

Executive Position Description

Position Title: Director General, Ecosystems Science
Position Number: 30970
Department: Fisheries and Oceans
Sector: Science
Classification: EX-03
Supervisor's Title ADM, Science
Location: Ottawa
Date: October, 2009

General Accountability:

Accountable for: developing national science programs and strategies supporting the integrated management of human activities in or affecting the marine environment to promote the conservation, protection and sustainable use of ocean species and ecosystems and to provide direction for the comprehensive husbandry of Canada's fisheries resources and developing, organizing and directing a comprehensive and nationally consistent peer review process and advisory capacity within the Department that provides departmental management with objective scientific information and advice to assist departmental decision-makers on policy and regulatory issues. The DG leads the development of comprehensive research policies, priorities and strategies and the review and evaluation of research results and their applications to national issues, federal priorities and departmental objectives associated with the management of the fisheries and ocean resources; the cohesive, nationally-consistent planning, management and evaluation of relevant research conducted by DFO and other scientific organizations with regard to fisheries research, species at risk, environment and biodiversity science, aquatic animal health, aquaculture, biotechnology, productivity and safety of Canada's aquatic ecosystems, and the provision of related scientific advice, services and products to decision makers. The DG also manages the provision of expert scientific advice and information to the Minister and senior departmental management related to the portfolio. Represent Canada's interests in international fora, leads the Canadian scientific delegation, negotiates with a variety of international contacts to achieve results and provides liaison functions on related science issues

Organizational Structure:

This is one of three senior executive positions reporting to the ADM, Science. The others are: the Director General, Ocean Science Services; and the Executive Director of Strategic Science Outreach.

The following executive positions report to the DG, Ecosystem Science:

Director, Fish Population Science (Staff of 12): Accountable for planning and recommending priorities and goals of Departmental programs related to fisheries research and species at risk, in particular activities pertaining to fish and population biology, stock assessment, resource inventories and forecasts; evaluating ongoing and proposed research programs, including coordination and integration of activities among DFO regions and sectors; managing the development of Departmental positions to represent fisheries research interests in government-wide science policy initiatives; managing initiatives to integrate fisheries science, species at risk and other elements in fisheries management; and participating in the formulation and delivery of scientific advice for management of Canada's national and international fisheries.

Director, Environment and Biodiversity Science (Staff of 9): Accountable for planning and recommending the priorities and goals of departmental programs related to environment and biodiversity science; for providing scientific leadership and direction for the program and strategic leadership in the evaluation of ongoing and proposed research programs, including co-ordination and integration of activities among DFO regions and Sectors; managing the development of departmental positions to represent environment and biodiversity science interests in government-wide and international science policy initiatives. The Director also leads initiatives for the integration of environment and biodiversity science and other elements into regulatory and decision-making

frameworks concerning the conservation, protection, stewardship and sustainable utilization of aquatic ecosystems and their living resources and provides scientific advice to OGDs on the conservation and protection of fish, fish habitat and aquatic ecosystems at regional, national and international levels.

Director, Aquaculture Science (Staff of 5): Accountable for: leading and coordinating the national integrated aquaculture science program with responsibility for the establishment of the research priorities and partnering activities, accountable for developing, implementing and advising on internal and co-operative research programs in aquaculture, aquaculture environmental interactions and aquaculture ecosystem-based approaches, in line with Sector and Department science strategies, and for leading the development of scientific evidence in support of ecologically sound management of Canada's aquaculture and improvement of the competitiveness of the Canadian aquaculture industry; managing the Aquaculture Collaborative Research and Development Program (ACRD) and chairing the ACRDP Steering Committee representing the Department on various international, national, f/p/t committees responsible for the development of aquaculture science, liaising and guiding the activities of the two national centres of aquaculture science (SABS and CAER).

Director, Biotechnology and Aquatic Animal Health (Staff of 10): Accountable for the management and delivery of several critical programs, in line with sectoral and departmental strategic plans, that support the sustainable development and increased competitiveness of Canada's seafood production industries through expanded R&D, in partnership with the provinces, industry, universities and other government departments (OGDs), leading to the development of new technologies and knowledge; and for managing the Biotechnology Research and Development program and the Biotechnology Regulatory Science Program; ensuring international coordination with key agencies (OIE, FAO) with special emphasize on Canada-USA collaboration; coordinating national activities with regional, provincial, industry and academic partners; establishing the national priorities of aquatic animal health research and the rapid and effective delivery of the disease diagnostic program with integration with CFIA; planning the policy & regulatory science advise and research activities with internal clients (FAM).

