

Surveying Alberta's Biodiversity on Your Land

Information for landholders



Mission

We track changes in Alberta's wildlife and their habitats from border to border, and provide ongoing, relevant, scientifically credible information on Alberta's living resources. For Alberta's land-use decision makers. For Albertans.

It's Our Nature *to Know*

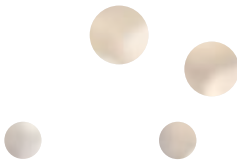
About the ABMI

The Alberta Biodiversity Monitoring Institute (ABMI) is an arm's-length, not-for-profit scientific organization. We monitor and report on the status and trends of Alberta's species and human footprint (land that has been visibly transformed by humans).

To monitor biodiversity across Alberta, we survey 1656 sites across the province (Illustration 1). At each site, we collect data and samples from both terrestrial (land) and wetland (water) habitats. In addition, we capture satellite images and aerial photography to assess the extent of human footprint across the province. To track changes in Alberta's biodiversity and human footprint over time, we aim to return to the same sites on a five to seven-year cycle.

Because many of the sites the ABMI visits each year are found on private land, private landholders, like yourself are essential partners in monitoring biodiversity. You help us to create a legacy of biodiversity information in this province that will benefit generations to come. Because we cannot do our work without your cooperation, your privacy and concerns are our number one priority. **For that reason, we never publicly disclose the exact locations of our monitoring sites and we keep all personal information confidential.**

(Please see page 4 for more information on site locations.)



Working together with Albertans, the ABMI aims to provide the reliable, objective information necessary to make informed decisions to manage our province's land and natural resources.

Why monitor biodiversity?

Biodiversity is the variety of life on Earth, from microscopic insects to massive trees, and all the plants and wildlife in between. **Maintaining biodiversity supports productive ecosystems and is critical to human health.** For example, ensuring healthy wetland ecosystems is actually one of the most cost-effective ways of providing a clean and reliable source of drinking water. Productive forest ecosystems grow trees that not only supply our sawmills and pulp mills but also act as an important storehouse of carbon, which helps to lessen the impacts of a changing global climate. Additionally, approximately one third of the fruits and vegetables we buy at the grocery store require pollination by the many insect species that are an important part of biodiversity.



1656 Sites

20 km APART



← 11 km buffer
AROUND EACH SITE



ILLUSTRATION 1

ABMI's 1656 randomly selected sites are located approximately 20 km apart across the entire province

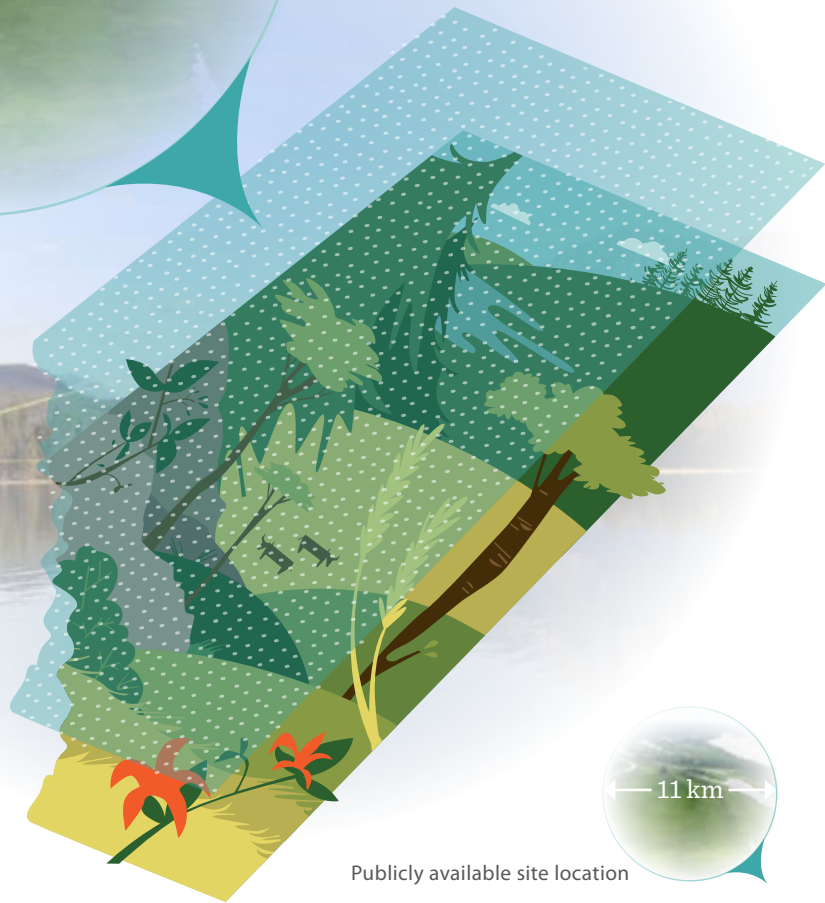
When the ABMI data is released, the site location is described as a large circle, 11 km in diameter (approximately one township in size). The exact locations of terrestrial and wetland sites within the circle are kept confidential, and are not released with the data.

