Saskatchewan Conservation Data Centre

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SKCDC Training Manual and Data Sharing Agreement

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Saskatchewan Conservation Data Centre: Background

Mission Statement

To serve the Saskatchewan public by gathering, interpreting, and distributing standardized information on the ecological status of provincial wild species and vegetation associations.

We are committed to:

- The conservation of biological diversity
- High quality science
- High quality service
- Objectivity
- Universal access
- Our hemispheric network
- Being the provincial clearinghouse for threatened and endangered species information

Organization

The Saskatchewan Conservation Data Centre (SKCDC) was formed as a co-operative venture between the Province of Saskatchewan (Ministry of Environment), the Nature Conservancy of Canada and The Nature Conservancy.

Currently the SKCDC resides in the Fish and Wildlife Branch of the Ministry of Environment and is co-managed with Nature Saskatchewan. The SKCDC is also a member of the NatureServe organization and its affiliate, NatureServe Canada (Figure 1).

NatureServe
A Network Connecting Science With Conservation

Figure 1 – The SKCDC is a member of NatureServe, a non-profit conservation organization whose network includes over 80 independent organizations from across Canada, the United States and Latin America. NatureServe and its network are the leading source for information about rare and endangered species and threatened ecosystems.

Species at Risk Management

Native plant and animal species are continually added to the list of flora and fauna in Saskatchewan. Several species new to science have been described from Saskatchewan during the past several decades. In addition, species in neighbouring jurisdictions have expanded or adjusted their range and are now found in Saskatchewan.

Several known species of animals and plants are believed to have been extirpated from Saskatchewan since European settlement. There are additional species that have not been observed for some time and may no longer exist in the province. Further species are vulnerable to extirpation because of extremely low populations or because of other factors, some of which remain poorly understood.

Colonization and extirpation are natural processes, and it is important to keep track of these kinds of events. It is also important to ensure that these processes remain natural and not aided by human actions. To this end, the province is committed to an adaptive management approach to species at risk management (Figure 2).

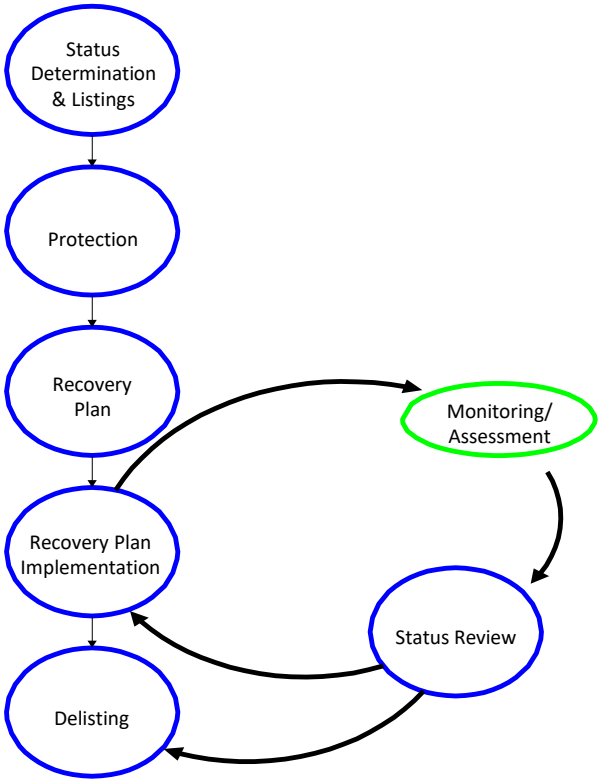

Figure 2 - Species Adaptive Management Process

Conservation Ranks

There are a wide array of rare species lists and categories. This includes SKCDC and COSEWIC lists as well as *The Wildlife Act, 1998*. Each of these lists has been put together for a different purpose, often by different agencies or individuals and the lists may differ in the ranks and statuses used. The SKCDC maintains a list of wild species in Saskatchewan on the SKCDC species list web page, which includes conservation ranks. SKCDC conservation ranks are a measure of extirpation risk and serve to focus conservation.

Jurisdiction and spatial scale are important considerations in rare species lists. There are three levels of ranking: Global (G-Rank), National (N-Rank) and Subnational (S-Rank).

Global Ranks (G-Ranks)

NatureServe and its constituent members, including the SKCDC, along with other scientific experts assign Global Ranks based on the range-wide status of a species, subspecies, or variety. These global ranks represent the risk of extinction of each taxon.

National Ranks (N-Ranks)

National ranks are assigned by the General Status Working Group (GSWG), with representatives from federal, provincial, and territorial governments. The Group was formed under the *Accord for the Protection of Species at Risk*. The Accord is an agreement signed by the provincial, territorial, and federal Wildlife Ministers in 1996 which commits the parties to "monitor, assess and report regularly on the status of all wild species" (National Accord for the Protection of Species at Risk, 1996).