Director, Ecosystem Science Advice and Ecosystem Program Coordination (Staff of 11): Accountable for developing, organizing and directing a comprehensive and nationally consistent peer review process at the regional, zonal and national levels that provide departmental management with objective scientific information and advice to assist departmental decision-makers on policy and regulatory issues; provides strategic leadership and coordination of the Canadian Science Advisory Secretariat. In addition, the Director is responsible for providing oversight and delivering results on some specific national science issues, such as alignment of Ecosystem Research Initiatives and Centres of Expertise (COEs) with Science Sector priorities.

The Director General also provides functional direction to the six regional Science Sector Offices and associated establishments for the assigned science portfolio.

Nature and Scope:

The Department of Fisheries and Oceans (DFO) is engaged in the development and delivery of policies and programs in support of Canada's economic, ecological and scientific interests in marine, estuarine and freshwater inland waters and the safe, efficient and environmentally sound movement of commercial and other traffic over Canada's oceans and inland waterways. The Department is responsible for the development of operational programs and policies, standards, directives and cost recoverable services related to the legislated mandate of the Canadian Coast Guard and the management of major scientific and technical activities related to the management of renewable fisheries habitats and resources, and aquatic and oceans research and management programs of national and international aquatic resource management consequence.

Within the department's Oceans and Science Sector, the Ecosystem Science Directorate is responsible for national fisheries, aquatic environment, biotechnology science (including genomics) and biotechnology regulations, and aquatic animal health activity coordination. The Directorate leads the compilation and dissemination of data, working closely with staff across the departmental Sectors and with other federal departments, the provinces, the private sector, and with the university community. There is considerable focus on partnership delivery of programs in keeping with the strategic direction of the Science sector and on building international coordination and collaboration. Challenges include strengthening of the department's internal science programs, furthering our understanding of aquatic ecosystem science needs in order to support informed management for biotechnology and aquatic animal health.

DFO is unique within the federal government in that it maintains a custodial responsibility over a natural resource for the people of Canada. As the custodian of the resource, the Department supports the sound management and sustainable exploitation of the fisheries and the oceans. For many of the decisions taken by the department, scientific information and advice from the Science Program provides the policy and scientific basis essential for the proper development of fisheries management plans and the conservation and protection regimes for aquatic fishery resources and their ecosystems, as well as for the conservation, protection and stewardship regimes for aquatic environments and the exploitation frameworks for the marine environment and to effectively and responsibly promote the aquaculture industry.

In addition, the Director General is called upon to provide strategic leadership for the development of ecosystem approaches in the integrated management of human activities in or affecting the marine environment in response to the *Oceans Act* which has created new mechanisms for the conservation, protection and sustainable use of ocean species and ecosystems. He/she provides a managerial framework for the planning and undertaking of research and related scientific activities that specifically address the ecosystem approach and the precautionary principle and are augmented through an increased focus on cross-disciplinary scientific programs and expanded partnerships with other science-based government departments and agencies, academic institutions, and industrial and environmental organizations at national and international levels. The Director General is also instrumental in leading the evaluation, development, and implementation of national programs and strategies needed for the integrated management of human activities affecting fish, fish habitat and ocean spaces and species.

The incumbent also directs the identification, analysis and assessment of program, operational and research issues related to the sustainable development of aquaculture. As these activities are science based, the incumbent is accountable for the cohesive, nationally-consistent planning, management and evaluation of relevant research conducted by scientists in DFO and other scientific organizations, and for the provision of high quality and timely scientific advice, services and products to decision makers especially with regard to the health, productivity and safety of Canada's aquatic ecosystems. The incumbent is also the chair of the Steering Committee for the Aquaculture Collaboration Research & Development Program, which provides a key national position in the advancement of the national R&D activities. This requires a significant amount of interaction with various granting agencies and research programs. The incumbent will be responsible to set priorities and balance aquaculture science investments between production and environmental protection.

The incumbent is also responsible for the management of a significant regulatory responsibility related to administration of the Fish Health Protection Regulations which are designed to prevent the introduction and spread of dangerous pathogens which can affect domesticated and wild fisheries resources, lead to major economic losses, and affect the viability of the fisheries; including the mandate to diagnose and report critical aquatic animal health diseases and establish the forward looking research agenda to support outbreak responses. The incumbent is also responsible to deliver science services to the habitat management program, located in the Oceans & Habitat Management Sector requiring the provision of scientific advice on key human activities which have a direct impact on fish and fish habitats. Those activities include various environmental impacts linked to energy development, toxic chemicals, shipping, forestry, mining and so on.

