Fish & Wildlife Division

SPECIES AT RISK

MULTISAR

A Multi-Species Conservation Strategy For Species at Risk In the Grassland Natural Region of Alberta

2008-2009 Report

MULTISAR

Alberta Species at Risk Report No. 122

Alberta

Alberta Conservation Association

Conserving Alberta's Wild Side

MULTISAR: A Multi-Species Conservation Strategy For Species at Risk in the Grassland Natural Region of Alberta

2008-2009 Report

François Blouin, Danielle E. Cross, Brandy L. Downey, Brad A. Downey, Shannon L. Frank, Darryl J. Jarina, Paul F. Jones, Julie P. Landry-DeBoer, Richard W. Quinlan, and Kristen S. Rumbolt

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MULTISAR is a collaborative effort of three agencies, cooperating landholders, and numerous other participants. It is succeeding due to the co-operative teamwork of all partners. This demonstrates a special open-minded attitude that goes beyond commitment and pride in any one organization, and is indicative of a desire in our society for multi-species and landscape-level conservation. Finally, we would like to thank all the

landholders who participated in the MULTISAR program, for allowing MULTISAR staff access on their land and for their forward thinking in trying to understand the needs of species at risk and provide habitat for them on their ranch. These people generously gave valuable time to participate in the development of HCSs and SARC Plans and continue to be involved with their implementation.

EXECUTIVE SUMMARY

The MULTISAR Program is managed by Alberta Sustainable Resource Development- Fish and Wildlife (ASRD-F&W), Alberta Conservation Association (ACA), and Alberta Sustainable Resource Development- Lands (ASRD-Lands).

MULTISAR thrives to assist landowners and lessees to manage land in a way that benefits provincial and federal species at risk, while maintaining an economically viable operation in the Grassland Natural Region (GNR)**.** It also plays an important role in creating awareness and educating Albertans about the importance of native prairie habitat and the biodiversity that rely upon it, as well as the formidable pressures that are threatening the integrity of this ecosystem from our increasing demand for agriculture, resource extraction, residential and urban development, and transportation.

2008-2009 marks the second year and the end of the 2007-2009 Business Plan which identified six key objectives:

1. To provide an integrated program for the recovery and maintenance for multiple species at risk, rather than the traditional approach of managing for individual species.
2. To develop detailed strategies in areas of highest priorities that incorporates wildlife and range values along with economic needs.
3. To inform Albertans about positive benefits of species at risk, and to encourage measures they can take to sustain species at risk.
4. To engage landholders (owners and lessees) in the development of habitat conservation strategies to address not only the biological needs of wildlife, but also the socio-economic needs of landholders.
5. To provide information to aid in management of industrial development (eg: oil and natural gas) in a manner which provides conservation for species at risk and native prairie landscapes.
6. To assist in the development and integration of the new Grassland Vegetation Inventory (GVI) and apply it to MULTISAR.

These objectives were met through the three MULTISAR program areas: Habitat Conservation Strategies, Education and Outreach and Species at Risk Conservation Plans.

To date a total of 9 Habitat Conservation Strategies (HCSs) involving 17 landholders were completed on almost 200,000 acres of land within the core program area of the Milk River and Pakowki Basins. The wildlife surveys contributed to about 20,000 sightings of wildlife (including species at risk) that were added to the provincial Fish and Wildlife Management Information System (FWMIS). Wildlife surveys, vegetation surveys and range health assessments formed the basis from which pasture management changes and habitat improvements were recommended and/or initiated to improve the sustainability of the rangeland and to benefit species at risk.

Species at Risk Conservation Plans (SARC Plans) were completed on 22 properties totaling 49,755 acres (20 135 ha) of land in the Montane and the Foothill Fescue Natural Subregions near the Porcupine Hills and the Livingstone Range, as well as in the dry Mixedgrass Natural Subregion around Hanna. This amounts to a total of 58,015 acres that were assessed for habitat quality on 29 properties during the life of the Business Plan. These plans provide the cooperating landholders with a series of beneficial management recommendations that can be implemented to benefit the species at risk or other wildlife potentially occurring on the habitats identified on their land. A grant received from the Government of Canada's Greencover Canada Technical Assistance Program also allowed to assist a few landholders in implementing some of the beneficial management recommendations or habitat enhancement projects that will be used as future demonstration sites.

The awareness and education program area contributed a significant amount of knowledge to the three target audiences: landholders, youth and the general public. This was achieved through a series of live presentations and participation at grazing schools, watershed groups and other rural stewardship initiatives, as well as school programs for grade 7 students. In addition to its web site, MULTISAR also produced a series of Beneficial Management Practices (BMP) fact sheets, a newsletter, as well as several newspaper, newsletter and magazine articles. Two focus groups were also conducted in the Hanna area to assess the awareness of landholders in that area of species at risk and their associated legislations, beneficial management practices for species at risk, and conservation organizations, and the MULTISAR program.

1.0 INTRODUCTION

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1.1 MULTISAR: Past; Present; Future

MULTISAR began its existence in 2002 as a potential means to address multiple species at risk conservation at a landscape level. The idea for the project came from the Federal Prairie and Northern Region Habitat Stewardship Committee. That committee, responsible for allocating the Federal Government Habitat Stewardship Program put forth the suggestion that, because of the concentration of species at risk and the availability of large tracts of natural grasslands remaining, the Milk River Basin may be worthy of consideration for development of a multi-species approach for conservation of species at risk. In 2003, the name "MULTISAR" was adopted as it captures all aspects of the program: multiple conservation organizations working together to conserve multiple species at risk (SAR). The MULTISAR conservation program is a cooperative initiative between landholders, Sustainable Resource Development- Fish and Wildlife (ASRD-F&W), Alberta Conservation Association (ACA), and Sustainable Resource Development- Lands (ASRD-Lands). This interdepartmental and interagency cooperation is key to the implementation of MULTISAR, and facilitates conservation of multiple species across the landscape. The participation of SRD-Lands allows for the implementation of the MULTISAR habitat conservation strategies on leased land. MULTISAR's mission, vision and goals have remained consistent throughout its existence:

Vision: Multiple species of wildlife, including SAR, are effectively conserved at the landscape level, through a process that integrates landuse[1] management with fish and wildlife management principles, and in a manner that may contribute to the sustainability of the rural economy.

Mission: To develop and implement the MULTISAR process which directs conservation of multiple SAR, associated fish and wildlife and their habitats, within the Grassland Natural Region of Alberta.

[1] Landuse management refers to both range management principals and management of the various land uses (including industrial developments) on the landscape.

Goal: The goal is to assist landowners and lessees to manage land to benefit provincial and federal SAR, while maintaining an economically viable operation**.**

MULTISAR has maintained a dynamic and evolving nature throughout its existence. The first two years (fiscal years 2002-2003 and 2003-2004) of the program concentrated on the development of the MULTISAR process through baseline wildlife inventories (Quinlan *et al.* 2003, Quinlan *et al.* 2004), species prioritization, construction of Habitat Suitability Index (HSI) models (Downey *et al*. 2004), prioritization of the landscape for conservation activities through the implementation of the Multi-species Conservation Value (MCV), and the development of Beneficial Management Practices (BMPs) for species at risk (Jones and Downey 2004, Rangeland Conservation Services Ltd. 2004). Following the initial two years, the focus for MULTISAR has been on the ground conservation efforts for SAR. Initial conservation efforts aimed at the development of Habitat Conservation Strategies (HCSs), in cooperation with landholders. HCSs are currently being implemented and completed on areas totaling roughly 200,000 acres of native prairie in the Milk River, Pakowki, and St. Mary's Basins.

Originally the Information and Education (I&E) component of MULTISAR has focused on "kitchen table" one-on-one meetings with landholders and presentations to stakeholder groups within the Milk River Basin and surrounding upland areas and to the scientific community via presentations at conferences. General reference material was later developed and in 2006 the "At Home on the Range" landowner guide to living harmoniously with species at risk in Alberta (Saunders *et al.* 2006) was completed and distributed throughout the Grassland Natural Region (GNR). In 2007, the I&E component was expanded to incorporate the delivery of Species at Risk Conservation (SARC) Plans. Information and Extension component of MULTISAR delivered SARC plans and the awareness and education program (e.g. school presentations) throughout the GNR during 2007-2008. MULTISAR is a team member of the Milk River Watershed Council Canada (MRWCC), the Oldman Watershed Council (OWC), and the Red Deer River Watershed Alliance and continues to collaborate with local counties and watershed groups on grazing schools, education and demonstration projects.

The following chapters outline the accomplishments of MULTISAR for the fiscal year 2008-2009 as well as a summary of accomplishments achieved over the life of the program.

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2.0 AWARENESS AND EDUCATION

Shannon Frank, Alberta Sustainable Resource Development–Fish and Wildlife Division, Lethbridge, Alberta

2.1 Introduction

MULTISAR's awareness and education program has continued into its second year with increased opportunities to work with its three target audiences: landholders, youth and the general public. The focus of the awareness and education program remains on rural landholders and youth. MULTISAR's approach is multifaceted for each target audience and long term messaging continues to be essential.

Partnerships are the cornerstone of MULTISAR's outreach strategy. MULTISAR's involvement with the Prairie Conservation Forum (PCF) and the Oldman Watershed Council's (OWC) Rural Team have been the most important approach for youth education and landholder awareness respectively. Moreover, forging these relationships and sharing resources has increased efficiency and delivery capacity of the partnering organizations.

MULTISAR continued several of its extension projects initiated in 2007-2008 and pursued new opportunities in 2008-2009. MULTISAR continued delivering its interactive curriculum-based presentation and activities for grade seven students on prairie and species at risk conservation throughout the Grassland Natural Region (GNR). It also participated in grazing schools and other community events such as *Holding the Reins*. It remained involved with the PCF Education Committee in engaging educators and developing innovative approaches to delivering prairie conservation messages. A grant from the Government of Canada's Greencover Canada Technical Assistance Program allowed MULTISAR to work with six ranchers in the GNR, to implement management practices that are mutually beneficial to their operations and to species at risk, and to establish demonstration sites for future community events.

