Media Backgrounder

Report of the Expert Panel on Biodiversity Science
Canadian Taxonomy: Exploring Biodiversity, Creating Opportunity

In 2009 the Minister of Canadian Heritage, on behalf of the Canadian Museum of Nature, posed the following question to the Council of Canadian Academies: ***What are the state and trends of biodiversity science in Canada? Are we equipped to understand the challenges of our biodiversity resources?***

The Council assembled a multidisciplinary group of 14 Canadian and international experts, chaired by Dr. Thomas E. Lovejoy, Biodiversity Chair at the Heinz Center for Science, Economics and the Environment. The Panel met over the course of 12 months to produce a comprehensive, evidence-based report entitled, *Canadian Taxonomy: Exploring Biodiversity, Creating Opportunity.*

The Panel's specific focus was on the state of taxonomy in Canada. Taxonomy discovers, distinguishes, classifies and documents living things. As such, taxonomy is central to biodiversity research and to understanding the world around us.

The Expert Panel's report examines three key areas: Canada's taxonomic expertise; the state of biodiversity collections; and Canada's strength in data sharing. After examining the evidence in each of these areas the Expert Panel concluded that Canada is not yet equipped to fully understand the challenges of its biodiversity resources.

Taxonomic Expertise - The Panel's findings suggest that despite Canada's history of world class contributions to taxonomic research there is reason for concern, particularly as taxonomic expertise is being lost due to fewer training opportunities, limited job openings, and stagnating research funds. However, an interest remains amongst students to learn about and pursue careers in taxonomy. If the expertise gap continues to widen, Canada risks the misidentification of invasive species and inaccurate information about their spread and potential for harm. Canada may also become incapable of assessing decline in certain native species.

State of Collections - There are over 50 million specimens in Canadian collections and the Expert Panel suggests that a conservative estimate of their value is over a quarter of a billion dollars. The Panel believes that Canada is at risk of losing long-term information essential to understanding changes in biodiversity and the ability to make informed policy decisions because of the conditions of some Canadian biological collections and the lack of a national collections strategy and standards.

Data Sharing - Although Canada has impressive specimen collections and a strong digital infrastructure, most information is trapped in cabinets and not available on the internet. Canada's data sharing efforts compare poorly internationally, as evidenced by its low participation in the Global Biodiversity Information Facility. Approximately 80 per cent of Canada's online biodiversity information is being held outside Canada. This data gap means that Canada risks making policy decisions related to the management of biodiversity resources

on the basis of inadequate data, with potentially enormous impacts for the economy and the well-being of Canadians.

The Panel believes the report is the most comprehensive and up-to-date assessment of Canada's taxonomic expertise and biodiversity collections currently available. The Panel came to its findings through a series of meetings, a public call for evidence, research, and surveys on taxonomic expertise and biodiversity collections. Like all Council reports, this assessment followed a strict process to ensure its independence. The sponsor (the Canadian Museum of Nature) did not participate in the assessment process, review drafts of reports, or propose any changes prior to publication. This report did undergo a formal report review by expert peers to assure quality and objectivity.

The Panel's report can be downloaded in English and French from the Council's website, www.scienceadvice.ca.

Expert Panel on Biodiversity Science

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Andrew Gonzalez, Professor and Canada Research Chair in Biodiversity Science, and Director of the Quebec Centre for Biodiversity Science, McGill University, Montréal, Quebec

David M. Green, Professor and Director of the Redpath Museum, McGill University, Montréal, Quebec

Peter Hall, Honourary Research Associate (retired), Agriculture and Agri-Food Canada, Ottawa, Ontario

Paul Hebert, FRSC, Professor and Director, Biodiversity Institute of Ontario, University of Guelph, Ontario

Thora Martina Herrmann, Professor and Canada Research Chair in Ethnoecology and Biodiversity Conservation, University of Montréal, Quebec

Douglas Hyde, Executive Director, NatureServe Canada, Ottawa, Ontario

Jihyun Lee, Environmental Affairs Officer, Marine and Coastal Biodiversity and Ecosystems Approach, United Nations Environment Programme/Secretariat of the Convention on Biological Diversity, Montréal, Quebec

Wayne P. Maddison, Professor and Canada Research Chair in Biodiversity and Systematics, and Director of the Beaty Biodiversity Museum, University of British Columbia, Vancouver

Sarah P. Otto, FRSC, Professor and Director of the Biodiversity Research Centre, University of British Columbia, Vancouver

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