

**BADLANDS MOTORSPORTS RESORTS  
AREA STRUCTURE PLAN  
KNEEHILL COUNTY  
  
BIODIVERSITY CONSIDERATIONS**

*EVIDENCE OF*

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## **EXECUTIVE SUMMARY**

The Badlands Motorsports Resort development has the potential to place a significant effect on the biodiversity of an environmentally significant area. In addition to the direct on-site impacts from development of native habitats, including rare rough fescue grassland, there could be indirect effects from use related to accessing the site and impacts on species of concern.

According to Kneehill County policies, any process involving redesignation for such an environmentally significant area should undergo an environmental impact assessment. This was not done and represents a major deficiency.

In my opinion, the proposed Badlands Motorsports Resort Area Structure Plan is not consistent with the Kneehill County Municipal Development Plan, specifically as it relates to guidance and policies dealing with Environmentally Significant Areas and valleys. In addition, the Badlands Motorsports Resort Area Structure Plan is not consistent with the Government of Alberta Land Use Policies as they relate to environmental protection since the Area Structure Plan promotes the loss of significant wildlife and plant habitat and establishes inappropriate land use.

## 1. INTRODUCTION

Cottonwood Consultants Ltd. was retained by local landowners to provide an assessment of some biodiversity concerns related to a proposed development in southern Alberta in Kneehill County. The Area Structure Plan (Badlands Motorsports Resorts 2013) involves the proposed development of a "Badlands Motorsports Resort" facility that will be located in the Northern Fescue Grassland Natural Subregion.

My evaluation has focused on environmental significance: biodiversity and environmentally significant areas in the project area. These are key considerations that should have been of interest to Kneehill County in evaluating the development and the proposed land use redesignation.

I am personally familiar with the lands in question. I was the principal researcher on Environmentally Significant Areas study for Kneehill County (Cottonwood Consultants 1991) and have conducted other biodiversity research in the surrounding region since the early 1970s, e.g. botanical and avian investigations in the Drumheller area, advising landowners on Encana shallow gas developments in the Rosebud River and other valleys.

## 2. THE GLOBAL BIODIVERSITY POLICY CONTEXT

The Federal Government of Canada endorsed the World Conservation Strategy and began its implementation in 1982. The strategy identifies three objectives:

- "to maintain essential ecological processes and life-support systems."
- "to preserve genetic diversity."
- "to ensure the sustainable utilization of species and ecosystems."

The Wildlife Policy for Canada (signed by both Alberta and Canada) states that the genetic viability on the earth shall not be compromised; the population levels of all life forms, wild and domesticated must be at least sufficient for their survival, and to this end necessary habitats shall be safeguarded. Specific goals in the National Wildlife Policy include:

1. Maintaining and restoring ecological processes.
2. Maintaining and restoring biodiversity.

Biodiversity is being lost at an alarming rate as a result of human activities. The state of the world's ecosystems was assessed in detail by international experts in the Millennium Ecosystem Assessment (2005). The conclusion was that "Human actions are fundamentally, and to a significant extent irreversibly, changing the diversity of life on Earth, and most of these changes represent a loss of biodiversity. Changes in important components of biological diversity were more rapid in the past 50 years than at any time in human history".

The Northern Great Plains ecoregion has been identified as a global priority for conservation and protection as one of the World Wildlife Fund's Global 200 ecoregions (World Wildlife Fund 2009; Henwood 2010).

### 3. PROTECTION AND PLANNING CONTEXT

Alberta has adopted the natural regions landscape classification system to describe environmental diversity and provide the scientific framework for the protected areas network (Alberta Parks 2010). Each natural region contains a mix of similar vegetation, geology, soils and landscape features. Alberta recognizes six natural regions including Grassland (Natural Regions Committee 2006) (Figure 1) that are again subdivided into 21 natural subregions, including the Northern Fescue in which the proposed facility is located.

In Alberta, protected area targets have not been met in some Natural Subregions, including the Northern Fescue where less than half of the protection target has been achieved with only about 1% of the subregion protected (Figure 2).

Much of the native Grassland in Alberta is fragmented or degraded. The remaining blocks of native habitat, especially environmentally significant areas, are significant for biodiversity conservation.

As Northern Fescue Grassland becomes more fragmented or lost to other uses, protection of the remaining intact areas or Environmentally Significant Areas (ESAs) becomes strategic for biodiversity conservation and important in evaluating a development's environmental effects.

The Land Use Framework has not developed any detailed policy or action plans although a regional plan is in preparation. In the absence of such legislation and policy, even more consideration needs to be afforded to Environmentally Significant Area and other biodiversity information in assessments of projects if options are to be maintained for future biodiversity conservation and to satisfy community needs and the aims of the Land Use Framework (Government of Alberta 2008).

Alberta has compiled Environmentally Significant Areas (ESAs) information for the entire province. ESAs may contain rare or unique biodiversity or are areas that may require special management consideration due to biodiversity conservation needs. ESAs currently have no policy context and are only intended to be an information tool to help inform land use planning and policy at local, regional and provincial scales (ACIMS 2010). ACIMS states:

*“While further analysis may be required at the regional scale to refine ESA boundaries, prioritize ESAs for management, and develop ESA-specific management strategies, this analysis highlights areas that should be given closer scrutiny by land managers and stakeholders during the land-use planning process.”*

The Badlands Motorsports Resort Area Structure Plan (2013) states: “Kneehill County has designated the site an environmentally sensitive area. The development of Badlands Motorsports Resort community will potentially impact the existing environment. BMR will minimize the risk of environmental impact through careful location, design and operating procedures. All development plans will be based on preserving and enhancing sensitive ecosystems, wherever possible. The general habitat, biodiversity and natural environment regimes will be preserved and enhanced across the entire Badlands Motorsports Resort area.”

In this review, I will demonstrate that it is impossible to meet these promises, or to satisfy key environmental protection policies in Kneehill County's Municipal Development Plan or Alberta's Land Use Policies.

Figure 1. Alberta Natural Regions and Subregions (Alberta Parks 2010)