The department is also increasing its leadership role relative to protection of species at risk and biodiversity. Through the *Species at Risk Act* (SARA), the federal government has committed to extended programs for protection and recovery of species at risk and the federal-provincial National Accord for Protection of Species at Risk has allocated funding to the federal strategy on species at risk. The federal Minister of Fisheries and Oceans is identified as the responsible Minister for aquatic species under SARA and because the federal government is directly responsible for species related to fisheries and oceans, this means greatly expanded responsibilities for the department and the Director General. Canada was an early signer of the Convention on Biological Diversity (1992) and accordingly has committed to a broader range of activities in support of the assessment, protection and recovery of biological diversity. These new responsibilities are complementary to those formerly held under the Fisheries Act, and the Director General is accountable for the development of new approaches to scientific assessment and new delivery programs to discharge the additional accountabilities.

With the increased importance of biotechnology and genomic developments, the Department has to ensure that a comprehensive research & development program is put in place to address its most critical priorities in this sector of activities. This program is to support fisheries, habitat and oceans management. The Department is

also mandated to develop and implement a biotechnology regulation which should provide a framework for aquatic genomics in Canada, as well as the approval of new genetically modified aquatic organisms. The management of this scientific program is another responsibility of the Director General, Ecosystem Science.

As well, the Science Program has been significantly influenced by several factors that have affected its mandate and ways of doing business. For example, there has been a shift in the priorities of the department's overall Strategic Plan Framework and a new emphasis on building a capacity in DFO's scientific research. For instance, research on precautionary and ecosystem approaches need to be increasingly addressed through new partnerships with industry and academia as well as other levels of government and international organizations. Similarly, Integrated Management and Objectives-based Fishery Management add a new dimension to the research needs and ask for new and innovative approaches. The Director General has been assigned accountability for evaluating, developing, and implementing national programs and strategies - such as the departmental Biodiversity Strategy and Biodiversity Science Program initiative - to provide direction for the comprehensive husbandry of Canada's fisheries resources and the habitat they depend on. Because these activities are science dependent, the Director General provides a focal point for cohesive national planning of relevant DFO research, and manages the provision of scientific information and expertise.

Another major responsibility for the Director General is peer review. Within the government context, peer review refers to scientific advice and information provided to clients. As part of the Department's scientific renewal program, the Director General is accountable to organize, develop, and implement a nationally consistent approach to the peer review process through the Canadian Science Advisory Secretariat that will be available to all departmental components in headquarters and regions. In addition, and as part of the business planning process, the Director General will also develop an annual advisory schedule that will be published at the start of each fiscal year. Once established, the Director General is accountable for the on-going direction of the peer review process and must ensure that the Department's peer review is conducted within the context and according to the principles and processes recommended for Scientific Advice for Government Effectiveness, (SAGE). These peer reviews can take many forms, ranging from ad-hoc and brainstorming session when advice and information requirements arise very suddenly in response to an unanticipated event, to very formal processes involving original research, information searches of known facts and the identification of unknown areas, information held in other government departments, in academic institutions, or internationally, the use of outside specialists under certain circumstances when confidentiality is not at issue, and formal advisory and committee processes.

To ensure that the department, government and the affected public receive the best possible scientific advice and information, the Director General provides direction and support to the process with respect to such principles as early issue identification to allow time for more thorough scientific research and analysis, inclusiveness, transparency, and openness to permit others to add their knowledge and be aware of the information or advice provided, client understanding of the risks and uncertainty that are a normal feature of scientific advice and information due to limits on knowledge and other unknown factors, and finally a commitment to all clients that the information and advice provided is based on good science. This latter issue is particularly important to ensure clients confidence in the information or advice received as to its validity and objectivity, and also ensure that science in the Department is conducted in accordance with good scientific research principles.

In addition to the provision of policy, peer review and strategic contributions, the Director General provides direction for in-house DFO science through the management of the review and evaluation of relevant research programs and of participation in Steering Committees, Science Advisory Committees or Resource Advisory Committees and the coordination of consultation with clients. He/she also directs development and coordination of processes to facilitate enhancement and exchange of innovative research methodologies. Furthermore, the Director General ensures the provision of expert functional guidance and advice for regional managers responsible for undertaking research and for delivering the department's programs in areas such as fisheries, species at risk, environment, biodiversity, aquatic animal health, aquaculture and biotechnology. The incumbent fosters and leads discussions among senior departmental managers both at headquarters and in the regions regarding issues related to the development of comprehensive research policies, priorities and strategies and to review and evaluate research results and their applications to national issues, federal priorities and departmental objectives associated with the management of the fisheries and ocean resources.

