

## **Progressive Approaches to Seismic Data Acquisition – Supporting Community Investment and Environmental Research**

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### **Summary**

In order to maintain positive relationships with communities, ConocoPhillips Canada (CPC) exercises a policy of investment in research, community and operator education and awareness, and a proactive approach to protecting the environment and the community. This is especially important as CPC operates in environmentally sensitive areas, including one of the largest remaining tracts of natural grasslands in North America that are preserved within SAB 2, 3, 4. Furthermore, up to 62 species at risk of flora and fauna in Alberta may be impacted by industrial or recreational activities, especially in the southern plains.

### **Introduction**

Recent surveys conducted in Alberta suggest that the oil and gas industry may need to increase awareness about the progressive work that some companies are investing in community and environmental issues. The processes involved are not defined by the oil industry in isolation but by engaging stakeholders such as the government, environmentalists, and surface owners to build a better action plan. As such, the oilpatch may need to invest in building trust with communities. The first step is action and the second step is communication.

### **Theory and/or Method**

This paper will discuss how ConocoPhillips Canada (CPC) operated and acquired seismic data during the 2007 season within the Special Areas 2,3, and 4, with respect to 3 main categories; 1) seismic data quality as it pertains to fold; 2) economics; and 3) environmental issues (e.g., natural grasslands, wetlands, and species at risk). The CPC approach will be compared to the more standard survey, acquisition and cleanup methods.

During the 2007 drilling and seismic acquisition season, CPC took several precautions in order to conserve the integrity of the special areas. These methods include heli-support, low ground pressure or impact vehicle support (e.g., ATVS), wildlife surveys, bentonite case dynamite holes, and shallow multiple hole source patterns.

## Examples

Alberta Sustainable Resource Development had identified that the CPC project area overlays occupied Burrowing Owl habitat and a number of burrowing owl nests had been recorded. (Figure 1)

The identified owl nest burrows were inspected to determine use and the seismic operations were adjusted to protect the species habitats as per “Recommended Land Use Guidelines for Wildlife Species and Habitat within Grassland and Parkland Natural Regions of Alberta” (July 26, 2001).

As these are migratory birds we could acquire our seismic data after October 16 and before March 31. Outside of this time window, several human use category setbacks are applied to Burrowing Owl Nest sites.

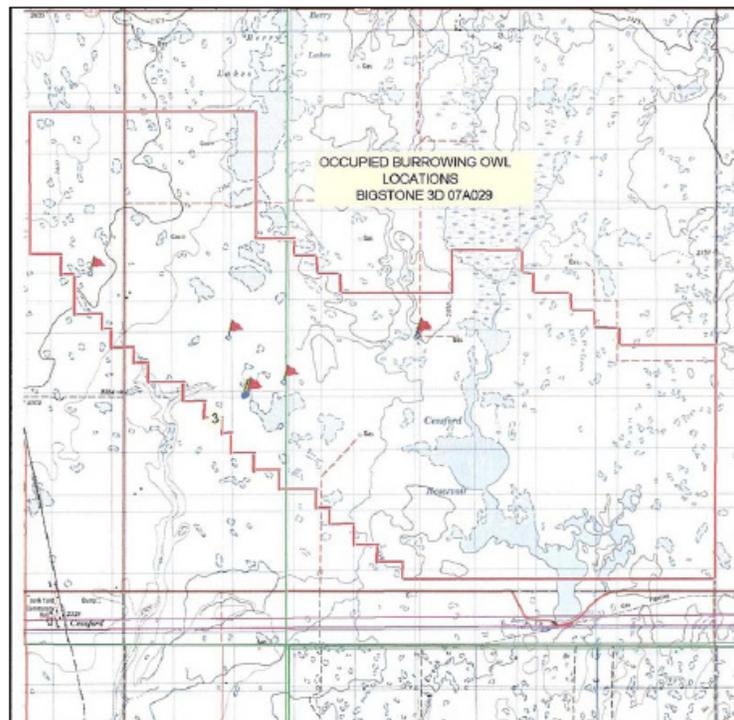


Figure1: Burrowing Owl nests occupied in 2007, CPC 07A029 project



Figure2: Young Burrowing Owls

This species is identified as “*Threatened*” in the Alberta Wildlife Act and is considered “*At Risk*” within the Province. (Figure 2)

CPC sponsors burrowing owl research through the University of Alberta as a part of sustainable development and stakeholder engagement efforts.

### **Conclusions**

The CPC acquisition approach (survey through to clean up) will show that we maintained seismic data quality, as will be shown through fold diagrams and examples of field records. Fully loaded economics supported the seismic data acquisition. Additional costs for drilling and equipment mobilization did not adversely affect the project costs which actually came in under budget. A policy of investment in research, community and operator education and awareness, and a proactive approach does protect the environment and the community and still meet business objectives.

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