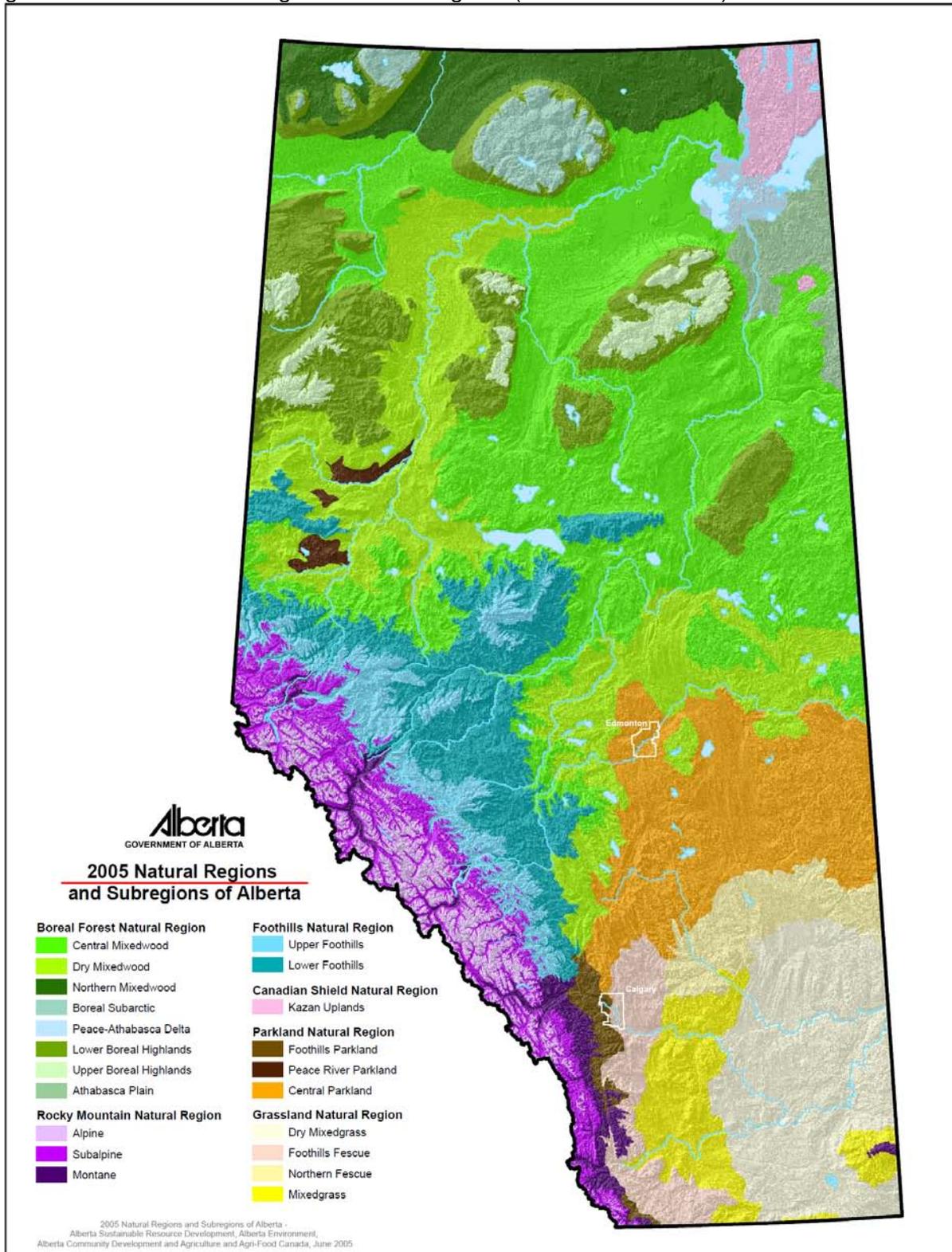


Figure 2. Level 1 Theme Targets for Protection by Natural Region

Representation of Natural Landscape Types by Natural Region and Subregion within Parks and Protected Areas in Alberta

updated 03-27-2012

Natural Region	Subregion	Subregion Size (km <sup>2</sup> )	Total Area of Sites within Subregion (km <sup>2</sup> ) <sup>1</sup>	% of Subregion Protected	Total # of Sites in Subregion <sup>1,2</sup>	Targets		Progress Toward Targets <sup>3</sup>		
						# Natural Landscape Type Targets	Total Area of Targets (km <sup>2</sup> )	# Sites Contributing to Target <sup>2</sup>	Area Contributing to Target (km <sup>2</sup> )	Average % of Targets Achieved
Rocky Mountains	Montane	8,768	2,356	27%	87	4	620	27	620	100%
	Subalpine	25,218	13,353	53%	49	5	645	30	645	100%
	Alpine	15,084	12,770	85%	21	5	645	20	645	100%
	<b>Subtotal</b>	<b>49,070</b>	<b>28,480</b>	<b>58%</b>		<b>14</b>	<b>1,910</b>		<b>1,910</b>	<b>100%</b>
Foothills	Lower Foothills	44,899	300	1%	58	5	1,125	12	277	40%
	Upper Foothills	21,537	585	3%	55	5	710	19	558	72%
	<b>Subtotal</b>	<b>66,436</b>	<b>885</b>	<b>1%</b>		<b>10</b>	<b>1,835</b>		<b>835</b>	<b>56%</b>
Grassland	Dry Mixedgrass	46,937	758	2%	12	10	1,250	9	708	65%
	Mixedgrass	20,072	182	1%	12	10	265	4	162	50%
	Northern Fescue	14,933	194	1%	9	11	450	4	173	41%
	Foothills Fescue	13,623	51	0%	13	9	270	5	48	32%
	<b>Subtotal</b>	<b>95,565</b>	<b>1,185</b>	<b>1%</b>		<b>40</b>	<b>2,235</b>		<b>1,091</b>	<b>40%</b>
Parkland	Central Parkland	53,706	460	1%	35	12	1,415	20	389	49%
	Foothills Parkland	3,921	80	2%	13	8	230	7	75	42%
	Peace River Parkland	3,120	20	1%	5	6	130	4	21	18%
	<b>Subtotal</b>	<b>60,747</b>	<b>559</b>	<b>1%</b>		<b>26</b>	<b>1,775</b>		<b>485</b>	<b>40%</b>
Boreal Forest	Dry Mixedwood	85,321	1,254	1%	80	11	2,000	38	955	57%
	Central Mixedwood	167,856	18,724	11%	80	11	3,500	35	3,500	100%
	Lower Boreal Highlands	55,615	3,239	6%	15	8	1,375	7	1,375	100%
	Upper Boreal Highlands	11,858	1,462	12%	4	4	325	3	325	100%
	Peace-Athabasca Delta	5,535	4,329	78%	3	3	300	3	300	100%
	Northern Mixedwood	29,513	13,216	45%	3	8	1,600	3	1,600	100%
	Boreal Subarctic	11,823	5,832	49%	2	5	450	2	450	100%
	Athabasca Plain	13,525	2,126	16%	8	7	385	7	385	100%
<b>Subtotal</b>	<b>381,046</b>	<b>50,183</b>	<b>13%</b>		<b>57</b>	<b>9,935</b>		<b>8,890</b>	<b>92%</b>	
Canadian Shield	Kazan Upland	9,719	1,504	15%	5	6	360	5	360	100%
	<b>Subtotal</b>	<b>9,719</b>	<b>1,504</b>	<b>15%</b>		<b>6</b>	<b>360</b>		<b>360</b>	<b>100%</b>
<b>ALL</b>	<b>TOTAL</b>	<b>662,583</b>	<b>82,796</b>	<b>12%</b>		<b>153</b>	<b>18,050</b>		<b>13,572</b>	<b>70%</b>

1 - Sites include all classes of Provincial Parks and Protected Areas, National Parks and National Wildlife Areas

2 - Individual Sites may contribute to more than one subregion and/or target

3 - Only sites with a primary objective of the conservation of nature are considered to contribute toward representation of targets

## **4. ENVIRONMENTALLY SIGNIFICANT AREAS**

### **4.1 Overview of Environmentally Significant Areas (ESAs) in Alberta**

Environmentally Significant Areas (ESAs) are areas that have been identified as being of ecological, hydrological or geological importance based on representativeness, diversity, naturalness and ecological integrity. Criteria for inclusion in ESAs in Alberta were listed by Fiera (2009) as:

1. Areas that contain elements of conservation concern.
2. Areas that contain rare or unique landforms.
3. Areas that contain habitat for focal species.
4. Areas that contain important wildlife habitat.
5. Riparian areas.
6. Large natural areas.
7. Sites of recognized significance.