2.2 Landholder Education and Awareness

2.2.1 At Home on the Range

The *At Home on the Range: Living with Alberta's Prairie Species at Risk* booklet remains the flagship document of the MULTISAR program. Copies are regularly mailed out to District Fish and Wildlife offices, county offices and Public Lands offices along with MULTISAR brochures. The booklet was updated and an additional 6600 copies were printed.

2.2.2 Southern Alberta Grazing School for Women

MULTISAR was one of the key organizers and participants to the 5th Annual Southern Alberta Grazing School for Women (SAGSW) held in Rowley July 16th-18th. The SAGSW informs landholders about tools for management of their grazing operations and how to use them. MULTISAR gave a presentation to the participants showcasing habitat management techniques for species at risk that would be mutually beneficial to species at risk and their operation. A display was also set up providing additional information for the audience. Interest was high with many landholders wanting to share their stewardship stories. Other topics included range and riparian health assessments, watering unit options, stocking rates and herd health. There were 30 women in attendance and all provided very positive feedback. A follow up evaluation is underway by the committee to determine how many participants applied what they learned at the school to their operations.

2.2.3 Blackfoot Challenge Tour

As a member of the OWC's Rural Team, MULTISAR participated in a tour of the sites where the Blackfoot Challenge developed stewardship projects in the Blackfoot watershed of Montana. Each Rural Team member sponsored a landholder to join the tour in order to inspire the local community of the Oldman watershed. The purpose of the tour was to learn how this world renowned group of local residents work together to manage and protect their watershed in the face of increasing challenges and competing land uses. The tour showcased how large carnivore conflicts are being managed cooperatively and openly, technical and bioengineering feats to improve water courses and trout spawning grounds, low impact forest management techniques and a discussion on the purchase of land for an ecological reserve owned and managed by the local residents. The OWC intends to use the lessons learned from the Blackfoot Challenge to help in the development of the Oldman Watershed Management Plan and to inspire local residents to continue their hard work in protecting our water and land. The key message that came out of the tour was building trust and cooperation among various agencies, stakeholders and residents.

2.2.4 Holding the Reins

The OWC's Rural Team also hosted the 3rd Annual "Holding the Reins" summit on February 3rd, 2009 in Fort MacLeod. Local landholders gathered to learn about environmental projects going on in the Oldman River basin. Presentation topics included predator control and conflict resolution in the Blackfoot watershed in Montana, opportunities for habitat creation, pheasant management, and irrigation and water scarcity. The summit also provided an opportunity for watershed stewardship groups to give an update of their projects and encouraged discussion of watershed management issues and concerns. MULTISAR set up a display table to provide information about the program to the attendees.

2.2.5 Milk River Watershed Council Canada

MULTISAR participated in the organization of the Milk River Watershed Council Canada (MRWCC) Annual General Meeting held in Milk River on April 8, 2008. The meeting featured a silent auction, displays (including MULTISAR's) a keynote speech by Lorne Taylor, former provincial Minister of Environment, and a delegation from the United States of America. An essay contest was organized to encourage local elementary school students to reflect on their watershed and what it means to them but a complete lack of participation meant a winner could not be rewarded at the meeting as was planned. In the future these types of contests will need greater advertisement and awareness.

MULTISAR also participated in the first phase of development of a management plan for the Milk River Watershed. MULTISAR attended a strategic meeting workshop in Cardston on December 5, 2008 to prioritize the list of recommended actions made in the state of the watershed report and assign timelines for their implementation. The management plan should be developed in 2009-2010.

2.2.6 BMP Implementation Project

MULTISAR received a grant from the Government of Canada's Greencover Canada Technical Assistance Program to increase extension material and activities. The grant allowed MULTISAR to work with 4 landholders to implement some of the Beneficial Management Practices (BMPs) suggested in their Species at Risk Conservation Plan (see Section 5.0 Species at Risk Conservation Plans for more details). This grant was instrumental in assisting landholders with immediate implementation of their BMP recommendations to initiate positive impact on habitat. MULTISAR plans to monitor these BMP sites and use them for demonstration purposes during field tours, as stories for newsletters and presentations and case studies for extension materials. The grant also allowed MULTISAR to install two artificial burrowing owl burrows that were recommended as a part of a Habitat Conservation Strategy (HCS) (see Section 4.0 Habitat Conservation Strategies for more details) and to pursue the installation of a

ferruginous hawk nesting platform in the Bow Island area. Altalink graciously donated the pole, nest platform and their services to install the pole, however, due to unfavorable weather and ground conditions the installation has been rescheduled for the 2009-2010 fiscal year. The Greencover Canada grant has also allowed MULTISAR to develop three BMP Implementation Guides and a newsletter, the "Grassland Gazette," for landholders. As well, the MULTISAR Program and the Greencover Canada Program were promoted through the following avenues:

- Alberta Conservation Association's *Conservation* magazine
- Call of the Land radio show
- Prairie Conservation Forum newsletter
- Lethbridge County newsletter
- The Hard Grass Advocate
- MD Pincher Creek website

2.2.7 Website

MULTISAR's website (www.multisar.ca) is updated every 2-3 weeks with new documents, news updates and photos. MULTISAR had planned to add several new features to the website, as was stated in the 2007-2008 Progress Report, including an education page highlighting our efforts with schools, a page highlighting agricultural businesses that provide habitat for species at risk and a self serve Species at Risk Conservation Plan guide. New pages highlighting MULTISAR's youth education program and producer stewardship stories are almost complete. Other additions are on hold until additional information is available.

2.2.8 Presentations to Landholder Audiences

Table 1. Presentations given to landholder audiences in 2008-2009.

Audience	Date	Number of landowners
Southern Alberta Grazing School for Women	July 17. 2008	30
Sandstone Ranch Co-op Members	May 20, 2008	5
Livingstone Landowners	March 12, 2009	23

2.3 Youth Education

2.3.1 School and Other Presentations

MULTISAR's interactive presentation and activities for grade seven students was introduced at the end of last fiscal year and has continued strongly in 2008-2009. Refinement of the presentation has been ongoing and has expanded to allow additional grade levels to participate. Focus remains on grade seven students because of the strong curriculum links with species at risk and ecosystems. Grade nine curriculum ties are also very strong as they have a *Biodiversity* unit in Science.

Thirteen presentations were given at nine different schools, four of them in French and one involving two Hutterite Colony schools. A total of 185 students in southern Alberta (mostly in grades seven and nine) have taken part in a MULTISAR presentation. Presentations varied from 50 minutes to three hour workshops, depending on the teacher's request. MULTISAR staff also presented information on species at risk to a group of youth attending a grazing school at Writing-On-Stone Provincial Park.

2.3.3 Environment Week 2008

The Environment Week 2008 theme was *Water: Connect, Protect, Conserve* and featured several events throughout the Lethbridge community. This annual national week is well advertised and covered by the media which offered MULTISAR an opportunity to raise its profile with the urban public. In order to link with the water theme, the northern leopard frog (*Rana pipiens*) was chosen as a profile species. MULTISAR organized an educational event where 80 students and parents from Galbraith Elementary School in Lethbridge took a field trip to Magrath to learn about the frog. The fact that northern leopard frogs had disappeared from Magrath and were then successfully reintroduced provided a good news story for the youth participants and the media. CTV news covered the event which was also mentioned in other general environment week news stories. The day was a great opportunity for the students to connect with nature and learn about their local species at risk. The students enjoyed searching for frogs in Dudley's Pond and most of them had an opportunity to hold a northern leopard frog as well as a plains garter snake. This field trip was paid for and organized by the Lethbridge Environment Week Committee, and in particular Alberta Environment, Alberta Tourism, Parks and Recreation and the City of Lethbridge provided much appreciated assistance.

2.3.4 Wetland Studies

MULTISAR collaborated with Alberta Tourism, Parks and Recreation staff with the delivery of Wetland Field Studies for grade five students at Beauvais Lake Provincial Park. This group of grade five students was the same group that participated in the Environment Week northern leopard frog field trip. Exposure on multiple occasions to

the same theme greatly increased the quality of learning for young students. The broader theme of the importance of water and wetlands was reinforced through the wetland field studies and the leopard frog field trip. These two events were the first of much possible collaboration with Alberta Tourism, Parks and Recreation and MULTISAR hopes to continue to strengthen this relationship.

2.3.5 Prairie Conservation Forum Education Committee

MULTISAR has been very active this year on the Prairie Conservation Forum Education Committee (PCF-EC). The committee assisted *Inside Education*, a non-profit organization that promotes environmental learning, in planning and organizing a Grasslands Institute for teachers of all subjects and grade levels to learn about the prairies and how to incorporate their knowledge and experiences into their classrooms. Twenty five teachers, mostly from outside the GNR, participated in the Institute. Participants visited the Waterton Park Front Project with Nature Conservancy Canada, the Bison Paddock with Parks Canada, the Irrigation Demonstration Farm at the Lethbridge Research Centre, and a coal bed methane development with Encana and Blackfoot Crossing at Siksika Nation. The PCF-EC was responsible for organizing a welcome BBQ in Cottonwood Park followed by an introductory scavenger hunt presented by the Helen Schuler Nature Centre, a grasslands 101 tour with Nature Conservancy, a discussion with a local rancher and the visit to Waterton Lakes National Park to learn about bison reintroduction and using fire as a tool on the landscape. MULTISAR also gave a presentation highlighting available resources for grasslands education such as the Grasslands Poster Kit (available from Alberta Environment), MULTISAR's presentation and activities for species at risk and a variety of posters, videos, brochures and factsheets. At the end of the Institute MULTISAR mailed these resources to all participants requesting them.

