



POSITION DESCRIPTION

Position:	Post Doctorate
Term:	Fixed term (2 years)
Status:	Full time
Location:	Lincoln
Directly reporting to:	Capability Leader, Lincoln

Purpose

To undertake research to understand how terrestrial landscapes can support climate adaptation in New Zealand whilst integrating objectives of climate mitigation, multiple ecosystem services provision and biodiversity conservation.

Primary Objectives

The position is in the Land Use & Ecosystems team within Manaaki Whenua. The team comprises more than 30 staff, at four sites across New Zealand. We lead research on greenhouse gases measurement and mitigation, above- and below-ground linkages of plants and soil biota with soil chemical and physical properties and impacts of land use, land use change, and climate change on ecosystem services providing knowledge and tools to wisely manage our natural resources and sustain ecological resilience.

This position will contribute to research on climate-smart landscapes for adaptation. Specifically, the researcher will:

- Advance conceptual understanding of how landscape configuration (composition and spatial pattern) affects trade-offs and synergies among multifunctional objectives of: ecological resilience, multiple ecosystem services including carbon sequestration and biodiversity conservation.
- Apply new developments of the LUMASS model to investigate the effects of alternative configurations of land use and management on these synergies and trade-offs depending on environmental and social context.
- Develop landscape scenarios for at least one regional case study in New Zealand.

Key Accountabilities

Independence, Reasoning and Decision Making

- Conducts work requiring independent judgement in the evaluation, selection, adaptation and modification of standard techniques, processes and criteria
- Refers to knowledge of precedents in a specialty area, principles and practice in related areas
- May require some planning guidance



Communication

- Contributes to referred publications and contract reports and may be the first author
- Contributes to science extension activities, and may take responsibility for some of these

External Relationships and Influence

- Often recognised externally as a source of advice in an area of expertise
- Able to obtain co-operation of others in complying with technical and other requirements of their tasks
- Contributes to national or regional change in environmental/social/economic outcomes

Leadership, Strategy and Planning

- Expected to lead the development of procedures and practices in areas where they have specialist expertise
- Contributes to planning and decision-making of contracts or programmes in which involved

Personnel and Financial Accountability

- Limited financial authority. Likely to manage equipment, small facility, or small project
- Expected to supervise and manage some tasks performed by other staff

Health, Safety and Environment Objectives

Applicable to all staff

- Take reasonable care to ensure your own health and safety in the workplace, and that no action or inaction on your own part harms others. Also ensure own activities comply with all relevant statutory and other Health, Safety and Environmental (HSE) requirements and apply appropriate CoPs, SOPs and other procedures.
 - Set an example of accountability and continual improvement in HSE practices.
 - All invited non-employees (visitors, volunteers, students, interns etc.) are hosted responsibly.
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Person Specification

Essential

1. Education/Qualifications and Learning

- Completed PhD in landscape ecology, ecosystem service science, functional ecology, physical geography or related fields

2. Knowledge, Skills and Experience

- Demonstrated experience and knowledge of ecosystem services
- Demonstrated experience and knowledge of spatial ecological processes
- Demonstrated experience and knowledge of global change science
- Demonstrated ability and experience initiating and/or implementing research projects

3. Personal Attributes

- Ability to work both independently and as part of a team
- Well organized, flexible, capable of independently and effectively planning time and resources
- Excellent written and oral communication skills
- The ability to work to high standards and within deadlines
- Refereed publications, including senior authorship, and presentation of research to external audiences (usually science conferences)

4. Competencies

- Data and knowledge synthesis methods including meta-analysis, systematic reviews and evidence assessment
- GIS and landscape modelling
- Statistical techniques for spatial analysis and modelling
- Proficient use of at least one major statistical modelling platform (R, GenStat...), including univariate and multivariate statistics
- Excellent independent writing of international scientific papers

