

# FOREST DYNAMICS MODELLING RESEARCH SCIENTIST

Do you have experience researching the effects of climate change on forested ecosystem dynamics, disturbance ecology, or vegetation modelling? If so, bring your unique blend of skills to this important role within the Ministry of Natural Resources and Forestry.

## **OPS commitment to diversity, inclusion, accessibility and anti-racism**

We are committed to build a workforce that reflects the communities we serve and to promote a diverse, anti-racist, inclusive, accessible, merit-based, respectful and equitable workplace.

We invite all interested individuals to apply and encourage applications from people with disabilities, Indigenous, Black, and racialized individuals, as well as people from a diversity of ethnic and cultural origins, sexual orientations, gender identities and expressions.

Visit the [OPS Anti-Racism Policy](https://www.ontario.ca/page/ontario-public-service-anti-racism-policy) < <https://www.ontario.ca/page/ontario-public-service-anti-racism-policy> > and the [OPS Diversity and Inclusion Blueprint](https://www.ontario.ca/page/ops-inclusiondiversity-blueprint) < <https://www.ontario.ca/page/ops-inclusiondiversity-blueprint> > pages to learn more about the OPS commitment to advance racial equity, accessibility, diversity, and inclusion in the public service.

We offer employment accommodation across the recruitment process and all aspects of employment consistent with the requirements of Ontario's [Human Rights Code](http://www.ohrc.on.ca/en/ontario-human-rights-code) < <http://www.ohrc.on.ca/en/ontario-human-rights-code> >. Refer to the application instructions below if you require a disability-related accommodation.

## **What can I expect to do in this role?**

In this role, you will:

- conduct research in the development of quantitative, statistical and process models to understand the impacts and adaptation of ecosystems to pressures such as climate change and forest disturbance
- assemble, manage, manipulate, integrate, query and format large geospatial, environmental, climatic, edaphic, and biological data sets
- publish research results in scientific journals, technical reports, and other publications and present at scientific meetings, workshops, training courses, seminars, and other appropriate forums
- communicate research results and applications to managers, foresters, collaborators and other clients

You will support one of three research projects, supported by lead research scientist(s):

1. Using machine learning and structural equation modelling to elucidate drivers of boreal forest succession to inform the stand and site guide
2. Using spatial modelling of wildfire, budworm and harvest to forecast boreal forest compositional dynamics to inform the landscape guide
3. Developing data-driven/machine learning models to synthesize spatiotemporal data and disentangle factors and processes driving boreal forest dynamics

**Location:** North York, Peterborough, Sault Ste Marie, South Porcupine, Thunder Bay

## **How do I qualify?**

### **Mandatory**

- Master's degree or Ph.D. in forestry, ecology or related science, with specialization in forest management, forest growth and dynamics modelling

### **Technical Expertise**

- Knowledge and proven capacity to develop and use modelling applications in relation to fields of research such as forest dynamics, forest ecology and management, and forest growth and yield
- Expertise in developing wood product life-cycle inventory and life-cycle assessment models
- Expertise in research methods for the development of advanced quantitative, statistical, and process models related to impacts and adaptation of ecosystems to pressures such as climate change, forest management, fire, and insects

### **Computer Proficiency**

- Experience and knowledge of computer programming techniques and languages (e.g., R, Python, Visual Basic, C++, MATLAB), and data science to develop efficient workflows and develop, calibrate and adapt models of forest dynamics, disturbance, growth, development and succession under different climate and forest management scenarios
- Advanced skills in statistical and mathematical methods and modelling techniques (e.g., machine learning, structural equation modelling) for modelling forest dynamics
- Knowledge of database management (Access, SQL Server), spreadsheets, word processing, and graphics software to develop, acquire and maintain databases for specific projects/programs, and to produce analyses of data and prepare reports on findings using a personal computer
- Knowledge and skills in creating programs or algorithms to parse data, performing exploratory data analysis and identifying patterns/relationships and data visualization

### **Communication and Interpersonal Skills**

- Ability to communicate effectively with staff from forest industry, other Ministries, other governments, and non-government organizations and co-ordinate activities to achieve a common goal
- Proven experience in scientific writing and publications to write scientific papers and publish research results in scientific journals

### **Planning and Organizational Skills**

- Skill in organization and planning to develop and implement programs of a complex nature and produce deliverables to a fixed timeline with minimum supervision

**Salary Range:** \$1,079.70 - \$1,305.55 Per Week

### **Additional Information:**

- 1 Temporary, duration up to 6 months, 1235 Queen St E, Sault Ste Marie, North Region or 421 James St S, Thunder Bay, North Region or 5775 Yonge St, North York, Toronto Region or 300 Water St, Peterborough, East Region or 5520 Hwy 101 E, South Porcupine, North Region

Please apply online, only, at [www.ontario.ca/careers](http://www.ontario.ca/careers), quoting **Job ID 185443** by **Friday, August 19, 2022**. Please follow the instructions to submit your application. Faxes are not being accepted at this time.

If you require accommodation in order to participate in the recruitment process, please contact us at [www.gojobs.gov.on.ca/ContactUs.aspx](http://www.gojobs.gov.on.ca/ContactUs.aspx) to provide your contact information. Recruitment Services staff will contact you within 48 hours. Only those applicants selected for an interview will be contacted.

The Ontario Public Service is an inclusive employer. Accommodation will be provided in accordance with Ontario's *Human Rights Code*.

[www.ontario.ca/careers](http://www.ontario.ca/careers)