National ranks are a synthesis of the individual provincial and territorial ranks (S-Ranks). The Canada- wide reports are available from the *Wild Species* web site. These *Wild Species* reports are released every five years.

Subnational Ranks (S-Ranks)

Subnational ranks are assigned at the provincial or territorial level. The SKCDC is responsible for evaluating and assigning a conservation rank to each taxon, resident or transient, found in the province. The process of conservation ranking involves the review of information housed in the SKCDC database as well as scientific and government literature, natural history publications, consultations with recognized experts and highly knowledgeable amateur naturalists as well as field work.

Ranks are calculated using a standardized procedure set forth by NatureServe (Faber-Langendoen et al., 2012). This allows the SKCDC to follow a repeatable and transparent procedure for categorizing the province's flora and fauna.

Each subnational, national, and global species assessment considers not just rarity, but also trends and threats (Master et al. 2012).

Rarity factors include:

- population size
- range extent
- area of occupancy
- number of occurrences
- number of occurrences or percent of area occupied with good viability/ecological integrity
- environmental specificity

Trend factors in population size or area include:

- long-term trends (ca. 200 years)
- short-term trends (10 years or 3 generations for species, whichever is longer, up to a maximum of 100 years; or 50 years for ecosystems)

Threat factors include:

- assigned overall threat impact based on the scope, severity, and timing in eleven different categories:
    - residential and commercial development
    - agriculture and aquaculture
    - energy production and mining
    - transportation and service corridors
    - biological resource use
    - human intrusions and disturbance
    - natural systems modifications
    - invasive and other problematic species and genes
    - pollution
    - geological events
    - climate change and severe weather
    - intrinsic vulnerability (i.e., any specific habitat requirements or other factors specific to the ecology of the species that may affect the risk of extirpation).

A minimum number of factors, and a minimum of certain types of factors, are needed to calculate a rank. The factors are scaled and weighted according to their impact on risk, and points are used to score the contribution of each factor to the risk. The final overall score is equated with a rank.

Interpreting Conservation Ranks

Ranks are given as the letter that represents the geographic scale followed by a number that represents the taxon's risk of extirpation. A **higher rank** (e.g., S5) indicates that a species is more common, more stable, and less threatened than a species with a **lower rank** (e.g., S1), which would indicate that a species is rarer, declining, facing a high threat level, or a combination of these factors (Figure 3). The following conservation rank definitions have been taken from NatureServe (NatureServe, 2020).

1 **Critically Imperiled/Extremely rare.** At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.

2 **Imperiled/Very rare.** At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

3 **Vulnerable/Rare to uncommon.** At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

4 **Apparently Secure.** At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

5 **Secure/Common.** At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations, or occurrences, with little to no concern from declines or threats.

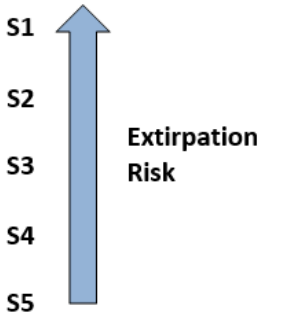

Figure 3 - Species with a low rank are at a higher risk of extirpation.

A **range rank** (such as S3S4) is used when the taxon straddles the criteria for more than one rank (i.e., S3 and S4). **Letters** in the rank are referred to as modifiers and can have various meanings:

- **B** – for a migratory species, applies to the **breeding** population in the province
- **N** – for a migratory species, applies to the **non-breeding** population in the province
- **M** – for a migratory species, rank applies to the **transient (migrant)** population
- **H** – **possibly extirpated** - known from only **historic** records but still some hope of rediscovery. There is evidence that the species or ecosystem may no longer be present in the jurisdiction, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.
- **U** – currently **unrankable** due to lack of information or due to substantially conflicting information about status or trends.
- **X** – **presumed extirpated** - species is believed to be extirpated from the jurisdiction. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered. (Equivalent to "Regionally Extinct" in IUCN Red List terminology)
- **NR** – **not ranked** - rank is not yet assigned or species has not yet been assessed
- **NA** – conservation status is **not applicable** to the species because the species is not a suitable target for conservation activities. This may include hybrids without conservation value, non-native species, and species that are accidental or causal in the jurisdiction, including species recorded infrequently that are far outside their range (e.g., migratory bird and butterfly strays).

A "**?**" following a rank means that there is some **uncertainty** associated with it. For example, in Saskatchewan, a rank of "S3?" means that it is believed to be most likely an S3, but there is a significant chance that it could be an S2 or S4.

How Conservation Ranks Are Assigned

The SKCDC prioritizes taxa for ranking based on a five-year rotation. Information on each taxon is gathered and compiled prior to assessing the rank factors. Once a rank is calculated, it is reviewed by SKCDC staff and other experts (e.g., members of the Botanical Assessment Working Group for plants), and can be adjusted if the reviewers feel that it is necessary. The ranks are only as good as the information that is put into the calculator, so it is very important for the SKCDC to have all the most up-to-date information on a taxon before ranking it. External data may play a role in adjusting the rank, but, if possible, the SKCDC will incorporate such data into its database prior to the rank calculation. Where data is scarce, the SKCDC may rely on expert opinion to inform a conservation rank.