Representativeness, diversity, naturalness, and ecological integrity all play a role in delineating ESAs. Each ESA has been assigned a significance level: provincial, national or international. The Summit Environmental Consultants (2010) report uses a different ranking system: Very High-1, High-2, Moderate-3, and Low-4.

Fiera (2009) states “environmentally significant areas (ESAs) are defined as areas that are vital to the long term maintenance of biological diversity, physical landscape features and/or other natural processes at multiple spatial scales. Identifying these areas using scientifically rigorous, defensible, and relevant methodology is the first step toward the successful integration of ecological values into provincial planning and management. The early recognition of ESAs is essential to help identify and prioritize areas that may be important to conserve, or that require special management consideration, thus supporting land-use planning processes. For example, areas of environmental importance are commonly used to prioritize environmental management toward areas that represent under-protected or vulnerable resources or resources that are highly unique (naturally rare) or “irreplaceable”. Identifying ESAs using credible, broadly supported methods enables decision makers to rapidly progress through the planning process where informed trade-offs can be discussed, priorities set and clear policy direction achieved.”

### **4.2 The Project Area**

The project area along the Rosebud River valley is known for its variety of landscapes, habitats and biodiversity. These include species of provincially rare or uncommon plants, plant communities and animals. Species of concern include species listed as “at risk” by Alberta or Canada. The subject lands have known records of species of concern.

ESAs are found in the project area (Figure 3). Cottonwood Consultants (1991), Fiera (2009) and Summit Environmental Consultants (2010) studies identified High-2, regionally or nationally significant sites on the subject lands.

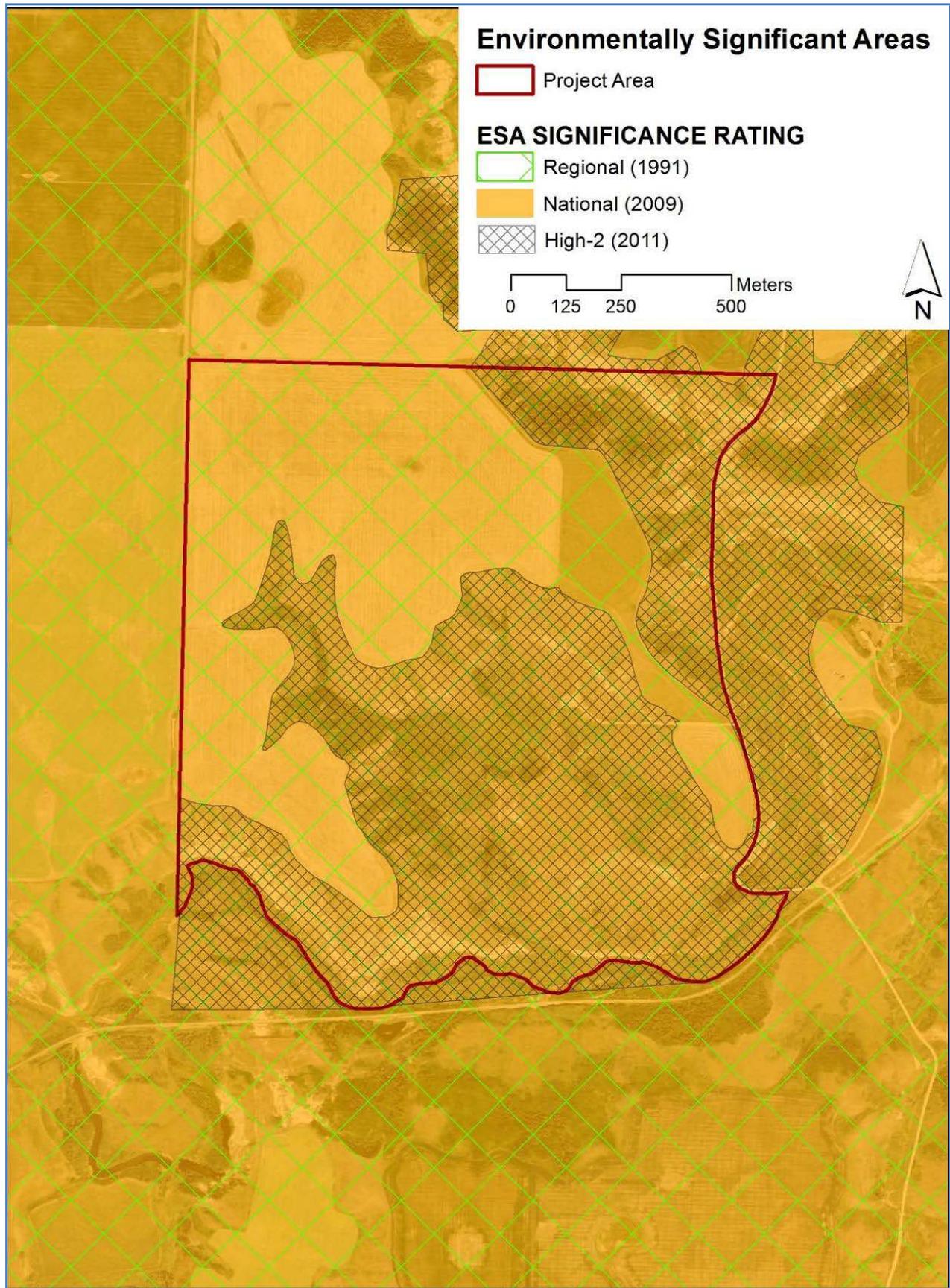


Figure 3. Environmentally Significant Areas and Subject Lands

Cottonwood Consultants (1991) described the following features for the entire Rosebud River ESA which, at the time, was considered of regional significance:

- diverse valley habitats including badlands, grasslands, tall and low shrubbery, aspen woodland, and dense white spruce forests
- small patches of riparian habitats
- includes small remnants of adjacent upland fescue grassland, some of which is in excellent condition
- diversity of breeding birds and butterflies
- nesting area for rare birds of prey including the Prairie Falcon and Ferruginous Hawk, a threatened species in Canada
- key Mule Deer habitat
- regionally uncommon birds including Blue Jay, Saw-whet Owl and Pileated Woodpeckers and a disjunct breeding population of the Cordilleran McGillivray's Warbler
- regionally rare wolf lichen (*Letharia vulpina*)

Fiera (2009) noted the following features in the larger nationally significant ESA (site #291 in their evaluation) and included some non-native habitats on uplands in the ESA due to their method of following quarter section lines to create ESA boundaries:

- Contains 12 elements of conservation concern
- Contains rare or unique landforms
- Drumheller Area badlands
- Contains habitat for focal species
- Contains important wildlife habitat
- Contains riparian areas
- Contains headwater streams
- Contains intact riparian areas
- Contains riparian areas along the six major rivers
- Contains large natural areas
- Contains sites of recognized significance

Summit Environmental Consultants (2010), the most recent study with likely the most accurate boundary, identifies the project area (native habitat portion) as environmentally significant in the high-2 category.

