Ontario

ONTARIO PUBLIC SERVICE CAREERS

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Job Specification

Position Title:	Aquatic Science Specialist - Renewable Energy
Job Code:	OPSEU - Biologist 3 B/U, 14026
Job ID:	19932

Purpose of Position:
Under the general direction of the Science Coordinator, contributes to the measurable advancement of sustainable resource management in the Northwest Region by planning, organizing and conducting aquatic science development and monitoring/assessment projects in support of an integrated program of science and knowledge acquisition, synthesis and adoption that supports local resource management planning and decision-making, policy development and effectiveness monitoring related to water utilization (e.g. water power development); provides scientific and professional expertise and leadership for renewable energy through the development, calibration and validation, interpretation and use, of monitoring standards and protocols (e.g. in-stream flow tools) for flowing waters and reservoir systems; supports other program areas (e.g. Ecological Framework for Fisheries Management, aquatic ecosystem classification, climate change).

Duties/Responsibilities:
1. Participates in the development and implementation of an integrated aquatic science and information program by contributing to the development of 3-5 year strategic aquatic science and regional water management plans; developing annual workplans, progress status reports, preparing budget proposals and monitoring expenditures.

2. Identifies the science and information required by resource practitioners to support waterpower development (e.g. hydrology and ecology of riverine and reservoir systems); site release and development criteria; mitigation of aquatic ecosystem impacts for dams and water power facilities and development; calibration and validation, interpretation and use of monitoring standards and protocols (e.g. in-stream flow tools) used for monitoring effects and effectiveness of water management plans by identifying and analyzing resource management and assessment problems (e.g. the potential impacts of proposed ramping rates on fish spawning habitats, populations and recruitment); liaising with local resource management practitioners, including staff from MNR Districts and other resource management partners.

3. Identifies the best existing science, knowledge, information, and technology available to meet the needs of resource management practitioners relative to water power development and the mitigation of aquatic ecosystem impacts to fish populations, fish communities, species at risk (e.g. lake sturgeon) and habitat from dams and water power facilities and development by conducting reviews of the scientific literature and environmental scans and synthesizing information from scientific and resource management literature (e.g. factors such as flow rates and water temperature and their influence on lake sturgeon spawning times and year class strength, impact of climate change on seasonal and total water yield and movement and its potential effect on future draw-down schedules and ramping rates to minimize effects on spawning habitat availability and fish population dynamics, impact of invasive species on riverine fish communities) and aboriginal knowledge of the land (AKOL); maintaining active liaison and partnerships with researchers, science specialists, and experts within the ministry, other government agencies and jurisdictions, and the scientific, academic, and resource management communities.

4. Develops and refines practices, standards, protocols, indicies and tools related to flowing waters and reservoir systems (e.g. in-stream flow tools), fisheries populations, aquatic ecosystems, their monitoring, assessment and management and the conservation of bio-diversity by designing, implementing, and coordinating monitoring and assessment programs, experimental management projects (e.g. local studies in experimental adaptive management of individual dams and waterpower facilities), case studies, and other investigative projects in concert with other team members and in cooperation with other researchers and specialists from other agencies and jurisdictions; analyzing and reporting on existing datasets collected through operational monitoring and assessment programs.

5. Leads and/or participates on project/task teams and other forums to develop agreement on practices, standards, and resource management guides by promoting the use of adaptive management principles in fisheries and aquatic ecosystem management and
ensuring the soundness of content, statistical design, analytical procedures, and scientific review of projects through appropriate tactical plans.

6. Transfers existing science, knowledge, information and technology related to hydrology and ecology of riverine and reservoir ecosystems; site release and development criteria; mitigation of aquatic ecosystem impacts for dams and water power facilities and development; calibration, validation, interpretation and use of monitoring standards and protocols (e.g. rapid assessment techniques, habitat assessment and

inventory, in-stream flow tools) and the conservation of aquatic diversity by providing direct technical assistance in the use and interpretation of science and information (e.g. interpretation of assessment and monitoring results post operation); publishing the results of literature reviews, monitoring and assessment activities, and other investigative projects in a variety of media including, scientific journals, technical reports and technical notes, as well as newsletters and popular magazines; packaging existing science and information for a variety of audiences to assist field practitioners in dealing with their clients.