General Status of Wild Species in Canada

Many of the subnational and national conservation ranks in the SKCDC's database have been assessed/reassessed as a result of the General Status of Species in Canada program. The National General Status Working Group, comprised of government representatives as well as Conservation Data Centre specialists and ex officio members, contracts experts to review the statuses of specific taxon groups. These taxon groups can include any wild species – bees, flowers, slime molds, you name it! Every five years, the General Status of

Species in Canada program releases a Wild Species report that provides a snapshot of the status of wild species in Canada. These reports can be downloaded from the Wild Species website.

Why are these conservation ranks important?

The S-Ranks are not legal designations and do not, by themselves, confer any protection to the species. However, provincial conservation activities are focused on taxa that have a rank of S1, S2 or S3, and avoidance or mitigation is required for these taxa during any development projects. Taxa with a rank including S3 or less are tracked by the SKCDC and locations of conservation significance are mapped. Taxa that are not ranked S1, S2 or S3 may still be tracked if special circumstances warrant (e.g., a host plant for an endangered insect).

COSEWIC and SARA Statuses

The Committee on the Status of Endangered Wildlife in Canada (**COSEWIC**) is made up of representatives from federal, provincial, and territorial governments as well as academia and private agencies that assign national statuses to species at risk in Canada. COSEWIC meets twice per year and makes recommendations to the federal ministers on which species should be added, removed, or adjusted in the *Species at Risk Act* (SARA). These statuses often reflect the conservation priorities of the federal government and many national organizations.

COSEWIC-designated species, once designated under Schedule 1 of the *Species At Risk Act*, have legal protection COSEWIC has been established as a legal entity by SARA, and reports to the Canadian Endangered Species Conservation Council. Operations will continue at arm's length from governments in the assessment process, as COSEWIC maintains its impartial scientific and expert judgment. For details on COSEWIC assessments please see the COSEWIC web site. For more details on the *Species at Risk Act*, visit the Government of Canada Species at risk website.

Statuses include:

Extinct	A species that no longer exists.
Extirpated	A species no longer existing in the wild in Canada but occurring elsewhere in the wild.
Endangered	A species facing imminent extirpation or extinction.
Threatened	A species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.
Special Concern	A species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
Data Deficient	A species for which there is insufficient information to support a status designation.
Not At Risk	A species that has been evaluated and found to be not at risk.

Federal Critical Habitat

The *Species at Risk Act* (SARA) describes Critical Habitat (CH) as the habitat that is necessary for the survival or recovery of a listed wildlife species (schedule 1), and that is identified as the species' critical habitat in a recovery strategy or in an action plan for the species (Species at Risk Registry, 2020). In collaboration with Environment and Climate Change Canada (ECCC), federal Critical Habitat for Species at Risk in Saskatchewan is available for registered HABISask users. This dataset displays the geographic areas within which, federal Critical Habitat for species at risk - listed on Schedule 1 of the federal *Species at Risk Act* (SARA) - occurs in Saskatchewan. Please be aware that not all the area within these boundaries is necessarily Critical Habitat. To determine if a specific area is Critical Habitat, and if your activity might be considered "destruction" of Critical Habitat, other information available in each individual species' Recovery documents (http://www.sararegistry.gc.ca/) need to be considered as follows:

- Biophysical attributes: The recovery documents contain important information about the interpretation of the geo-spatial information, especially regarding the biological and environmental features ("biophysical attributes") that complete the definition of a species' critical habitat. If the geo-spatial information identifies an area that does not contain the biophysical attributes, this area is not considered Critical Habitat.
- Activities likely to result in destruction of Critical Habitat: Information is provided on potential impacts to Critical Habitat and species population that may result from example activities. For some species, these activities could be easily avoided by planning work around it, like any noise during breeding season, where for others it might be better to consider another location for your project if it involves

habitat loss.

It is important to note that recovery documents (and therefore Critical Habitat) may be amended from time to time. Species are added as the data becomes ready, which may occur after the recovery document has been posted on the SAR Public Registry. Although HABISask will try to provide the latest data, the SAR Public Registry should always be considered as the official source for Critical Habitat information.

If you need further information on how federal Critical Habitat affects your project in Saskatchewan, please contact Saskatchewan Ministry of Environment through your regional Ecological Management Specialist.

The Conservation Database

Elements and Element Occurrences (EO)

The SKCDC's database contains records of mapped Element Occurrences for tracked elements in Saskatchewan. "**Elements of Biodiversity**" is the term coined by the Nature Conservancy used to refer to a species, subspecies, vegetative community, or a special feature.

An **Element Occurrence (EO)** is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. An Element Occurrence record has both spatial and tabular components including a mapped feature (i.e., an Element Occurrence Representation) and its supporting database attributes.