Summit describes the Rosebud River ESA in Figure 4.

## ROSEBUD RIVER ESA

**Natural Subregions:**

- Northern Fescue
- Foothills Fescue

**Natural Feature Types:**

- Aspen Forest
- Coulees & Badlands
- Native Grassland
- Riparian Areas
- Waterbodies

**1991 Cottonwood ESAs:**

- Rosebud River

**2009 Provincial ESAs:**

- 290 – (Grassland)

**Overall Comments:**

The Rosebud River runs through the County’s southeast corner, just before it enters into the Red Deer River. This portion of the river has steeped-walled valleys, which creates unique landscape features and highly significant wildlife habitats.

**Surrounding Disturbance:**

Overall, this area is only moderately disturbed. High disturbance sites occur where there is transportation, oil and gas, agriculture and/or grazing. Minimally disturbed sites generally occur in the more deeply incised hazard lands and the Beynon Coulee, a protected area.

**General Vegetation Health:**

Vegetation health ranges from stressed to very healthy, depending the land uses which largely determine soil exposure, stability and presence of agronomic and weed species.

**ESA Area (hectares):**

- 2029 ha

**Applicable Criteria:**

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

**ESA Significance:**

- 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: 29 Criteria:** 1-3, 5, 8, 10, 12

**ESA Significance:** ESA-1: Very High

**Natural Feature Types:** Coulee & Badlands, Native Grasslands



**Site: 29 Criteria:** 1, 2, 8

**ESA Significance:** ESA-2: High  
**Natural Feature Types:** Aspen Forest



**Site: 30 Criteria:** 1, 2, 8

**ESA Significance:** ESA-2: High  
**Natural Feature Types:** Riparian Area, Waterbody

**Figure 4. Rosebud River Environmentally Significant Area description from Summit Environmental Consultants (2010)**

Species of conservation concern (COSEWIC 2012, SARA 2013; ACIMS 2013, and Alberta Sustainable Resource Development 2010) occurring in the project area include:

#### **Amphibians and Reptiles**

Garter Snakes (sensitive)

#### **Birds**

Bank Swallow (COSEWIC Threatened)

Barn Swallow (Alberta sensitive; COSEWIC Threatened)

Short-eared Owl (Alberta may be at risk; COSEWIC/SARA Special Concern)

Northern Harrier (Alberta sensitive)

Prairie Falcon (sensitive)

Sprague's Pipit (Alberta sensitive; (COSEWIC/SARA Threatened) )

Common Yellowthroat (Alberta sensitive)

#### **Mammals**

American Badger (Alberta sensitive); COSEWIC Special Concern

#### **Plants/Vegetation**

Plains Rough Fescue dominated plant community (tracked element in Alberta Conservation and Information Management System 2013)

### **4.3 Management Objectives Relevant to Land Use Planning**

Summit Environmental Consultants (2010) identifies management objectives for High-2 rated ESAs:

“In order to meet the environmental objectives of Kneehill County and work towards the Government of Alberta’s recently adopted Land-Use Framework, planners **should set the management goals to preserve the most significant ESAs (ESA-1 and -2)** (my emphasis).”

. . . “Generally, development within an ESA-1 or -2 should be avoided or minimized. If this is unavoidable, an environmental impact assessment should be completed prior to development. Site-specific environmental impact assessments can provide detailed boundary delineation, comparison of alternatives, and assessment of long-term consequences.”

Summit further identified some specific recommendations for fescue grassland including:

“Avoid, limit, or strictly enforce mitigation of impacts if construction, recreation, or development is unavoidable in remnant native grasslands (e.g. implement erosion and sediment control plan, environmental monitoring, etc.).”

Summit also provided some specific recommendations on badlands and coulees:

- “Direct development of permanent structures away from valley edges, protrusions and escarpments (Kneehill County 2005); and,

- Ensure land uses and developments are compatible with contiguous landscapes (e.g. guest ranches and low impact recreation that enable preservation of large areas of land).”

Cottonwood Consultants (1991) also provided guidelines for ESA management:

- “No major development should be permitted in ESAs due to detrimental impact or physical constraints;
- Long-term resource protection and management (and therefore long- term economic benefits) should have priority over short-term economic gains that result in the loss of future options;
- Recognizing a site as an ESA does not imply that it will be purchased by a public agency or that it is open for public use;
- Maintaining an environmental database is essential;
- In-depth studies may be necessary in those areas that are subject to development threats in the near future. Proactive actions are preferable to reactive ones;
- Buffers around an ESA may be necessary but cannot be prescribed until the proposed activity is known and its impacts assessed;
- ESAs should be recognized and included in official plans and not as an overriding development control over a variety of land use designations;
- Appropriate policies, plans and regulations must be adopted to ensure effective implementation and adherence to the priorities for ESAs; and,
- By-laws, policies and regulations should permit innovative approaches including management.”

Summit identifies specific ways that the ESA information could be used in land use planning, including:

“Help determine suitable locations for environmental protection, such as Environmental Reserves (ER) and Environmental Reserve Easements (ERE), which may be required for land use district re-designations, subdivision or development under the *Municipal Government Act*. Other types of land designation that the ESA report could assist with are listed in the table of legal tools for municipalities to conserve environmentally sensitive areas (Appendix E). This document is intended to be used as a planning tool to provide options for the County and landowners when dealing with sensitive features.”

Summit concludes: “The mapping and ranking of ESAs in Kneehill County enables recognition of areas that require conservation and where management should be focused. Provincial and federal requirements for sustainability and protection laws continually evolve and trend towards better protection of ecological attributes. In the case of proposed development in an ESA-1 or 2, completing an environmental impact assessment would ensure the application of the most recent legislation.”

## **5. DISCUSSION**

### **5.1 Importance of Planning for Sustainability**

The Alberta Land Trust Alliance (2006) suggested that:

"The majority of the municipal governments are focused on land conservation initiatives that are directly associated with a proposed or anticipated development; these activities are fundamental to municipal administrations. There is, however, a need to address the accumulating effects of many activities over a much broader landscape in moving towards sustainability. "

"Looking ahead, four fundamental building blocks will be required at the municipal level to protect and improve natural resources and biodiversity, the goals of environmental sustainability:

- a sound science-based knowledge of the ecology of the landscape being considered,
- a vision for the community that recognizes significant environmental assets (and the relationships between them)
- a plan to integrate land conservation with community development and economic growth in a ecologically balanced and effective manner, and
- a practical method for expressing this knowledge spatially as a reference for land-use decisions"

"It will be important, as a result, for municipal governments to have such a long term vision for land conservation within their municipality. "

### **5.2 Importance of the Subject Lands for Biodiversity**

The biodiversity importance of the subject lands is well documented in three environmentally significant areas studies (Summit Environmental Consultants 2010, Fiera 2009 and Cottonwood Consultants 1991).

