

Reclassification

Ministry

Forestry and Parks

Describe: Basic Job Details

Position

Position ID

Position Name (30 characters)

Forest Hydrologist

Current Class

Requested Class

Job Focus

Operations/Program

Supervisory Level

00 - No Supervision

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

Employee

Employee Name (or Vacant)

Organizational Structure

Division, Branch/Unit

Forestry Division

Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Director Forestry Operations

Supervisor's Current Class

Design: Identify Job Duties and Value

Changes Since Last Reviewed

Date yyyy-mm-dd

2024-08-19

Responsibilities Added:

The position was initially established in 2012 to provide specialized professional input into operational plans within the Southern Eastern Slopes of Alberta, specifically the Calgary Forest Area (CFA). The position originally reported to the Senior Forester of the CFA, and now reports to the Director, Forest Operations (2014 change in reporting lines). Since the position was established and with the staff abolishment in 2020, the role has significantly changed. It has taken on a provincial scope and is now focused on the entirety of the forest management system and the interrelationship between forests and water across the province, with a focus on operational implementation and monitoring.

The Forest Hydrologist is the divisions lead subject matter expert on forest hydrology and plays a key role not only within the division, but coordinating within the department and cross ministry.

In addition to duties defined in the original 2012 position description, the position, since 2020 is also responsible for the following duties:

- Position is the Provincial authority in the areas of forest hydrology, watershed management, and the

impacts to water quantity and quality from activities such as recreation, rangelands, forestry, forest health, wildfire and prescribed fire.

- Position is directly responsible for the development and coordination of all activities pertaining to Divisional business and priorities as it relates to water resources. This includes both the interaction with the Forest Stewardship and Trade branch, Wildfire Management branch and Forestry Field Operations Branch.
- The position is the subject matter expert (SME) and provides input into Forest Management Plans, including the assessment of impacts from proposed forestry activities on water, including but not limited to streamflow, sedimentation, drinking water and fisheries values.
- The position is responsible to represent the division in cross ministry, departmental and federal policy committees for the integration of forestry division activities related to watershed management and hydrology across jurisdictions (federal and provincial) and programs, including but not limited to engagement with both federal and provincial ministries on forestry activities and the linkages to fish and fish habitat.
- The position also works with the Senior Forester Compliance and Enforcement in the development and assessment of field protocols in the implementation and monitoring of timber operations to ensure compliance with Alberta's regulatory requirements, in support of the Forest Operations Monitoring Program.
- The position is a senior position within the division, with the added expectation that it mentor junior staff.
- The position also acts as a liaison between science and practice, with the responsibility to develop and maintain scientific partnerships with organizations such as fRI Research, fish and water program and the division, focusing on the implementation of scientific learnings for both the wildfire and forest management programs.

Responsibilities Removed:

None

Job Purpose and Organizational Context

Why the job exists:

The Provincial Forest Hydrologist provides specialized professional input and strategic direction for forestry division in regards to forest and watershed management, hydrology, aquatic ecology, cumulative effects, and alignment of forest management processes to ensure the forest management systems meets a high standard of watershed protection.

The position is the provincial specialist, responsible for the development and implementation of programs, policy, standards and guidelines related to forest and watershed management and will provide input on internal and external forest and land management plans, forest operations and forest policy in order to maintain water quantity, water quantity and healthy aquatic ecosystems; key Water for Life Goals.

The position will develop and maintain effective partnerships with relevant agencies regarding resource management issues and solutions (e.g. watershed management, forest hydrology and cumulative impacts/ risk assessment, integrated land management, predictive modeling and decision support tool development).

The Provincial Forest Hydrologist is also responsible for coordination of research initiatives and the subsequent knowledge transfer related to sustainable water resource and forest management practices. As the Ministry's specialist, the position will play a key role in defining provincial roles and responsibilities in regards to jurisdiction over the administration of the *Forests Act* and associated regulations in the province.

Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

1. Acts as the local professional authority in the areas of forest hydrology, watershed management and the impacts to water quantity and quality from forestry activities, including but not limited to, timber operations, natural wildfire, and prescribed fire:
 - Provides balanced professional advice on plans, operations and activities; including but not limited to forestry, lands, recreation, fisheries and aquatic habitats, forest health, wildfire and prescribed fire burning by conducting sound assessments using appropriate predictive models and/or risk assessment methods,
 - Advises and informs Directors, Executives and Ministers on issues through written and oral briefings
 - Shares information and manages issues with other professionals,
 - Offers professional advice on problems, solving questions related to forest hydrology and the diverse theoretical and applied topics areas of this discipline,
 - Represents the Department during negotiations with industry to ensure that sustainability and economic viability are considered,
 - Represents the Department with the general public using various communication and engagement methods (e.g leading information sessions, meeting, participating in conferences and workshops, lead and collaborate in applied science to improve the policies and practices of forestry in and around water and aquatic habitats),
 - Represents Forestry Division on inter-disciplinary technical planning teams, regional forest management groups and other ad-hoc committees.
2. Play a lead role as the Departmental forest hydrologist within the division:
 - By providing review and advice on existing programs, policies and operations in forest management,
 - Identify knowledge gaps in current state of understanding, regulatory processes and operational practices and provide knowledge, tools and advice to facilitate improvement,
 - Assess the practicality and regional/provincial appropriateness of knowledge and tools upon which forest management plans and strategies are based,
 - Recommends, and influences implementation of policy into operational practice to ensure continued sustainability based upon advances in science and professional practice (e.g Alberta Timber Harvest Planning and Operating Ground Rules),
 - By implementing policy and working within the section in the development and implementation of monitoring programs, with a focus specifically on forestry roads, watercourse crossings and associated activities,
 - Provide advice and direction to regional forestry staff with regards to mandate issues as well as provide direction with regards to day-to-day forest management interactions with industry and the public.
3. Maintain effective and collaborative partnerships with relevant agencies regarding resource management issues:
 - Design and develop processes that will ensure that watershed management objectives and input are considered during plan development and approval at both the regional and provincial levels.
 - Establish and maintain effective partnerships and working relationships with forest, water and resource managers to ensure forest hydrology management objectives are understood and integrated into planning processes,
 - Represent the Department in cross-ministry initiatives through the sharing of information and generation of ideas to achieve departmental, ministerial and provincial objectives (e.g. cross-ministry committees, technical working groups, Communities of Practice),
 - Work with external agencies, such as Watershed Planning and Advisory Councils, to facilitate knowledge transfer through various education and outreach opportunities (e.g public forums, workshops, boards, community events),
 - Lead/ participate in technical issues and working groups consisting of the Federal Government, Alberta Environment and Protected Area, Alberta Energy Regulator (AER) and other regulatory agencies on connected topics related to water resources, aquatic ecology and forestry and related operational issues related to fish habitat management.

4. Provide leadership to research initiatives and ensure transfer of scientific knowledge into sustainable water resource and forest management practices:
- Define research priorities related to forest hydrology and watershed management,
 - Develop and manage applied research initiatives in partnership with other government agencies, research and private sector/industries,
 - Participate in department coordination and approval mechanisms for research expenditures,
 - Facilitate transfer of knowledge to field delivery staff by ensuring incorporation into policy, processes and guidelines.

Problem Solving

Typical problems solved:

The position is recognized in the Ministry as a specialist and is expected to be leading edge in terms of scientific expertise. Problems are based on understanding the interactions between natural and human caused disturbance to watershed values (water quantity, water quality and aquatic ecosystems) and how these interactions propagate over temporal and spatial scales. These problems are often complex and require a systems level understanding and knowledge of current science, policy and practice from both internal and external sources. The position uses professional judgment to implement appropriate assessments and reviews and provides direction in the development of new procedures when needed. The position will act as lead investigator in complex investigations and assessment projects. Assessment will determine potential hazards to watersheds values, priorities and plans and propose appropriate mitigation actions. The role will develop guidelines and identify and analyze initiatives in the area of program and policy development and research. Creative thinking typically involves the development of standards to meet the needs of diverse resource issues. This requires blending the legislation and the science and developing practical guidelines that can be used by industry. The position works with land, water and other resource managers, resource development industries, stakeholders and the public.