A second project that MULTISAR continues to be involved with through the PCF-EC is the creation of a distance learning education (DLE) broadcast focusing on grasslands. DLE is an interactive way of connecting to students without having them leave the classroom. Escalating costs and logistics of field trips and long distances are formidable barriers for teachers, making these broadcasts desirable. In addition, the possibilities for connecting classrooms and inviting guests from anywhere in the world offers unique opportunities for learning.

MULTISAR's Extension Coordinator attended Elevate 2008, a videoconferencing convention in Banff August 25-27th, 2008 to discover how the PCF-EC could use DLE and modern technology and to observe first hand how others are using it now and how it will be used in the future. The conference was exceptional and provided much insight into the far-reaching possibilities of DLE and the grasslands. The entire PCF-EC also viewed a live broadcast at Writing On Stone Provincial Park about the history of First Nations in the park, which demonstrated that powerful subject matter can be presented in a simplistic way and connect with the audience in another city. The PCF-EC is continuously seeking funding opportunities to make this project reality.

2.3.6 Milk River Watershed Council Canada Communications Team

As part of the MRWCC Communication Team, MULTISAR has collaborated with several education and awareness initiatives over the past year. MULTISAR assisted in creating and presenting a watershed resource kit for each school within the watershed and placed one in their library for use. The kit included the *At Home on the Range*, Alberta Prairie Species at Risk Identification Guide and the Grasslands Poster Kit. The Red Deer River Watershed Alliance is currently creating their own watershed kit and MULTISAR assisted in gathering materials for it.

A web developer was hired to update the MRWCC website and add a virtual library and blogging ability. The virtual library provides a simple method for viewing reports, maps and research going on in the basin. The blogging feature will allow local residents to communicate with each other and with the MRWCC. It will provide a forum for sharing ideas, discussing issues and staying informed. The website was completed in February 2009.

The Communications Team also organized the Annual General Meeting for 2008 as was outlined in Section 2.2.5. Ongoing efforts include erecting a storefront display in the Town of Milk River and creating a video introducing the MRWCC.

2.4 Public Education

2.4.1 Interpretive Signage

Two interpretive signs were installed at the Etzikom Museum in June 2008. One sign features all prairie species at risk and the other focuses on the endangered soapweed (*Yucca glauca*) and yucca moths (*Tegiticula yuccasella*) to complement the living specimens outside the museum entrance. Partners in the production of the signs included Medicine Hat College and the Etzikom Museum.

Two interpretive signs were also created for the Magrath Galt Canal Trail to highlight the *threatened* northern leopard frog population, their habitat along Pothole Creek and their reintroduction to the area after disappearing in the late 1970s. These signs will be installed in the of spring 2009.

2.4.2 Media Exposure

MULTISAR has had increased media coverage this year as the program has expanded to include more events and new projects. The majority of publicity was centred on rural newspapers and newsletters but also included public events and a radio show (Table 2).

Table 2. Media exposure MULTISAR received in 2008-2009.

Type of Media	Name of Media
News Story	Alberta Conservation Association's *Conservation* Magazine The Hard Grass Advocate Prairie Conservation Forum Newsletter Lethbridge County Newsletter MULTISAR's Grassland Gazette Municipal District of Pincher Creek website
Radio Interview	Call of the Land
Television Interview	Global (Northern Leopard Frog Field Trip)

2.5 Summary of Activities

- Distributed 1500 *At Home on the Range* booklets and 300 MULTISAR brochures to landholders, Fish and Wildlife offices, county offices, other agencies, etc.
- Assisted in organizing the Southern Alberta Grazing School for Women and presented on MULTISAR at the school.
- Attended tour of Blackfoot Challenge in Montana to learn how to apply lessons learned and successful techniques of watershed management to Oldman watershed.
- Collaborated in organizing Holding the Reins, a summit for landowners in the Oldman watershed. MULTISAR had its display at event.
- As a member of the Communications Team for MRWCC, assisted in organizing the Annual General Meeting and other awareness and education initiatives.
- Received a grant from the Government of Canada's Greencover Canada Technical Assistance Program to set up demonstration sites for select species at risk BMPs and to:
    - Create three BMP Implementation Guides and a newsletter for landholders.
    - Increase media coverage through news articles in several newspapers, on websites and on the radio program Call of the Land.
- Continued to update website with news bulletins, new photos and add documents as required.
- Three presentations were given to landholder audiences, including the Livingstone Landowners Association and the Sandstone Ranch Co-op members.
- Thirteen presentations were given to grade seven and nine students, including four in French and one to two Hutterite colonies.
- Eighty grade five students were taken on a field trip to learn about northern leopard frogs and their reintroduction to Magrath as part of Environment Week 2008 celebrations.
- Assisted Alberta Parks with wetland field studies for several grade five classes at Beauvais Lake Provincial Park.

- Two signs were installed at the Etzikom Museum, one over viewing prairie species at risk and one focused on the endangered yucca moths and soapweed.
- Two signs were created for the Magrath Galt Canal Trail highlighting northern leopard frogs, their habitat around Pothole Creek and their reintroduction to a local pond.
- MULTISAR increased its media exposure in rural newsletters, newspapers and on websites.
- As a member of PCF's Education Committee:
    - Assisted *Inside Education* in organizing Grasslands Institute for teachers to learn about the prairies. Also, MULTISAR presented to teachers about available grassland resources and mailed resource packages to teachers requesting them.
    - Attended Elevate 2008, a conference featuring distance learning education and videoconferencing.
    - Assisted in creating and presenting a Watershed Resource Kit to all schools in the Milk River Basin, in support of the MRWCC's Communication Team and in providing content for the Red Deer River Watershed Alliance kit.
    - Supported the MRWCC's website upgrade (addition of a virtual library and blog).
    - Assisted with organizing The MRWCC's Annual General Meeting, including a silent auction.

2.6. Conclusion

MULTISAR's awareness and education program has had a busy and exciting year with many events, new opportunities for outreach as well as ongoing education projects. Partnerships and participation on committees continue to assist MULTISAR in optimizing its outreach goals with limited resources and time, as well as avoiding overlap and making connections between environmental messages.

MULTISAR's awareness and education program remains focused on landholders as they are in a position to directly influence habitat for species at risk. The grant received from the Greencover Canada Technical Assistance Program was a significant step towards greater awareness of BMPs and their demonstration will be extremely useful for field days and examples in extension documents. Moreover, this grant has built trust in MULTISAR in the rural community and added value to participation in the program.

Youth and the general public are also target audiences for MULTISAR's multifaceted education strategy. A variety of tools have been developed including interpretive signs, field trips and presentations. In addition, maximum media exposure through newspapers, radio and the web is creating a foundation for awareness that can be built onto in the future.

2.7 Future Activities

- Continue distribution of *At Home on the Rang*e booklets and MULTISAR brochures.
- Add new features to website, including education page, showcase for businesses that maintain or enhance species at risk habitat.
- Continue presenting to youth, especially at rural schools and Hutterite Colonies and continue improving and evolving the content.
- Include MULTISAR demonstration sites in field tours.
- Continue presenting to landholders, government, non profit organizations and at public events.
- Collaborate with Alberta Tourism, Parks and Recreation, museums, nature centres, etc. to create interpretive walks and displays of species at risk.
- Investigate possibilities for creating digital stories with staff, landholders, youth or other cooperators.
- Investigate options for providing additional incentives to landholders for implementing BMPs for species at risk.
- Develop strategies for using marketing and other techniques for education and awareness.
- Continue to increase media exposure.
- Continue to work with PCF, MRWCC, OWC, Environment Week and SAGSW on distance learning education, field trips, teacher's institutes, grazing schools, etc.
- Increase partnerships in eastern portion of the grasslands (Red Deer River Watershed Alliance, Southeast Alberta Watershed Alliance, Special Areas).
- Continue research on attitudes, opinions and awareness of species at risk, especially among landholders.

3.0 SOCIOECONOMIC REVIEW OF THE VALUE OF SPECIES AT RISK

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Managing species at risk is not a purely scientific process. Scientific research has provided biologists with insights on why species are at risk and how they could be managed to conserve or recover their populations, but putting the solutions into practice in Alberta's Grassland Natural Region (GNR) is not a simple task. It requires the involvement and support of a wide range of people, from landowners and lessees to political figures and the general public. Thus, social, economic, political and cultural considerations have to be taken into account.

The primary goal of MULTISAR is to assist landowners and lease holders in Alberta's GNR to manage their land in a way that benefits provincial and federal species at risk while maintaining an economically viable operation. As such, MULTISAR has a keen interest in understanding the socio-economic implications to landholders of having species at risk on their land and implementing range management practices and habitat enhancement projects that will have positive impacts on the conservation of wildlife and recovery of species at risk.

MULTISAR originally engaged in a socioeconomic evaluation process to assess the total value (social, economic and ecological) of maintaining MULTISAR focal species on the grasslands. The goal of this process was to generate an understanding of the costs and benefits of maintaining habitat for species at risk to allow MULTISAR to improve its outreach messages and possibly provide additional motives to landholders for conservation of species at risk. A contractor was hired to develop a framework for this evaluation which was completed in January 2008. The framework identified indicator questions for each set of values (social, economic and ecological) that would be directed to various stakeholders and answered in terms of a rating (ex. 1-5). The rating for each set of values would then be averaged to create a total value for each species.

MULTISAR had concerns regarding the ranking of species that may result from the process, as the intent was not to compare the importance of species. Furthermore, it was felt that the whole value of a species could not be fully captured by a simple rating system. In order to capture the total worth of a species more intense investigations would be required, likely relating to the value of ecological goods and services, which is still in its infancy in Alberta.

Due to these concerns and a limited timeframe and budget, MULTISAR decided against pursuing the proposed framework for evaluating its focal species. Instead MULTISAR focused on landholder knowledge levels, perceptions and values of species at risk as well as their adoption of BMPs. A literature review and focus groups provided this insight.