### **5.3 Direct Impact on Environmentally Significant Area**

The development proposed in the Area Structure Plan places some facilities in natural portions of the Environmentally Significant Area (Figure 5). These include the Mountain Drive and Paddock, Valley Course and Paddock and Lower Activity Park as well as a peripheral road network connecting facilities and activity areas to the condo area.

Figure 6 shows the layout of the proposed development and that various facilities occupy an area that is primarily native habitat, including rare native rough fescue grassland communities. The Badlands Motorsports Resort Area Structure Plan notes "For example, the Plains Fescue-Northern Wheatgrass community is important as winter forage for ungulates. However, given that the proposed courses will occupy only a small amount of each of these communities, the project related impacts on grassland vegetation is anticipated to be moderate."

*All plains rough fescue grassland community types are considered rare (ACIMS 2013) so any direct impacts on this community type should be considered significant.*

*Other elements of the development (Condo Area and Top Paddock and Course) successfully avoid direct impacts on the Environmentally Significant Area even though all of the project area, including non-native habitats, has been mapped as environmentally significant. Even so, required setbacks from wildlife species of concern, e.g. Prairie Falcon nest may impose additional constraints on permanent developments in non-native habitats.*

## **5.4 Consistency of the Area Structure Plan with Existing Policies and Guidance**

### *5.4.1 Overview*

*The Badlands Motorsports Resort Area Structure Plan, at least the portion that directly impacts native habitats in the Rosebud River Environmentally Significant Area recognized by Kneehill County, is not consistent with the existing policies of Kneehill County, namely the Kneehill County Municipal Development Plan.*

### *5.4.2 Inability to Protect the ESA*

The Badlands Motorsports Resort Area Structure Plan, sets out some guidance for protecting the ESA:

#### **“3.17.3 Environmentally Sensitive Area**

Kneehill County has designated the site an environmentally sensitive area. The development of a community such as Badlands Motorsports Resort will have potential impact on the existing environment. Whenever people enter the natural environment, there is some impact. When the number of people increases and when facilities are constructed, that impact is elevated. Severity of impact depends upon several factors including facility location, facility design and facility operation.”

“BMR will minimize the risk of environmental impact through careful location, design and operating procedures. All development plans must be based upon the purpose of preserving and enhancing sensitive ecosystems wherever possible, and will preserve or enhance general habitat, biodiversity and natural environment regimes across the entire Badlands Motorsports Resort area.”

*Quite simply, this is not possible given the nature of the proposed development. There will be direct loss of native habitat from proposed roads, race courses, activity areas and paddocks in a high value Environmentally Significant Area including loss of rare plains rough fescue grassland. Depending on use patterns, foot traffic could also have a significant impact on native vegetation. There may be additional impacts on species of concern that nest or reside in the area. Recommended setbacks from nesting areas of some species of concern, e.g. Prairie Falcon, would preclude this type of development in most of the Environmentally Significant Area recognized by Kneehill County.*

### *5.4.3 Failure to Address Listed Wildlife Species and Setbacks*

The Area Structure Plan (Badlands Motorsports Resorts 2013) has not dealt with concerns related to federally or provincially listed wildlife species. Alberta Sustainable Resource Development (2011) identifies setbacks for nesting birds of prey and species at risk like Sprague’s Pipits. The Badlands Motorsports Resort Area Structure Plan notes the presence of

either a Prairie or Peregrine Falcon nest site in the Rosebud River valley on the project lands. This site and another to the east have been active Prairie Falcon eyries most years for decades. The year-round setback for high impact activities such as contemplated in this project is 1000 m for both Prairie Falcon. For Sprague's Pipits, 100 m setback is required from nests from April 1 to July 15. This includes nests located off the project lands. High impact activities are defined as: "disturbances that are high in frequency, involve vehicles and machinery, permanently modify the habitat by altering vegetation, soils and perhaps hydrology (e.g., buildings, roads) and the impact is long term (i.e., more than 10 years)."

If this guideline is followed, much of the high impact activities proposed by this project should not be permitted. In addition, new guidelines will likely be issued to deal with protection for recently listed Bank Swallows which nest on cutbanks along the Rosebud River and aerial feed over wetlands that will be encircled by the proposed race courses.

In addition, the presence of garter snakes in the area should mandate a search for garter snake overwintering sites (hibernacula). In other parts of Alberta, the recommended setback for industrial developments for high impact activities is 500 m. For wetlands, the recommended setback is 100 m for industrial activity.

*In summary, the requirements for setbacks for wildlife species of concern as outlined by Alberta Sustainable Resource Development (2011) are not addressed in the Badlands Motorsports Resort Area Structure Plan.*

#### *5.4.4 Failure to Comply with The Kneehill County Municipal Development Plan*

Plains rough fescue grassland shown on Figure 6 (Map 3 of the Badlands Motorsports Resort Area Structure Plan) is a rare plant community in Alberta. The project layout appears to overlap directly on this rare community type.

*There is no information on how this rare community type will be protected.*

#### *5.4.5 Failure to Comply with The Kneehill County Municipal Development Plan*

In the Kneehill County Municipal Development Plan (Kneehill County 2013), ESAs are recognized:

"Environmentally Significant Areas (ESAs) are recognized for their intrinsic value and are protected from potentially harmful use and development. ESAs are identified within the Environmentally Significant Area Study (Summit 2010) in four categories (i.e. ESAs 1-4 with ESA 1 having the highest significance)."

"ESAs, hazard lands, and other natural, environmental and historical resources shall be protected from inappropriate development through the use of voluntary policy wherever possible and prescriptive policy when required for the purposes of due diligence and planning applications."

#### 5.4.5.1 Environmental Impact Assessment

The Kneehill County Municipal Development Plan states:

“1.3.1 When making decisions concerning redesignation, subdivision or development for certain areas, the County shall, unless waived by Council regarding redesignation or MPC regarding subdivision or development, require the proponent to submit additional information with their request for redesignation or approval of an application for subdivision or development.”

“Near/In Environmentally Significant Areas (ESA)

- Generally, development on lands within an ESA Level 1 or ESA Level 2 should be avoided or minimized. If unavoidable, and unless this requirement is waived by Council or the MPC, the proponent shall submit an environmental impact assessment (EIA) by a qualified professional addressing the potential impact of the proposal on lands designated and any actions that should be taken to prevent or minimize any impacts.”

“9.3.10 Environmental Impact Assessment (EIA)

When considering a proposal that the County determines may have significant environmental consequences, such as multi-lot country residential, the County may require the proponent (at the proponent's expense) to submit an environmental impact assessment (EIA) prepared by a qualified professional, which is satisfactory, in its form and content, to the County.”

*I could not find any reference that indicated an EIA had been completed.*

#### 5.4.5.2 Open Space and Environment

For Open Space and Environment, the MDP's stated goal is:

“9.1.1 To protect significant environmental and natural areas and resources, including water resources, and to promote integrated, accessible and well-planned open spaces supporting appropriate leisure and recreation opportunities.”