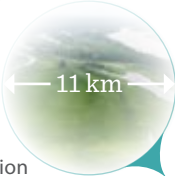


What data is collected?

The ABMI's 1656 survey sites are spaced approximately 20 km apart from each other across the entire province (Illustration 1). In our public data, our survey locations are presented as large circles that are 11 km in diameter, or about the size of one township. The ABMI's actual terrestrial and wetland sites are situated randomly within these circles.

The exact locations of these terrestrial and wetland sites are kept confidential and are not released with our public data.

We use specific criteria to select wetlands suitable for long-term monitoring. For us, wetlands could be ponds, small lakes, or even dugouts, and can include human-created or modified wetlands. This approach ensures we get an accurate representation of all of the possible aquatic habitats in the province.



- Publicly available site location 
- Confidential terrestrial site location within the publicly available site 
- Confidential wetland site location within the publicly available site 

Because the locations of the ABMI's survey sites are random, we survey different habitats and land use types (such as agricultural fields, forestry cut blocks, and protected areas) in proportion to their occurrence in the province. By collecting data this way, the ABMI is able to identify key relationships between different types of land use and biodiversity.

Terrestrial

site protocols (methods used to collect data):

To complete our terrestrial survey protocols, two to three visits are required throughout the field season (Illustration 2). ABMI crews typically start fieldwork in the fall and continue through to mid-summer.

Visit 1 (September-March)

Up to four pairs of motion-sensitive trail cameras and autonomous recording units (ARUs) are set-up in a 600 metre by 600 metre square around our survey site. The cameras and ARUs record images of wildlife and birdsongs, which allow us to monitor the distribution of Alberta's mammals and birds. Any photos of humans, vehicles, or potentially identifiable features are permanently removed from our data set to ensure privacy for participating landholders.

Visit 2 (May-June)

During this visit, field staff will determine their best access path and prepare forested sites to be surveyed by marking out the area with flagging tape. Additionally, field technicians will collect moss and lichen for identification at the Royal Alberta Museum, take soil samples and site photographs, and note the species of trees and shrubs and their densities.

Visit 3 (June-July)

The third survey visit takes place in June or July. Field technicians will collect the cameras and ARUs, record plant species, and identify the ecosite and physical site characteristics. The ABMI is also interested in rangeland grasses, and for some pasture sites an additional half-hour Rangeland Site Assessment may also be completed.



ILLUSTRATION 2

List of protocols performed at ABMI terrestrial survey sites. Each protocol is repeated in every quadrant (northeast, southeast, southwest and northwest) of the 100 metre x 100 metre (1 hectare) terrestrial site. Sightings of birds, mammals, and amphibians are also noted during each site visit.

