



# ECOSYSTEM SERVICES

## Assessment Project

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ECOSYSTEM SERVICES ARE BENEFITS HUMANS RECEIVE FROM NATURE THAT SUPPORT OUR HEALTH AND WELLBEING.

They include basic needs such as clean water, food, and raw materials for building, and less tangible benefits like recreational opportunities and beautiful views. As our population grows, the capacity of Alberta's ecosystems to provide these benefits is being stretched.

Given the essential role that ecosystem services play in our lives, we need to better understand where and how they're supplied and how our actions affect them. The Alberta Biodiversity Monitoring Institute (ABMI) has started to map, measure, and value several ecosystem services across the entire province. Powered with this information, Albertans can better understand how our decisions affect environmental and human health outcomes.

### A CLOSER LOOK AT ECOSYSTEM SERVICES

What, exactly, is an ecosystem and how does it supply these valuable services? An ecosystem is a community of all living organisms (plants, animals and more) and their interactions with the environment (water, air, soil minerals). Ecosystems, and the many living things within them, give us products such as timber, they purify our water and they pollinate our plants. Some ecosystem services have a well-known economic value like food, but for other services like aesthetic experiences, value is much harder to calculate.





# THE ABMI'S ECOSYSTEM SERVICES ASSESSMENT PROJECT

Using ABMI's specialized ecological knowledge and expertise, the ESA Project is enhancing and creating knowledge that will support better environmental management through regional planning, market-based approaches and sustainability reporting. Its two main goals are:

1. To develop a system to assess and map ecosystem services across Alberta, and
2. To better understand how planning and management decisions affect the provision of ecosystem services.

Ecosystems are complex, making it difficult to evaluate the supply and value of services they provide. Initially, our assessment approach uses existing sources of information such as maps, inventories and monitoring programs to determine the supply of each service across a region of interest. Ecosystem service assessments need to be grounded in science, easily understood, and cost effective.

Once the supply of an ecosystem service is estimated, the value can then be calculated based on how humans use or benefit from the service.

For example, estimates of water quality in a stream, wetland, or lake are based on an understanding of precipitation, topography and land use in a watershed. The value of water purification services provided in that watershed can then be determined by estimating what it would cost to build and operate infrastructure to provide clean drinking water or healthy fish habitat.

## HOW WILL THE ABMI'S ESA PROJECT BENEFIT ALBERTA?

Currently, ecosystem services are often taken for granted. It's easy to lose sight of how the water coming from our taps came to be safe to drink, how food gets to our dinner table, or the importance of places to fish, canoe or hunt. Learning how to measure and value ecosystem services will provide insights on how to manage Alberta's land base and help us make decisions about how to best steward the land now and in the future.



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