The MDP's objectives for Open Space and Environment are:

- “9.2.1 To conserve and sensitively incorporate natural areas as an integral part of the County's open space system.
- 9.2.2 To ensure that the various approval authorities, both within and outside the County, consider the natural environment when making decisions concerning applications for land use district redesignations, subdivision, or development.
- 9.2.3 To promote the protection of environmentally significant areas and the environment in general.”

The policies created for Open Space and the Environment in the MDP state:

“9.3.2 Environmentally Significant Areas (ESAs)

The County recognizes the following environmentally significant areas (ESAs):

(a) The areas identified in the Kneehill County Environmentally Significant Areas (2010) study prepared by Summit Environmental Ltd."

"9.3.3 Protection of Environment

The County shall work with applicable provincial and federal agencies to protect the natural environment and resources, including land, air and water from degradation by inappropriate or detrimental land uses and development."

"9.3.4 Proximity to ESAs

Proposals for redesignation, subdivision and/or development within 0.8 km (0.5 mile) of an identified ESA shall be referred to the appropriate agencies for comment before the County makes a decision on the application."

*I can find no reference that appropriate government agencies at federal and provincial levels were "worked with" or "referred to" before the County made decisions on the Badlands Motorsports Resort Area Structure Plan which, in part, occupies the Rosebud River Environmentally Significant Area recognized by Kneehill County.*

5.4.5.3 Development in Valleys

The policy created for Development in Valleys in the MDP states:

"9.3.6 Development in Valleys

Unless otherwise provided for in a statutory plan or non-statutory plan acceptable to the Council, subdivision and development within river or stream valleys will be limited to non-intensive agricultural uses, parks and public open spaces."

*Along with other policies, it seems clear that to be consistent with the intent of this policy, the location of the portion of the property within the Rosebud River valley would naturally exclude the facility described in the Badlands Motorsports Resort Area Structure Plan. The facility is neither non-intensive agricultural nor is it park or public open space.*

5.4.5.4 Conservation Easements

The policy created for Conservation Easements in the MDP re-emphasizes the general policy of Kneehill County to protected ESAs:

"9.3.11 Conservation Easements

Although the County will consider allowing some types of development within ESAs, when it is appropriate, it is the general policy of the County to preserve and protect important recognized ESAs. To this end the County will support the use of conservation easements as a means of preserving the natural qualities of privately held land within ESAs."

#### 5.4.6 Conclusions

*I cannot understand how the County decided that this type of development within an ESA of such importance is appropriate since it is “the general policy of the County to preserve and protect important recognized ESAs”. As noted previously 9.2.2 states that various approval authorities, both within and outside the County, should ensure the consideration of the natural environment when making decisions concerning applications for land use district redesignations, subdivision, or development. This highlights that the County’s decision is not consistent with stated policies. The policies in the Municipal Development Plan are consistent with recommendations in previous environmentally significant area studies including Summit’s 2010 study prepared for Kneehill County; however, for reasons identified in previous paragraphs, the Badlands Motorsports Resort Area Structure Plan is inconsistent with key policies in the Municipal Development Plan with respect to those portions of the proposed development that lie in the High-2 category Environmentally Significant Area in a valley location (Rosebud River valley).*

The provincial Land Use Policies (1996) state:

“Municipalities are encouraged to expand intermunicipal planning efforts to address common planning issues, especially where valued natural features are of interest to more than one municipality and where the possible effect of development transcends municipal boundaries.”

*It appears that, while there is a recognition of the Rosebud River ESA in Kneehill County’s Municipal Development Plan, implementation of protection of ESAs contemplated in the Municipal Development Plan during planning processes in the case of the Badlands Motorsports Resort Area Structure Plan has not been consistent with this provincial policy and the stated goals of Wheatland County (2013) to similarly protect environmentally sensitive areas. The Badlands Motorsports Resort Area Structure Plan fails to address the potential impacts on those portions of the Rosebud River ESA that lie in the adjacent Wheatland County. In addition, I cannot find reference to any contact with Wheatland County on this issue. Kneehill County has contacted Wheatland County to deal with transportation issues related to this project but apparently not environmental issues.*

Alberta’s Land Use Policies’ goal is:

“To foster the establishment of land use patterns which make efficient use of land, infrastructure, public services, and public facilities; which promote resource conservation; which enhance economic development activities; which minimize environmental impact; **which protect significant natural environments** (my emphasis); and which contribute to the development of healthy, safe, and viable communities.”

*The Badlands Motorsports Resort Area Structure Plan promotes the degradation of a significant natural environment, one identified in county and provincial documents as nationally significant or high-2 significant. The Badlands Motorsports Resort Area Structure Plan is not consistent with this stated goal of Alberta’s Land Use Policies.*

The Land Use Policies encourage municipalities:

“to identify, in consultation with Alberta Environmental Protection, areas of significant fish, wildlife and plant habitat and to establish appropriate land use patterns designed to minimize the loss of valued habitat within and adjacent to these areas.”

*While the identification of significant habitats has been done and is consistent with the Land Use Policies, in my professional opinion, the Badlands Motorsports Resort Area Structure Plan promotes the loss of significant wildlife and plant habitat and establishes inappropriate land use. The Badlands Motorsports Resort Area Structure Plan is not consistent with the Land Use Policies in this matter.*

*Given the importance of the Rosebud River valley, more consideration needs to be given to protection of this Environmentally Significant Area if environmental goals stated in Alberta’s Land Use Policies and Kneehill County’s Municipal Development Plan are to be achieved. This is needed to ensure development plans are consistent with both the intent and the stated goals in the Land Use Policies and Municipal Development Plan.*

