



Species at Risk Act (SARA) Consultation, Cooperation and Accommodation Project

Prairie Rattlesnake Early Engagement Session for:
Environment and Climate Change Canada –
Prairie Region

Participant Summary Report

Created by:

The Centre for Indigenous Environmental Resources (CIER)

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CIER

Centre for Indigenous
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Acknowledgements

The Centre for Indigenous Environmental Resources (CIER) and Environment and Climate Change Canada (ECCC) would like to thank the participants that attended the virtual “Species at Risk Act (SARA) Consultation, Cooperation, and Accommodation (CCA) Project” Prairie Rattlesnake Early Engagement Session on April 11th, 2023.

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Introduction

Environment and Climate Change Canada (ECCC) is partnering with The Centre for Indigenous Environmental Resources (CIER) on a national Species at Risk Act (SARA) Consultation, Cooperation, and Accommodation (CCA) project. The multi-year project will facilitate Indigenous communities' and organizations' participation in Environment and Climate Change Canada's (ECCC) listing and recovery planning processes for terrestrial species as part of implementing the federal Species at Risk Act (SARA) .

The purpose of this workshop was to engage, discuss and share information with participants about the Prairie Rattlesnake (*Crotalus viridis*) to help inform the draft federal Management Plan and aid in the conservation of this Species at Risk (SAR). Prairie Rattlesnake was first assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Special Concern in 2015. ECCC prelisting consultations on whether to add Prairie Rattlesnake to SARA were made in 2016 and the species was listed as Special Concern nationally under Schedule 1 of SARA in 2019. Prairie Rattlesnake is currently in the recovery planning stage of SARA and an early engagement/consultation process will contribute to the compulsory Management Plan which aids in implementing the conservation measures within the plan to recover Prairie Rattlesnake or prevent it from becoming further at risk.

ECCC-CWS of the Prairie region partnered with CIER to host a virtual Early Engagement informational workshop on April 11th, 2023. ECCC recognizes the cultural, ecological, and economic significance the Prairie Rattlesnake holds for Indigenous peoples and other Canadians and understands the importance of working together to safeguard this species' well-being. The intent of the two-hour informational session was to collaborate with Indigenous communities, organizations, and governments and identify measures to reverse the decline of Prairie Rattlesnake in its natural range.

CIER's role is to support and facilitate a range of activities between Indigenous communities and organizations and ECCC on developing recovery documents, sharing knowledge and language, addressing threats to terrestrial species at risk survival and recovery, and land use planning for species at risk on reserve lands and within traditional territories. CIER also manages the provision of funds on behalf of ECCC with participation and capacity funding requests and Expression of Interest (EOI) call for proposals.

Prairie Rattlesnake Virtual Workshop Agenda

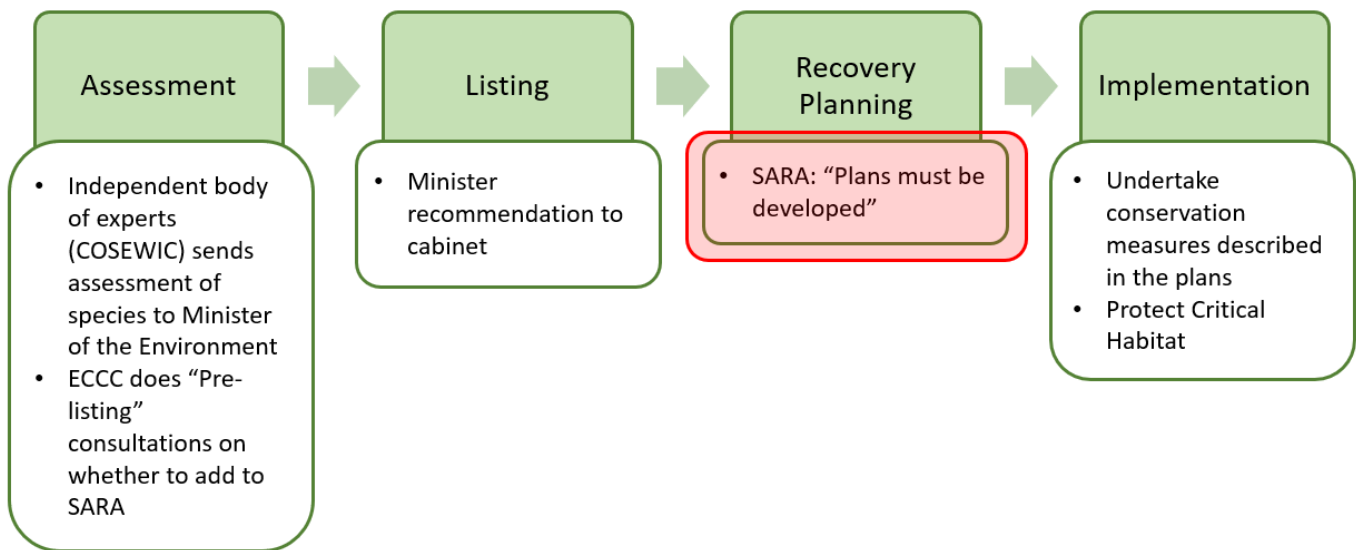
Time AB/SK	AGENDA
1:00	Welcome, Acknowledgements, Introductions, Housekeeping, Purpose and Process
1:15	<ul style="list-style-type: none"> • Word Cloud Activity – “What word comes to mind when you think of Rattlesnake?” • (Indigenous names for Rattlesnake are welcome!)
1:20	<p>ECCC-CWS Presentation Overview:</p> <ul style="list-style-type: none"> • Prairie Rattlesnake draft Management Plan Engagement Process t • Biology & Status of the Prairie Rattlesnake- What we know and <i>don't know</i> <p><u>With discussion after each key sections of the Management Plan (MP) (Please Read the attached Questions)</u></p> <ul style="list-style-type: none"> ➤ Species Information – Anything you would like to be considered for inclusion in the MP (oral history, cultural importance, Indigenous Knowledge of rattlesnake lifecycle, habitat needs etc.) ➤ Population and distribution- knowledge gaps in population size, population trends and range ➤ Threats- What factors do you think affect the Prairie Rattlesnake and/or its habitat in your area? ➤ Conservation- What actions do you think can be taken/should be included in the Management Plan to ensure conservation of the Prairie Rattlesnake and their habitat? ➤ Anything else you would like to discuss about Prairie Rattlesnake or the engagement process
2:55	Workshop wrap-up and Closing Comments

