environmental Flows Public Meeting, Motunau, 16 February 2004.
- Jenkins B.R. 2004. "Performance management and productivity measures" presentation to Directors, Senior Managers and Portfolio Managers, Environment Canterbury, Christchurch, 16 February 2004.
- Jenkins B.R. 2004. Presentation to the Waipara Catchment Public Meeting, Waipara, 10 February 2004.
- Jenkins B.R. 2003. "Future direction for Environment Canterbury" presentation to the Environment Canterbury and Christchurch City Council Joint Seminar, Christchurch, 5 December 2003.

- Jenkins B.R. 2003. "Performance Management" presentation to Directors' and Manager' Meeting, Environment Canterbury, Christchurch, 2 December 2003.
- Jenkins B.R. 2003. "Recent West Australian experience – management of resources and sustainable development" presentation to the Ministry of Agriculture & Forestry, Wellington, 28 November 2003.
- Jenkins B.R. 2003. "Interaction Analysis" presentation to Environment Canterbury staff, Timaru, 15 October 2003.
- Jenkins B.R. 2003. "Interaction Analysis" presentation to Environment Canterbury staff, Christchurch, 13, 14 & 16 October 2003.
- Jenkins B.R. 2003. "Focus on Water - Environment Canterbury's approach to water allocation and planning" presentation to public forum, Timaru, 29 September 2003.
- Jenkins B.R. 2003. Address to Hornby Rotary Club, Christchurch, 18 September 2003.
- Jenkins B.R. 2003. "Rangitata water management" presentation to Ashburton Community Water Trust, Ashburton, 3 September 2003.
- Jenkins B.R. 2003. "Strategic issues for the Canterbury Region" presentation to the LTCCP Retreat for Councillors, Directors and Portfolio Managers, Christchurch, 2 September 2003.
- Jenkins B.R. 2003. "Sustainability as the pathway to prosperity" presentation to the Family Help Trust, Christchurch, 27 August 2003.
- Jenkins B.R. 2003. "Environment Canterbury as a shopping centre" presentation to Directors' and Managers' Meeting, Environment Canterbury, Christchurch, 27 August 2003.
- Jenkins B.R. 2003. "What is policy ...?" presentation to the Policy and Planning Group, Environment Canterbury, Christchurch, 20 August 2003.
- Jenkins B.R. 2003. "Cockburn Sound" presentation to the Avon Heathcote Ihutai Trust AGM, Christchurch, 11 August 2003.
- Jenkins B.R. 2001. "Western Australia's Approach to developing a Greenhouse Strategy" Presentation to the Commonwealth Joint Standing Committee on Treaties.
- Jenkins B.R. 2001. "Trends in Industry Environmental Regulation in Western Australia" presentation to the Kwinana Industries Council, Kwinana WA, 10 January 2001.
- Jenkins B.R. 2000. "Environmental Forensic Science" Lecture to Forensic Science Course Murdoch University 21 August 2000.
- Jenkins B.R. 2000. "Western Australia's position on Greenhouse" Presentation to the Senate Inquiry on National Greenhouse Strategy, 17 April 2000, Perth WA.

- Jenkins B.R. 1999. "Developments in Environmental Impact Assessment" Presentation to the Council of the Chamber of Minerals and Energy, 9 November 1999 Perth WA.
- Jenkins B.R. 1998. "Status of WA Greenhouse Response" Presentation to Environmental Consultants Association 20 July 1998 Perth.
- Jenkins, B.R. 1997. "Development of a Performance Management and Productivity Measurement Model in the context of an Enterprise Agreement", August 1997.
- Jenkins, B.R. 1997. "Application of Risk Management to Environmental Decision Making" AGM Risk Engineering Society, Perth, December 1997.
- Jenkins, B.R. 1996. "Issues for the waste management industry in Western Australia as we enter the 21st century". Paper presented at the Annual General Meeting of the Waste Management Association of Australia. Perth, 6 March 1996.
- Jenkins, B.R. 1995. Government's view of EIA's role in the decision-making process. Paper presented to School of Biological and Environmental Sciences, Murdoch University. Perth, 27 May 1995.
- Jenkins, B.R. 1995. Achieving best practice environmental management—the regulatory response. Paper presented at the AMIC Industry Workshop, Environmental Management – Industry Performance. Canberra. 31 May 1995.
- Jenkins, B.R. 1995. Environmental impacts of Perth's urban development, Harvard Club, Perth, 5 July 1995.
- Jenkins, B.R. 1995. Environmental Objectives for Agriculture – National Landcare Advisory Committee, WA Council Meeting, 7 August 1995.
- Jenkins, B.R. 1992. Current and Possible Future Trends in Environmental Regulation in Australia. Paper delivered to Short Course on Environmental Regulations, Compliance and Liability, University of New South Wales, 6–7 February 1992.
- Jenkins, B.R. 1992. Engineers and the Environment. Paper presented to Physics and Engineering Summer School, University of Adelaide, January 1992.
- Jenkins, B.R. 1991. EIS's—do they tend to be biased? Debates in environmental studies. Talk to students in environmental education project, University of Sydney. Presented 23 January 1991.
- Jenkins, B.R. 1990. Trends and future directions in environmental assessment. Lecture to South Australian Institute of Technology Built Environment Programme, 10 October 1990.
- Jenkins, B.R. 1987. Control mechanisms in relation to EIS – some international comparisons. Paper presented to Environmental Science Group Adelaide, June 1987.