A contractor facilitated two focus groups in Hanna, which were held December 8th, 2008. Results from the discussion confirmed that awareness of species at risk, associated legislation and MULTISAR in general was low in the Hanna area. Awareness of some BMPs was higher but often not associated with species at risk or even wildlife but as general environmental practices. Willingness to adopt BMPs was high if a monetary incentive was available but low profit margins and high administrative requirements and government regulations for agricultural producers meant that implementation of BMPs was not economically viable. The participants perceived wildlife as resilient and believed that they were providing quality habitat for species and therefore there was no need to alter their practices. The cause of decline was believed to be a result of poor practices in wintering habitats of other nations, oil and gas development, urbanization and climate change. Conservation groups and governments were viewed negatively as having little experience in and understanding of farming and ranching operations. Extensionists (preferably from a ranching or farming background) that are knowledgeable, open minded and willing to listen to the landholder's perspective were seen as beneficial.

Results from the focus groups are very useful for guiding MULTISAR's extension program. The need for greater outreach and awareness in the Hanna area is apparent, along with a mutual understanding and appreciation of landholders' socio-economic reality. Key messages and strategies can now be created that will target specific concerns of landholders in that area and attempt to engage them in species at risk conservation and recovery. This feedback also reinforces the need for the core value of MULTISAR; conservation through voluntary stewardship.

MULTISAR will continue to take into account the social and economic factors behind species at risk management, especially those influencing land managers. Additional focus groups in other areas of the GNR and telephone surveys are options for further information gathering.

4.0 HABITAT CONSERVATION STRATEGIES

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4.1 Introduction

MULTISAR's Habitat Conservation Strategies (HCSs) strive to balance the conservation needs of multiple species at risk, with the need for healthy rangelands and a sustainable ranching operation on both publicly and privately owned lands in the Milk River and Pakowki Basins. MULTISAR HCSs result from intensive vegetation and wildlife surveys and range health assessments in this core species at risk area. The relationships between habitat condition and species occurrences contribute to our understanding of management practices that are beneficial to species at risk. The learning that we gain from HCSs and their monitoring is then used to make management recommendations in key habitats in the remainder of the Grassland Natural Region (GNR). To address multi-species conservation in the remainder of the GNR of Alberta, MULTISAR has developed a rapid assessment program that produces landholder specific Species At Risk Conservation Plans (SARC Plans - refer to Section 5). HCSs and SARC Plans are focused in priority areas, as identified by Multiple-species Conservation Values (MCVs - refer to Downey *et al*. 2008). Areas with high MCVs in southern Alberta include but are not limited to the Milk River, Pakowki and St. Mary's Basins and the lands east of Hanna, west of Cardston, and east of the Porcupine Hills.

4.2 HCS Process

Success of MULTISAR relies on the creation of partnerships between landholders and government and non-government agencies. Without conservation-minded landholders, large areas of native prairie would likely no longer support many species at risk. For that reason MULTISAR believes conservation is only possible through voluntary actions by landholders. As a result MULTISAR forms a specific team for each HCS that consists of the landholder and representatives from each of the following:

- Alberta Conservation Association (ACA)
- Alberta Sustainable Resource Development (ASRD) - Lands Division – Rangeland Management and Land Management
- ASRD – Fish and Wildlife Division
- Other non-government or private industry representatives if applicable (HCS specific)

For each landholder that voluntarily signs up for a HCS, a MULTISAR Letter of Intent is signed. The MULTISAR Letter of Intent clearly lists tasks/commitments/expectations made by both MULTISAR and the landholder in a checklist format. The HCS process is

both flexible and dynamic as it is guided by the commitments checked off by the landholder (Appendix A).

Management objectives and the implementation plan are developed by the entire MULTISAR HCS Team and address all habitat, wildlife, range and land management issues identified for that land base. A Stewardship Commitment Letter that acknowledges the HCS and the role of each party in the implementation of any proposed enhancements or management modifications is also signed by the applicable landholder, ACA and ASRD representatives following completion of the HCS analysis and prior to funding any enhancements based on HCS recommendations (Appendix B).

Implementation of the MULTISAR HCS results in stewardship of habitat that has high potential to support multiple species at risk. Recovery actions from species-specific Recovery Plans and from MULTISAR's Beneficial Management Practices (BMPs - Rangeland Conservation Services Ltd. 2004) documents are used to guide management and enhancement recommendations in the final landholder HCS report. A completed HCS report contains:

- Project goals and objectives,
- Purpose and application of plan,
- History of ranch,
- List of team members,
- Location, climate, soils and ecological significance of the area,
- Wildlife methods, results and selection of focal management species,
- Range management methods and results,
- Range and wildlife correlations,
- Species specific BMPs,
- Implementation plan,
- Industrial development guidelines,
- Monitoring program, and
- All necessary mapping.

4.2.1 Surveys and Inventories

To effectively manage multiple species at risk at a landscape level it is necessary to determine the species present, their habitat requirements, habitat conditions and availability as well as land uses within the area. Initially, the baseline data gathered from wildlife surveys and range health and detailed vegetation inventories is used to develop a landholder specific management plan. In the long term, the data collected will provide the baseline to measure the effects that enhancements and management changes have had on wildlife habitats and populations, particularly those related to species at risk. Inventories and monitoring allow MULTISAR to gauge which areas are most valuable for species at risk and if any land uses present a threat to that habitat and/or species at risk.

A.) Multi-species Surveys

Multi-wildlife species surveys are conducted on all HCS cooperators' publicly and privately owned lands. MULTISAR staff designed the survey protocol as follows: Surveyors walk transects 400m apart, stopping every 400m for 5 minutes between 0500 and 1100 hours. GPS coordinates for the 400m grid pattern are predetermined using GIS to ensure all stops are equally spaced, to facilitate monitoring and to allow for easier entry of all sightings into the Fish and Wildlife Management Information System (FWMIS). All birds, mammals and/or herptiles seen or heard during the 5 minutes within 200m of the stop location are recorded. Key habitat features such as burrows, nests, dens, leks, trees, shrub complexes or ephemeral ponds are also recorded. Important habitat information and wildlife sightings observed in between stops but not previously documented are also collected and GPS coordinates recorded. Surveys are not conducted in the presence of heavy precipitation or winds greater than 30km/hr. The multi-species point count is the core survey method utilized in the MULTISAR HCS program. However MULTISAR also participates in or conducts many surveys using species-specific methods and timing for amphibians, reptiles, mammals and birds.

B.) Amphibian Surveys

Upon HCS lands all ephemeral or permanent wetlands potentially supporting northern leopard frogs (*Rana pipiens*), tiger salamanders (*Ambystoma tigrinum*), and/or toads are surveyed according to Kendell's protocol (2002). In 2002, MULTISAR developed a roadside toad survey protocol (Taylor and Downey 2002). This included the establishment of specified survey routes, 10 of which are now part of the provincial Researching Amphibian Numbers in Alberta (RANA) program. In the spring of 2008 greater than average precipitation fell in a short time period providing suitable survey conditions for MULTISAR to complete surveys on 5 of the 10 routes.

C.) Reptile Surveys

Short-horned lizard (*Phrynosoma hernandesi hernandesi*) surveys were conducted using the protocol described by James (2002). Surveyors walked a few meters apart across suitable habitat with walking sticks to flush lizards during the hottest part of the day in the hottest month of the year. MULTISAR conducts short-horned lizard surveys on any historic sites or potential habitat included under HCS lands.

Snake hibernacula surveys were conducted on HCS properties with known snake activity or those containing suitable habitat for prairie rattlesnakes (*Crotalus viridis viridis*). These surveys were conducted using the survey protocol described in the Sensitive Species Inventory Guidelines (ASRD 2005). In addition to these surveys, MULTISAR used external transmitters to track prairie rattlesnake movements back to hibernacula sites in late summer and early fall. Search areas were determined based on confirmation of snake presence via past snake sightings and road kill events but lacking confirmation of a hibernacula within their vicinity. Priority was given to areas close to or on HCS lands.

D.) Mammals

A protocol to survey Richardson's ground squirrels (*Spermophilus richardsonii*) was developed by ASRD, Fish and Wildlife Division in 2003 (Downey 2003). The annual

surveys themselves are now conducted via MULTISAR with the help of ASRD staff. Due to inclement weather in the spring of 2008 only 10 of the 30 survey blocks could be completed.

Two infrared Reconyx© trail cameras were purchased and field tested over the 2008 summer field season to identify large mammals. These cameras provided MULTISAR with some rudimentary ungulate data on two HCS properties but are intended to survey mammalian predators within the MULTISAR core study area in the beginning of 2009.

E.) Bird Surveys

MULTISAR surveys all greater sage grouse (*Centrocercus urophasianus*) leks contained within HCS landholdings during the provincial ASRD sage grouse surveys each spring. MULTISAR also surveys all sharp-tailed grouse (*Tympanuchus phasianellus*) leks within HCS landholdings for the Lethbridge Fish and Wildlife District each spring. In addition to these grouse surveys MULTISAR helped the Medicine Hat District Fish and Wildlife office establish a sharp-tail grouse lek monitoring program of their own to coincide with the annual ASRD sage grouse surveys. Surveys follow the protocol outlined by Alberta Fish and Wildlife (ASRD 2005).

Electronic call playback surveys were used for both burrowing owls (*Athene cunicularia hypugaea*) and loggerhead shrikes (*Lanius ludovicianus*) in suitable habitat during HCS multi-species surveys. Burrowing owl playback surveys followed the protocol set out by Alberta Fish and Wildlife (ASRD 2005), while loggerhead shrike surveys followed the survey methods specified by Prescott (2003). In 2008, MULTISAR also assisted on six of the provincial loggerhead shrike road-side surveys, which intersect the Milk River Basin.