The definition of what constitutes an EO is specific to the element and may include considerations of habitat specificity, continuity, and proximity; dispersal; home range; and breeding. For species Elements, the EO often corresponds with the local population, but when appropriate may be a portion of a population (e.g., long distance dispersers) or a group of nearby populations (e.g., metapopulation). As an example, an EO of a Loggerhead Shrike is defined as one or more breeding pairs in appropriate habitat, with the separation distance between EOs being 5 km. For plant species, occurrences less than 1km apart will always be part of a single EO, those >10km will always be separate EOs, and specific consideration must be given to anything in between. For community Elements, the EO may represent a stand or patch of a natural community, or a cluster of stands or patches of a natural community.

NatureServe provides the SKCDC with the EO definitions and quality ranks for each species or taxon group. This information is stored electronically in the SKCDC database along with other details about the conservation ranks and ecology of the species. Examples of information stored in the EO database include mapped location information, a list of all observations that make up the Element Occurrence (over time and over space), description of the habitat, population size, quality of occurrence and references to available literature documenting the occurrence.

Element occurrences consist of two components. This first is the observed (source) feature. Depending on the type of occurrence, an observed feature can be a point, a line, or a polygon. Examples might include a ferruginous hawk nest (point), a stream segment containing bigmouth buffalo spawning beds (line), or a lake or bay used by staging shorebirds (polygon).

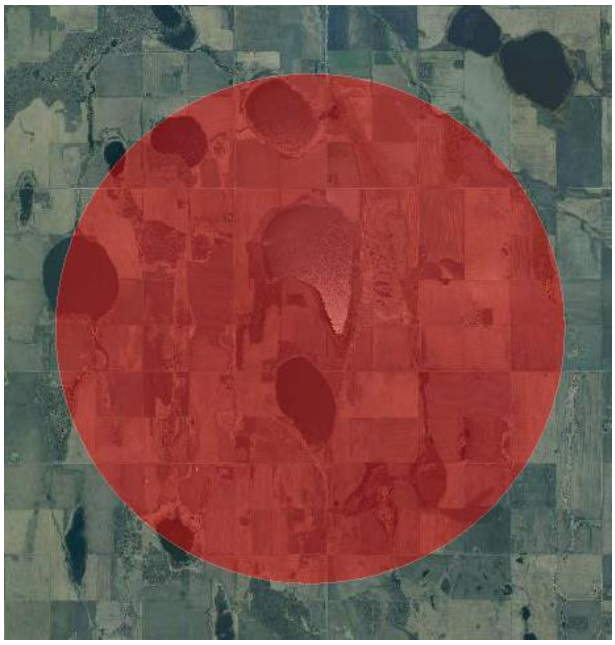

Figure 4 – The red circle on the map represents an animal element occurrence (EO). The occurrence is somewhere within the representational polygon rather than everywhere within the polygon, and not necessarily in the centre of the polygon.

The location of an observed feature is determined based on information that is often incomplete or imperfect. The quality of the information may vary due to a number of factors. Consequently, the recorded location may vary from the true location reflecting a measure of spatial uncertainty.

The second component is the representational polygon; the polygon you see (Figure 4). This polygon incorporates the spatial uncertainty and the observed feature to build a polygon representing the area within which the element occurrence is known to occur. **The occurrence is somewhere within the representational polygon** rather than everywhere within the polygon, and not necessarily in the centre of the polygon.

When using Element Occurrence data, always remember absence of species observation records does not preclude the existence of species in the area of interest. Observations may simply not have been recorded for the given area or may not have yet been entered into the ministry data holdings – new observation records are continuously being discovered. Information accessible through HABISask is not intended to be a definitive statement on the presence, absence, or status of a species within a given area, nor as a substitute for onsite surveys.

Element Occurrence (EO) Ranks

EO ranks are used in prioritizing occurrences for conservation planning purposes. The different ranks that can be assigned to an EO are as follows (Hammerson et al., 2020):

A - Excellent estimated viability
B - Good estimated viability
C - Fair estimated viability
D - Poor estimated viability
E - Verified extant (viability not assessed)
F - Failed to find
H - Historical
X - Extirpated
U - Unrankable
NR - Not ranked

As with conservation ranks, a **range rank** may be used when the occurrence spans multiple categories (e.g., AB – excellent or good estimated viability), and a **question mark** following a rank indicates uncertainty (e.g., A? – possibly excellent estimated viability). The basic "A" through "D" ranks are based on current known factors that are used to predict the viability of an EO. The more viable an EO is, the higher its EO rank and the higher its conservation value. The cut-off for viability occurs at the "C" rank, with "D" ranked EOs characterized as probably not viable.

