IDENTIFICATION

Department	Position Title	
Environment and Climate Change	Watershed Partnership Scientist	
Position Number	**Community**	**Division/Region**
23-12865	Yellowknife	Water Monitoring and Stewardship/HQ

PURPOSE OF THE POSITION

The Watershed Partnership Scientist (Scientist) provides expert advice and recommendations on water management and monitoring as well as conducts water monitoring, data analysis and reporting to meet the water management goals of the Division, Department, Minister and other partners such as communities, Indigenous governments and Indigenous organizations and water partners. The incumbent is the principal scientist accountable for the implementation and delivery of the Northwest Territories (NWT)-wide Community-based Water Quality Monitoring program (CBM).

SCOPE

Located in Yellowknife and reporting to the Senior Aquatic Quality Scientist (Senior Scientist) in the Water Monitoring and Stewardship Division, the Watershed Partnership Scientist is required to have a broad spectrum and depth of knowledge related to aquatic and terrestrial systems. Expertise is required in multiple disciplines of biological, physical and chemical sciences. The incumbent is responsible for engaging with communities and Indigenous governments and Indigenous organizations to plan, design and implement water and aquatic monitoring and studies that assess aquatic ecosystem health and variability. These monitoring programs and studies are used to enhance the understanding of the health of aquatic ecosystems and support the implementation the NWT Water Stewardship Strategy. This position also investigates opportunities to support community and partnership programs that lead to a greater understanding of aquatic ecosystem of the Mackenzie River Basin.

The Department of Environment and Climate Change (ECC) works to promote and support the sustainable use and development of natural resources and to protect, conserve and enhance the NWT environment for the social and economic benefit of all residents.

The Water Monitoring and Stewardship Division bears the primary roles and responsibilities related to water research and monitoring, providing advice to co-management partners, water quality and quantity data analysis and interpretation, and water stewardship and planning which includes collecting and sharing water monitoring data and results and increasing community capacity for water sampling and interpretation. The Division, in cooperation with Environment and Climate Change Canada (ECCC) and other federal and territorial departments, is responsible for collecting and interpreting information about water quantity and quality in the NWT. The Division works with its water partners on a collaborative approach to water stewardship and planning in the NWT, including transboundary water management agreements.

The Northwest Territories (NWT) is the ultimate downstream jurisdiction in the Mackenzie River Basin (MRB). The MRB drains an area that consists of a fifth of Canada's land mass. It is one of the largest river basins in the world and is subject to industrial activity which has the potential to influence water flow and quality. It is experiencing the brunt of climate change as one of the nation's northern watersheds. Healthy and abundant water is needed for healthy ecosystems. If water quality is exceptional, the health of fish, wildlife and all flora is preserved. For humans, good quality water is necessary for drinking and food preparation. Guidelines and standards for assessing water quality are available for water quality assessments across the globe, including Canada. The expertise of the Scientist and others from within the unit can help to answer questions about the health of the water and the potential impact of development on community public water supply sources. The incumbent is responsible for building and maintaining partnership to ensure the CBM program is appropriately meeting the needs and questions of our community partners.

The Scientist works within a legislative, regulatory and policy framework that includes the: *Waters Act*, *Environmental Protection Act*, NWT Water Stewardship Strategy and Action Plan, 2030 NWT Climate Change Strategic Framework and Action Plan, Strategic Plans, as well as other GNWT and ECC policies and programs. The incumbent informs the Department's research agendas or other monitoring programs that can assess environmental change in an effective and timely manner. In addition, the incumbent conducts research to identify emerging innovative ecosystem management approaches, methods for the development of ecosystem indicators and the development of collaborative water monitoring programs. The Department of Environment and Climate Change (ECC) works to promote and support the sustainable use and development of natural resources and to protect, conserve and enhance the NWT environment for the social and economic benefit of all residents. A holistic approach is necessary for the assessment of ecosystem health and ecological integrity, taking into account science as well as considering local and Indigenous ecological knowledge.

The Scientist works closely with the Senior Aquatic Quality Scientist as well as other colleagues the Division. The incumbent also works collaboratively with colleagues within the Department as well as with other Departments such as Municipal and Community Affairs and Health and

Social Services. The Scientist occasionally collaborates with federal scientists and experts from Environment and Climate Change Canada (ECCC) and other provinces/territories scientists and academia. The Scientist conducts regular engagement with communities and the public because of the interest of NWT residents in water quality and aquatic ecosystem health.

The Scientist has significant latitude in their role provided that best practices in data collection, research and scientific methodology are complied with while supporting the needs of NWT departments, communities and residents. The incumbent has a lead role in overseeing data analysis, reporting, data sharing and manages contracts or contributions related to watershed management, water monitoring and research.