Types of guidance available for problem solving:

The work is both independent, as well as collaboratively with diverse group of resource management professionals. Where specific work requires additional support, the position will seek the appropriate resources collaborators to achieve expectations; considerable professional judgment and autonomy is required.

Direct or indirect impacts of decisions:

Work is broad and based on the hydrological impacts of forest management. This includes but is not limited to: watershed management strategies and policy, forest hydrology, resource use, integration, modeling techniques for water quality and quantity in forested landscapes. The position will act as lead investigator in complex investigations and assessment projects.

Key Relationships

Major stakeholders and purpose of interactions:

External:

- Formal and informal contact with Alberta's forest sector, specifically timber disposition holders related to the connection of timber operations and forest hydrology, including, planning, implementation and monitoring,
- Formal and informal contact/liason with academic and research organizations (e.g fRI Research, Universities, colleges and technical post-secondary programs),
- Engagement with and not limited to non-government agencies, including Watershed Planning and Advisory Councils (WPAC), public advisory committees (PACs) and Indigenous Communities,
- Formal and informal contact with Federal Departments, e.g. Department of Fisheries and Oceans Canada,
- Formal and informal contact with the Alberta Energy Regulator (AER). Shared knowledge transfer as a joint regulatory on Alberta public lands.

Internal:

- Assistant Deputy Minister - Meets as part of the section, providing updates and issue specific briefings on topics related to forest hydrology,
- Executive Director(s) - As a cross divisional resource, regular briefings with those ExDir, responsible for timber operations, wildfire operations, forest/wildfire planning and policy. This include providing regular updates and issue specific briefings,
- Forest Area staff - working with and assisting forest area staff in the implementation and understanding of water related requirements in operational planning, and monitoring,
- Formal and informal engagement with other government ministries, - mainly Environment and Protected areas, mainly but not limited to Fish and Wildlife Stewardship,
- Within Forestry and Parks, working weekly with Lands Division, specifically the Stream Crossing program on joint mandates.

Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Master's Degree	Science	Other	Other

If other, specify:

Forest management, wildland/forest hydrology, physical hydrology. Registered Professional Forester(RPF).

Job-specific experience, technical competencies, certification and/or training:

Recognized M.Sc. in forestry, forest hydrology or related natural resource discipline.

- Membership or eligibility for membership in a regulated professional college (AAFMP, APEGA, ASPB)
- Knowledge must be applicable to a variety of relevant subject/topic areas across Alberta
- Highly developed working knowledge of forest hydrology and watershed management principals in reference to rocky mountain and boreal coniferous and deciduous landscapes.
- Knowledge must be augmented by directly applicable and related experience in forestry and forest hydrology.
- Computer modeling/statistical analysis skills and proficiency in ArcGIS/ArcPro inputs, outputs and analysis
- Ability to conduct field and office based watershed assessments and investigate complicated cumulative effects issues, including the design and execution of monitoring and science based programs.
- Advance analytical and quantitative research ability
- Highly developed interpersonal communications skills in order to be able to influence internal/external contacts.
- well-developed communication skills to be able to influence industry practice by reputation and scientific understanding within the scope, knowledge and applicability.
- Confident and persuasive approach to address and present information.
- Able to manage sensitive issues related to natural resource and forest watershed management

Behavioral Competencies

Pick 4-5 representative behavioral competencies and their level.