A "**Failed to find**" EO rank does not indicate that the species is not there or that it could not be found with additional field survey efforts. Multiple factors can be involved in failing to find an element, including search effort, surveyor experience, the elusiveness of a species, time of year and day, and year to year changes in weather patterns (e.g., dry year or late spring). Similarly, an EO with a rank of "historic" or one that has not been ranked ("unrankable" or "not ranked") is extant until it has been ranked as extirpated.

An element occurrence is only considered extirpated when adequate surveys by one or more experienced observers at times and under conditions appropriate for the species, or other persuasive evidence, indicate the species no longer exists at the occurrence location; or, that the habitat or environment of the occurrence has been destroyed to such an extent that it can no longer support the species (Hammerson et al., 2020).

Sensitivity Issues and Rare Elements Data

Why are we concerned about data sensitivity?

- Certain species (e.g., falcons, snakes, and rare orchids) are sought after by collectors because of their trade value.
- Some species (e.g., Purple Coneflower and Golden Seal) have reputed medicinal value and may be over-harvested.
- Some species are vulnerable to the attentions of over-zealous observers more interested in getting a good photograph rather than in the welfare of the wild species.
- Some species are extremely sensitive to human disturbance at certain stages in their life cycle (e.g., some nesting raptors or colonial nesting birds or bat species during hibernation).
- Many rare species occur on private lands and dissemination of rare species locations may encourage some people to illegally trespass.
- Most rare species data incorporated into the SKCDC database were received from other sources (e.g., local naturalist clubs, researchers) and in some cases the individuals or agencies from whom we received the data are very concerned about its possible misuse. In some cases, SKCDC has written agreements with providers of rare species information specifying how the data can and cannot be used. Misuse of rare species information will jeopardize our partnerships with some information providers.
- Some species are protected under legislation (e.g. *The Wild Species at Risk Regulations*, 1999), meaning there is a legal obligation to protect the species and its habitat. *The Wildlife Act* takes precedence over the *Freedom of Information and Protection of Privacy Act* if releasing the information will further jeopardize the species or its habitat.

If Rare Elements data are so sensitive, why release it at all?

- In most cases, wise use of Rare Elements data can do far more to benefit the rare species in question than not having any information about it.
- In many planning related activities, it is essential to know the location of significant “values”, and rare species are one such value.
- Agencies have a legal requirement to make use of SKCDC information in the planning process.
- Parks, nature reserves and other protected sites are designated in part to protect Rare Elements, and to do so requires knowledge of their location.
- Knowing the location of Rare Elements helps in the identification and designation of provincially significant sites and wetlands.
- Recovery and management efforts on Rare Elements are virtually impossible to carry out without accurate location and population information.
- Co-ordinated multi-jurisdictional planning and management efforts over large areas (e.g., Cypress Hills) require standardized information on rare species locations, threats, population sizes, etc.

What Rare Elements data are sensitive and what are not?

Unfortunately, this is not a straight-forward question.

- In general, natural area and vegetation association information is less sensitive than rare species information. There are, however, some sensitivity concerns for these data (e.g., private land concerns, presence of rare species in significant communities and natural areas).
- Certain species and species groups (e.g., raptors, communally nesting or hibernating species, showy plants, turtles, snakes, area sensitive bird species, species dependent on very restricted or specialized habitats, large mammals) are generally more sensitive due to their biology, or the fact that they are more sought after by humans. However essentially all rare species can be put at risk by improper human activities.
- In general, rare species information on private lands is more sensitive than similar information on public lands.
- Conservation information on officially designated species (particularly those listed under Saskatchewan's *Wildlife Act, 1998*) may be considered more sensitive than similar information on non-listed species.
- In general, the rarer a species is (globally, provincially, and locally), the more sensitive the specific data pertaining to it becomes. In general, information on an S1 species should be treated more confidentially than for an S3 species (because if a population is inadvertently or deliberately damaged/destroyed, the impact on the provincial population will be more serious for an S1 species).
- It is primarily the precise location information that is sensitive, and other information is generally not sensitive (e.g., habitat, population size). However, releasing descriptive information that might pin-point a location (e.g., saying that the habitat for a particular species was a 70 metre, SW-facing cliff on the edge of a 12-hectare lake might pin- point a Peregrine Falcon nest, even without revealing its precise location).
- There are two primary ways that the SKCDC addresses data sensitivity concerns when releasing rare species information: 1) by not revealing the species; and 2) by not revealing the precise location.

Data Sharing and the "NEED-TO-KNOW" Principle

"Need-to-know" is a phrase adopted to convey the general principle that the information on rare species and spaces may be disseminated to both internal SKCDC users and external clients, at varying levels of detail. The level of detail is determined by balancing the demonstrated needs of the requester or program against the conservation needs of the species, community or natural area and the wishes of the individual(s) or agency providing the information.

Discretion and caution continue to be appropriate because unrestricted access to rare species records could increase the risk to the species and their habitats. The biological and heritage values of rare species vary by species, distribution, biology, and habitat needs. The economic values of rare species may relate to whether they are harvestable or collectable commodities or perceived as obstacles to certain land uses.

