



Industry: Oil and gas

Duration: 2007 – 2013

Location: Southwest Alberta

Case study type: Research

Shell Canada Southwest Alberta Montane research program



Shell has been operating in Canada since 1911, and is now one of the country's largest integrated oil and gas companies. Headquartered in Calgary, Alberta, Shell Canada employs more than 8,200 people across Canada and represented nearly a third of all global recruitment in 2008. Shell Canada holds approximately 30% of Royal Dutch Shell's global resource base. A leading manufacturer, distributor and marketer of refined petroleum products, Shell produces natural gas, natural gas liquids and bitumen, and is Canada's largest producer of sulphur. Shell is one of Canada's largest oil sands developers.

Shell's perspective on biodiversity

Impacts on biodiversity

The exploration and development of natural gas and oil reserves requires the development of infrastructure such as well pads, roads, pipelines and processing facilities in many remote and backcountry areas as well as in and adjacent to protected areas.

These developments can have environmental impacts through habitat degradation, runoff and erosion and an operational presence during critical times of the year for wildlife populations. They can also open up remote areas to additional human impact.

Shell's approach to biodiversity conservation

Shell's Business Principles include contributing to sustainable development, which means helping to meet the world's growing energy needs in economically, environmentally and socially responsible ways. This includes managing operations and supply chains in ways that mitigate environmental impacts and create benefits in the societies where it operates.

To meet this commitment Shell ensures its employees have the expertise needed to carry out their jobs and build relationships with customers, business partners, governments, academic institutions, non-governmental organizations and neighbours.

In addition, Shell's Health, Safety and Environment (HSE) Policy stipulates protecting the environment and managing resources responsibly, by promoting and implementing best practices in the industry. Shell recognizes the value of biodiversity by:

- working with others (e.g., local communities, researchers, non-government organizations and regulators) to maintain ecosystems;
- respecting protected areas (i.e., areas specifically dedicated to the protection and maintenance of biodiversity, and of natural and associated cultural resources, managed through legal or other effective means);
- seeking partnerships to enable the Shell Group of companies to make a positive contribution towards the conservation of global biodiversity.

Sustainable development

Contributing to sustainable development means consciously balancing short and long-term interests by integrating economic, environmental and social considerations into business decisions and regularly engaging with stakeholders to understand issues and develop appropriate mitigation. Shell's approach to sustainable development affects the choices it makes about its portfolio and products and the way in which it operates.

Shell's focus on sustainability includes producing cleaner-burning natural gas, environmentally acceptable biofuels, and fuels that improve fuel efficiency and reduce emissions. It has also implemented a series of requirements for integrating environmental, including biodiversity, and social factors into the way it plans, designs and makes investment decisions on major new projects. These provide local employment, including for contractors and suppliers and exemplify socially and environmentally responsible business practices

To reduce environmental and social impacts at its operations, Shell works to protect the health and safety of employees and neighbours, reduce disruptions to the community, lower emissions and reduce impacts on biodiversity by using less energy, water and other resources.

Partnerships

Shell has developed local, regional, national and global partnerships to progress thinking on environmental issues. Global partnerships have been created with the International Union for the Conservation of Nature (IUCN) and Wetlands International to work together on biodiversity conservation issues.

In 2008, the partnerships began research to find the best ways to conserve tundra ecosystems in the Arctic; to treat wetlands in an environmentally sustainable manner along the flight paths of migratory birds; and to reduce the impacts of growing biofuels on biodiversity and local communities.

In 2008, it co-authored a report with the IUCN titled *Building Biodiversity Business*, which describes the benefits for business of biodiversity conservation. In 2009, Shell also signed a cooperative agreement with The Nature Conservancy.

To follow and strengthen these standards, Shell partners with stakeholders in projects such as the Southwest Alberta Montane Research Program.

Case study: Southwest Alberta Montane research program

Rationale

Elk are an important wildlife resource in southern Alberta and an essential element that helps maintain an ecosystem balance of this area. Maintaining habitat and reducing disturbance during critical periods is imperative to maintaining healthy and viable elk populations. Other species, including large carnivores such as wolves and grizzly bears, also contribute to overall ecological health.

To ensure that industrial activities have minimal impact on the ecosystem, Shell stepped forward as the major funder and partner of the Southwest Alberta Montane Research Program. The purpose of the Southwest Alberta Montane Research Program is to understand how elk use the montane landscape during winter.



