



IDENTIFICATION

Department	Position Title	
Environment and Climate Change	Geographic Information Systems & Wildfire Data Technician	
Position Number	Community	Division/Region
23-12941	Fort Smith	South Slave

PURPOSE OF THE POSITION

The incumbent integrates the use of Geographic Information Systems (GIS) technology into the information management processes that are used to support program delivery in the South Slave Region. The incumbent provides a broad range of geospatial services to both the Forest Management and Wildlife Management Programs within the South Slave Region and other Regions. Working in a team environment, the incumbent provides geospatial data essential to regional decision-making. In addition, the incumbent maintains wildfire, forestry, fire mitigation and wildlife geospatial databases and develops products using that data.

SCOPE

This position is located in the South Slave Regional Office of Environment and Climate Change (ECC) in Fort Smith and reports to the Manager, Forestry Operations. The incumbent provides information management support for geospatial data in all stages of regional program development and delivery. This includes the integration of GIS technology into initial program planning, development, implementation, and audit.

The Incumbent works within a team environment with other positions within the South Slave Region, with responsibilities for developing and maintaining wildfire, forestry, fire mitigation projects and wildlife geospatial databases. Liaison with staff within the Region, Forest Management Division and other regions/divisions is also required to effectively achieve business objectives related to the use of GIS in regional program development and delivery.

The incumbent provides geospatial data for a variety of regional programs. This includes collecting, creating, editing, digitizing, and storing geospatial data and associated attributes, carrying out analysis on the data, developing cartographic products, reports, charts, and other forms of data products. In addition, the incumbent coordinates the regional collection and input of wildfire and forestry geospatial data into SPARCS, EMBER, and Land Resource Manager



(LRM).

This position also requires the incumbent to participate in regional field programs for wildfire, forestry and wildlife programs.

The decisions made by the incumbent can directly impinge on the quality and effectiveness of the Region's geospatial database. Improper decisions in the management of geospatial data can negatively impact the accuracy and level of information available for regional management decision-making and the credibility of decisions related to implementation of regional program delivery. It may also directly impinge on the region's managerial responsibility to deliver services to divisional units, and industrial and community-based clients.

Significant work is required in the development and management of geospatial data to enable the region to effectively and efficiently utilize the GIS capabilities available today. The incumbent is responsible for ensuring that regional program delivery best utilizes the technology available today.

RESPONSIBILITIES

1. Developing and maintaining geospatial data and acts as a custodian of the South Slave Region's geospatial databases by:

- Creating, editing and quality control of geospatial datasets and associated metadata related to wildfire, forestry, fire mitigation and wildlife management that are used by regional staff and ENR divisions.
- Ensuring integrity of geospatial data collected by seasonal, contract and permanent staff by performing frequent audits of data coordination and input.
- Assisting regional program delivery with the collection/conversion of survey and plot data into suitable digital format, management of data storage, compilation, and analysis.
- Assisting regional program delivery with the compilation of data, identification of data gaps, and development of strategies to achieve a comprehensive database for regional activities.
- Distributing available geospatial data to regional offices, headquarters, and external clients.
- Assisting regional and headquarters staff with development of databases such as SPARCS for wildfire operations and Land Resources Manager for forestry operations.
- Assisting with the evaluation and implementation of procedures for integrating non-standard and standard inventory or operational geospatial into GIS.

2. Creating geospatial products and project deliverables by:

- Producing finished cartographical products for distribution to regional staff, Indigenous Government Organizations, other Government Departments, and other regional clients.
- Creating electronic and hard-copy maps for wildfire incidents, forestry harvest areas,



FireSmart projects, Shovel-Ready projects, Community Wildfire Protection Plans, Interface Response Plans and wildlife surveys.

- Creating custom maps and templates as required by other users in the region and outside agencies.
- Representing, customizing, and ensuring data quality through complex queries, integrated attribution, and relational tabular joins.
- Archiving and storing geospatial data to central GNWT GIS servers and applications.