Workshop Overview

The Prairie Rattlesnake virtual workshop was carried out as early engagement to populate the recovery document and welcome Indigenous communities and organizations to review and discuss Prairie Rattlesnake under its current SARA status. Workshop topics included:

- Focusing on where the species and its habitat have been found;
- Identifying what the species needs to survive and/or recover;
- Identifying threats (current and historical) and which activities might destroy their habitat;
- Discussing what could be done to recover/manage the threats to the species and what actions are already underway (broad strategies and conservation measures);
- Identifying population and distribution objectives for recovery and management;
- Discussing Indigenous Knowledge to be considered for inclusion in a recovery document; and,
- Discussing anything else that may aid in the survival and recovery of the species.

Building our relationships with, listening to, learning from, and collaborating with Indigenous communities and organizations help deepen our understandings of the importance of the Prairie Rattlesnake to improve its chances of recovery. SARA is designed to protect individuals and habitat, allow for recovery of species, and work in a complementary fashion with provincial legislation. The diagram below outlines the SARA Process:



*Figure adapted from ECCC SARA 101 presentation by Victoria Leck.

Biology and Status of the Prairie Rattlesnake

The Prairie Rattlesnake (*Crotalus viridis*) is a large venomous snake that is greenish tan in colour with large darker green blotches running along the length of its body. It is one of the three rattlesnake species found in Canada along with the Western Rattlesnake (*Crotalus oreganus*) and the Eastern Massasauga Rattlesnake (*Sistrurus catenatus*). Prairie Rattlesnakes are found in the southern portions of Alberta and Saskatchewan and although the portion of its range in Canada is small, the total North American range is quite large. The Prairie Rattlesnake is a symbol of the Canadian Prairies, and the protection of its grassland habitat will contribute to the conservation of a globally imperilled ecosystem (COSEWIC, 2015).

Prairie Rattlesnakes are large members of the pit viper family. Pit vipers have heat-sensing organs between the nostrils and the eyes, two retractable fangs in the upper jaw, and infrared vision that is used to locate prey. Prairie Rattlesnakes can grow to almost 1.6 m in length, although they are more commonly about 1 m long. Like all rattlesnakes, this species has a segmented rattle at the end of its tail (COSEWIC, 2015).

Life Cycle

Beginning in the spring (March/April) the Prairie Rattlesnake will come out of its hibernaculum (winter den). In April/May they will migrate to seek food. Males and nongravid (non-pregnant) females will migrate upwards of 10 to 15 km to areas with abundant prey species. The gravid (pregnant) females will stay in rookeries close to the hibernaculum while gestating. In the first part of the summer season Prairie Rattlesnakes are focused on feeding. Mating occurs in late summer (July) and fertilization will be delayed until the next year. From August to October the gravid females will give birth to live young at the rookeries. The female will typically not reproduce until its 6th year, a major contributor to its SAR status. In late August to September, they will return to the hibernaculum and the cycle repeats itself.

Habitat

The hibernacula are integral for the species' survival. The majority of hibernacula in Canada are found near major river valleys (south facing slopes), coulees (drainage zones) and areas where there are burrows made by mammals or cracks in the soil caused by erosion. Plants and shrubs for cover at the entrance of the hibernacula help avoid predators and provide cover from the sun's heat. Like the hibernacula, rookeries are also found in areas with good sun exposure for basking. They will also provide ample cover and can be used by more than one female; the same rookery sites can be used year after year. Ideal foraging habitat is often found in coulees, river valleys, upland grasslands, or any area with high prey density (ground squirrels, prairie dogs, mice, etc.). Connectivity of habitats is of utmost importance for Prairie Rattlesnakes.