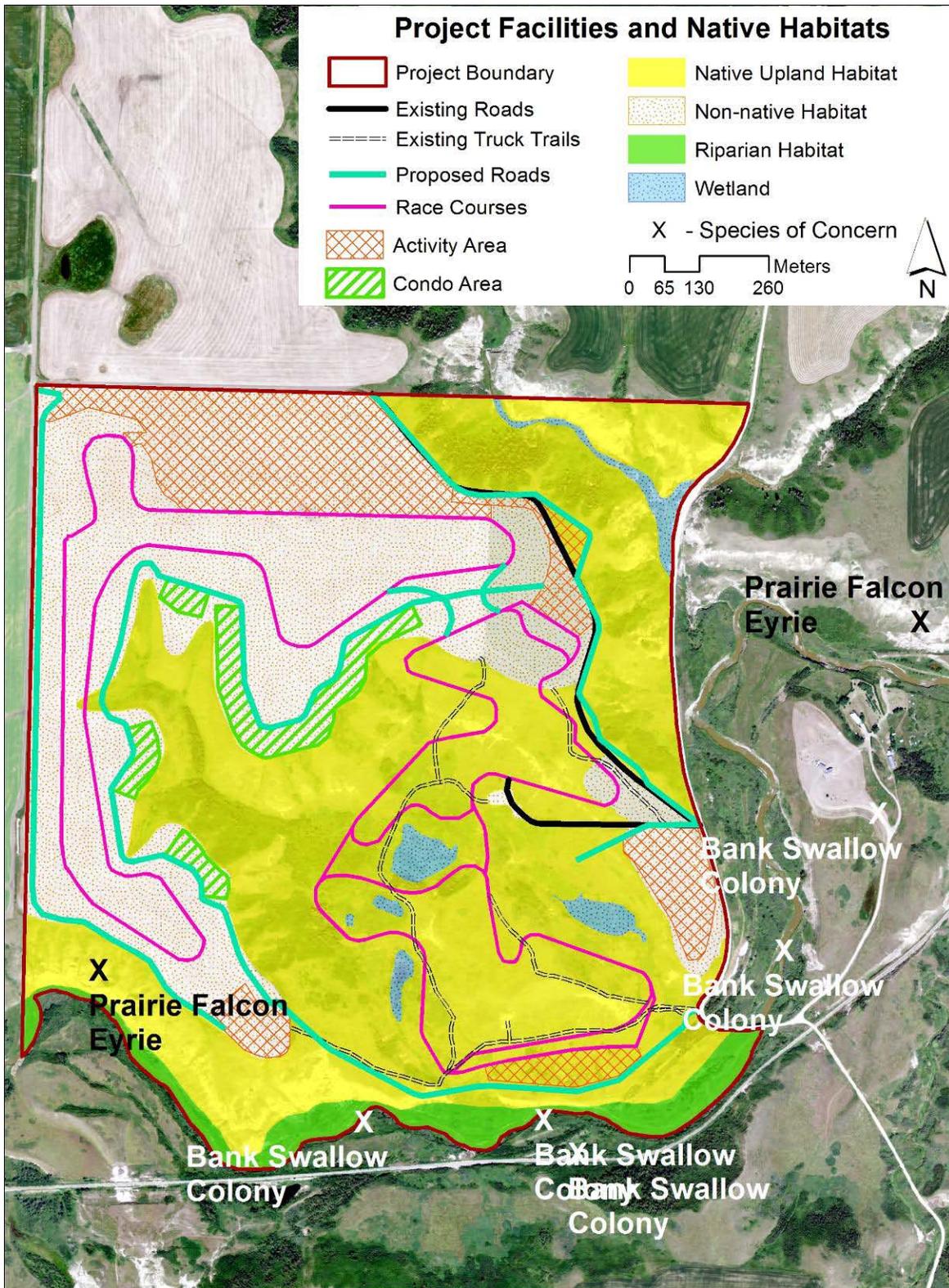


Figure 5. Site Detail-showing development footprint overlay on various habitats as well as locations of nesting species of concern

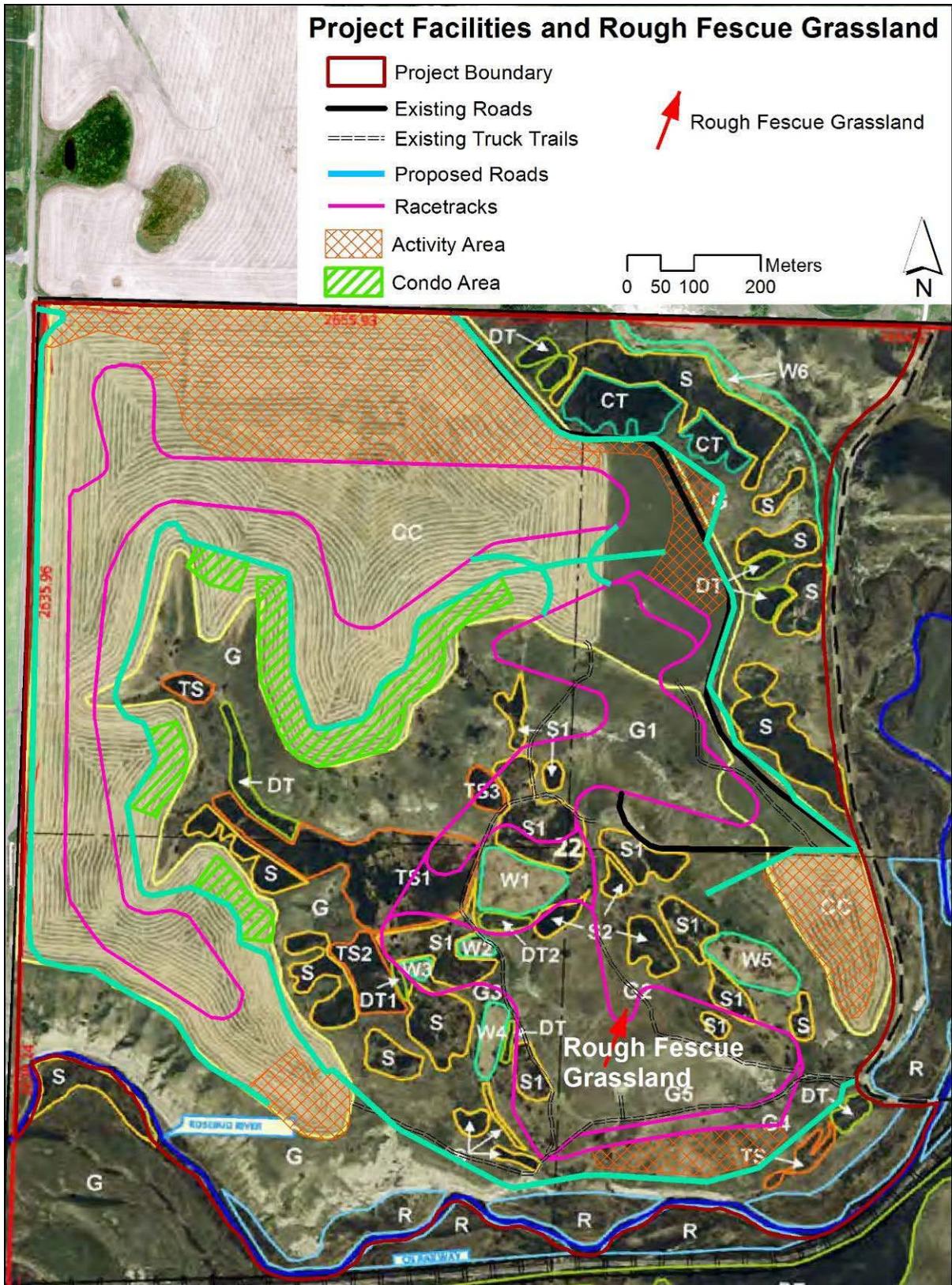


Figure 6. Map 3 from Area Structure Plan Showing Rare Rough Fescue Grassland (G2) with project facilities overlay

## 6. SUMMARY

Temperate grasslands, including native grassland habitats, are recognized as a threatened biome globally. There is a need to significantly reduce the impact on environmentally significant areas by avoiding further development of native habitats included in them.

The development as proposed has the potential to place a significant effect on the biodiversity of an environmentally significant area. In addition to the direct on-site impacts from development of native habitats, including rare rough fescue grassland, there could be indirect effects from use related to accessing the site and impacts on species of concern.

Setbacks recommended by Alberta Sustainable Resource Development (2011) need to be adhered to and native grassland habitats avoided if the project is to meet its stated goal of preserving the general habitat, biodiversity and natural environment regimes across the entire Badlands Motorsports Resort area.