Jenkins, B.R. 1984. Environmental considerations in water resources planning. Paper presented to a short course in Planning of Water Resource Systems. University of Adelaide.

Theses

Jenkins, B.R. 1983. Models of organization systems: Their relevance to organizational effectiveness and conflict. Masters thesis, Department of Administrative Studies, Monash University.

Jenkins, B.R. 1977. Changes in water resources planning: An organization theory perspective. PhD thesis, Stanford University, Civil Engineering Department.

Jenkins, B.R. 1974. The behaviour of reinforced concrete flat slabs. ME thesis, University of Adelaide, Civil Engineering Department.

Updated: 28 April 2018

STATEMENT OF EXPERIENCE, SKILLS, KNOWLEDGE, AFFILIATIONS AND QUALIFICATIONS

Bryan Jenkins

For the position of Independent Chair of the Eastern Region Alliance Water Board

1. Experience

The use of collaborative approaches to water management issues has been a major component of my professional experience. After the successful development of water quality criteria for Cockburn Sound (near Perth) using a collaborative approach when chief executive of the Western Australian Department of Environmental Protection, I was responsible for introducing collaborative approaches to water management in Canterbury when chief executive of the Canterbury Regional Council. Initial success at the tributary and catchment scale of resolving difficult issues, led to the collaborative approach to the formulation and implementation of the Canterbury Water Management Strategy. This represented a paradigm shift in water management in the region.

My experience in relation to the specific experience elements identified in the Candidate Briefing Notes are set out below.

Collaborative Work as a Board Member or Chair

Significant examples of collaborative work include:

- The development of the Canterbury Water Management Strategy: I was the principal architect of the approach, a member of the Canterbury Mayoral Forum (as chief executive of the regional council) that had oversight of the Strategy, and a member of the 26-person multi-stakeholder steering group for the Strategy.
- The development of an Environmental Protection Policy and Environmental Management Plan for Cockburn Sound – WA's most polluted marine water body. After the failure of the traditional approach putting out proposed criteria for public comment and receiving industry comment that the criteria were too stringent and from the public that the criteria were too lenient, I established a governance group of industry, community, local and state government representatives supported by a science group to agree the management criteria. The agreed criteria became the policy.
- The preparation of the Greater Christchurch Urban Development Strategy which involved the three local authorities and the regional council to develop a forty-year strategy for the Greater Christchurch area.

Experience as Independent Chair

- Project Chair, Development of National Environmental Protection Measure for the Assessment of Contaminated Sites for National Environmental Protection Council, 1997-2000
- Chair of independent expert panel to undertake a quality assurance review of the proposed NIWA Air Quality Research and Development Programme, 2007.
- Chair, Advisory Board for Waterways Centre for Freshwater Management, University of Canterbury and Lincoln University, 2009-10.

Strong Governance and Constructive Skills

Examples of governance roles include:

- Chair of the Western Australian Greenhouse Council
- Chair of the Standing Committee on Environmental Protection for ANZECC
- Chair of the WA State of Environment Reporting Reference Group
- Western Australian Planning Commissioner
- Chair of the NEPC/EnHealth/NHMRC Liaison group
- President of the Environment Institute of Australia and New Zealand
- Chair of the Avon Otakaro Network Community Trust

In addition to the constructive skills needed in the development of the Canterbury Water Management Strategy and the Cockburn Sound Environment Protection Policy, an example of constructive skills of particular relevance to ERA responsibilities is the negotiation with the chief executive of Christchurch City Council to address stormwater management at multiple spatial scales from the housing lot to the river catchment.