Every 5 years ASRD conducts provincial ferruginous hawk (*Buteo regalis*) block surveys. There are over 100 blocks of which 30 are within MULTISAR's core HCS study area. MULTISAR surveys these 30 blocks annually, regardless of the provincial 5 year cycle.

F.) Detailed Vegetation Inventories

Detailed vegetation inventories were conducted on pre-determined polygons on HCS participating lands. Soil series, range site and plant community data were gathered for each polygon. Soil series was collected via Agrasid 3.0 (Alberta Soil Information Centre 2001) and further investigated during the field visit. Range Site was determined by cross over tables constructed for each soil series (Adams *et al.* 2005). Plant communities were classified by utilizing the soils, range site, and a detailed transect. Detailed transects entailed assessing plant species composition along permanent transects established by MULTISAR. Plant species present, species cover, soil exposure, moss/lichen cover and overall vegetation cover within a 20x50cm Daubenmire frame was recorded on field sheets created by ASRD (Robertson and Adams 1990; Willoughby *et al.* 2005). Grazing intensity, utilization, distance of transects to water and visual obstruction readings (VOR) were also noted at this time. VOR and height of vegetation were measured with a Robel pole (Robel *et al.* 1970). A final classification of the plant community was completed to

fit the Range Plant Communities and Range Health Assessment Guidelines for the Mixedgrass Natural Subregion of Alberta (Adams *et al*. 2004) using ordination techniques with the acquired data.

G.) Range Health
Range health is a measure of the ability of rangeland to properly function ecologically. The assessment takes a critical look at ecological status (species composition), plant community structure, hydrologic function and nutrient cycling, site stability and presence of noxious weeds. Range health assessments were conducted in conjunction with each detailed vegetation inventory transect. The range health assessment is representative of stratified range site polygons throughout the management units (pastures) using the guide set out by Adams *et al*. 2005. For isolated small polygons, such as those surrounding dugouts, additional range health assessments were completed.

H.) Wildlife and Range Health Correlations
Data gathered from both the detailed wildlife and range health surveys were compiled and entered into ArcGIS for mapping. The maps created display range health and wildlife sightings within the various management units (pastures) for each HCS landholder. MULTISAR staff are then able to visually relate range health to various wildlife species and habitat features to establish a management plan for each management unit that incorporates BMPs for sustainable ranching and conservation of species at risk.

4.2.2 Monitoring

Each HCS contains a 5 year monitoring commitment to evaluate the effectiveness of any implemented enhancements. This includes annual or bi-annual monitoring of key wildlife species and/or features (i.e. raptor nests) observed during the HCS wildlife surveys. At the end of the 5 years a full monitoring program should be initiated to include all the species on the entire ranch land base (not just the key wildlife species and/or features). Surveys should be conducted in a similar fashion to original surveys and on comparable adjacent lands to determine if the HCS's BMPs are having the desired effect on species at risk and their habitat and if the lands being managed under MULTISAR BMPs provide increased opportunities for species at risk.

4.3 Achievements

To date field work has been completed on 9 HCSs under MULTISAR covering approximately 200,000 acres within the Milk River and Pakowki Basins. At the time of this report's publication, 4 HCS reports remained to be completed and were on schedule for completion by March 31st, 2009. In addition to the 9 HCSs undertaken, MULTISAR assumed responsibilities for 8 more properties through the Western Blue Flag program. The 8 Western Blue Flag project properties cover 12,439 acres.

Through the MULTISAR HCS program ~20,000 wildlife sightings have been submitted into FWMIS since 2004 and interest and participation by landholders has increased more than three fold (Table 3).

Table 3. Cumulative acreage summary of participating HCS landholders.

Year	Number of Landholders	Completed Wildlife Surveys to Date (ac)	Completed Range Health to Date (ac)
2004	1	30,000	30,000
2005	3	62,200	62,200
2006*	15	110,000	75,000
2007	17	165,000	105,000
2008	**17**	**195,000**	**195,000**

*8 of the landholders listed were incorporated through the Western Blue Flag program accounting for approximately 12,500 acres.

During the 2008 field season wildlife surveys were initiated and completed on ~30,000 acres and range health surveys were completed on ~90,000 acres under the MULTISAR HCS program. As a result of the 2008 surveys many new significant sightings were recorded (Table 4).

Table 4. Significant sightings from 2008 HCS field season.

Species	General Status*	Legislative Status*	# of Observations	Feature	Significance
Burrowing Owl	At Risk	Threatened	4	Burrow	Active and not previously recorded.
Ferruginous Hawk	At Risk	Endangered	10	Nests	Active and not previously recorded.
Plains Spadefoot	May Be at Risk	-	numerous	Tadpoles	Evidence of successful reproduction.
Northern Leopard Frog	At Risk	Threatened	>200	YOY	Evidence of successful reproduction on 1 HCS property, and one site which was not previously known.
Prairie Rattlesnake	May Be at Risk	Data Deficient	3	Hibernacula	Unknown sites previous to 2008 surveys and telemetry project.
Greater Sage Grouse	At Risk	Endangered	1	Lek	Active and not previously recorded.
Short-horned Lizard	At Risk	Endangered	2	YOY	Site known to support lizards with last young of the year observed in 2003.
Swift Fox	At Risk	Endangered	1	Den	Active and not previously recorded. Pups observed at den.

*Alberta Status

Other significant sightings included 1 garter snake (*Thamnophis spp.*) hibernacula, 5 new prairie falcon (*Falco mexicanus*) nests and 1 sighting of a western painted turtle (*Chrysemys picta*) at a site not previously known to provincial wildlife staff or ACA. All three of these species are listed as Sensitive under Alberta's General Status of Wild Species. HCS surveys resulted in numerous other sightings of rare plants and wildlife in 2008. For example, Moquin's sea-blite (*Suada moquinii,* S2 Alberta Natural Heritage

Information Center –ANHIC- rank), Spatulate-leaved heliotrope (*Heliotropium curassavicum*, S1), Red three awn (*Aristida purpurea var longiseta*, S1), loggerhead shrike (*Lanius ludovicianus*), Sprague's pipit (*Anthus spragueii*), Baird's sparrow (*Ammodramus bairdii*), short-eared owl (*Asio flammeus*), upland sandpiper (*Bartramia longicauda*), long-billed curlew (*Numenius americanus*) and pronghorn (*Antilocapra mericana*).

4.4 Implementation of Habitat Conservation Strategy Habitat Enhancements

In 2008-2009 several habitat enhancements and management changes were facilitated through the MULTISAR process.

Along the Milk River, a riparian and a winter pasture were created through a three kilometer fencing project. The riparian pasture will be reserved for summer (July and August) grazing and the winter pasture keeps cattle out of the riparian zone and on tame grasses and creates an area for the landholder to supplement feed. Fencing materials were purchased by the MULTISAR program and considerable in-kind contributions were provided by the landholder to install the fence.

In April 2008, 140 acres (~56ha) of agricultural land was seeded back to native grasses. The seed mix was comprised of 17% needle and thread grass, 16% june grass, 27% northern wheatgrass, 20% western wheatgrass, and 20% blue grama grass. Prior to seeding, the field was sprayed with a glyphosate herbicide to combat weeds that had established. A broadcast seeder was used to distribute the seed, which was then followed by a light harrow. Assessment of the land in August 2008 found all seeded species emerging with the exception of needle and thread grass. During another assessment in November 2008, all species were found. The field has been fenced to prevent cattle from disturbing the seed bed. MULTISAR purchased the seed and fencing material and the landholder contributed in-kind services by seeding, harrowing, and erecting the fence. To prevent weed spread and reduce the risk of fire and fence damage, the landholder hayed the existing kochia and Russian thistle that emerged after seeding.

A second seeding project was a continuation of the 2007 Downy Brome Project in which 90 acres (~36ha) of abandoned cultivation, infested with downy brome, was sprayed and an additional 40 acres (~16ha) of crested wheat was mowed to reduce seed. In 2008, the ninety acre downy brome field was sprayed again in early spring followed by the land being tilled and a green feed crop planted to help outcompete the brome. The green feed crop was then swathed and baled and hauled away to prevent further spread of the downy brome. Prior to the possible seeding of native grasses in 2009 (Table 5), MULTISAR installed, with financial assistance from the Government of Canada's Greencover Canada Technical Assistance Program, two artificial burrowing owl burrows on the edge of the ninety acre field as identified in the HCS. The forty acre crested wheatgrass field was again mowed to reduce seed with plans of spraying the field in the spring of 2009.

Table 5. Summary of MULTISAR HCS enhancements completed each year.

Year	Range Management[3]	Burrow/Den/Nest Structure	Reclamation and Seeding	Water Structure Development or Improvement
2004[1]	-	-	-	
2005	-	-	-	1
2006[2]	8	-	3	7
2007	-	2	1	4
2008	2	2	2	1
Total	**10**	**4**	**6**	**13**

1. Field work was not yet completed in 2004; therefore management strategies and enhancements had not yet been determined.
2. In 2006 MULTISAR assumed responsibility for Western Blue Flag program and related enhancements. Of all the enhancements recommended for the Western Blue Flag, 15 were implemented. These included 4 fencing projects, 3 vegetation control projects, 2 reseeding projects and 6 watering developments or improvements.
3. Can include such things as changes in stocking rate, on/off dates, fencing projects, weed control etc.

The summer of 2008 was also the first time the portable watering units purchased in 2007 as habitat enhancement projects were put to use. Landholders were very impressed with the units and felt that when given access to the units, the cattle preferred them over dugouts, wetlands, and streams. Long-term used of these portable watering units will hopefully prolong the life of dugouts, stabilize banks, improve emergent vegetation around wetlands and riparian areas, and improve water quality for cattle and for aquatic species such as northern leopard frogs.

Some minor issues with the portable watering units included cattle trampling the water intake line if it wasn't protected, solar panels turning in the wind if they weren't tethered down, and cattle pulling on loose wires causing the units to stop pumping water. All these issues have been addressed and changes have been installed.