Prairie Rattlesnake Early Engagement Workshop

A total of six participants with affiliation to five Indigenous organizations attended the virtual workshop on April 11th, 2023. The facilitator for the two-hour session was Kate Hewitt from CIER and a PowerPoint on Prairie Rattlesnake was presented by ECCC-CWS Species at Risk Biologist Michelle Sawatzky with an introduction from Wendy Eskowich of ECCC-CWS. A Word Cloud (Figure 1) question was incorporated into the workshop presentation as an ice breaker and a graphic recording of the presentation and discussions were captured by Aaron Russell of Conference Doodles and can be seen in Figure 2.

Figure 1. What word comes to mind when you think about Prairie Rattlesnake? (Word Cloud).



Figure 2. Graphic design created by Aaron Russell of Conference Doodles.



Prairie Rattlesnake Threats

Some local Prairie Rattlesnake populations have experienced substantial declines due to large-scale habitat loss from cultivation and increased road mortality. The species still faces serious threats across its Canadian range. Prairie Rattlesnake was assessed by COSEWIC and listed on Schedule 1 of SARA as Special Concern due to ongoing threats across its Canadian range (COSEWIC, 2015). Threats include:

Residential and commercial development:

- Loss and fragmentation of habitat near urban centres;
- Increased traffic;
- Increased human activity; and,
- Population isolation.

Agriculture:

- Major historic threats;
- Loss/degradation of foraging habitat;
- Direct mortality from agricultural equipment; and,
- Population isolation.

Energy production:

- Oil and gas;

- Renewable energy;
- Habitat alteration;
- Access roads/increased traffic; and,
- Increased human activity.

Road mortality:

- Higher during spring and fall migration;
- Increases with traffic volume; and,
- Dispersal barrier.

Intentional persecution:

- Historical destruction/damage of hibernacula; and,
- Destroyed when considered a threat to human safety.

Behavioural attributes that increase the species' vulnerability to human-caused threats:

- Seasonal congregations at overwintering sites and gestation sites;
- High site fidelity to hibernacula and gestation sites;
- Long-distance migrations between overwintering and foraging grounds;
- High fidelity to seasonal migration routes; and,
- Conspicuous defensive behaviours.

Biological attributes that limit the ability of the species to recover from human-induced declines include:

- Delayed age of sexual maturity in adults;
- Long generation time;
- Slow growth;
- Biennial or triennial reproduction;
- Small litter size; and,
- High juvenile mortality rate.

Prairie Rattlesnake Conservation Actions

The purpose of the Management Plan is to identify ways we can preserve the Canadian population of Prairie Rattlesnakes. Broad conservation strategies suggested to date include:

- Conserving remaining suitable habitat within the range of the species (protected areas, stewardship, conservation easements/agreements);
- Reducing the impact of threats on the species (road closures to prevent mortality, eco-passages);
- Outreach and education (public awareness and appreciation); and,
- Filling knowledge gaps (more accurate estimates of population abundance).

Other Prairie snakes listed on Schedule 1 of the SARA or assessed as At Risk by COSEWIC include:

- Eastern Yellow-Bellied Racer (*Coluber constrictor flaviventris*) (Threatened in SARA, 2006).
- Bull Snake (*Pituophis catenifer sayi*) (Special Concern in SARA, 2021)
- Western Hognose Snake (*Heterodon nasicus*) (Special Concern in COSEWIC, 2019).

Prairie Rattlesnake Cultural Significance

The Prairie Rattlesnakes' cultural significance is a symbolic one. "Kinaypik" is snake in Cree (as noted in Figure 1) and represents many different things to many different cultures. One participant noted that the shedding of its skin is metaphorical to Cree peoples as it signifies new beginnings or rebirth. Its rattle has been used in ceremony and snakes are considered symbols of fertility, rebirth, guardianship, medicine, and vengefulness (Personal communication Thomas McKay, 2023).

The Species at Risk Act recognizes that:

"The roles of the Aboriginal peoples of Canada and of wildlife management boards established under land claims agreements in the conservation of wildlife in this country are essential."

and:

"The traditional knowledge of the Aboriginal peoples of Canada should be considered in the assessment of which species may be at risk and in developing and implementing recovery measures."

Funding Opportunities

Indigenous leadership is key to implementation of the Species at Risk Act. The Federal government's funding programs focus on improving partnerships with Indigenous people that support continued Indigenous leadership and engagement in nature protection, wildlife management and sustainable resource practices, including:

- Aboriginal Fund for Species at Risk;
- Habitat Stewardship Program;
- Canada Nature Fund; and
- Expression of Interest funding through the SARA-CCA project.

It is with the continued engagement and participation of Indigenous people that we may begin to see the recovery of Prairie Rattlesnake and other SAR within and across Canada.