Stormwater Management

As well as tertiary training in hydrology and hydraulics, I have also had specific experience in introducing Water Sensitive Urban Design to Western Australia when chief executive of WADEP, addressing diffuse source pollution from rural and urban catchments as a major component of the Canterbury Water Management Strategy, providing advice to the Australian Government on its aid programme to China with respect to water and wastewater treatment plants. My experience also includes irrigation and water storage which were also major components of the Canterbury Water Management Strategy.

Familiarity with The Local Government Act

My experience with local government legislation was from working with the regional council in New Zealand. Regional councils and local authorities are established under the Local Government Act. On a quick review of the Australian legislation there are many parallels in the legislation as well as differences.

Business Experience in Commercial, Water and Technical Settings

Specific examples include:

I was Director responsible for managing Kinhill's Adelaide office of about 160 engineers and planners consulting in all disciplines of engineering (civil, mechanical, electrical and chemical), urban planning and environmental studies. Responsibilities included: direction of operations, co-ordination of marketing, accountability for Adelaide office performance to the Kinhill Board, and, financial and personnel management.

I was Chief Executive of the Department of Environmental Protection in Western Australia with technical responsibilities for preparing environmental policy, assessing the impacts of development proposals, preventing pollution from prescribed premises, developing management frameworks for environmental systems and waste management policy and regulation. I was also responsible for 350 staff and \$40 million per annum budget.

Dr Jenkins was Chief Executive for Environment Canterbury – the Regional Council for the Canterbury Region based in Christchurch. The prime role of the Canterbury Regional Council (known as Environment Canterbury) relates to its responsibilities for the management of the natural and physical resources for the Canterbury region on the east coast of the South Island of New Zealand from the Waitaki catchment in the south to Kaikoura in the north. I was responsible for 550 staff and a \$120 million per annum budget

2. Skills

My skills are both technical and managerial. With training in civil engineering, environmental planning, and public and private administration and professional experience in environmental management as well as management responsibilities in the private sector (managing a 160-person multi-disciplinary consulting office), state government (managing a 350-person organisation) and regional government (managing a 550-person organisation). I also have strong skills in working in a collaborative manner, particularly in regional management with local government. Please refer to my Curriculum Vitae for a comprehensive list of skills and projects.

3. Knowledge

I have been a leading practitioner in my fields of experience with extensive publications in books and refereed journals as well as professional conference and presentations to community interests. Please refer to my Curriculum Vitae for the list of professional publications and presentations.

4. Affiliations

My affiliations are as follows:

- Fellow, Environment Institute of Australia and New Zealand; currently the President and Chair of the Board of the Institute
- Fellow, Institution of Engineers, Australia; former Chairman, National Committee on Environmental Engineering
- Member, Editorial Board of the Australasian Journal of Water Resources

5. Qualifications

My qualifications are as follows:

- Bachelor of Engineering (Civil) with First Class Honours, University of Adelaide, 1969
- Master of Engineering, University of Adelaide, 1972
- Doctor of Philosophy, Environmental Planning (Water Resource Management), Stanford University, 1977
- Master of Administration, Monash University, 1983

Bryan Jenkins Bio



Bryan has recently retired from the position of Professor, Strategic Water Management at the Waterways Centre for Freshwater Management, a joint centre of the University of Canterbury and Lincoln University. The Centre provides undergraduate and postgraduate courses in water resources management and coordinates research across the universities in water resource issues.

Prior to this appointment he was chief executive of Environment Canterbury for more than seven years. Environment Canterbury is the regional council for Canterbury whose responsibilities include natural resource management. He was responsible for the introduction of collaborative governance concepts to the regional council including the development of the Canterbury Water Management Strategy.

Before coming to Canterbury, he was chief executive of the Department of Environmental Protection in Western Australia for seven years. Prior to that, he had more than 20 years' experience in environmental management consulting throughout Australia, South East Asia, India and China.

He has a PhD in environmental planning from Stanford University, a masters and first class honours degrees in civil engineering from Adelaide University and a master of administration from Monash University.

He is the President of the Environment Institute of Australia and New Zealand.