The Director General manages/participates in consultations and networks with a number of key contacts on behalf of DFO and on a variety of national and international scientific committees and management boards

responsible for the horizontal integration of science programs and for developing and implementing strategies and initiatives to support and advance the department's interests and concerns with respect to science in support of departmental and federal goals. He/she also represents the science sector and the department in a variety of international science organizations, processes and events related to the responsibilities of the position including Asia-Pacific, European and international bodies related to international fisheries science cooperation, conservation, resource management and information exchange. In some cases, these bodies engage in international negotiations on fisheries management and conservation issues and the incumbent may be called on to present and defend Canada's position on the basis of scientific information under adversarial circumstances. Often there may be a requirement to lead the Canadian scientific delegation, present the national position, provide explanations of the scientific basis for the position, and negotiate with a variety of international contacts to achieve results. Failure to discharge this function adequately can lead to conservation problems for Canadian resources, economic loss to Canada's fishing industry, or outcry and censure of the department or the government.

The Director General is also accountable for the creation of partnerships with other DFO sectors, OGDs, provincial and territorial governments, academic scientists, and stakeholder groups to develop robust scientific information and assessments of aquatic ecosystem resources and to develop and acquire comprehensive scientific knowledge and information on environmental science issues in support of departmental mandates. Additionally, he/she establishes and expands partnerships with fishing industry, involving, for example, the establishment of a national workshop on partnering and the review and realignment of the Sentinel Fisheries program.

The Director General is accountable for providing expert scientific advice and information to the Minister and senior departmental management on biodiversity-species at risk related issues and on issues related to the capacity of fish habitat to support fisheries and the impacts of human activities on fish, fish habitat, marine ecosystems and sustainable utilization, and oversees the preparation of briefings, memos, briefing note and reports. There is a frequent need for the Director General to take a key role in briefing the Minister and senior departmental issues on controversial matters related to decisions taken by the department and the Minister particularly on the scientific advice related to fish stocks such as northern cod, seals, crab, salmon and marine mammals, all of which potentially can lead to outcry, criticism of the Minister and public and user group reaction. The Director General also provides expert scientific advice on environmental science, biotechnology & genomic, aquaculture, biodiversity and fisheries issues to Standing Committees of Parliament and the Senate.

Dimensions:

	<u>Direct</u>	<u>Functional</u>
Number of Staff:	40	1000
Salary and Operating Budget:	\$ 15 million	\$140 million
Ship Support:	N/A	\$18 million

Specific Accountabilities:

1. Leads the development of national science programs and strategies supporting the integrated management of human activities in or affecting the marine environment to promote the conservation, protection and sustainable use of ocean species and ecosystems, sustainable aquaculture and to provide direction for the comprehensive husbandry of Canada's fisheries resources and the habitat they depend on.
2. Manages the planning and undertaking of research and related scientific activities that specifically address the ecosystem approach and the precautionary principle and are augmented through an increased focus on cross-disciplinary scientific programs and expanded partnerships with other research organizations.
3. Directs the development and implementation of a nationally consistent approach to the peer review process that will be available to all departmental components in headquarters and regions and formal national and international advisory and committee processes through the Canadian Science Advisory Secretariat.

4. Directs the cohesive, nationally-consistent planning, management and evaluation of relevant research conducted by DFO and other scientific organizations with regards to the health, productivity and safety of Canada's aquatic ecosystems, aquaculture, and the provision of related scientific advice, services, regulations and products to decision makers.
5. Directs the development and coordination of processes to facilitate enhancement and exchange of innovative research methodologies and ensures the provision of expert functional guidance and advice for regional managers responsible for undertaking research and for delivering the department's programs in areas such as fisheries, the environment, biodiversity, aquaculture, aquatic animal health, biotechnology and species at risk.
6. Leads the development of comprehensive research policies, priorities and strategies and to review and evaluate research results and their applications to national issues, federal priorities and departmental objectives associated with the management of the fisheries and ocean resources.
7. Directs the creation of partnerships with other DFO sectors, OGDs, other governments, academic scientists, and stakeholder groups to develop scientific information and assessments of aquatic ecosystem resources and information on environmental science issues in support of departmental mandates; and establishes and expands partnerships with fishing industry to enhance the management of the fisheries, aquaculture and ocean resources.
8. Develops and delivers two major regulatory science programs, biotechnology and aquaculture, both have important commercial importance as they provide the framework for trade related activities; import and export compliance.
9. Manages the provision of expert scientific advice and information to the Minister, to Standing Committees of Parliament and the Senate, and senior departmental management on issues related to the portfolio and oversees the preparation of briefings, memos, briefing note and reports.
10. Represents DFO on Steering Committees, Science Advisory Committees and/or Resource Advisory Committees and manages/participates with a number of key contacts on behalf of DFO on a variety of national and international scientific committees and management boards; leads the Canadian scientific delegation, negotiates with a variety of international contacts to achieve results and provides liaison functions on related science issues.

CERTIFICATION

The foregoing is an accurate and comprehensive statement of the duties and responsibilities assigned to this position.

Incumbent

Date

Signature

Manager

Date

Signature

Senior Official

Date

Signature