

POSITION DESCRIPTION

POSITION TITLE: Regional Director, Science

POSITION NUMBER: 4430

REGION: Pacific

BRANCH: Science

LOCATION: Nanaimo or Sidney, British Columbia

SUPERVISOR'S TITLE: Regional Director General Pacific

DATE: September, 2000

General Accountability

The Regional Director, Science is accountable for developing, designing and coordinating the implementation of regional plans and programs related to understanding the aquatic and marine environments, their processes and their resources with the goal of facilitating the sustained economic utilization of both renewable and non-renewable fresh water and ocean resources in a safe and environmentally sound manner. The scientific advice and support provided by the Branch provides the bases for the decisions and actions taken by the Department relative to fisheries and habitat management and the safe navigation of Pacific Region waterways.

Organization Structure

This is one of sixteen executive positions reporting to the Regional Director General. The others are: Regional Director Canadian Coast Guard; Regional Director Fisheries Management; Regional Director Policy and Communications, Regional Director Habitat and Enhancement; Regional Director Human Resources; Director, Canada Oceans Act Coordination Office; Regional Director Finance and Administration; Director Realty and Facilities; Regional Director Treaty and Aboriginal Policy; Area Director BC North Coast; Area Director BC Central Coast; Area Director BC South Coast; Area Director Yukon and Transboundary Rivers; Area Director Lower Fraser River; Area Director Interior BC.

Reporting directly to the Regional Director Science are:

Director Stock Assessment (Staff of 120) Accountable for planning, developing and managing scientific research programs and assessment functions for all stocks, including five salmon species, shellfish, pelagics and groundfish; and marine mammals; for providing support to pre-season, in-season and post-season fisheries management functions in the form of scientific advice, often through decentralized staff working with fisheries managers; for providing advice on stock status and harvest limits and other considerations related to the conservation and sustainable harvesting of resources. The position plays a key role in fishery/stakeholder consultation processes and treaty negotiations through the provision of scientific information.

Division Head, Marine Environment and Habitat (Staff of 50) – Accountable for planning, developing and managing scientific research programs and habitat science activities related to a wide variety of habitat issues, particularly those affecting salmonids, herring and shellfish; for providing advice and support for

regional habitat management and planning activities, including environmental assessment and containment risk assessment functions; and operation of the regional dioxin ultra-trace laboratory.

Division Head, Ocean Science and Productivity (Staff of 75) - Accountable for planning, developing and managing scientific research programs related to the understanding of ocean processes and properties and their influence on the productivity of resource species and other ecosystem components in keeping with the Canada Oceans Act; the conduct of climate change studies and phenomena, such as El Nino conditions; waves, storms, currents, and other hazards; the conduct and maintenance of long term series of ocean data in order to understand oceanic variability; the archiving and quality control of ocean information; partnership and cooperative initiatives with the ocean industry.

Division Head, Aquaculture (Staff of 60) – Accountable for planning, developing and managing scientific research programs in the aquaculture field, particularly salmonid aquaculture but also shellfish and other finfish aquaculture, in support of the aquaculture industry; research into wild stock interactions and potential hazards to wild stocks; support for the department's salmonid enhancement activities through directed research in support of the enhancement programs; research into fish disease, parasitology and diagnostic programs in support of the Fish and Shellfish Health Protection Regulations, the industry, and the enhancement program; consultation and liaison with the aquaculture industry stakeholders and the public including media relations and coordination with the programs of the Province of British Columbia and the industry.

Director Canadian Hydrographic Service (Staff of 65)- Accountable for surveying Canadian navigable waterways and for producing a number of nautical publications, including nautical charts, sailing directions, bathymetric maps and tide and current tables.

Chair, Pacific Scientific Advice Review Committee (PSARC) (3 FTEs) – Accountable for organizing, coordinating and overseeing the Pacific Regional body responsible for the review and evaluation of all scientific information on the status of living aquatic resources, and their ecosystems, and on biological aspects of stock management. PSARC provides internal and external clients with scientific information and advice; advises the Resource Management Executive Committee of Fisheries and Oceans Canada and other bodies on stock and habitat status and potential biological consequences of management actions and natural events; issues Stock Status Reports and Habitat Status Reports.

Executive Assistant (2 FTEs) – Accountable for the efficient operation of the office of the Regional Director Science and for administrative and liaison functions related to the operation of the Pacific Region Science Branch.