4.5 Future

MULTISAR has grown over the past six years with HCSs now being completed on several ranches throughout the Pakowki and Milk River Watersheds. MULTISAR has developed plans for ~200,000 acres (~80,937ha) of land of which most is interconnected and allows for landscape planning versus single property initiatives. MULTISAR HCSs will continue to be the cornerstone of the MULTISAR program with efforts made to increase the land base we work with in both the Pakowki and Milk River Watersheds. MULTISAR has and will continue to provide open communication, information and awareness, team based wildlife habitat planning, and will continue to build long-term relationships with landholders, government, non government organizations, and industry.

Summarized below is a list of objectives for 2009-2010:

- Initiate work on 1-2 new HCS properties,

- Monitor important habitat on current HCS participating lands,
- Monitor enhancements completed on participating lands,
- Continue to implement enhancements on lands with completed HCSs, and
- Create protocols for the five year monitoring commitment

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5.0 SPECIES AT RISK CONSERVATION PLANS

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5.1 Introduction

Species at Risk Conservation Plans (SARC Plans) were developed in 2007 as an extension of the MULTISAR Habitat Conservation Strategy (HCS). HCSs have been successful at conserving species at risk (SAR) habitat at the landscape level, but are extremely time consuming and costly and are therefore not cost-effective to conserve SAR habitat on a larger scale across the entire Grassland Natural Region (GNR). Initially the SARC Plan process was evaluated on a trial basis in two high value areas for multiple species at risk; Hanna region and the Milk River Basin (See Downey *et al*. 2008). The success of the SARC Plan assessment in these areas has led to the continuation of the program in 2008-2009 and the expansion into additional key multi-species at risk areas identified within the GNR, including the Foothills and the South Saskatchewan Basin.

The goal of the SARC Plan is to provide landholders with the appropriate tools and knowledge to make subtle management changes to their operation to benefit SAR and other wildlife, based on a rapid assessment of the key wildlife habitats found on their ranch. The objectives of the SARC Plans are to:

1. Apply methods and knowledge learned from the MULTISAR HCSs and create a scaled-down assessment which can be applied to ranches across the entire GNR of Alberta.
2. Recommend and assist with implementing appropriate Beneficial Management Practices (BMPs) to key species at risk or other wildlife habitats.
3. Track knowledge and changes in attitudes towards SAR.
4. Track management changes and results.

SARC Plan assessments are divided into 4 steps; identification of priority lands, preliminary analysis, site assessment, and development of the MULTISAR SARC Plan. The details of these steps are briefly described below. For a more complete account of the SARC Plan assessment process please refer to Alberta Species at Risk Report No. 117 (Downey *et al*. 2008).

5.2 SARC Process

5.2.1 Step 1: Identification of Priority Areas

In 2007, using Multi-species Conservation Values (MCV), MULTISAR identified priority areas to implement its extension program and targeted communities to approach for SARC Plan development. For a detailed explanation of the MCV and MULTISAR priority areas please refer to Alberta Species at Risk Report No. 117 (Downey *et al*. 2008).

5.2.2 Step 2: Conduct preliminary analysis for entire ranch (public and private)

Once a landholder has decided to have a SARC Plan completed for their ranch, the preliminary analysis is initiated. Preliminary work is conducted in the office prior to the SARC field assessment and includes a review of all the current wildlife and range data for the property. This may include the following: a search of the provincial Fish and Wildlife (FWMIS) database for all documented wildlife sightings; a MCV and Habitat Suitability Index (HSI) model review to determine habitat potential and quality for MULTISAR focal species; a review of SAR distribution maps to determine which species may occur on the ranch; GIS mapping for field planning, including identification of habitat structures and prior wildlife sightings; review of applicable SAR recovery plans to determine applicable BMPs or recovery actions; and communication with the local range agrologist to determine current management objectives on leased lands and ensure that SARC Plan recommendations fall within these objectives.

All information gathered during this preliminary assessment is used to provide an initial understanding of the potential species and wildlife habitats that may be present on the ranch, in order to inform the consultation with the landholder and the field assessment. The entire preliminary process takes approximately half a day to complete, but this may vary depending on ranch size.

5.2.3 Step 3: Landholder Visit and Habitat Assessment

The next step in the SARC planning process is a one on one visit with the participating landholder. At this time, a review of the ranch history, current ranch management, and future goals is conducted, as is the landowner's current knowledge of SAR. A standardized questionnaire, which was developed for the program, is given during this initial consultation (Appendix C). Some of the information collected from the questionnaire is entered into a MULTISAR Landholder Database for reference and future analysis. Data will eventually be used to measure changes in landholder knowledge about SAR, and to determine current opinions and understanding of SAR.

After consulting with the landholder, a field assessment is conducted. The field component is not designed as a complete inventory, but rather, an identification of key SAR and other wildlife habitats. Field assessments can be conducted any time during the year except during periods of snow cover or adverse weather. Pictures and GPS locations are taken of key habitat features. These features, along with fence lines, wetlands, and historical wildlife sightings, are later mapped and included in the report. The entire ranch is assessed to determine if the species identified during the preliminary analysis occur or have the potential to occur in the available habitats on the ranch. The MULTISAR BMPs as well as the current recovery actions for the selected species are then reviewed to determine if the landholder's current management system is appropriate for the recommended management species. Any changes or tweaks to management practices that may be needed to help improve or maintain SAR habitat on the ranch without negatively impacting the landholder are noted.

5.2.4 Step 4: MULTISAR Species At Risk Conservation Plan Report

A standardized report is written which highlights the data collected prior to and during the SARC assessment. The plan includes: an introduction outlining the goals and objectives of the SARC Plan; a results section detailing all habitat features and current management approach and potential issues on the ranch, a map showing the various pastures and the locations of structures, combined with a list of pasture-specific recommendations which details the appropriate BMPs for the selected management species or group of species, and a conclusion. The report is delivered in person to the landholder, and it is during this second meeting that the MULTISAR team disscusses the results with the landholder and makes the appropriate adjustments to the report to ensure it is acceptable and can be economically implemented by the landholder. Proceeding this meeting, the landholder will be contacted on an annual basis for updates on the implementation and results of any management changes.

5.3 Achievements

Since the inception of the SARC Plan program in 2007, 29 assessments (22 in 2008-2009) have been completed throughout the GNR covering an area of 58,015 acres. In 2008-2009 MULTISAR began a collaboration with Operation Grassland Community (OGC), a habitat stewardship program of the Alberta Fish and Game Association, in the development and delivery of Species at Risk Conservation Plans in southern Alberta. Through this collaboration, another 2 assessments, with property covering approximately 17,000 acres, were in the process of being completed by OGC at the time of this report's publication.

For the 22 SARC Plans completed by MULTISAR this year, BMPs were recommended for the following species and groups of species:

1. Grassland Birds – 19 (287 quarter sections = 45,925 acres)*

2. Amphibians – 9 (77 quarter sections = 12,595 acres)
3. Sharp-tailed grouse – 7 (105 quarter sections = 16,780 acres)
4. Loggerhead Shrike – 1 (10 quarter sections = 1590 acres)
5. Raptors – 11 (140 quarter sections = 22,387 acres)
6. Burrowing owl – 4 (30 quarter sections = 4870 acres)

* BMP recommendations for species/groups of species are not mutually exclusive.

This year MULTISAR also partnered with Ducks Unlimited Canada (DUC) and their Natural Advantage Plan: The On-farm Wildlife and Biodiversity Planning Service Program to produce a collaborative multi-species conservation report for a prominent southern Alberta ranch, a first of its kind between the two organizations.

Through a grant from the Government of Canada's Greencover Canada Technical Assistance Program, MULTISAR was also able to setup future demonstration sites on targeted SARC Plan lands to showcase some of the beneficial management practices and habitat enhancement projects developed in collaboration with SARC Plan cooperators. Projects included windbreak construction, riparian, wetland and shelterbelt fencing, a grazing management plan, and the installation of an off-stream watering unit. These enhancements were aimed at improving grassland management practices, protecting water quality and enhancing species at risk and other wildlife habitat. MULTISAR will continue to monitor these projects and assess their impact on habitat.

Since their inception in 2007-2008, interest in SARC plans has continuously grown among landholders. In 2008-2009 the majority (70%) of landholders who had SARC Plan assessments completed initiated contact with MULTISAR. This indicates that MULTISAR's efforts, through its education and extension program and continued work in key areas, has already shown success in generating awareness of and interest in species at risk conservation across southern Alberta.

Through the SARC Plan program, MULTISAR has been evaluating landholders' awareness, use of BMPs and attitudes towards SAR using a standardized questionnaire. Appendix D gives a list of tables summarizing the answers to key questions on the questionnaire. Results show the attitudes and awareness of landholders towards SAR. All of the respondents believed that SAR are important and are beneficial to their operation. They believed that land for SAR should be provided by landholders and that they were willing to share species locations with MULTISAR as well as to make management changes to improve species at risk habitat. The majority of the landholders also believed that SAR should be protected by law and were aware of provincial and federal SAR legislation. Most believed that such legislation was of benefit to SAR, however a large percentage of respondents were unsure if such legislation was of any benefit (or detriment) to them and their operation. The majority of the SARC participants stated that prior to meeting with MULTISAR they had already made adjustments in their operation for SAR and those landholders who did seemed to have some knowledge of what species they may able to provide habitat for.

Most landholders are already using important BMPs such as maintaining native prairie and using rotational grazing. However, there are still many important practices that are not often used, like seeding fall seeded crops and delaying fieldwork until wildlife nesting is complete. Possible reasons for the limited use of these practices may be due to a lack of knowledge on the part of the landholder or that many of these BMPs have an undesirable cost associated with implementing them.

Of the 22 SARC Plans, 18 questionnaires were completed in 2008-2009 and results were similar to those in 2007-2008 in that attitudes towards SAR were largely positive. However these questionnaires were only given to landholders who agreed to participate in the SARC Plan program and might have already been positively biased toward species at risk. They may not represent the views of all landholders in the Grassland Natural Region.