Levels of SKCDC Data Access

The SKCDC has two levels of data access: general user and detailed user.

General users:
The public have access to locality information and level of rarity (e.g., SKCDC species class, S1 species, etc.). These users are not supplied with the name of the species or other detailed information. This level of access is adequate for many purposes.

Detailed users:
Users who have read and understand the SKCDC Training Manual and have signed a Data Sharing Agreement with the Ministry of Environment may be given an account. These users have access to location data, information on what the species is, plus additional information on date of observation, biological data, etc. Users, who have a demonstrated need for in-house use of spatial data, may request to download data from the SKCDC.

External Data Use Guidelines

Users of SKCDC information must follow the following guidelines:

Users must acknowledge that the information is sensitive and intended for conservation purposes only.

Although every effort has been made to verify the information, the SKCDC makes no guarantee with respect to the accuracy of the data provided and accepts no responsibility for decisions made based on the information supplied.

In accepting the data, the user acknowledges that:

Data in digital form may not be further disseminated or modified without prior consent from the SKCDC. Unauthorized reproduction, modification, or dissemination may violate copyright held by the King's Printer of Saskatchewan or data-sharing agreements with partners of the SKCDC. If information from the SKCDC is used in the preparation of a report or other document, the SKCDC must be acknowledged and properly referenced.

Maps, charts, and other visual materials produced using SKCDC information must acknowledge the SKCDC as a source of the information. The user agrees to inform the SKCDC of any inaccuracies in the supplied data, and to provide corrected or updated data to the SKCDC as described in the Data Sharing Agreement.

It is the users' responsibility to ensure they are using the most current information available.

Submitting Information to the SKCDC

Detailed Users are obliged, under the terms of the Data Sharing Agreement, to submit reports electronically to the SKCDC on at least an annual basis. If you have collected data as part of a Government of Saskatchewan Research Permit, reporting requirements will be dictated as part of the terms of the permit and data will be forwarded to the SKCDC as part of that process. If you have data that was collected without a Research Permit, submissions should be made on or before December 31st of each year. If you prefer to submit individual reports as they are completed, that is acceptable. If you do not collect any species observations within the year, no reports are required to be submitted to the SKCDC (except for reporting requirements under a research permit).

All wild species data acquired or compiled should be submitted. At a minimum, each species that is tracked by the SKCDC and is encountered for a project must be reported, and all other species data, tracked or not, that are recorded should be reported as well. If you have observations of a species from a letter, report, or conversation, please also submit this information. The SKCDC has several tracked and complete species lists for the province available for download.

All species can be reported by using the appropriate loadform available through the SKCDC's "Submit Wild Species Observations" web page. Loadforms are in Microsoft Excel (.xlsx) format. In addition, if a spatial file of the occurrence is available (e.g., a shapefile or GPS track file outlining a patch of a plant occurrence), or if a photograph of the species was taken, please submit this along with the loadforms. At minimum for us to be able to use the observation, we need:

- Date
- Sensitive Data (true/false). Data may be deemed sensitive for two reasons: 1. Publication Reasons, and 2. Landowner/Lessee Confidentiality.
- Observer Name(s)
- "Location" section (only one format required, in order of preference: Lat/Long (decimal degrees), UTM (including zone), or Dominion Land Survey)
- Scientific or Common Name. Please provide the scientific name as it is given in our accepted taxon lists. For plants, scientific name is required.

Negative data (searching for an Element Occurrence (EO) and not finding it) is as important to the SKCDC as reporting a new occurrence of a species. Repeated lack of observation of an EO can cause its EO rank to be reviewed and changed (e.g., from Historic to Extirpated). This can also affect the conservation rank of the element. To report an EO that was surveyed for and not found, please fill out the "EO Not Found" section of the Species Detection Loadform (found at the end of the "Survey Standards Data" worksheet).

Please Note: Survey Protocols, Data Loadforms and Species Lists will be updated regularly on the web site to reflect changes in methodology, taxonomy, and species rankings. Please check back prior to using any previously downloaded content and clear your browser's cache to ensure you are using the latest information.

There are two methods for submitting data:

1. For reports corresponding to a **Government of Saskatchewan wild species research permit**, including surveys where notification is required, data and reports should be directed to SD.researchpermit@gov.sk.ca for Species Detection permits or AR.researchpermit@gov.sk.ca for Academic Research permits. This may include incidental observations recorded during the project. See the Government of Saskatchewan Wild Species Research Permitting page for details; specifics on submissions can be found in the Conservation Standards Terms and Conditions. Please note that this data will be forwarded to the SKCDC, and therefore you will only submit your data once.

