

Evaluating the Ecological Risk of Oil and Gas Development on Ferruginous Hawks

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A three-year project to inform the energy sector about risks and mitigation options when working around endangered Ferruginous Hawks (hereafter FEHA) in the Canadian prairies. The Canadian prairie population of FEHA has been reported as suffering a population decline of 50% and a range contraction of 50% over the past 20 years. Risk management for FEHA is a priority for both industry and regulatory agencies as a result. Alberta's FEHA Recovery Plan and the draft Recovery Strategy for the FEHA in Canada have set forth a number of key research questions about FEHA ecology, particularly how energy development influences this species. Over the next few years, governments will designate critical habitat and define what warrants destruction of critical habitat for FEHA. To ensure the energy sector is accurately considered when critical habitat is defined, research is needed to evaluate how specific energy sector activities do or do not influence critical habitat. In addition,

existing provincial setback guidelines for Endangered Species, such as the FEHA, are periodically reviewed and updated when new information is uncovered. Working proactively to understand impacts on Species At Risk, the Raptor Ecology and Conservation Team (REACT) at the University of Alberta has six major objectives:

- Complete and validate multi-level habitat-selection models that identify environmental and anthropogenic factors associated with hawk presence and abundance in Alberta relative to landscapes available now and historically.
- Evaluate how human activity at and near the nest influences nesting behaviour and reproductive success.
- Determine if there are threshold of energy sector activities that limit when FEHA will return to nest between years and whether this is drive by a threshold in reproductive success.
- Use radio-transmitters to determine area required by juvenile hawks after they leave the nest, and which natural and anthropogenic factors influence their habitat use and mortality between fledging and migration.
- Use satellite technology to track adult hawks to determine home range sizes and how hawks forage within home ranges. Conduct spatial analyses to determine if hawk foraging and foraging success is altered by human activity and infrastructure.
- Develop a beneficial management plan for artificial nest platforms to mitigate for human

impacts by determining nest structure characteristics conducive to successful nesting. Use products from Obj. 1 – 5 to develop a model to strategically install artificial nest platforms where reproductive success will be maximized.

Key deliverables for this project are: 1) a series of reports that will outline issues faced by energy sector with respect to Ferruginous Hawks; 2) Recommendations to industry and government regarding the best strategies to mitigate any negative effects; and 3) increased public awareness about this species and what can be done to increase FEHA numbers in Canada.

Policy Issue

Wildlife responses to oil and gas activity. The responses of wildlife species to oil and gas activity vary, and relatively little information exists on causal mechanisms for these responses.

Knowledge Gap

Setback distances for a variety of wildlife species, particularly species at risk and species of management concern (eg. birds, ungulates, bears)

Final Report

2010 Presentation

2012 Presentation

2013 Presentation