5.4 Conclusion

Overall SARC Plans have continued to be successful in their second year of operation. The response to the program this year has been very positive. SARC Plans seemed to have gained momentum in that landholders have been approaching MULTISAR to request a SARC Plan on their land. Three possible reasons for this trend may include the work of MULTISAR's education and extension program, continued work in focal areas, and simple word of mouth. However, MULTISAR is still relatively new to many areas and it may take some time for the program to become widely recognized or a household name. MULTISAR will continue its efforts at increasing its exposure and generate continued interest in the SARC Plan program.

Myths surrounding SAR and the loss of land or management control to the government are still common in many areas, including the Hanna area (see Section 3.0 Socioeconomic Review of the Value of Species at Risk). Many landholders are still apprehensive about the program and sharing information on SAR with the government, fearing loss of control of their land. These fears seem to be more prevalent in areas where the MULTISAR name is not well known. MULTISAR had a similar experience in the Milk River Basin when the program was in its infancy and not well known, but the awareness and education work has largely changed this. MULTISAR hopes to dispel myths surrounding SAR and the government by continuing with its education and extension program and by continuing to work with individuals in these areas so that the word will spread between landholders. MULTISAR will also continue to partner with organizations such as OGC in the development and delivery of SARC Plans. It is hoped that partnerships such as this one will provide the opportunity to reach an increased number of landholders with the MULTISAR message, especially in areas where the partnering organization may be well known and trusted.

5.5 Future Goals and Direction

- Continue with the development and delivery of SARC Plans across the GNR, with emphasis on priority areas as defined by the MCV.
- Monitor future demonstration sites.

- Continue to track landholder attitudes and awareness of SAR through the SARC Plans questionnaire and annual contact with SARC Plan cooperators.
- Identify universal knowledge gaps or negative attitudes towards SAR and develop appropriate educational materials or presentations to address these issues.

5.6 Literature Cited

Downey, B.L., B.A. Downey, R.W. Quinlan, S.L. Frank, D.E. Cross, D.J. Jarina. C.G. DeMaere, J. Nicholson, and P.F. Jones. 2008. MULTISAR: A Multi-Species Conservation Strategy for Species at Risk 2007-2008 Report. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species at Risk Report No 117, Edmonton, AB.

6.0 HABITAT SUITABILITY INDEX MODEL REVISIONS

Julie Landry-DeBoer, Alberta Conservation Association. Lethbridge, Alberta

Kristen Rumbolt, Alberta Sustainable Resource Development-
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6.1 Background information

During 2002-2004, habitat suitability index models were developed by MULTISAR staff for the Milk River Basin area for the following 17 species (Downey *et al*. 2004):

1. Ferruginous Hawk
2. Prairie Falcon
3. Long-billed Curlew
4. Sharp-tailed Grouse
5. Sprague's Pipit
6. Loggerhead Shrike
7. Burrowing Owl
8. Prairie Rattle snake
9. Great Plains Toad
10. Short-horned Lizard
11. Plains Spadefoot
12. Weidemeyer's Admiral
13. American Badger
14. Olive-backed Pocket Mouse
15. Richardson's Ground Squirrel
16. Western Small-footed Myotis
17. Swift Fox

The criteria for species selection included such things as association with a specific major ecosystem (e.g. native grasslands), a strong association with particular habitat structures (e.g. cliffs), value as a keystone species, narrow ecological tolerances and sensitivity to habitat changes or human disturbance.

Thirteen of the models were expanded to the entire Grassland Natural Region (GNR). The Multi-species Conservation Value (MCV) method was developed to combine the values from the HSI models into a single value represented for each quarter section on the landscape. Stewardship efforts are being focused on areas with high suitability rankings. A web-based interactive HSI tool was also created and is available to the public: http://www.srd.gov.ab.ca/fishwildlife/guidelinesresearch/hsitool.aspx).

Over the last several years a new database, the Grassland Vegetation Inventory (GVI), was developed incorporating AGRASID and the Native Prairie Vegetation Inventory. These 2 older databases were the main sources of information in creating the HSI models. With the development of this new database revisiting and recalculating the HSI models was debated.

6.2 Objectives for 2008-2009

Using a test sample of three HSI models (ferruginous hawk, long-billed curlew, Sprague's pipit) the following goals were determined:

- Re-work the mathematical HSI model using GVI variables.
- Test the model with occurrence data.
- Investigate using Resource Selection Function (RSF) modeling where HSI does not perform well. Develop RSF mathematical model where appropriate or alternatively update HSI models with added/modified variables and re-test the model.
- The resulting report will include:
    - How the HSI models were updated using GVI variables.
    - How they performed.
    - How they were revised using RSF or HSI and the reasoning behind why a modeling approach was selected over the other based on applicability and/or performance.
    - If the RSF approach is utilized, a suite of prioritized models to be tested will need to be developed. If the HSI approach is utilized, rational as to why variables were removed or added and the values for new variables will be required.

The results of this project were not available at the time of printing of this report but will be presented in the 2009-2010 MULTISAR annual report.

6.3 Literature Cited

Downey B.A., B.L. Downey, R.W. Quinlan, O. Castelli, V.J Remesz and P.F. Jones (eds.) 2004. MULTISAR: The Milk River Basin Habitat Suitability Models of Selected Wildlife Management Species. Alberta Sustainable Resource Management, Fish and Wildlife Division, Alberta Species at Risk Report No. 86, Edmonton, AB.

Appendix A: Letter of Intent

Letter of Intent to Participate in the MULTISAR Stewardship Program

Ranch:_____ Size(acres):_____ Home quarter: 1/4____ Sec___ Twp___Rge____
(Please attach map of ranch)
This letter is to set forth the intended partnership between (landholder(s))
_____and the MULTISAR stewardship program (represented by Alberta Conservation Association (ACA) and Alberta Sustainable Resource Development (ASRD) to implement a stewardship program on _____(ranch)

Within this partnership the following tasks will be completed by the MULTISAR project for _____ranch.

- ❑ Complete a full habitat assessment.
- ❑ Complete a full wildlife inventory.
- ❑ Results of inventories will be put in the Alberta Government's Fish and Wildlife Management Information System (FWMIS) with appropriate buffers for Species at Risk.
- ❑ Provide information on habitat requirements of Species at Risk.
- ❑ Provide species historical information for the above ranch from FWMIS.
- ❑ Participate as a member of a Habitat Conservation Strategy team to develop a Habitat Conservation strategy for the above ranch.
- ❑ Assist with the implementation of any habitat improvements as outlined in the Habitat Conservation Strategy (pending funding availability).
- ❑ Assist in the developments of small improvement projects depending on funding.
- ❑ Sign a habitat improvement agreement outlining the roles and responsibilities of each partner prior to the onset of completing improvements.
- ❑ Sign a Stewardship Commitment, which is mutually agreed to by all parties.

Within this partnership the following tasks will be completed by the landholder(s)_____.

- ❑ Allow the MULTISAR project and/or consultants reasonable access to the above ranch for the purposes of habitat and wildlife inventories.
- ❑ Allow reasonable public access requests.
- ❑ Participate as a member of a Habitat Conservation Strategy team to develop a Habitat Conservation Strategy for the above ranch.
- ❑ Within the framework of the Habitat Conservation Strategy team, assist in the implementation of a Habitat Conservation Strategy.
- ❑ Assist with the implementation of any habitat improvements identified in the Habitat Conservation Strategy (funding availability).
- ❑ Work with the MULTISAR team on small improvements, which show measurable benefits to species at risk.
- ❑ Sign a habitat improvement agreement outlining the roles and responsibilities of each partner prior to the onset of improvements.
- ❑ Follow recommendation outlined in the Habitat Conservation Strategy.
- ❑ Display a recognition sign at a visible site.
- ❑ Allow the project to be used as a demonstration site.
- ❑ Sign a Stewardship Commitment, which is mutually agreeable to by all parties.

Landholder_____ Date:_____

SRD-FW_____ Date:_____

SRD- Lands_____ Date:_____

ACA_____ Date:_____

Appendix B: Stewardship Commitment Letter

The (NAME of RANCH) Ranch MULTISAR Plan represents a collaborative effort involving the landholder, Alberta Conservation Association, Alberta Sustainable Resource Development, and other partners. The plan uses detailed wildlife and range evaluations to provide a multi-species management plan for application at the full ranch level (private and public land). Range and wildlife priorities have been determined for individual pastures. MULTISAR Beneficial Management Practices were used to develop specific management recommendations for priority management species and their habitats.

This MULTISAR Plan provides the rancher with information and guidance to incorporate species at risk into his ranching operation. It provides resource management agencies with the information needed to effectively manage for wildlife and range in an important part of their jurisdiction. The MULTISAR Plan provides the primary conservation partner, Alberta Conservation Association, with the baseline information needed for ongoing monitoring. This monitoring is important in determining the success of the MULTISAR Plan in achieving habitat goals.

A MULTISAR plan is the culmination of a voluntary cooperative process involving three key partners (landholder, government agency, and conservation partner), and several other consultants and individuals. A landholder (owner or lessee) who has a MULTISAR Plan has enjoyed the benefit of personal consultation sessions with resource experts, has received detailed range and wildlife information regarding his ranch and has participated in decision-making towards management of crown land resources on his land.

This Stewardship Commitment is the final stage in the MULTISAR process. It is a statement of commitment to implement the MULTISAR Plan for five years. It represents a joint declaration of confidence that this MULTISAR Plan will be beneficial to all parties. It ratifies the need for ongoing consultation, including annual meetings, and a commitment towards adaptive management to ensure the plan remains effective. It endorses a 5-year review to revise and renew the (Name of the Ranch) Ranch MULTISAR Plan.