2. **All other data can be submitted to the SKCDC directly at SKCDC.data@gov.sk.ca.**

iMapInvasives is the provincial system for submitting the occurrence of invasive plant or animal species. Any observations of prohibited, noxious or nuisance weeds, along with observations of any other invasive species, should be submitted using this website. An account is not required to submit observations. For further information please visit the SKCDC's invasives page or contact invasives.imap@gov.sk.ca.

iNaturalist is a citizen science web site where observations may be submitted by anyone. If you wish to submit incidental observations to us in this way, that is acceptable. However, in order to do so, you must join the Saskatchewan Conservation Data Centre's project and add your observations to it. To make private/obscured coordinates visible to project curators, when joining the project, you must check "Yes, no matter who adds the observation to the project", or at the least "Yes, but only if I add the observation to the project myself". This gives the SKCDC access to the location coordinates of the observation so that we may use it in the SKCDC's database. See the SKCDC's iNaturalist Journal post on Adding Observations for information on how to add you observations to the project once you join – simply joining our project does not add your observations! For further details, visit this SKCDC's iNaturalist web page.

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SKCDC makes no representations or warranties, expressed or implied, with respect to the document, or any part thereof, including any warrantees of title, non-infringement of copyright or patent rights of others, merchantability, or fitness or suitability for any purpose.

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Resources

- Botanical Assessment Working Group (BAWG) (http://biodiversity.sk.ca/partners.htm#BAWG)
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (http://www.cosewic.ca/)
- Government of Saskatchewan GeoHub – Access Government of Saskatchewan Geospatial Information (https://geohub.saskatchewan.ca/)
- Government of Saskatchewan Wild Species Research Permitting:
    - Wild Species Research Permitting (https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/wildlife-and-conservation/wild-species-research-permitting)
    - Wild Species Research Permitting-related documents (i.e., application forms, survey protocols, activity restriction guidelines) (https://publications.saskatchewan.ca/#/categories/162)
    - Wild Species Research Permitting Data Loadforms (https://publications.saskatchewan.ca/#/categories/2070)
- *i*MapInvasives (https://www.imapinvasives.org/)
    - SKCDC Invasives page (http://biodiversity.sk.ca/Invasives.htm)
- HABISask : Hunting, Angling and Biodiversity Information of Saskatchewan (https://gisappl.saskatchewan.ca/Html5Ext/?viewer=habisask)
- Native Plant Society of Saskatchewan (http://www.npss.sk.ca/)
- The Nature Conservancy of Canada (http://www.natureconservancy.ca)
- Nature Saskatchewan (http://www.naturesask.ca)
- NatureServe (http://www.natureserve.org)
    - NatureServe Canada (http://www.natureserve.org/natureserve-network/canada)
- Saskatchewan Invasive Species Council (http://www.saskinvasives.ca)
- Species at Risk Public Registry (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html)
- Wild Species: General Status of Species in Canada (http://www.wildspecies.ca/)

SCHEDULE 1

SKCDC Data Sharing Agreement

BETWEEN: _____

(Hereafter referred to as The Agency)

AND: The Saskatchewan Conservation Data Centre
Fish and Wildlife Branch – Ministry of Environment

OBJECTIVE:
The objective of this Agreement is to establish a framework of cooperation between the Ministry of Environment (ENV), through the Saskatchewan Conservation Data Centre (SKCDC) and the Agency identified above respecting the management of natural heritage information (including data sharing, data standards and data collection) in Saskatchewan.

1. TERMS

1.1. On the condition that The Agency adhere to the SKCDC Data Sharing Agreement the Saskatchewan Conservation Data Centre (SKCDC) shall provide:

i. Detailed access for The Agency to the SKCDC Rare and Endangered species map layer, limited to Saskatchewan, provided an Officer of The Agency has read and understood this agreement and a signed copy of this agreement is delivered to the Saskatchewan Conservation Data Centre;

ii. Permission to The Agency to provide the summaries of the content to its partners and consultants for use in environmental impact assessments and other research endeavors, in order that the data be reported in a standard fashion;

1.2. In support of this agreement, The Agency will:

i. Annually (on or before December 31st) provide a copy of all wild species detection data for Saskatchewan, acquired, or compiled by The Agency. Data corresponding to a research permit shall be directed to the ENV Research Permit office and all other data shall be submitted directly to the SKCDC. The Agency shall use the data loadforms provided by the ENV, and shall submit the information electronically unless otherwise agreed to;

ii. Whenever possible, make special efforts to validate and update known element occurrences in project areas investigated by The Agency.

2. CONDITIONS

Detailed access to the SKCDC database is provided on the condition that the signatories of this agreement have read and understood this Agreement and will adhere to the conditions as follows:

2.1 This Agreement between the Crown in right of Saskatchewan as represented by the Minister of Environment (Saskatchewan Conservation Data Centre) and The Agency is non- transferable.

2.2 This Agreement, between the SKCDC and The Agency, will automatically renew on an annual basis providing The Agency adheres to, and complies with, the conditions set out in this Agreement. This Agreement is revocable at any time by SKCDC if The Agency does not adhere to the terms, conditions, restrictions, and policies outlined in this Agreement.