Science Planning and Finance Advisor (1 FTE) Accountable for coordinating and administering the planning functions for the Branch and for keeping abreast of all financial matters on behalf of the Regional Director of Science; and for close liaison with Division Heads on planning and financial matters.

International Science and Partnership Coordinator (1FTE) Accountable for coordinating and administering international agreements with other science laboratories, preparing briefing materials for senior management on international science issues, and for coordinating a variety of partnership activities.

Senior Scientist (1FTE) Accountable for the provision of advice to senior management on priority science issues, and for conducting a program of scientific research.

Nature and Scope

The Department of Fisheries and Oceans is engaged in the development and delivery of policies and programs in support of Canada's economic, ecological and scientific interests in oceans and 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 consequence.

The Department, as the custodian of Canada's marine resources, supports the sound management of the fishery through an extensive fishery management program. The Department's Science Program provides scientific information of high international standards for use in developing policies, regulations and legislation regarding the oceans and aquatic life, and in planning and carrying out aquatic activities. There is a specific responsibility for conservation and sustainable management of aquatic life with scientific advice forming the basis for conservation and management decision making. The Department supports scientific activities regionally and nationally to enhance the performance, promotion and assistance of research in the conservation, augmentation and use of aquatic and marine renewable resources of all Regions and on the biological productivity of the aquatic environment in order to improve the management and sustained economic utilization of these resources in a fashion that is compatible with a concern for the quality of the environment.

In response to the increasing emphasis which the government has placed on the creation and maintenance of partnerships with stakeholders in the administration of regulations, the department has embarked upon a series of reforms which have shifted the emphasis from reactive enforcement to the concept of sharing the stewardship responsibility for the resource with all participants in the fisheries. This change in the Department's operating philosophy will have a profound effect on the Department's clients and stakeholders, as the policies governing this resource directly affect people's jobs, communities and their way of life. One of the key programs in support of reform is the Pacific's Program Delivery Renewal (PDR) initiative. One of the key objectives of the PDR initiative is to decentralize all possible program delivery activities, with operational and decision making functions shifted to Area Directors and Area staff. This "shift" is intended to allow the remaining regional functions to focus on the development of policies, longer-term strategies, standards and guidelines and evaluation frameworks. This decentralization and realignment of accountability has impacted the Science Branch through a substantial increase in the number of internal clients requiring advice and information as well as an increasing emphasis on longer term projections on the status of the oceans and their habitats.

The Department's Science programs are delivered through six regional offices across Canada: - Newfoundland, Maritimes, Gulf, Laurentian, Central and Arctic, and Pacific. Although all of the Regions are similar in organizational structure the Pacific Region Science Branch is unique because of its comparative size and its responsibility for environmental science.

The Pacific Region responsibility area includes the coastal, offshore, and freshwater salmon-bearing systems of British Columbia, the Yukon Territory and some directed programs in the western Arctic related to vessel access to that area from the West Coast of Canada. This area induces Temperate, Sub-arctic, and Arctic oceanic regimes and a wide array of ocean ecosystems ranging from protected coastal bays; inlets and passages to fully exposed outer coast and offshore areas. Several thousand stocks of fish species of Pacific salmon occupy the rivers, stream and lakes, which form an integral part of the salmon life cycle and are the responsibility of the Department. Coastal estuaries are very important in the life cycle of Pacific salmon and are also often the site of human activities, pollution, water and land use practices and are the subject of conflict with respect to salmon conservation and protection. Shellfish, groundfish and herring resources are important components of the fishery.

The Region encompasses a large area, which extends 200 miles into the ocean. The Region is characterized by a number of competing interests. There is an aboriginal fishery including numerous and widely dispersed groups that have co-operated in the development of comprehensive land and resource claims establishing in the courts, under the Constitution Act, their right to fish for food, societal and ceremonial purposes. The British Columbia recreational fishery is the fastest growing recreational fishery in North America and the major economic impact of the sport fishery, boating and recreational infrastructure are evident and are based on fishing opportunities and the status of stocks. There is a commercial fishery that produces high dollar yields over very short periods of the year and which is experiencing profound change

in terms of economic opportunity and the approach to harvesting of fish stocks. All of these groups are often at odds with the Department's Fisheries Strategy. There are also a multiplicity of international interests and issues, and a proliferation of important environmental stakeholders with both common and diverse interests in fisheries and oceans related issues.