Fall & Winter Protocols: (September-March)

- Set up of wildlife cameras and ARUs

Spring Protocols: (May-June)

- Moss and lichen collection
- Trees, snags, and stump measurements
- Downed woody material measurements
- Soil mites and mineral soil samples
- Site photographs

Summer Protocols: (June-July)

- Physical site characteristics (topography, elevation, and slope)
- Soil depth measurements
- Shrub and ground cover estimates
- Tree core collection (to determine age)
- Forest canopy cover estimates
- Plant identification
- Wildlife camera and ARU retrieval





SURVEY
TRANSECT

WITHIN **10km**
OF TERRESTRIAL SITE

The randomly selected wetland survey site is within 10 km of the randomly selected terrestrial site. Wetlands must be permanent, which means they must have existed for at least 10 years and be at least one metre deep.

Wetland **site protocols:**

The ABMI visits wetland survey sites once or twice throughout the field season (Illustration 3).

Visit 1 (September–March)

At **previously visited** sites, technicians may install one trail camera and one ARU to monitor birds, mammals, and amphibians.

Visit 1 (May–June)

During the first visit to a **new** wetland site, field technicians will determine their best access path and ensure the wetland site meets ABMI survey requirements for depth and size. Sightings of birds, mammals, and amphibians are also noted during this visit.

ILLUSTRATION 3

Wetland protocols are performed during spring and summer visits. Each protocol is repeated in every quadrant of the wetland (northeast, southeast, southwest and northwest). Sighting of birds, mammals, and amphibians are also noted during each visit.

Spring Protocols: (May–June)

- Depth measurements (from shore)
- Wetland vegetation zone maps (from shore)

Summer Protocols: (June–July)

- Depth measurements (from boat)
- Shoreline characteristics and site photos
- Vertebrate (birds and mammals) search
- Water chemistry and nutrients
- Plant and ecosite identification
- Aquatic insect collection

Visit 2 (June–July)

Wetland surveys occur during the second site visit in June or July. During this visit, technicians will survey plants around the perimeter of the water. Technicians will also use an inflatable kayak to collect water samples, take depth measurements, and collect aquatic insects. Sightings of birds, mammals, and amphibians are also noted during this visit.

Data Use and Confidentiality

What happens to the data?

After the ABMI's data is organized and processed, we will send you an information package describing the species we found on your land. The data is also made publicly available, though the exact site locations remain strictly confidential (Illustration 1). Data may be downloaded by scientists and researchers, teachers, land managers, or provincial planners, and can be used in a variety of ways.

The ABMI also runs a series of application projects, which use the data we collect to investigate important subjects such as the effect of climate change on biodiversity and how we might better value ecosystem services (the benefits we get from nature that support our wellbeing), such as water purification and pollination.

Protecting your privacy

The ABMI has been releasing biodiversity data since 2007 while simultaneously protecting the privacy of landholders and site locations. The ABMI is a not-for-profit, arm's length organization and does not represent any government, industry, or environmental entity. We do not disclose any personal information about landholders and keep our site locations confidential using our public coordinate system. We do not advocate for any group, nor do we interfere with land management practices.

When we monitor biodiversity, we are not looking for anything in particular. This is why our sites are randomly selected. Our goal is to collect scientific data on the province's overall biodiversity and to monitor trends on Alberta's landscape.

Jordan Bell
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Land Access Manager

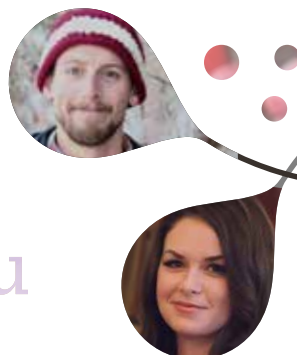
Thank you

*Thank you in advance for your cooperation.
We look forward to working with you as
stewards of Alberta's land and biodiversity.*

Working together: thank you!

The ABMI follows strict land access rules and we will always seek permission before allowing technicians to access monitoring sites. All landholders are contacted prior to site visits and may set specific site access guidelines if they wish.

As one of the world's most comprehensive biodiversity monitoring programs, the ABMI recognizes the importance of building strong relationships with the people on the land. Without the support and cooperation of Alberta's landholders, the immense undertaking of monitoring Alberta's biodiversity would not be possible. We recognize your connection to your land, and appreciate the opportunity Alberta's landholders grant us.



www.abmi.ca

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It's Our Nature to Know



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