Desirable

- Experience in interdisciplinary research projects
- Experience in climate change research
- Experience in scenario research
- Experience in dynamic landscape and/or land use modelling
- Experience in applied (spatial) optimisation

Interactions/Regular Contacts

Direct reports: Nil

Internal: Portfolio Leaders, Research Priority Area Leaders, Scientists and Technicians

External: Researchers at other Crown Research Institutes and Universities, Government Officials at the Ministry for the Environment (MfE), Ministry of Primary Industries (MPI), Regional Councils and other commercial customers

Delegations

Financial Delegations: No financial delegations

Human Resources Delegations: No HR delegations

Performance Criteria

Manaaki Whenua - Landcare Research has a Performance Appraisal & Development process which provides an opportunity for the employee and their manager to discuss and agree what contribution the individual employee is expected to make during a regular review period towards achieving the strategic goals and objectives of the Company.

Goals and objectives will be agreed annually. These will be consistent with the Key Accountabilities and Personal Attributes contained within this Position Description and will include performance measures (statements of achievement), together with any support and professional development required by the employee to achieve those objectives.

Working Environment & Physical Demands

Manaaki Whenua - Landcare Research undertakes to ensure its workplaces are safe and that no person is harmed as result of our work activities. The list below is provided to give an indication of the type of environment and potential hazards which may be encountered in this role.

<input checked="" type="checkbox"/> Office/computing	<input type="checkbox"/> Soils, potting mixes, composts	<input checked="" type="checkbox"/> Adverse weather/heat/sun
<input checked="" type="checkbox"/> Standing for long periods	<input type="checkbox"/> Sewage and wastewaters	<input type="checkbox"/> Alpine conditions
<input type="checkbox"/> Manual handling/lifting	<input type="checkbox"/> Bio solids	<input type="checkbox"/> Off-shore islands
<input checked="" type="checkbox"/> Hiking/tramping – easy	<input type="checkbox"/> Insects	<input checked="" type="checkbox"/> International travel
<input type="checkbox"/> Hiking/tramping – hard	<input type="checkbox"/> Microorganisms	<input type="checkbox"/> Polar environments
<input type="checkbox"/> Camping out – “roughing it”	<input type="checkbox"/> Pathogens	<input type="checkbox"/> Isolated environments
<input type="checkbox"/> River-crossings	<input type="checkbox"/> Animals – contact/handling	<input type="checkbox"/> Geothermal areas
<input checked="" type="checkbox"/> On-road driving	<input type="checkbox"/> Plants and fungi	<input type="checkbox"/> Urban environments
<input type="checkbox"/> Off-road 4WD/ATV driving	<input type="checkbox"/> Chemicals/toxins	<input checked="" type="checkbox"/> Rural/farm environments
<input type="checkbox"/> Charter flying/Helicopters	<input type="checkbox"/> Flammable liquids/gases	<input type="checkbox"/> Production forestry blocks
<input type="checkbox"/> Travel in Boats/Ships	<input type="checkbox"/> Dusts/fumes/vapours	<input type="checkbox"/> Mines/earthworks/excavations
<input type="checkbox"/> Construction work	<input type="checkbox"/> Compressed gases	<input type="checkbox"/> Old mine shafts/pits
<input type="checkbox"/> Operating tools & equipment	<input type="checkbox"/> Cryogenic substances	<input type="checkbox"/> Roadside work
<input type="checkbox"/> Deft/fine manual tasks	<input type="checkbox"/> Other	<input type="checkbox"/> Working at heights
<input type="checkbox"/> Microscopy	<input type="checkbox"/> Radioactive substances & equipment	<input type="checkbox"/> Noise (in environment or from equipment)
<input type="checkbox"/> Swimming/Snorkelling/Diving	<input type="checkbox"/> Electricity	<input type="checkbox"/> Confined space work
<input type="checkbox"/> Night time/shift work	<input type="checkbox"/> Lasers	<input type="checkbox"/> Firearms/hunters