



IDENTIFICATION

Department	Position Title	
Environment and Climate Change	Wildlife Spatial Data Analyst	
Position Number(s)	Community(s)	Division/Region(s)
23-12418	Yellowknife	Wildlife Management/ HQ

PURPOSE OF THE POSITION

The Wildlife Spatial Data Analyst (Analyst) uses its expertise in compiling, analyzing, validating, importing, managing and exporting current and historical wildlife and habitat georeferenced data in the Wildlife Management Division's computer applications to provide wildlife managers, decision makers, industry and the public with access to timely, high quality wildlife and habitat information.

The Analyst is responsible for providing leadership and expert advice on matters related to mapping, spatial data creation, advanced spatial analysis, and automated reporting and providing subject matter expertise on animal movement and spatial ecology of Northwest Territories (NWT) species. The position troubleshoots complex issues, develops solutions, solves complex problems and provides long-term solutions for various data and mapping purposes for the Wildlife Management Division and regional biologists across the NWT. The incumbent familiarize oneself with the existing data to provide assistance with database maintenance solutions in the Wildlife Management Information System (WMIS) and other wildlife applications.

The Analyst also provides Geographic Information Systems (GIS) products, support, and expert advice to Wildlife Management Division programs in headquarters and the regions associated with wildlife management, species monitoring and spatial modeling. The position monitors and administers GIS licensing within the Wildlife Management Division.

SCOPE

Located in Yellowknife and reporting to the Manager, Biodiversity Conservation of the Wildlife Management Division (Manager), the Wildlife Data Analyst is responsible for ensuring that up-to-date, quality wildlife information is available for wildlife managers to analyze and use for



decision making. The Analyst works closely with the technical support staff, including the Senior Wildlife Data Applications Specialist and Informatics staff to ensure the computer wildlife management applications in operation are meeting business requirements. The position acts as a departmental GIS expert on GIS analytical processes.

The Analyst reviews, evaluates and analyzes data sharing applications, determines spatially whether or not the data are available and appropriate, and facilitates the sharing of data. The position is also responsible for administering the data sharing agreements with the public or other clients, and compiling data and information to fulfill the agreements.

The Wildlife Management Division (Division) maintains various computer applications to store georeferenced data designed to supply information to wildlife managers to enable effective analysis and to support decision making.

Georeferenced wildlife data is gathered by 30 Government of Northwest Territories (GNWT) biologists and technicians in HQ and all regions, and the Wildlife Data Analyst works closely with these staff to ensure that wildlife related data is input into the appropriate computer application in a timely manner. The Analyst is responsible for ensuring data input complies with legislative requirements (privacy, intellectual property and copyright concerns), divisional data administration policies and protocols, and technical constraints.

The Analyst is responsible for using GIS and programming software to validate wildlife data, develop analytic procedures, analyze spatial data, and developing mapped GIS products to assist in the management and monitoring of wildlife and species at risk for the Wildlife Management Division and the GNWT. The position also develops and maintains spatial layers for inclusion in the GNWT spatial data warehouse which supports the publicly available GIS and data viewers. The position is also responsible for documenting procedures in a standardized format and consistent with GNWT Spatial Data specifications and developing new modeling procedures. The incumbent must maintain current knowledge of advanced spatial analytical methodologies. The GIS products and analyses provided by this position influence senior management decisions regarding wildlife management, resource management, environmental assessments, non-renewable resource developments, and protected area establishment and development.

Additionally, the Wildlife Data Analyst is the senior technical expert providing advice and assistance to less experienced staff in headquarters and regional offices associated with wildlife management undertaking their own GIS projects. The Analyst provides one-on-one training and end-user support for the computer wildlife management applications in operation by the Wildlife Management Division. The position also develops and scripts applications and mapping products for regional biologists that are used for wildlife management decisions and to inform various stakeholders.



The position has a direct impact on the quality of wildlife management decisions made by senior ECC management that are based on georeferenced wildlife data that have been developed, analyzed, visualized with GIS mapping tools and maintained in wildlife and GIS System applications. These developed products and wildlife data are also used by industry and regulators to understand and mitigate the impacts of development on wildlife. The position has an indirect impact on the residents of the NWT as georeferenced wildlife data are also used to support the delivery of government and industry wildlife management programs and services to the public.

RESPONSIBILITIES

1. Establishes, develops and maintains wildlife geospatial data and is the custodian of geospatial resources and data for the Wildlife Management Division.

