Badland Motosport Project Environmental review of the impacts on species at risk, songbirds and their plants

To Kneehills County Council public hearings 11 June 3013

By: Dr. Geoff Holroyd Linda Kershaw Helen Trefry



#### Concerns

- current development design will have negative impact on Species-At-Risk, songbird numbers and plant populations
- important bird breeding and feeding habitats will be affected for SAR
- effect on populations will add to cumulative impacts



#### Data sources

#### Limited information in EIA

- limited sample due to limited time, duration, intensity and date
- confusion between Columbian Ground Squirrel and Richardson's Ground Squirrel
- ♦ used data base from a two day site visit 30-31 May
- A few additional species reported by local residents
- accessed continental Breeding Bird Survey home page

# Conservation Status of Migratory Birds

continental population declines



- radar studies over the Gulf of Mexico have shown 50% decline in songbird in 30 years
- declines are incremental impacts due to human activity
- most important single reason is habitat loss

### Solutions to Loss of Biodiversity

Biodiversity Convention
Canadian Biodiversity Strategy
Partners in Flight initiative, Important Bird Areas, Ecologically Sensitive Area Inventories and others

Goal is to avoid endangered species

How do these issues apply to Badland Motosport Development Environmental Impacts?

**Ecoregion has highest species richness** 





**Number of species recorded per Breeding Bird Survey route** 

How do these issues apply to Cheviot Mine EIA?

Ecoregion has high species richness
 Ecoregion with high risk to biodiversity



### **Risk to Biodiversity**



BIODIVERSITY IN CANADA -A Science Assessment for Environment Canada 1994



How do these issues apply to Badlands Motosport EIA?

Ecoregion has high species richness
 Ecoregion with high risk to biodiversity
 Some species are already declining



## Project Species in Decline

- ♦ 61 bird species identified in 2 brief surveys
- ♦ 20 species listed as sensitive by Alberta
- ♦ 7 species are listed Nationally by COSEWIC
  - 4 species are Threatened
  - 3 species are Special Concern





#### Grassland Bird Declines in Prairies State of Canada's Birds 2012



#### Aerial Insectivore Declines in Canada State of Canada's Birds 2012



Indicators of the national population status of all regularly occurring native bird species in Canada and eight selected subgroups. 9 Species were recorded:

Swallows Flycatchers Nighthawk

#### Bank Swallow Status in Proposed Development



- Nationally listed by COSEWIC as THREATENED
- Three colonies on immediately adjacent banks of Rosebud River
- > 500 pairs active at 500 burrows
- Adults foraged continuously over wetlands





#### Bank Swallow declines of 80%



# Many species of Swallows and Flycatchers are in decline



How do these issues apply to Badlands Motosport EIA?

Ecoregion has high species richness
 Ecoregion with high risk to biodiversity
 Some species are already declining
 Some species have restricted ranges

### **Distribution of Project species**

+ no endemics

♦ 6 species with restricted range



How do these issues apply to Badlands Motosport EIA?

Ecoregion has high species richness
Ecoregion with high risk to biodiversity
Some species are already declining
Some species have restricted ranges
Some species occur at their highest concentrations in the prairies

# Significance of peaks of abundance

important because breeding density of these species is high in the project area

- source populations for elsewhere in range
- higher quality genotype associated with source habitats

How do these issues apply to Badlands Motosport EIA?

 Ecoregion has high species richness Ecoregion with high risk to biodiversity Some species are already declining Some species have restricted ranges Some species occur at their highest concentrations in the prairies Some habitats have higher bird density

61 species of birds found on only two short surveys indicates that this area is unusually diverse

#### Photo 1 from Bylaw 1597 Area Structure Plan

## Important habitats (birds per sq.km)



### **Other Seasons**

 only breeding habitats have been considered
 concerns in migration and winter seasons have not been reviewed



HEADINGS FOR RECOMMENDATIONS IN ENVIRONMENTAL ASSESSMENT

AVOID IMPACT
MINIMIZE IMPACT
MITIGATION/RESTORATION
COMPENSATION



# Recommendations to avoid impacts

 The concept of No-net-loss is not possible for Species-at-Risk songbirds

Lost habitat = lost population

 Cumulative impact of this habitat loss will negatively affect the abundance of each species SRD / Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat within Grassland and Parkland Natural Regions of Alberta