At a minimum, any process involving redesignation for such an environmentally significant area should undergo a thorough environmental review. This was not done and represents a major deficiency.

In my opinion, the proposed Area Structure Plan (Badlands Motorsports Resort 2013) is not consistent with the Kneehill County Municipal Development Plan (Kneehill County 2013), specifically as it relates to guidance and policies dealing with Environmentally Significant Areas and valleys. In addition, the Badlands Motorsports Resort Area Structure Plan is not consistent with the Government of Alberta Land Use Policies (1996) as they relate to environmental protection since the Area Structure Plan promotes the loss of significant wildlife and plant habitat and establishes inappropriate land use.

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## CLIFF WALLIS, P. BIOL. SUMMARY

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Cliff Wallis is a Professional Biologist, registered in the province of Alberta, who has had over 40 years experience coordinating and undertaking ecological and wildlife field surveys since 1970. Cliff graduated from the University of Calgary in 1972 with a B.Sc. in Botany and Zoology. After working with Alberta Parks conducting biophysical inventories and planning parks, he moved into the private consulting field and established Cottonwood Consultants Ltd. in 1978. He has a diverse background in protected area systems planning, tourism projects, ecological studies, species at risk evaluations, environmentally significant features identification, protected area planning, environmental assessment, native species restoration and interpretive planning. He has published numerous consulting and government reports as well as several articles in scientific and popular journals.

Cliff has worked in a variety of Canada's Ecozones including the Boreal Shield, Taiga Shield, Taiga Plains, Prairies, Northern Arctic and Montane Cordillera and internationally in the steppes of Inner Mongolia and the tropical and montane forests of Cameroon. He is conversant with vegetation, physical features, and wildlife identification and evaluation. Cliff coordinated or assisted on most of the environmentally significant area studies done to date in southern Alberta. He has conducted a variety of field studies on vascular and non-vascular plants, fish, amphibians, reptiles, birds and mammals, as well as on-line computerized literature searches and extensive searches of archival material in government files, museums and universities. He has undertaken the GIS and database components of several major projects as well as hundreds of smaller biodiversity impact assessments in the Calgary and Lethbridge areas. He developed a biodiversity database for rare plants in the Foothills and Mountains of Alberta and developed monitoring protocols for rare plants in the Grasslands of Alberta. Cliff has managed a variety of plant and animal species at risk projects for industry, government and non-government clients.

Cliff has provided expert testimony to several regulatory bodies related to proposed developments and he has worked on several projects which have integrated protection and appropriate development of sensitive biophysical resources, including species at risk. He recently chaired a panel of experts which had as its major focus species at risk and SARA for the Suffield EnCana Shallow Gas Project Joint Panel Review.

Of particular note are Cliff's involvement with hundreds of species at risk studies and status assessments; conservation systems analyses for the Grassland and Parkland Natural Regions; restoration in riparian and grassland environments; ecological land classifications and environmentally significant areas studies involving vegetation and wildlife surveys throughout Alberta's Grassland and Parkland Natural regions, including Kneehill County; multi-layered ecological constraints analyses for energy developments; capacity building for management planning and environmental education for nature reserves in the grasslands of Inner Mongolia; and providing training and international expertise on environmental assessment and biodiversity protection, including species at risk, for the City of Chongqing in southwest China.

## CLIFF WALLIS, P. BIOL. PROJECT INVOLVEMENT

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**Ecological/Biophysical Inventories:** Kootenay Plains; Kazan Upland; Milk River; Bow Valley; Southland Park; Bowmont Park; Young's Point; Grizzly Ridge; Canada Olympic Park; Lakeland, Waterton Lakes National Park, Frank Lake, Bearspaw, Edworthy; includes surveys and analysis as part of environmental assessment of development projects

- field studies of fish, wildlife, vegetation, and landscapes

**Species at Risk:** Rare Plants of the Boreal Forest, Parkland, and Grassland; Trans-Canada Highway Twinning -- Banff National Park; Piping Plover; National Historic Sites; Rare Plants Monitoring, Oldman River Region; Rare Plants and Wildlife of Sand Hills; Western Blue Flag; Daishowa FMA; Foothills Grassland; Panorama Hills; Kneehill Water; Onefour; PFRA Pastures; Wainwright Dunes; Lethbridge and Calgary Region subdivisions--e.g. Panorama Hills, North Stoney, Seton, Walden, Sunridge, Evergreen, DeWinton; City of Chongqing, Alberta Caribou Committee; Greater Sage Grouse; Giffen-Hill and McNally water pipelines

- field surveys to identify rare plant and wildlife habitats, population size, and management problems; literature surveys to determine status; surveys as part of environmental assessment of projects; workshops on approaches to species at risk management

**Significant Features Analyses:** Many Springs; Saskatoon Mountain; Coal Valley; Calgary Region; Oldman River Region; Red Deer Region; Palliser Region; Southeast Region; Lower Red Deer River Corridor; David Thompson; Lloydminster; Bow-Canmore Corridor; County of Newell; County of Cypress; Shorebird Lakes in East-Central Alberta; Foothills Model Forest

- field/literature studies to determine significant landscape, fish, wildlife and vegetation features—Aspen Parkland, Boreal Forest, Grasslands, Rocky Mountains, Foothills

**Resource Management Planning/Environmental Impact Assessment:** Battle Lake; Beauvais Lake, Dinosaur and Cypress Hills; Medicine Hat/Hatton, Suffield Shallow Gas

- collection and analysis of data/constraints for protected area management and environmental impact assessment of developments; participatory approaches to planning and management; training of protected area managers; appearance before regulatory boards (ERCB, EUB, NRCB, Environmental Appeals Board, National Energy Board, Canadian Environmental Assessment Agency)

**GIS/Database Management:** undertook hundreds of GIS and database development and management projects with respect to environmentally significant areas, restoration, biophysical assessment and protected areas systems planning spanning over two decades

**Restoration:** Ross Creek, County of Strathcona; Dalinor National Nature Reserve, Inner Mongolia; Norman Wells; Express Pipeline, southeastern Alberta

- inventory for industrial site reclamation; historic photo interpretation, planning and supervising topographic, soil and vegetation restoration of pipeline crossings in environmentally significant riparian and wetland habitats; advisory committee to identify, implement and monitor best practices in grassland restoration for a large diameter pipeline

**Systems Planning:** Grasslands; Aspen Parkland; Red Deer River Corridor; and Southwestern Alberta Montane and River Valleys; Provincial Parks System

- literature/field studies to determine park potential and to analyze theme representation

## CLIFF WALLIS SELECTED PUBLICATIONS

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## **CLIFF WALLIS ACHIEVEMENTS, AWARDS**

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- Cliff Shaw Award, Saskatchewan Natural History Society, 1972
- Governor-General's Canada 125th Anniversary Medal, 1992
- Prairie Conservation Award, World Wildlife Fund, 1992
- Peggy Thompson Award, Alberta Society of Professional Biologists, 1993
- J.B. Harkin Medal, Canadian Parks and Wilderness Society, 1997
- Douglas H. Pimlott Award, Canadian Nature Federation, 2003
- "Ernie" Award, Alberta Wilderness Association, 2004