- Leads quality assurance and control of geospatial wildlife and habitat data collected from multiple sources, including headquarters, regional ECC offices, other government departments, Indigenous governments, Indigenous organizations, renewable resources boards, residents, industry and stakeholders, and integration collected data into computer applications maintained by the Wildlife Management Division.
- Recommends standards and best practices for managing geospatial wildlife and habitat data.
- Develops and maintains foundational and authoritative geospatial datasets critical to wildlife programs for the GNWT that includes wildlife management areas, human disturbance, and species at risk.
- Develops new geospatial data sets from advanced spatial analysis using scientific and statistical methodologies for wildlife management decisions made by senior management and external co-management partners, and for use in Wildlife Management and Monitoring Plans (WMMPs).
- Maintains and enhances data integrity and security by proactively managing existing data and working with biologists and other data holders and originators.
- Develops, automates and maintains wildlife geospatial data creation, data manipulation and map products to improve efficiency in data validation and delivery of services through scripts and models.
- Supports to end-users in implementing data collection standards.
- Provides guidance and advice to headquarters and regional staff and other departments on data management.
- Publishes and migrates geospatial data to the Spatial Data Warehouse, following quality control processes and enterprise data standards.
- Validates, edits, and imports data into computer applications, to ensure data integrity and adherence to data standards.
- Documents all phases of project work and dataset revisions including technical information and organizational structure.



- Develops and maintains an inventory of existing data sets within the Division and all regional ECC offices.
- Develops data standards and protocols for data collection and validation to ensure data integrity.
- Establishes departmental data-management priorities in collaboration with wildlife managers.

2. Provides expert geospatial advice to senior management to support their wildlife management decisions.

- Provides advice and support to senior management in making wildlife management decisions that meet modeling strategies, data-sharing protocols, and are based on advanced spatial analyses, interpretation of results, and presentations of analyzed products.
- Ensures that wildlife management decisions also meet the goals of Wildlife Management and Monitoring Plans, and species at risk processes.
- Reviews, analyzes and evaluates data sharing applications and data available by spatially analyzing current data within the area of interest, using GIS tools (ArcPro, ArcGIS, R and SQL).
- Initiates, tracks, and ensures the appropriate approvals for Data Release Agreements.
- Tracks, administers, and implements all data requests using the Data Release Protocols.
- Administers data sharing agreements with the public or other clients and compile data and information to fulfill those agreements following the Data Release Protocol.
- Prepares technical presentations and writes technical reports in both scientific and plain language to explain analysis methods and findings to decision-makers, co-management partners, and other interested parties.
- Ensures appropriate export of data to other systems such as the GNWT Spatial Data Warehouse and NatureServe Canada.
- Provides solutions for end-users regarding the requirements and availability of wildlife metadata within wildlife computer applications, and develop data sharing and data integration options for analyses.

3. Develops and delivers GIS programming, advanced spatial modelling, mapping services and provides expert advice to departmental staff in headquarters and regions for species monitoring.

- Maintains current knowledge of novel and industry standard for advanced spatial analytical analysis of various wildlife datasets.
- Uses subject matter expertise to perform and deliver advanced spatial analysis, including species spatial distribution models, animal movement models, wildlife density models to develop habitat use maps, seasonal range maps and distribution maps.
- Attends meetings, workshops, community meetings and conferences with relevant organizations to share and provide mapping expertise, support and information.