3. Providing support to Wildfire Management by:

- Providing support to regional forest management staff in documentation of wildfires in EMBER and SPARCS.
- Providing technical support to fire managers in the field as required.
- Conducting wildfire detection flight to assess and map new and existing wildfires.
- Entering, manipulating, refining, and rendering raw data to create wildfire maps.
- Assessing Values-at-Risk by collecting data such as coordinates, photos and completing VAR assessment form.
- Entering VAR geospatial data, photos, and VAR assessment form into SPARCS.
- Deployment to a wildfire incident as part of an Incident Management Team.

4. Providing support to Forest Resources Management by:

- Providing data management and data entry support in all stages of the forest authorization process, including field data, annual operating plans, harvest inspections, load tickets, final harvest blocks and license areas.
- Entering and managing forest authorization data in the centralized data management application and Land Resource Manager.
- Produce forest authorizations maps and reports.
- Providing support as requested in Forest Resources related field programs and GIS projects.

5. Providing support to Wildlife Research and Monitoring activities by:

- Producing grid maps for wildlife survey.
- Collecting field data by use of handheld or fixed mounted GPS.
- Conducting wildlife survey flight to collect data for creation of maps.
- Accompanying Renewable Resource Officers and other field staff while travelling on the land to gather detailed geospatial data about landforms and wildlife.

6. Providing support to Regional Operations and Program Delivery by:

- Supporting field investigations by collecting geospatial data with the purpose of producing maps for court cases.
- Coordinating Regional responses to computer software and hardware issues with the Technology Service Center (TSC) and the NWT Geomatics Centre.



- Representing the Region at Territorial and National Geomatics conferences.
- Conducting Global Positioning System (GPS) training in conjunction with the annual fire crew training and as required.

WORKING CONDITIONS

Physical Demands

Field work requires walking and riding in or on various ATVs, snowmobiles, boats over rough terrain, rough water, and deep snow for long periods of time.

Environmental Conditions

Some field work is anticipated including fire line duties which can provide for extreme environmental conditions such as high levels of smoke, exposure to flames, vibration and noise which can be hazardous to your health.

Sensory Demands

Reviewing and evaluating geospatial data and maps requires attention to details.

Mental Demands

Exposure to tight deadlines and a large workload with competing priorities and demands can be stressful during the fire season. Field work can disrupt home life and routine.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of GIS and GIS software including ArcGIS and other ESRI products.
- Knowledge of GPS units and software including GPS Garmin model 64, DNRGPS, GEOJOT+, Ozi Explorer, and Garmin Basecamp.
- Knowledge of the principles of cartography and hardcopy and digital mapping specifications.
- Knowledge of forest fire weather patterns that produce significant fire operations problems and the effects of surface weather on forest fuels as determined by the codes and indexes of the Canadian Forest Fire Weather Index (FWI) System.
- Knowledge of forest fire behavior in northern boreal forest fuel types, specifically rate of spread, frontal fire intensity, spot fire threshold values, depth of burn, and crown scorch height as determined by the outputs of the Canadian Forest Fire Behavior Predictions (FBP) System.
- Knowledge of use of plotting/printing devices, such as Inkjet printers, large-format plotters Laser printers.



- Skills in using commercial and custom-made computer software such as Excel, Word, PowerPoint, EMBER, SPARCS, LISIN, LRM, DIIMS, HRIS and SAM.)
- Strong written and oral communication skills. Strong analyzing and problem-solving skills.
- Good interpersonal skills and the ability to work well in a team environment.
- Ability to think abstractly. The science and technology of some of the subject matter is complex in nature.
- Ability to generate high quality maps, printouts, and digital multi-layer interactive mapping tools for use in the field.
- Ability to quickly learn new software and hardware.
- Ability to set and assess priorities and meet deadlines.
- Ability to work effectively as part of a larger team and demonstrated leadership when required.
- Ability to work independently with minimal supervision.
- Ability to obtain an Unmanned Aircraft System (UAS) pilot license.
- 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.

Typically, the above qualifications would be attained by:

Completion of an undergraduate degree in geography with an emphasis in GIS with a minimum of two years of related GIS experience, along with a minimum of two years of fire line control practices and wildfire assessment experience.

Equivalent combinations of education and experience will be considered.

ADDITIONAL REQUIREMENTS

Class 5 Driver's License.

Possession of a Valid Restricted Operator Certificate-Aeronautical (ROC-A) – License is a legal requirement of the position.

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