RESPONSIBILITIES

1. **Develops, manages and leads the implementation of the Community-based Water Quality Monitoring (CBM) Program.**
   - Develops partnerships with Indigenous governments and Indigenous organizations, communities, co-management boards, academic institutions, and others to collect information necessary for the implementation of the CBM program across the NWT.
   - Plans and leads logistically complex field-based research and monitoring projects and programs, often in remote areas.
   - Prepares scientific and technical reports outlining the findings of water monitoring programs and aquatic health research in the NWT, which can include data reports, scientific papers, or plain language summaries, graphs, charts and other materials.
   - Conducts water quality trend assessments for the CBM program in collaboration with external agencies and scientists (e.g. ECCC, other jurisdictions, contractors).
   - Conducts periodic review of the CBM program and data to ensure that the monitoring sites and frequencies are appropriate and redundancy is reduced.
   - Supervises and mentors summer students working on the CBM program.
   - Manages administrative aspects of the program including: the timely acquisition of permits and licenses of field-based projects, financial tracking, preparation of service contracts, and engaging with local communities and land managers to share information and obtain clearances.
   - Leads operational planning exercises to ensure the monitoring program remains current, cost-effective and appropriate to address community questions and/or concerns. Develops new and/or modified methods, practices, and techniques.
   - Prepares service contracts, contribution agreements and purchase orders for environmental laboratory analyses and/or the procurement of experts in analysis and interpretation of scientific data.
   - Co-develops funding proposals, including budgetary submissions, to support community-based monitoring and research projects in the NWT.
   - Ensures cost-effective, efficient, and safe work practices in the field and office.

- Organizes and conducts program workshops and training exercises as required.
- Ensures water monitoring data in the NWT is accessible to the public and is responsible for uploading data on the Mackenzie DataStream platform.
- Leads the development of non-technical promotional and educational materials about water quality and aquatic health in the NWT with colleagues in communications and public outreach.

2. **Provides timely expert advice on complex water management matters to management, Directorate, the Minister, and other government departments and agencies.**
   - Researches and evaluates current national or international current practices in watershed management including the incorporation of local and Indigenous ecological knowledge and community-led approaches, evaluating these for benefit to the NWT. Recommends studies or approaches to be taken.
   - Manages watershed projects and initiatives undertaken to advance the objectives of the Department as well as water partners, ensuring appropriate scientific protocols are used and project tasks are completed on schedule within the allocated budget.
   - Formulates and promotes systems to apply innovative or current standards in watershed management, including cumulative effects management principles and approaches, to land use planning or water stewardship initiatives undertaken within the NWT.
   - Researches and monitors current development project proposals (primarily energy or other resource extraction, but also industrial, commercial/residential, municipal) within the Mackenzie River Basin (in and adjacent to the NWT) that may have potential impactson the NWT.
   - Assesses potential impacts of development on ecosystems and aquatic resourcesand advises on issues of concern to the GNWT and its partners.
   - Provides input into research and monitoring agendas or programs developed to enhance understanding of land and water management practices related to northern ecosystems, identifying ecosystem research and monitoring gaps.
   - Ensures knowledge and advice regarding complex matters related to watershed management are strategically communicated to both GNWT and partner agencies.
   - Presents complex scientific and technical matters through informative briefings, comprehensive reports, Decision Papers, or other materials in appropriate formats for a variety of audiences such as colleagues, senior management, academics and water partners including the general public or others with an interest in watershed management.
   - Recommends actions to advocate sound watershed management approaches within the NWT, such as through strategic initiatives including the GNWT Knowledge Agenda.
   - Prepares guidelines for and assists community governments with watershed management programs and projects to conserve nearby land or water resources, such

as community public water supply sources.

3. **Participates on departmental, interdepartmental, regional or national working groups and committees that focus on watershed management or provides watershed management focus to other science matters.**
   - Establishes and advances Departmental interests in ecosystem-based management through departmental, interdepartmental, and intergovernmental initiatives and working groups related to the implementation of watershed management principles.
   - Fulfills NWT obligations on technical committees associated with water-related community based or guardian type monitoring programs.
   - Promotes GNWT strategic interests in periodic or ongoing initiatives of: the Canadian Council of Ministers of the Environment; the GNWT Interdepartmental Committee on Drinking Water and Waste; the Gordon Foundation and Mackenzie DataStream; the GNWT Knowledge Agenda working group; and other NWT or multi-party committees.
   - Working closely with the federal government and partnership agencies, manages all initiatives related to watershed management and integrated watershed management as promoted through an NWT Water Stewardship Strategy, including regional land use planning.

4. **Assesses potential impacts of development on the ecosystems and aquatic resources of the NWT.**
   - Conducts monitoring and reviews reports and information to ensure impacts from development on the ecosystem can be detected and that ecosystem health is protected.
   - Applies consistency in recommending approaches to promote water stewardship and ecosystem best management practices.
   - Assists in the development of aquatic ecosystem policies, strategies, legislation, standards, guidelines, directives, and codes of practice as it relates to watershed management and resources protection.
   - Manages initiatives to ensure that ecosystem-based management expertise is provided in planning or regulatory agencies in adjacent jurisdictions.