Species	Location	Time of Year	Level of Disturbance				
			Low	Medium	High		
Great Plains Toad and Plains Spadefoot Class III wetlands on Native Prairie		Year round	100 m	100 m	100 m		
Northern Leopard Frog	Breeding ponds	Year round	100 m	100 m	100 m		
Eastern Short Horned Uzard*	Habitat	Year Round	100 m	100 m	200 m		
Bull Snake, Western Hognose Snake, Prairie Rattiesnake	Hibernacula	Year around	200 m	200 m	500 m		
	Rookery	March 15 <sup>th</sup> - October 31 <sup>st</sup> November 1 <sup>st</sup> - March 14 <sup>th</sup>	200 m 50 m	200 m 50 m	200 m 200 m		
Greater Sage Grouse*	Leks	Year around	3200 m	3200 m	3200 m		
	Habitat	Year-Round	1000m	1000 m	1000m		
Sharp-Tail Grouse	Leks	March 15 <sup>th</sup> - June 15 <sup>th</sup>	500 m	500 m	500 m		
		June 16 <sup>th</sup> – March 14 <sup>th</sup>	100m	100 m	500m		
Peregrine Falcon, Bald Eagle, Golden Eagle, Prairie Falcon, Ferruginous Hawk		March 15th - July 15th	1000 m	1000 m	1000 m		
	Nesting sites	July 16 <sup>th</sup> - March 14 <sup>th</sup> 50 m		100 m	1000 m		
Burrowing Owl		April 1 <sup>st</sup> - August 15 <sup>th</sup>	200 m	500 m	500 m		
	Nesting sites	August 16th -October 15th	200 m	200 m	500 m		
		October 16 <sup>th</sup> - March 31 <sup>et</sup>	50 m	100 m	500 m		
Colonial Nesting Birds:		April 1 <sup>st</sup> - August 31 <sup>st</sup>	1000 m	1000 m	1000 m		
American White Pelican, Great Blue Heron*	Nesting sites	September 1 <sup>st</sup> - March 31 <sup>st</sup>	100 m	100 m	1000 m		
Piping Plover waterbodies*		April 15th - July 31th	100 m	200 m	200 m		
	Nesting sites	August 1 <sup>st</sup> - April 14 <sup>th</sup>	100 m	100 m	200 m		
Ord's Kangaroo Rat**	Nesting sites (dens)	Year Round	50 m 100 m		250 m		
Threatened and Endangered Plants	Habitat	Year Round	30 m	30 m	300 m		
an Marcala et al	10. <sub>122000</sub>	February 16th - July 31st	500 m	500m	500 m		
Swift Fox	Den	August 1 <sup>st</sup> - February 15 <sup>th</sup>	50 m	100 m	500 m		
Long-billed Curlew Upland Sandpiper Mountain Plover Short-eared Owl Sprague's Pipit	Active nest and surrounding habitat	April 1 <sup>st</sup> - July 15 <sup>th</sup>	100 m	100 m	100 m		

Provincially recommended setbacks for species-of-concern would encompass the whole proposed project area



\*These species habitats are mapped

## Bank Swallow foraging habitat





Critically important foraging wetlands for this nationally threatened species

Road mortality from collisions with vehicles will be a major impact

Three colonies with approximately 500 active pairs of bank swallows are at risk from this development

# Rare Plant Overview by Linda Kershaw

◆ 50 plant species identified by EnviroConsult Inc.

- ♦ May 30-31, 2013 survey of plants
- Some common obvious species were not listed by EnviroConsult Inc.:
  - Water smartweed
  - Dock
  - Creeping juniper





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# 140 species of plants identified





### Rare Plants

\$ \$1\$ species are 'critically endangered'
\$ One \$1\$ species was identified:
Prairie Cordgrass (*Spartina pectinata*)
extensive along the edge of the well access road







Rosebud Valley was identified as highest Environmentally Significant Area in 1990 and 2010

This proposal would destroy a biologically diverse portion of this area

**Environmentally Significant** Areas in Kneehills County County ESA reduced 25% in last 20 years - 61,887 ha in 1990 - 45,857 ha in 2009 Rosebud ESA reduced over 50% in last 20 years – 4530 ha in 1990 - 2029 ha in 2010





#### ESA Area (hectares):

2029 ha

#### Applicable Criteria:

- Hazard lands and areas unsafe to develop (ie. Floodplains, steep or unstable slopes)
- Vital environmental, ecological or hydrological functions
- Areas with rare or unique geological or physiographic features
- Unique habitats or remnants of once large habitats
- Areas that provide a linking function and permit movement for wildlife
- Areas with intrinsic appeal or widespread community interest
- 12. Areas of historical importance

#### ESA Significance:

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- ESA-1: Very high (1065 ha)
- ESA-2: High (964 ha)

#### Management Considerations:

For management plans for ESA-1 through 4 refer to section 7.1. For management recommendations by natural feature type refer to section 7.2.

#### Photoplate:





Site: 30 Criteria: 1, 2, 8 ESA Significance: ESA-2: High Natural Feature Types: Riparian Area, Waterbody



## Conclusions

 Environmental Assessment was incomplete → 20 bird species listed as sensitive by Alberta
 ♦ 4 bird species Nationally Threatened ♦ 3 bird species Special Concern → At least one S1 plant species
 Nationally significant ESA ♦ 50% loss of ESA in past 20 years



## Conclusions

- Proposed Development will result in:
- Destruction of this Ecological Diverse and Important area
- Destruction of Critical Foraging Habitat for listed species
- Contribute to Cumulative Destruction of Global Biodiversity

## **THINK GLOBALY ACT** LOCALY













