

# Intermediate Groundwater Modeller



*To lead and conduct groundwater-related research and consultancy, with a focus on numerical modelling of hydrologic systems, and responsible for increasing revenue for GNS Science from these areas. In particular, this position is responsible for strongly contributing to the development of the GNS Groundwater Modelling Team related to numerical modelling of water-related systems (e.g. surface water and groundwater flow systems), and further enhancing its skill base, research capability and commercial consultancy.*

<b>Reports to:</b>	Groundwater Modelling Team Leader
<b>Department:</b>	Surface Geoscience
<b>Group:</b>	Science and Commercial Operations
<b>Employment Type:</b>	Permanent
<b>Location:</b>	Auckland, Dunedin, Lower Hutt, Wairakei
<b>Direct reports:</b>	Nil
<b>Budget:</b>	Nil
<b>Career Path:</b>	Research
<b>Job Family:</b>	Research
<b>Career Step:</b>	Scientist 2 (Step 6)
<b>Date:</b>	September 2024

## Position priorities and responsibilities

### Scientific Research

- Design, secure funding for, and lead research in the field of Groundwater Modelling and its application to decision support water management tools.
- Plan research directions, develop proposals and implement new approaches to scientific inquiry.
- Establish new projects to enhance capabilities in areas such as environment and climate change, land use change, and associated environmental impacts (groundwater resource assessments, the effects of land use and climate change on groundwater quality and quantity, and groundwater as a drinking water supply).
- Assess the feasibility and soundness of proposed experimental approaches.
- Develop new or improved techniques and procedures.

## Programme/project management

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- Lead projects or liaise with the Programme Leader regarding workload and capability to ensure successful project execution and delivery on time.
- Coordinate funding applications for group(s) of researchers.
- Manage the financial and administrative aspects of programmes/projects including project management plan, budget, and resource allocation.
- Undertake projects for your Team Leader and Department Manager as and when required.

## Commercial

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- Assist staff to understand GNS Science commercial business environment.
- Identify commercial opportunity for GNS Science by generating innovative ideas and develop project proposals to secure funding and contracts.
- Provide expert advice to clients and undertake and project manage commercial groundwater modelling projects that meet scope, timeframe, and budget as required.

## Communication

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- Publish research results through authoring or co-authoring scientific publications, papers, or reports.
- Present at conferences and seminars representing GNS Science within area of expertise.

## Leadership

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- Lead funding applications and oversee the development and leadership of new research projects focused on groundwater.
- Act as a scientific adviser to staff and quality peer reviewer.
- Act as a mentor for less experienced team members.

## Responsibilities of all staff

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- Comply with all GNS Science policies and procedures.
- Contribute to making GNS Science a healthy and safe place to work by complying with the responsibilities and accountabilities outlined in the Health and Safety Management System Framework.

The responsibilities of this position will change over time to respond to changing needs. The incumbent will need the flexibility to adapt and develop as the company and its environment evolves.

## Key working relationships

### Internal:

- Groundwater Modelling Team Leader
- Surface Geosciences Department Manager and teams
- Environment and Climate Theme Leader
- GNS programme and project leaders
- Members of other Groups outside of the Science Group

**External:**

- Local government agencies and regional councils (e.g., senior policy planners, environmental and water resources managers and senior project managers)
- Government agencies (e.g., Ministry for the Environment)
- Other Crown Research Institutes (CRIs), national and international research organizations including universities.

## Person specification

### Skills, knowledge and attributes

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- In depth knowledge and track record in:
  - using industry standard groundwater modelling software for water resource evaluation
  - quantifying uncertainty of model output
  - and research and technology transfer business environment in which a Groundwater Modelling Team operates would be an advantage.
- Ability to develop:
  - groundwater flow models (including integrated surface water and groundwater models) and coupled nutrient transport models.
  - code for linking models and pre-processing input data sets and post processing model outputs.
- Build mathematical models, undertake model parameter and predictive uncertainty analysis, and use parameter estimation software, for example PEST and PEST++.
- GIS and coding skills and experience, particularly python coding would also be an advantage.

### Qualifications and Experience

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**Essential:**

- PhD in numerical ground water modelling (or related topic) OR at least 5 + years' demonstrated work experience in groundwater modelling and / or related consulting fields.
- A demonstrated publication record based on innovative research achievements.
- Experience in contributing to successful proposals for research funding.
- Demonstrated coding skills.
- Proven experience in leading groundwater projects, writing successful research proposals, and working closely with stakeholders to develop and refine business strategies.

### Other requirements

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**Essential:**

- Good computer skills.
- Excellent oral and written English communication.
- A valid full driver's licence.

**Desirable:**

- First aid certificate

## Performance dimensions

At a high level, GNS Science recognises six **performance dimensions**: three relate to technical capability, one relates to leadership (if applicable) and two relate to the way we work. Below are the general expectations that are the minimum standards expected of all staff. There are also expectations that specifically relate to the career step associated with the role; you can find these on GNS Online.

### Technical capabilities

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#### Scope, complexity and innovation

- Enduring commitment to maintaining and developing skills and knowledge in area of expertise.
- Both the ability and desire to apply appropriate rigour, principles and practices to deliver quality work in a cost-effective manner.
- Acts in a manner that conveys high personal and professional standards.
- Open to coaching and feedback – incorporates suggestions to find better ways of doing things (to improve own and GNS Science performance).

#### Contribution to GNS Science / profession

- Establishes and maintains effective and collaborative working relationships – with colleagues and external individuals and groups.
- Both the ability and commitment to work in a culturally responsive and inclusive manner; respecting and valuing the diverse perspectives of individuals and groups.
- Takes an interest in early career colleagues, graduates and students – provides coaching and/or mentoring as appropriate. Supports initiatives to promote science careers.
- Prevents harm to self and others by carrying out duties safely and responsibly.

#### Delivery of work

- The ability and commitment to deliver pieces of work and projects on time to required quality, cost and benefit parameters.
- The application of appropriate project management rigour, principles and practices to delivering quality projects in a cost-effective manner

### Behavioural expectations

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#### Manaakitanga – we do the right thing

Champions a positive working culture. Works and interacts with colleagues, external partners, stakeholders and customers in a way that is consistent with our values:

- We are **CONNECTED** in our purpose; with each other, with partners and stakeholders and with our communities.
- We are **INSPIRED** by our work to explore, challenge, innovate and aim higher.
- We are **EMPOWERED** to be our best – valued for our differences, encouraged to contribute and enabled to grow and develop.

#### Bicultural commitment

- As a Crown Research Institute, GNS Science is committed to partnering with iwi/hapū and Māori communities and agencies to achieve their science aspirations.
- We do this in a way that is culturally appropriate (**tikanga**) and honours Māori and non-Māori worldviews (**te ao**).

These expectations are intended to support and guide the development of individual staff.