WORKING CONDITIONS

Physical Demands

The incumbent will usually work in a normal office environment with intermittent field work. In the summer field season, the incumbent will be hiking over rough terrain with a backpack and collected samples (up to 50 pounds) for 8 hours per day, up to 3 weeks per year; will be travelling in small aircraft and helicopters for up to 8 hours per day, up to 3 weeks per year; will be travelling in small watercraft for up to 1 hour per day, up to 3 weeks per year. In the winter field season, work involves travelling by snowmobile, work at extreme cold temperatures, and operation of one-person ice augers or other equipment.

Environmental Conditions

The incumbent will usually work in a normal office environment with intermittent field work. While in the field, the incumbent can be exposed to rapidly changing weather and to conditions such as cold (hypothermia), intense sun (burn), wind, rain; helicopters, airplanes, ATVs, road vehicles (physical injury, hearing loss, gas/fumes); insects and insect bites; dangerous, unforeseen, uncontrolled field situations such as vehicular accidents, attack by wild animals, falls; and other accidents while on traverse (cuts, muscle sprains, broken bones, etc.). The incumbent will be exposed to these environment conditions every day up to three weeks per year.

The incumbent will be exposed to noise from helicopters, airplanes, ATVs, snowmobiles, and outboard motors as well as other equipment such as ice augers, chainsaws, firearms, and generators. The incumbent will be exposed to these noise conditions every day up to three weeks per year.

Sensory Demands

The incumbent will usually work in a normal office environment with intermittent field work.

Mental Demands

The incumbent will usually work in a normal office environment with intermittent field work. There is expectation of some field-based work. While in the field, the incumbent is subject to substantial disruption of family life due for field work in distant locations. The incumbent is also responsible for the continuous management of scientific and logistical activities and safe work practices while in the field, including the prediction and mitigation of potentially hazardous situations and managing personality conflicts amongst field staff. The incumbent will be exposed to these demands every day up to three weeks per year.

The incumbent is also required to present research or work plans to scientific peers, collaborators, community groups, etc. and may attend workshops or research meetings in southern Canada two to four times per year.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of current and emerging watershed management approaches, with specific knowledge related to sustainable resource and environmental management, integrated watershed management, and collaborative or multi-party water monitoring programs.
- Knowledge of NWT scientific and research sector and operating environment, considering geographic, industrial and community development needs.
- Knowledge of NWT legislation, Indigenous governments and Indigenous organizations and land claims, institutions, government systems and communities.

- Knowledge of the cross-cultural environment and communicating and developing effective working relationships with Indigenous people in communities, Indigenous governments and Indigenous organizations and other agencies.
- Knowledge and experience in watershed management planning, policy and program development, preferably within a northern environment.
- Field knowledge of ecological monitoring and ecosystem studies, as well as research, scientific writing, and editorial skills.
- Ability to address complex problems that may require multi-disciplinary and multi-jurisdictional solutions.
- Excellent oral and written communication skills and proven ability to express ideas about ecosystem objectives and research, for political and senior government members, public and scientific target audiences.
- Ability to operate in a team environment with multiple partners, as well as work independently towards partnership outcomes.
- Strong organizational, project management, risk assessment, analytical and critical thinking skills to enable good judgment and priority setting.
- Ability to manage politically sensitive and controversial matters related to land and water management, where tact and diplomacy are required.
- Knowledge of computer software including word processing, database, and electronic mail and communications programs. Experience with GIS is an asset.
- Ability to take broad direction, setting priorities to maintain strategic initiatives of the division, coordinating many projects.
- Ability to commit to actively upholding and consistently practicing personal diversity, inclusion, and cultural awareness, as well as safety and sensitivity approaches in the workplace.
- Supervisory skills to oversee contractors and casual staff, as well as mentor staff.

Typically, the above qualifications would be attained by:

Completion of a graduate (M.Sc.) degree in an environmental science discipline, with at least two (2) years progressive experience in watershed management related to field monitoring and research programs, datamanagement and analysis and reporting of scientific findings.

Equivalent combinations of education and experience will be considered.

ADDITIONAL REQUIREMENTS

Position Security (check one)

☒ No criminal records check required
☐ Position of Trust – criminal records check required
☐ Highly sensitive position – requires verification of identity and a criminal records check

French language (check one if applicable)

☐ French required (must identify required level below)

Level required for this Designated Position is:

ORAL EXPRESSION AND COMPREHENSION

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

READING COMPREHENSION:

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

WRITING SKILLS:

Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐

☐ French preferred

Indigenous language: Select Language

☐ Required

☐ Preferred