- Manages and analyzes in real-time incoming wildlife telemetry data to facilitate wildlife management decision-making and data sharing.
 - Provides telemetry data and relevant up-to-date information to regional biologists while they are in the field.
 - Analyzes wildlife telemetry data and prepares maps for planning wildlife research activities.
 - Solves complex problems and assists with the necessary fixes to data queried from WMIS.
 - Develops new or improves approaches and solutions to GIS problems to best support client and GNWT needs, including the evaluation of new tools, software or analytical techniques.
 - Develops, maintains and updates protocols for the cleaning, maintenance and management of geospatial wildlife data.
- 4. Ensures GIS studies, products and services are provided to senior management and departmental staff in headquarters and regions to assist in the management and monitoring of wildlife and wildlife habitat.**
- Develops products (maps, documents, methods) for planning wildlife research activities and for wildlife management decision making. Products may require the integration of GIS and other data sets, independent judgment and/or research. Products are used to provide a solid basis for wildlife and habitat management decisions by senior management, headquarters and regional staff, and external partners (e.g. COSEWIC, NatureServe Canada, co-management agencies, Aboriginal governments).
 - Remains current with GIS technology and advanced spatial analytical techniques to meet the needs of future wildlife studies and maintenance of the wildlife computer applications.
 - Develops and evaluates analysis and modeling results, then refines or updates analyses as needed or as new data becomes available.
 - Develops, monitors, maintains and updates GIS base data for wildlife staff, as well as external partners such as the Federal Government, Indigenous governments, Indigenous organizations and Academics
 - Develops and promotes up-to-date metadata practices.
 - Leads the creation, maintenance and organization of wildlife GIS project files.
 - Develops protocols for management of GIS data (e.g. cleaning and maintenance of data) that are consistent with GNWT Spatial Data Infrastructure specifications.
- 5. Interacts with and provides expert advice, support and mapped products to multiple stakeholders including representatives of ECC and other GNWT departments, federal government agencies, Indigenous governments, Indigenous Organizations, industry and environmental organizations on wildlife management related GIS projects, data, and other analyses.**



- Participates in various working groups as a GIS and wildlife data expert and team lead.
- Attends meetings, workshops, conferences, and otherwise communicates with relevant organizations to share information and stay abreast on other agencies' GIS projects, data, and modeling developments.
- Provides training and support to HQ and regional staff in GIS software and methods.
- Provides support to end-users to input and access data within wildlife computer applications including the related use of GIS tools.
- Monitors and administers GIS licensing within the Division.
- Facilitates one-on-one training for the computer applications in operation by the Wildlife Division including the related use of GIS tools.
- Identifies and reports computer application problems to Senior Wildlife Data Applications Specialist, and conducts application testing to ensure functionality for wildlife management decision making.
- Provides feedback to the Senior Wildlife Data Applications Specialist to ensure computer applications meet the needs and the mandate of the Division, and the Department.
- Assists with selection, training, work plan creation and supervision of casual, intern, student or other staff as required.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of data management including quality assurance and quality control, documenting, validating, importing and exporting data from databases.
- Knowledge of Geographic Information Systems and geospatial software programs (ESRI ArcPro, Q-GIS, R, Python), scripting languages, technical procedures, and application to natural resource issues, notably wildlife management and spatial modeling.
- Knowledge of programming languages required for spatial data manipulation and analysis.
- Knowledge of spatial analytical techniques and ability to lead analysis, and to create, edit, maintain, and analyze spatial data, and cartography.
- Knowledge of data collection and maintenance standards, including spatial data.
- Knowledge of environmental and biological factors that determine the distribution and abundance of terrestrial organisms.
- Knowledge of wildlife and habitat management and the use of database management systems and GIS tools as they relate to wildlife management.
- Proficiency in relational database systems and office productivity software such as Oracle, and Microsoft Word, Excel, PowerPoint and Access.
- Ability to perform data conversion from various files types.
- Ability to work independently with minimal supervision as well as to work well in a team environment.
- Organizational skills.
- Ability to manage multiple projects with competing priorities.



- Interpersonal skills
- Communication skills, including gathering user requirements, conveying complex technical information to a lay audience, and reporting on projects to clients, NWT Centre for Geomatics team and managers.
- Attention to detail.
- Initiative and ability to make sound judgments.
- 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.

WORKING CONDITIONS

Physical Demands

No unusual demands.

Environmental Conditions

No unusual conditions.

Sensory Demands

Preparing digital maps, the incumbent must pay close attention to colours, textures and tones. The incumbent must be able to monitor a full range of colours and variations in minute detail.

Mental Demands

The incumbent is required to manage multiple concurrent projects with competing deadlines. At times requests from senior management require tight turnarounds and possible overtime. In support of wildlife research field operations, extended hours of work may be required at times throughout the year to prepare and send real-time data, and handling requests could be stressful as they may require rapid and accurate responses. Travel is required approximately 3 to 5 days per quarter, mostly within the NWT. The Analyst may be asked to give presentations on complex data analysis to lay audiences in community meetings and working groups.

Typically, the above qualification would be obtained by:

Completion of a Bachelor of Science degree in biology, zoology, or ecology or other relevant field, and a minimum of two (2) years of direct experience in data management, including working with Geographic Information Systems (GIS).

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:

- ☐ Required
- ☐ Preferred