7. Provides advice and guidance to resource practitioners on hydrology and ecology of riverine and reservoir systems, fisheries populations and productivity, the management of information (e.g. data definitions, data collection methodologies, field applications), and the impact of different stresses on species at risk, fish communities and aquatic ecosystems and their diversity (e.g. exploitation, climate change, invasive species, water level fluctuations) by reviewing water management plans and strategies; providing on-site assistance and participating on regional and provincial on task teams and committees.

Managers have the right to assign additional duties

The incumbent shall, work in compliance with the Occupational Health and Safety Act and its regulations and any workplace practices as directed by the employer. The incumbent shall ensure that workers take precautions to protect the health and safety of themselves and others by complying with such acts, codes, policy, procedures or accepted workplace practices as may be appropriate. The incumbent shall advise workers of actual and potential dangers in the workplace and take the required precautions.

Knowledge:
Job requires advanced knowledge of the theory, principles and practices of aquatic ecosystem management, fisheries population ecology and management, hydrology, aquatic ecosystems classification and productivity, aquatic habitat classification, fish physiology and behavior, monitoring and biometrics to identify science needs, develop new practices, technologies and transfer science, information and tools to Ministry staff (e.g. calibration, validation, interpretation and use of monitoring standards and protocols (e.g. rapid assessment techniques, habitat assessment and inventory, in-stream flow tools) . Job requires knowledge of resource management legislation, regulations, policies and guidelines relative to Ontario (e.g. Environmental Bill of Rights, Environmental Assessment Act, Green Energy Act, Lakes and Rivers Improvement Act, Public Lands Act, Federal Fisheries Act, SPOF II, Ontario Biodiversity Strategy, Renewable Energy Strategy) in order to develop technology, standards, techniques and tools consistent with the needs of resource managers and Government Legislation (e.g. identification of science needs associated with Green Energy Act). Job requires knowledge of scientific methods such as experimental and sampling design and statistical analysis (multi-variate and trend-thru-time) in order to design, organize and implement science, assessment and monitoring projects and to advise on internal and external clients projects (e.g. by conducting statistically sound analyses of population responses to new water management plans). Job requires knowledge of computer software including word processing, data management, spreadsheets, and statistical analysis programs in order to access and analyze information, prepare scientific reports/technical papers, publications and presentations. Job requires general knowledge of GIS and proven ability to create, manipulate and query spatial data. Job requires knowledge of database design and architecture principles to extract and synthesize similar primary and derived data from large desparate datasets.

Staffing and Licensing Requirements:
Valid Drivers License. Current Standard or Wilderness First Aid Certificate; Pleasure Craft Operators Certificate as issued by Transport Canada.

Skills:
Job requires project management and organizational skills to determine client needs by leading working groups and workshops, interviewing staff and researching available scientific/technical information to meet those needs. Job requires analytical and problem solving skills to clarify problems evaluate options and identify approaches to address fisheries population management problems (e.g. leading the development of riverine monitoring protocols for fisheries population management and habitat assessment). Job requires interpreting/synthesizing to translate information from scientific studies into solutions by developing guidelines and recommendations. Job requires excellent written communication skills to provide input to strategic and operational plans, scientific publications/reports and prepare project proposals and status reports. Job requires excellent oral communication skills to present project/program proposals to clients, partners and Ministry staff; transfer science and technology in symposia and workshops; provide guidance and advice to partners/clients. Job requires strong interpersonal and consultative skills to facilitate cooperation between researchers, clients and partners (e.g. development of collaborative studies involving researchers and specialists from government as well as academia and first nation resource management specialists to evaluate the ecology and hydrology of managed vs. non-managed watersheds and water systems and the effect of water regulation on aquatic ecosystems). Job requires group leadership skills to provide advice and guidance to field staff.

Freedom of Action:
Job requires working within legislation, regulations, policies and program standards governing natural resource management and research in Ontario (e.g. Federal Fisheries Act, Act, Public Lands Act, Land and Water Acts, Environmental Assessment Act) and within recognized technical and scientific procedures and practices for surveying and research (e.g. sampling methods and standards). Job requires making decisions to determine and prepare work program/project plans, budget submissions and schedules using input from program clients, research scientists, peers and other research interests in accordance with policies, directives and administrative practices. Job requires consulting/liaising with supervisors, collaborators and clients to develop and refine project directions and plans. Job requires communicating

project implementation strategies and project progress to supervisors, collaborators and clients to ensure broader resource program goals and directions are met and links to other science and technology programs are made. Job requires referring only unusual situations such as requirement for increased budget to supervisor or possible conflict with accepted scientific or technical methodologist to research community.