Competency	Level	Level Definition	Examples of how this level best represents the job
	A B C D E		
Systems Thinking	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> D <input type="radio"/> E	Integrates broader context into planning: <ul style="list-style-type: none"> • Plans for how current situation is affected by broader trends • Integrates issues, political environment and risks when considering possible actions • Supports organization 	Long term and holistic views are a necessary component in watershed and forest management. <ul style="list-style-type: none"> - Understanding the response and recovery of forested watersheds to disturbance requires a long term and holistic understanding of factors

		<p>vision and goals through strategy</p> <ul style="list-style-type: none"> • Addresses behaviours that challenge progress 	<p>and natural processes over time and space.</p> <ul style="list-style-type: none"> - A watershed based perspective requires strong understanding of individual and collective values and objectives and actively seeks opportunities toward achievement of solutions.
Creative Problem Solving	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>Works in open teams to share ideas and process issues:</p> <ul style="list-style-type: none"> • Uses wide range of techniques to break down problems • Allows others to think creatively and voice ideas • Brings the right people together to solve issues • Identifies new solutions for the organization 	<p>Has an understanding of local and regional issues and landscapes and works with planners and regulators across agencies including the public to identify key issues that can be addressed.</p> <ul style="list-style-type: none"> - Able to identify common problems across land use sectors and provide collaborative solutions that will be of mutual benefit to all groups. - Seeks balanced information to inform and provide recommendations that are timely, relevant and well-thought out
Agility	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>Proactively incorporates change into processes:</p> <ul style="list-style-type: none"> • Creates opportunities for improvement • Is aware of and adapts to changing priorities • Remains objective under pressure and supports others to manage their emotions • Proactively explains impact of change on roles, and integrates change in existing work • Readily adapts plans and practices 	<p>Maintain current state-of-science knowledge as to policies, practices and programs that will help meet departmental and ministerial mandates</p> <ul style="list-style-type: none"> - Able to conduct themselves in a professional manner in confrontational, conflicting or high pressure situations (e.g open house, media requests, public forums). - Ability to recognize opportunities and timing to achieve expectations and departmental objectives.
Develop Networks	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>Makes working with a wide range of parties an imperative:</p> <ul style="list-style-type: none"> • Creates impactful relationships with the right people 	<p>Watersheds contain a diversity of people, communities, and values.</p> <ul style="list-style-type: none"> - Expanding networks and relating common individual and

		<ul style="list-style-type: none"> • Ensures needs of varying groups are represented • Goes beyond to meet stakeholder needs • Ensures all needs are heard and understood 	<p>departmental interests to personal and community values is critical to the success of the role.</p> <ul style="list-style-type: none"> - Establishing trust in the community and among organizations - Having empathy and understand, taking the time needed to listen and provide guidance through issue identification and resolution - Ensure important issues are brought up to managers/directors and provide appropriate background materials and recommendations
<p>Drive for Results</p>	<p>○ ○ ○ ● ○</p>	<p>Works to remove barriers to outcomes, sticking to principles:</p> <ul style="list-style-type: none"> • Forecasts and proactively addresses project challenges • Removes barriers to collaboration and achievement of outcomes • Upholds principles and confronts problems directly • Considers complex factors and aligns solutions with broader organization mission 	<p>Uses logic and creativity to recognize and anticipate challenges, works with other to seek solutions in advance and to maintain time-lines and productivity</p> <ul style="list-style-type: none"> - Seeks advice and council with peers to ensure alignment with other programs, partners and polices. - Responds to problems and challenges with optimism and seeks collaborative options for resolution.

Benchmarks

List 1-2 potential comparable Government of Alberta: [Benchmark](#)

Assign

The signatures below indicate that all parties have read and agree that the job description accurately reflects the work assigned and required in the organization.

Employee Name

Date yyyy-mm-dd

Employee Signature

Supervisor / Manager Name

Date yyyy-mm-dd

Supervisor / Manager Signature

Director / Executive Director Name

Date yyyy-mm-dd

Director / Executive Director Signature

ADM Name

Date yyyy-mm-dd

ADM Signature

DM Name

Date yyyy-mm-dd

DM Signature