STEWARDSHIP COMMITMENT STATEMENT

The signatories agree to implement the MULTISAR Plan on the private and public lands of the (Name of the Ranch) Ranch for 5 years from (Year X) to (Year Y).

Representative of the (Name of the Ranch) **Ranch:**

_____

Representative of Alberta Conservation Association:

_____

Representative of Alberta Sustainable Resource Development:

Appendix C: SARC Plan Landholder Questionnaire

Date: _____ Landholder: _____ Ranch: _____

Section 1: History, Land Base and Usage

1. How long have you owned/operated this ranch? (If inherited how long has family owned ranch)?

2. What is the total land base (*i.e.*, acres) of your operation?

3. What acres do the following contribute to the land base of your operation?
    i. Native prairie
    ii. Seeded pasture
    iii. Hayland
    iv. Cropland
    v. Ranch house/buildings

4. Do you currently have/follow a grazing management plan? Y N

    i. Who developed your current plan?

    ii. If yes, please explain details of plan (type of grazing regime, stocking rates, in/out dates?

    iii. When was the last time you reviewed your management plan?

5. Which of the following best characterizes current grazing management on your operation?

    a) *Continuous grazing*: Placing livestock on pasture (or a field) in spring and allowing them free access to all or most of the pasture for the entire grazing season until removed in fall.

    b) *Rotational grazing*: Rotating livestock between pastures (fields) through the grazing season, or making use of cross-fencing to divide the pasture into paddocks and rotating livestock between these paddocks or fields through the grazing season, providing a period of rest to the unoccupied pastures or paddocks.

6. Are grazing records kept for livestock movements between pastures?

    a) No
    b) Yes

c) If yes
    i. How are these records kept? (Check all that apply)
        1. Days in a field
        2. Animal units (AU)/acre or acres/AU
        3. AU per month (AUM)
        4. Other_____

    ii. Are livestock weights or AU equivalents (AUE) noted (ex., 1 bull = 1.5 AUE)?
        1. No
        2. Yes

7. How do you determine the amount of time livestock spend in each grazing unit? (If different methods are used for different types of pasture, please indicate which type of pasture they are used for.)

    i. Predetermined number of days
        1. How many days?_____
    ii. Forage height
        1. At what forage height are livestock moved?_____
    iii. Percent of pasture utilized
        1. At what percent of utilization are livestock moved?_____
    iv. Other method_____

8. Do you make changes to your management based on external factors (examples include drought, industrial developments etc)? Please list examples.

9a. Have you ever had a range health assessment completed on any of your land?
Yes – private land Yes – public land No

9b. Was it done by a professional? If yes, who?

Section 2: Wildlife and Species at Risk

1. Do you agree that species at risk are important to maintaining biodiversity and a healthy, functional prairie ecosystem? Y N

2. Do you agree that species at risk are beneficial to your operation? YN
Please explain your opinions.

3. Do you agree that habitat for species at risk should be voluntarily provided by landholders through programs like MULTISAR?
Y N

4. Do you agree that your land is important for providing habitat for species at risk and/or other wildlife? Y N

5. Do you agree that species at risk should be protected by law? Y N

6. Have you heard of federal and provincial legislation such as the Species At Risk Act (SARA) and the Alberta Wildlife Act? Y N

7. Do you feel this legislation is a benefit to you or a detriment?
Benefit Detriment Not Sure

8. Do you currently make adjustments in management for species at risk on your operation? Y N If yes, please give examples.

9. Are you willing to share the species and/or locations of species at risk with MULTISAR? Y N

10. Are you willing to make changes to your current management plan in order to enhance habitat for species at risk? Y N
If not, please explain why not

11. If you wanted to consider species at risk and other wildlife on your ranch what are the problems that make it difficult for you to do that?

- ☐ Do not know what to do
- ☐ Too expensive to make changes
- ☐ Too time consuming to make changes
- ☐ Don't have any species at risk on my land
- ☐ Don't want any species at risk on my land
- ☐ Am not interested
- ☐ Other? Please specify.

12. Do you have any idea what SAR you might be able to provide habitat for? (From talking to neighbors, seeing SAR on landscape, etc). Y N
If yes, which ones?

13. Do you currently practice any of the following Beneficial Management Practices?
    - ☐ Maintaining native prairie
    - ☐ Rotational grazing if appropriate
    - ☐ Fencing off natural water bodies for part of the season when vulnerable
    - ☐ Delaying field work with machinery until after wildlife has nested
    - ☐ Not disturbing nesting sites, burrows, etc when occupied
    - ☐ Using flushing bars
    - ☐ Maintaining patchy areas on the range
    - ☐ Seeding fall seeded crops
    - ☐ Maintaining shelterbelts and natural trees
    - ☐ Limiting chemical use around water bodies or leaving buffer zones
    - ☐ Removing exotic weeds
    - ☐ Limiting environmental disturbance from oil and gas development
    - ☐ Restoring wetlands/not draining wetlands
    - ☐ Limiting grazing around wetlands
    - ☐ Resting pastures after use to restore forage
    - ☐ Keeping land under permanent cover
    - ☐ Avoid planting invasive tame grasses next to native range
    - ☐ Using zero or minimal tillage

14. What would motivate you to consider wildlife and species at risk on you land?

    - ☐ Personal pride in being a steward
    - ☐ Recognition that I am a steward
    - ☐ Financial benefits
    - ☐ A more sustainable operation
    - ☐ Doing my part for the future
    - ☐ Other? Please specify.

Section 3. Future Plans and Direction

1. Do you currently have a 5 year, 10 year or longer plan for your ranch?

2. Are your current future management plans flexible? Y N

3. Do you plan to sell or deed (to family) the ranch in the next 5 years?

4. Will you take into account MULTISAR beneficial management practices into your current management plans? Y N

5. Would you be willing to report back to MULTISAR on a regular basis (annually)on any of the following:

    - ☐ On the location of wildlife species
    - ☐ Changes in management practices
    - ☐ Implementation of BMPs
    - ☐ The positive/negative results that have occurred since adopting MULTISAR BMPs
    - ☐ On changes to range health

Section 4: Ranch Tour and Map

On the map provided please draw pastures, fence lines, stock watering sites, and corral placement, areas of historical importance (tipi rings). (Please send to landowner in advance of meeting).

Appendix D: 2008-2009 Results Summary of SARC Plan Participant Questionnaires

Questionnaire Results based on 18 questionnaires*.

Percent of Landholders (%)	Answer to MULTISAR SARC Plan questionnaire
100	SAR important for healthy ecosystem
100	SAR beneficial to operation
100	SAR habitat should be provided by landowners
100	their land is important for SAR habitat
76	SAR should be protected by law
76	aware of SAR legislation
0	legislation detriment to themselves, 61% say benefit, 39% not sure
100	willing to share SAR locations with MULTISAR
78	currently make adjustments for SAR
94	willing to make changes in management if doesn't affect their bottom line
78	have some idea of SAR habitat they may be able to provide

BMPs currently used by landholders prior to the completion of a SARC Plan.

Current BMPs	
Freq.	BMP
100%	Maintaining native prairie
94%	Rotational grazing if appropriate
67%	Fencing off natural water bodies for part of the season when vulnerable
44%	Delaying field work with machinery until after wildlife have nested
83%	Not disturbing nesting sites, burrows, etc. when occupied
0%	Using flushing bars
83%	Maintaining patchy areas on the range
6%	Seeding fall seeded crops
89%	Maintaining shelterbelts and natural trees
100%	Limiting chemical use around water bodies or leaving buffer zones
89%	Removing exotic weeds
89%	Limiting environmental disturbance from oil and gas development
100%	Restoring/Not draining wetlands
78%	Limiting grazing around wetlands
100%	Resting pastures after use to restore forage
83%	Keeping land under permanent cover
67%	Avoid planting invasive tame grasses next to native range
61%	Using zero or minimal tillage

Landholders motivating factors for considering SAR on their land

Freq.	Reasons
100%	Personal pride in being steward
28%	Recognition of being a steward
44%	Financial benefits
78%	More sustainable operation
100%	Doing my part for the future
6%	Like having and seeing SAR on landscape

What participating landholders are willing to share with MULTISAR

Freq.	Options
100%	Locations of wildlife species
100%	Changes in management practices
100%	Implementation of BMPs
100%	Positive and negative results since adopting MULTISAR BMPs
100%	Range health changes

*4 landowners did not complete questionnaires

Appendix E: List of Acronyms

ACA	Alberta Conservation Association
AGRASID	Agricultural Region of Alberta Soil Inventory Database
ASRD – F&W	Alberta Sustainable Resource Development - Fish and Wildlife
ASRD - Lands	Alberta Sustainable Resource Development - Lands
BMP	Beneficial Management Practice
CNRL	Canadian Natural Resources Ltd.
DLE	Distance Learning Education
DUC	Ducks Unlimited Canada
FWMIS	Fish and Wildlife Management Information System
GIS	Geographic Information System
GNR	Grassland Natural Region
GPS	Global Positioning System
GVI	Grassland Vegetation Inventory
HCS	Habitat Conservation Strategy
HSI	Habitat Suitability Index
MAC	Management Advisory Committee
MCV	Multi-Species Conservation Value
MRWCC	Milk River Watershed Council Canada
NCC	Nature Conservancy of Canada
OGC	Operation Grassland Community
OWC	Oldman Watershed Council
PCF	Prairie Conservation Forum
PCF-EC	Prairie Conservation Forum Education Committee
RANA	Researching Amphibian Numbers in Alberta
RSF	Resource Selection Function
SAGSW	Southern Alberta Grazing School for Women
SAR	Species at Risk
SARC Plan	Species at Risk Conservation Plan
VOR	Visual Obstruction Reading

For a list of additional reports in the Alberta Fish and Wildlife Division – Species at Risk Series please go to our website:

http://srd.alberta.ca/fishwildlife/speciesatrisk/projectreports.aspx

Thank-you