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Alberta Biodiversity Monitoring Institute



What We Monitor

- Mammals
- Birds
- Vascular Plants
- Mosses and liverworts
- Soil Mites
- Wetland invertebrates
- Human footprint
- Trees, snags and downed woody material
- Habitat types and characteristics
- Wetland shape, size and water depth
- Wetland physiochemistry
- Incidental species

Biodiversity Matters

Alberta is home to more than 80,000 species including plants, animals, arthropods, bacteria, fungi, and algae. These species and their habitats make up Alberta’s biodiversity and they are critical to our health and well-being in ways that are often overlooked. Forest lands grow trees that supply our sawmills and pulp mills, agricultural lands grow crops that feed our communities, and natural areas provide opportunities for hiking, hunting, fishing, and trapping. Biodiversity lays the groundwork for active and healthy communities throughout Alberta.

Who We Are

The ABMI is a not-for-profit, arm’s-length and science-based organization that provides relevant, timely and credible scientific information on the state of Alberta’s biodiversity, to support policy, planning and resource management decisions.

The ABMI is guided by a core set of principles: *independent, objective, credible, accessible, transparent, and relevant.*

The ABMI program is jointly delivered by Alberta Innovates Technology Futures, the Royal Alberta Museum, the University of Alberta, and the University of Calgary. The ABMI Board of Directors includes representatives from the Government of Alberta, environmental non-governmental organizations, the forest, energy and agriculture sectors, and the research community.

What We Do

We monitor biodiversity throughout the entire province. To do this, the ABMI collects data from 1,656 sites distributed evenly – every 20 km – across Alberta. At each site, ABMI field technicians assess both



terrestrial and wetland biodiversity: they gather soil and water samples, record which species are present, and measure a variety of habitat characteristics. Through this effort, the ABMI assembles data on over 2,000 species.

Through a strong partnership with the Royal Alberta Museum, the ABMI processes and documents tens of thousands of specimens of vascular plants, lichen, moss, aquatic invertebrates and soil mites each year. These groups of organisms are key indicators of ecosystem health, however, they are often overlooked and underreported aspects of biodiversity. In fact, through this process we have discovered new species of vascular plants, mites and lichen!

Rigorous scientific analyses of the monitoring data – augmented with remote sensing data – allows the ABMI to accurately report on the status and trends of biodiversity in Alberta. We also undertake special projects to demonstrate practical applications of the ABMI data, including projects on rare plant and animal monitoring, climate change adaptation, ecosystem service evaluation and oil and gas reclamation.

Where We Monitor

The ABMI surveys all of Alberta. Our monitoring sites are in cities, on public and private lands, industrial installations, protected areas, wetlands and sometimes even on glaciers. Each site is scheduled to be surveyed once every five years with the bulk of monitoring occurring in spring and summer. In the spring, birds are monitored through birdsong recordings, and, in the winter, populations of mammals are monitored through snow tracking.

Our monitoring sites exist in cities, public and private lands, industrial installations, protected areas and wetlands.

We also track changes in habitat structure and composition at two scales: locally, using field measurements, and remotely using aerial and satellite imagery. We use this data to build statistical models that describe the relationship between land use, habitat and the relative abundance of individual species. One of the uses of these statistical models is to project the abundance of a species in quarter sections of land in Alberta. The outcome is a program that monitors and predicts change in species, habitats, and human land-use activities.

Remote Sensing and Wall-to-wall Mapping

The ABMI Remote Sensing Group, based at the University of Calgary, researches, develops, and implements remote sensing methods to gather information on habitat and human footprint. The group undertakes analyses in two ways. First, using fine-resolution aerial photography, a detailed inventory of existing human, vegetation, land and water features is made for 3x7 km sections surrounding each ABMI field site. Second, existing satellite imagery is used to produce and update a wall-to-wall land cover map of the entire province.

Public Access to Data and Information

ABMI data is publically accessible and all species and habitat data are accompanied by relevant contextual data and background information. This includes a summary of the data collection methods and a comprehensive set of metadata that explains the variables and codes found in the dataset. We periodically release reports, which include analyses of ABMI data that provide status and trend information for species, as well as findings on habitat and human land use. For access to our data and reports please visit: www.abmi.ca.

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Photos (from left to right): Boreal Chickadee - Wayne Lynch, Woodland Caribou - Christopher Kolaczan, Northern Gooseberry - Wayne Lynch, Alaskan Dark-eye - D.E. Walter, Powdered Sunshine - Diane L. Haughland