Description

Shell has been developing the gas reserves in the Castle / Waterton region for 50 years. There are approximately 75 producing wells in the Waterton gas field and incorporating sustainable development into activities is a key objective. Shell recognizes that creating new motor access into undeveloped areas can have a significant effect on wildlife.

Shell works with regulatory agencies and wildlife conservation groups to reduce its environmental footprint, control public motor vehicle access and to remediate and restore habitat effectiveness in the region.

The Castle area in southwest Alberta has a rich diversity of large wildlife such as bighorn sheep, elk, mule deer, grizzly bears, black bears, cougars, mountain goats, wolves and many other species.

Elk have both winter and summer habitat in the Castle region. Also, the area is one of several corridors that grizzly bears and wolves, which are closely linked to elk population dynamics through the predator-prey relationship, use to move throughout the Rocky Mountains.

Maintaining habitat and reducing disturbance are critical to sustainable elk herds in the province, and elk are part of the regulatory framework along the east slopes of the Rockies. Though elk are the primary focus of the study, a large database of information on other wildlife species will be gathered and new management regimes initiated. Also resulting from this study will be three Ph.D. and three M.Sc. theses, as well as research from two post-doctoral students.



To date, over 100 elk have been fitted with radio collars and their movements are being tracked using Global Positioning Systems (GPS) for the duration of the 7-year study (2007 – 2013).

By monitoring elk movements, information such as size of winter range for cows and bulls can be further defined. Ongoing monitoring also helps account for animals missing from previous surveys that impacts the bull to cow ratio. Spatial information gained through the monitoring program will help understand the accuracy and increase value of these previous surveys.

Several additional research projects have been added that complement the elk study. These involve radio-collaring grizzly bears and investigating wolf depredation on livestock. These collaborative projects are looking at the predator/prey relationship of elk/wolves; livestock and wildlife diseases, and examining the effects of various levels and types of human activity on the food chain, including an evaluation of human access management as a strategy tool for the recovery of grizzly bears.

Though data have yet to be analyzed comprehensively by the academic partners in the program, preliminary results show that bull elk have home ranges much greater than currently thought, and intermixing of elk herds may provide important diversity in genetic makeup.

This Program is the largest elk project ever conducted in terms of data analysis. Given the large elk population in the region – over 1,800 animals – and the importance of this species to the ecosystem, the relationship between herbivores and predators will be an important part of this program. Information collected in this region may assist wildlife management agencies in understanding trophic cascades, biodiversity restoration, and migration corridor use.

Communication

- 3,000 brochures printed and distributed.
- A dedicated website (www.montaneelk.com).
- General meetings twice a year to provide updates to government, research team members and local residents.
- Several magazine articles, conference presentations and journal articles.
- In-house poster session and seminar for Shell staff.
- Short video for TV spot.

Outcomes

Benefits

Economic

Having a sound understanding of the critical times and corridors of elk movements, including when they arrive and leave specific habitats, will allow Shell to manage their activities. Wells in this area require several months to drill and cost several million dollars. Having a single timing window for drilling helps reduce costs and results in a safer project because drilling can be completed during a single time period with a single drilling crew.

Biodiversity

New access created by Shell into sensitive areas will be blocked to general vehicle use. Older access, seismic lines and other existing trails will be re-vegetated to minimize human impacts. Shell has set a goal of “no net increase in public motorized access” to work in parallel with government land management agencies, local landowners and environmental groups.



Lessons learned

A successful, major project such as this requires the time and commitment of a multi-disciplinary team. During the course of planning the project, and through its first years of operations, several “keys to success” have been identified and supported. The following should be taken into consideration before starting an undertaking like this:

- Identify a corporate leader to look at the big picture and incorporate the research into project plans.
- Identify a full time project manager to keep participants aligned and the project running smoothly and efficiently.
- Collaborate with user groups on philosophies, activities, and objectives.

Impact on company

Shell proactively takes steps to minimize environmental impact related to its operations and to help protect wildlife. In the Castle area it means working closely with Alberta Sustainable Resource Development to address concerns about the environmental effects of activities. The results of the study will help Shell time its activities as to have minimum impact on the various wildlife species that live in the area.

Contact information

Trevor Hindmarch

Environment Team Leader

☎ 403-691-3111

✉ trevor.hindmarch@shell.com

Shell Canada

400 4th Avenue SW

Po Box 100, Station M

Calgary, Alberta T2P 2H5

Canada

www.shell.ca