The Pacific Region is the main liaison and contact point for a number of Asia-Pacific, bilateral and multilateral processes and arrangements ranging from formal treaties to bilateral and multilateral activities, partnerships and networks for the exchange of scientific information and research cooperation. The Regional Science Program is accountable for providing direct support to negotiations under the often controversial Canada-USA Pacific salmon Treaty, as well as support of the Halibut Commission, the North Pacific Anadromous Fish Commission, and the North Pacific Science Organization (PICES), involving Canada, the USA, Japan, Russia, South Korea and China. The Branch is also responsible for providing support for a number of bilateral arrangements including the Canada-Japan Science and Technology Agreement, memoranda of understanding with University and research groups in Korea, joint programs with China and cooperative research with the USA and other countries. The Regional Director Science plays a key role in many of these activities by serving as a contact point or facilitator, as a delegate to the PICES organization and the ASIA-Pacific Economic Cooperation (APEC) Marine Resource Conservation Working Group involving eighteen Asia-Pacific countries. These activities are very important to Canada, not only from the resource conservation and sustainable management perspective, but also from the significance in establishing working relationships and cooperative ventures with the world's strongest developing and developed economies.

It is in this context that the Regional Director of Science is responsible for planning, organizing and implementing a complex scientific interdisciplinary research program which has a direct impact on the management of oceans, aquatic resources and their habitats. A significant portion of the Regional program is centered on the stock assessment function related to the full array of species management by the department. There is heavy emphasis on Pacific salmon due to their commercial, recreational and social importance to the stakeholders. Salmon research and assessment functions are carried out in both marine and freshwater due to the critical stages in the life cycle of the fish, which affect the survival, available harvest, and reproductive success of the salmon. The level of complexity makes prediction and management very difficult, and often controversial and confrontational, because of the necessity of communicating in "grey" rather than black and white terms.

There a number of environmental concerns impacting on salmonids and other species including forestry practices, pollution, water and land use practices, ocean disposal, estuarine destruction, foreshore development, the introduction of exotic organisms, marine spills and other hazards which must be studied and remedial or regulatory measures prescribed. Some of the work involves operation of ultra-trace analytical laboratory facilities, which serve the Region as a whole, as well as the Science Branch, and are capable of analyses of dangerous contaminants such as dioxins at the parts per trillion level. Much of the work in stock assessment and fish habitat involves the need to promote interdisciplinary cooperation and to provide advice to accountable managers, to participate in the discussion of results, to present information to concerned groups and stakeholders, to take part in formal inquiries and fact-finding processes and to support a variety of consultative processes. The Science Program is responsible for scientific data quality control and data archiving and for the provision of formal advice on the status of stocks through the Pacific Scientific Advice Review Committee (PSARC) which provides for formal peer review of stock and habitat status advice.

Approximately one third of Canada is underwater and is charted by the Canadian Hydrographic Service. The production of a chart by the Government is seen as a form of guarantee or certification to permit the safe and efficient conduct of marine transportation. The production of charts provides the Government with direct support to control and regulate marine transportation safety. Charts also control fishing by delineating where it can take place. The Government of Canada produces charts as an assertion of sovereignty. National security demands that a supply of accurate, up to date charts be available at all times to the department of National Defense and to the Canadian Coast Guard. The Canadian Hydrographic Service also provides the Department of Foreign Affairs with technical advice on sovereignty and maritime boundary issues.

The RD Science reports directly to the Regional Director General and functionally to the ADM Science and the ADM Oceans (because of the RD's unique habitat responsibility). The RD has close working relationships with functional peers across the Region and the country and with the Pacific Region Area Directors. The RD Science is functionally responsible within the Areas for providing overall direction, coordination, the development of standards and methods, region consistency etc., relative to Science programs. To facilitate effective communication and integration of Science programs within the Region the RD Science is a member of the Pacific Policy Committee, The Resource Management Executive Committee, and the Regional Management Committee. Funding pressures lead to joint project partnerships with Aquaculture Industry groups and organizations, other members of the private sector and academic institutions. These contacts are international in scope.

A major challenge in the Pacific Region is the highly operational nature of the salmon and other fisheries which necessitate provision of pre-season, in-season and post season assessment advice. Given the rivalries between competing stakeholders and the volatility of opinion with respect to policy related to activities such as aboriginal fishing, in-season management is often highly controversial and has led to formal public inquiry processes and major impacts on the Department. It is thus critical that the scientific aspects of in-season assessment as well as pre-season predictions be as accurate as possible, both from the perspective of conservation and rebuilding of salmon stocks and from the perspective of the public controversy that surrounds failure to meet escapement targets or discrepancy in enumeration technique.