2.3 The Participants acknowledge that data exchanged in this Agreement are sensitive and are provided only for purposes related to the protection, management, conservation, and public awareness of the elements of biodiversity.

2.4 The Participants acknowledge that protection and conservation of the elements must take precedence over public awareness in circumstances where these uses of the data appear to conflict.

2.5 The Agency agrees to apply the data in a manner that does not result in the contravention of Saskatchewan's *Wildlife Act, 1998*, and federal *Species at Risk Act*. Should such contravention occur, The Agency acknowledges that their access to the data may be withdrawn, this Agreement revoked, and that they may face prosecution.

2.6 The Agency acknowledges that absence of information provided by SKCDC for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. The agency acknowledges that the quantity and quality of data collected by the SKCDC are dependent on the research and observations of many individuals and organizations.
In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Saskatchewan have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the SKCDC cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Saskatchewan. SKCDC reports summarize the existing natural heritage information known to the SKCDC (at the time of the request). SKCDC data should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. **The user therefore acknowledges that the absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.** New and updated information is continually being added to the SKCDC databases.

2.7 The Agency acknowledges that accuracy of the data is time limited. SKCDC does not guarantee the currency of the data provided. Although every effort has been made to verify the information, the SKCDC makes no guarantee with respect to the accuracy of the data provided and accepts no responsibility for decisions made based on the information supplied.

2.8 The user acknowledges that data provided by SKCDC may not be further disseminated or modified without prior written consent from SKCDC staff. Unauthorized reproduction, modification, or dissemination may violate copyright held by the King's Printer of Saskatchewan or data sharing agreements with partners of the SKCDC.

2.9 The user acknowledges that if information provided by the SKCDC is used in the preparation of a report or other document (including maps, charts, presentation materials and other visual products), that the Ministry of Environment and the Saskatchewan Conservation Data Centre will be acknowledged in the document. In some cases, in accordance with data sharing agreements between the SKCDC and other agencies or partners, it may also be necessary to acknowledge the original supplier of the information.

2.10 By signing this Agreement, The Agency acknowledges, and will adhere to, restrictions on data use outlined in agreements SKCDC has signed with data suppliers. The user agrees to consult SKCDC prior to publication of reports or other documents to ensure that copyright or other restrictions on the use of data are not being violated.

2.11 The signatories of this agreement shall hold each other harmless against any claims by third parties.

2.12 The Agency acknowledges that responsibility for data use will be restricted to their designated staff that have read and understood the SKCDC Training Manual. Failure to comply may result in the cancellation of this Agreement and loss of access to the detailed SKCDC rare and endangered species data.

2.13 SKCDC reserves the right to withdraw The Agency's access to SKCDC data in the event of use of the data for any purposes other than protection, management, conservation, or public awareness of the elements of concern by The Agency staff.

2.14 The SKCDC does not condone the physical (in situ) collection of natural heritage data without prior consent of the landowner. ENV and SKCDC assume no liability for data (or use of data) acquired on private lands without landowner permission.

2.15 The Agency acknowledges that access to sensitive natural heritage data relating to a feature on private land does not imply a right to enter onto private land to inspect or monitor the feature without landowner permission.

2.16 The Agency agrees to verify, update, and correct any inaccuracies in the data from the SKCDC, by providing updates/reports to SKCDC on or before December 31st of each year, using the appropriate loadforms.

2.17 The Agency agrees to immediately report to ENV any suspicious information requests for sensitive data (i.e., requests that may be used for illegitimate or illegal purposes, such as collection of threatened or endangered species for commercial purposes).

2.18 The Agency agrees to notify SKCDC within five (5) business days should a user's employment terminate at The Agency and there are concerns over misuse of information by the former employee.

2.19 By signature on this Agreement, The Agency accepts all the terms and conditions of this agreement without exception, deletion, or alteration. The Agency recognizes that any use or release of the data not authorized by this Agreement will be considered a breach of this Agreement. Upon breach, The Agency agrees that use of the data shall be unlawful and constitute unauthorized use.

3. Effective Date and Termination

This agreement will remain in effect from the date of signing, until such time as one of the Parties notify the other, in writing, of the termination of this Agreement; alternatively, should one party fail to comply with the provisions of this agreement, the other party may unilaterally terminate the agreement.

This agreement may be amended to reflect new or supplementary statements of intent that relate to the acquisition, maintenance, application, and/or dissemination of natural heritage information.

IN WITNESS WHEREOF the parties have signed this Memorandum of Agreement, effective the day and year appearing on this document.

Signed on behalf of the Parties by their designated representatives.

_____ _____

Signature on behalf of the Minister of Environment, Executive Director, Fish and Wildlife Branch, Ministry of Environment (or representative) — DATE

_____ _____

Signature on behalf of The Agency — DATE

_____; _____

(Name) (Position)

On behalf of_____(The Agency)

Address: _____

City:_____ Province/ State: _____ Postal/ Zip Code: _____ _____

Phone: _____

Email: _____