

What are Ecosystem Services Markets and Why do they Matter to Alberta?

Alberta is a leader in ecosystem services and biodiversity market innovation. We have developed the knowledge and capacity to better understand ecosystem services, and how we can best manage the land to get the most value out of these services.

What are Ecosystem Services (ES) and ES Markets?

Ecosystem services are the benefits that humans receive from nature. This includes everything from food, fibre, and fuel, to regulating services such as flood control, and even recreational services such as enjoying the esthetic value of nature. Currently, some of these services, like food production, are marketable. However, there are many services that we do not yet attach a dollar value to, like water purification and pollination.

Ecosystem Services and biodiversity markets are markets in which the transactions take place with the goal of improving or maintaining environmental quality or minimizing environmental degradation. Using this approach, we see the costs of our actions on the environment and the benefits of preserving it. Market approaches for restoring and enhancing ecosystem services has shown to cause positive changes in land-use management and bring a number of benefits to individuals, businesses and communities.

Why are ES markets important to Alberta?

Environmental excellence is one of our province's priorities, along with economic diversification, and innovation and competitiveness. Ecosystem services and biodiversity markets can contribute to achieving the goals in these three important areas.

Economic Diversification: Ecosystem services and biodiversity markets help to diversify the economy by providing new business opportunities. For example, agricultural producers can sell improved water quality, providing them with another income stream.

Environmental Integrity: since ecosystem services and biodiversity markets value the benefits nature provides, they are inherently protecting our environment. The tools developed to support these markets will help measure, monitor and report on sustainability and manage environmental risks associated with industrial development. Furthermore, the market approach to environmental management has the potential to help industry increase social license to operate.

Enhanced Competitiveness: In ecosystem services and biodiversity markets, businesses will compete for the revenues they can get for selling these services. This competition promotes innovation and efficiency as companies work to find the best management practices for achieving their goals.

Building Capacity

Since 2010, Alberta Innovates and others in the province have supported and carried out much work in the area of ecosystem services. The foundational work captured in the Ecosystem Services Roadmap was facilitated by Alberta Innovates Bio Solutions through the former Institute for Agriculture, Forestry and the Environment. The roadmap identified 5 building blocks necessary for ecosystem services and biodiversity markets:

- Assessments
- Market infrastructure
- Enabling policy
- Data and information; and
- Capacity building

The Ecosystem Services and Biodiversity Network, formalized in 2015, is guided by a working group providing expertise in each of these areas. The working group is bringing in expertise to work on various innovation projects to build capacity for ecosystem services and biodiversity markets. Through the network, we are connecting and sharing knowledge and reaching out to get others involved.

Proving the concept: Ecosystem Services on the Farm

In an interesting pilot project, Alberta Innovates is developing tools to assess ecosystem services benefits from beneficial management practices on farms, and is evaluating the potential for markets for ecosystem services on agricultural lands. The project “Development of Information and Science to Support the Provision of Ecosystem Services on Agricultural Lands” is integrating science, bringing in and engaging landowners, and coordinating and applying the research at a farm-level scale in a way that ultimately can be used to facilitate the development of markets.

Since agriculture is a primary land use in Alberta, it offers many opportunities for maintaining and improving ecosystem services. For markets to work, we need to identify how management actions translate into quantifiable benefits that could be traded. However, farmers and ranchers need information so they can understand the different costs and impacts of various management actions on their farm operations and how they can manage risks.

Through this project, researchers will try to understand the public’s willingness to pay for biodiversity, water quality and storage and carbon, and determine whether or not a market is feasible and where the early opportunities are for investing in ecosystem services.

To learn more visit ecoservicesnetwork.ca