

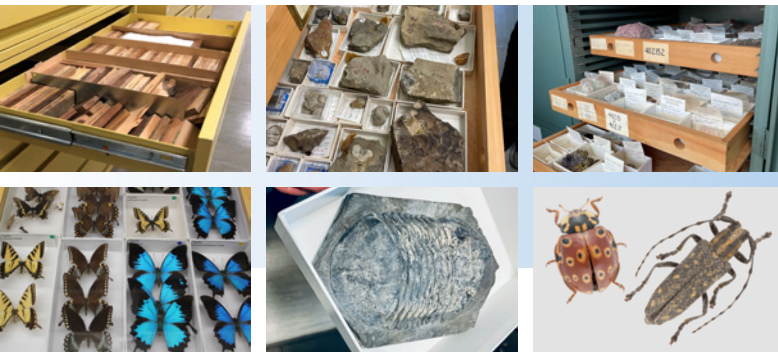


# Bringing scientific collections into the digital age

## Essential resources for science-based decision-making

Natural Resources Canada (NRCan) has a rich and extensive pan-Canadian network of scientific collections comprising over **30 million specimens and samples**, mainly under the responsibility of the Lands and Minerals Sector (LMS) and the Canadian Forest Service (CFS). Over the decades, NRCan has invested billions of dollars to build and consolidate its collections, providing a unique window into the past that cannot be replicated.

These collections are an invaluable asset for supporting research into priority issues such as climate change, biodiversity, critical mineral supply, forest pest management and the cumulative effects of natural resource projects. The rapid evolution of analytical tools now makes it possible to revisit these collections and their associated data. This has outstanding potential for the development of innovative and transformative science in response to the challenges facing Canadian society.



*“Imagine a library containing millions of books with no computer to search for the title or author.”*

*Dr. Heather Cole, Agriculture and Agri-Food Canada (AAFC)*

Access to these collections, however, is hampered by an incomplete digital inventory and a weak online presence. These are essential elements in supporting NRCan’s mandates, ensuring the visibility of its science and strengthening its partnerships.

A national consultation identified the key challenges facing NRCan’s collections. Complemented by a rigorous literature review, this enabled us to compare their current state with international best practices in management and governance.

### The challenges facing NRCan’s scientific collections

- Incomplete digitization
- Lack of data standardization
- Complex, non-harmonized information management
- Inadequate physical facilities
- Scarcity of genetic data
- Chronic underfunding
- Insufficient human resources
- Poorly defined roles and responsibilities

# Project at a glance



**2022-2023**

**NRCAN ENTERPRISE INVESTMENT FUND**  
(\$492 K)

Conduct a needs analysis for the modernization of NRCan's geological and biological collections.



**2023-2024**

**NRCAN ENTERPRISE INVESTMENT FUND**  
(\$626 K)

Establish an improved, consolidated network of collection management systems.

## Towards a network of modern collections

### STANDARDIZED DIGITAL MANAGEMENT

- Implement an inventory and data management system
- Publish data online

### GOVERNANCE

- Develop a sectoral vision and guidelines in collaboration with the national network of scientific collection managers and specialists
- Share expertise and best practices in collections management

### MODERN PHYSICAL FACILITIES

- Upgrade physical facilities
- Develop a conservation strategy for valuable samples and specimens

### NEW PROSPECTS FOR COLLECTIONS

- Develop expertise in DNA extraction and perform mass sequencing by partnering with an external organization
- Further develop expertise in conducting reanalysis projects using modern geoscience knowledge, concepts and analytical techniques

### FINANCING

- Secure an annual budget for each collection
- Allocate permanent human resources (scientific profile and information management)

## The future of NRCan's collections

### A fully digitized and integrated network of collections that:

- enables effective and efficient management;
- meaningfully contributes to scientific research on key priorities;
- supports new science policies and science-informed decision-making;
- strengthens NRCan's national and international influence, visibility, and collaborations.

Want to learn more ? Please contact [collections@nrcan-rncan.gc.ca](mailto:collections@nrcan-rncan.gc.ca).

Aussi disponible en français sous le titre :  
*Propulser les collections scientifiques à l'ère numérique*

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