An important aspect of the science Program is the maintenance of long term ocean databases to support the highest possible level of understanding of ocean variability. Ocean scientific information and research is vitally important as changes in oceanic conditions, including El Nino events and possibly global climate changes, have potential to influence the abundance and survival of important species in a major way. Also important, is the study of ocean dynamics and processes in order to understand water movements, coastal currents, larval distribution, marine hazards such as waves, storms and tsunami impacts, direction of drift of spilled contaminants, vessels and persons lost at sea. Hydroacoustic research is very important, both from applications leading to more accurate enumeration of stock status and also innovative applications of acoustic technology for the study of ocean dynamics, waves, and ice break-up phenomena of importance to the shipping and petroleum industry.

The Region has the largest aquaculture industry in the country, largely focused on salmon aquaculture and with some growing activity on other species such as shellfish and other fin-fish. The program supports both the industry and the Region's extensive enhancement activities, which require directed research and development activities. Major challenges in aquaculture research include supporting the diversification of the industry to facilitate economic viability and take advantage of global markets for new species, genetics and biotechnology applications, and understanding the potential environmental impacts of aquaculture activities.

The geographic dispersion of the Branch's locations presents the RD Science with a considerable internal coordination challenge and a frequent requirement for travel. Three main laboratories are located in Sidney (Institute of Ocean Sciences), Nanaimo (Pacific Biological Station), and West Vancouver. In addition, a satellite facility is operated at Cultus Lake and approximately 50 stock assessment staff are located with fisheries managers in six Areas throughout the Region. The Region Headquarters is located in Vancouver. The decentralization of program delivery to the Areas has increased the difficulty and complexities involved in promoting information exchange and linkages with the areas and other branches within the Region.

The rapid pace of technological innovation concomitant with diminished resources, and the exponential increase in the demands upon the Branch for scientific information and advice, provides a profoundly complex challenge to the RD Science to maintain a high level of scientific quality; to focus resources on the highest priorities of both a national and regional nature; and to ensure that the program is responsive to the needs of fisheries and habitat managers as well as the scientific program priorities of the Department. The aging workforce presents an immediate challenge to the development of succession plans and formal mentoring and transfer of knowledge programs. Additionally the continuity of effective Canadian ocean and aquatic science programs requires that new ways must be found of delivering programs through

partnerships, new sources of funding must be established, and new ways of operating programs must be developed.

Because of the Branch's specialized technical focus the RD Science has a high level of autonomy in terms of technical authority and decision making. However, the RD must obtain a broad range of inputs into priority setting in order to provide effective actionable support and advice. Additionally the RD Science must look to other groups within and outside Government for the funding of programs and projects and must work collegially with First nations, Universities, and colleagues within the Science community for the provision of data upon which to make assessments. The RD Science is expected to keep the RDG fully apprised of all new developments and takes direction from the RDG on priorities and the response of the Branch to critical situations

Dimensions

Annual Operating Budget	\$35million
Staff	380

Specific Accountabilities

1. Develops and implements regional science priorities and objectives for science programs in the Region, ensuring that they are consistent with departmental policies, priorities and objectives.
2. Provides scientific leadership and direction for the region and directs the provision of expert scientific advice to the Region, Headquarters, other government departments, and stakeholders.
3. Ensures the efficient and effective delivery of biological, chemical and physical scientific research activities.
4. Directs the development and implementation of regional habitat research and programs in support of habitat management.
5. Directs the production of current nautical charts, sailing directions, bathymetric maps and tide and current tables through the Canadian Hydrographic Service.
6. Directs the development and application of approaches to encourage greater participation in scientific research on the part of clients, stakeholders, universities and provincial governments and to foster development of new partnerships.
7. Ensures that the results of research programs are properly and correctly interpreted and that appropriate advice reaches the relevant users in a timely fashion.
8. Represent the scientific interests and concerns of the Region and the Department in a variety of Regional, National and International fora.
9. Ensures that the resources and personnel assigned to the Region are optimally utilized.
10. Continues to develop and promote the use of partnerships, technology transfer and development.
11. Advises the ADM Science on all matters related to the Region's Science program contribution and to participate in the setting of Science sector *priorities* and advises the ADM Oceans on all matters related to joint habitat responsibilities.