Saskatchewan
Ministry of
Environment

3211 Albert Street
Regina, Canada
S4S 5W6

Terrestrial Field Surveys: Permit Requirements, and Design & Methodology Guidelines

April, 2009

These guidelines are to assist Proponents carry out appropriate surveys for terrestrial vertebrates and plants in Saskatchewan. For more detail on how to conduct rare plant surveys, please follow the guidelines provided by the Conservation Data Centre (CDC) at: http://www.biodiversity.sk.ca/Docs/rareplantsurveyguidelines.pdf. Other guidelines on preparing Environmental Impact Assessments and project proposals under *The Environmental Assessment Act* are found online at: http://www.environment.gov.sk.ca under Programs and Services.

In general, survey methodology will depend upon the species of interest and whether a simple presence/absence survey is needed or whether more detail, such as population numbers, are required to evaluate impacts to wildlife. For species at risk, estimates of the population size and if appropriate, territory size and critical habitats, are requested in addition to presence/absence data. This information can be used to better estimate the impacts of a development on the rare species we have in our province.

It is the responsibility of to the Proponent to demonstrate that surveys are conducted at the appropriate time (day, year, and under suitable weather conditions), location (relative to the ecological footprint of a development), and that sufficient effort was devoted to conducting thorough searches. These guidelines are focused on detecting species at risk, however, there may be other unique flora and fauna that are not considered to be at risk, yet remain important survey targets.

Permits

Under the authority of *The Wildlife Act*, 1998, the Ministry of Environment issues provincial Scientific Research Permits to study and work with wildlife in Saskatchewan. A permit is required to conduct activities that disturb wildlife and wild species at risk (e.g. call play-back surveys, nest/den site disturbances, plant voucher collection).

Please see the website below to determine if your activities require a permit (i.e., species listed under the *The Wild Species at Risk Regulations*)
(http://www.environment.gov.sk.ca/Default.aspx?DN=b135c332-9078-4d5f-aff3-84e1aa91cccc)

The Fish and Wildlife Branch in Regina is responsible for processing and issuing these permits. Once an application has been filled out, the applicant should send it to the Licensing Specialist for consideration. Please allow three weeks for processing.

Saskatchewan Ministry of Environment
Licensing Specialist
Fish and Wildlife Branch
3211 Albert St.
Regina, SK S4S 5W6
Fax: 306.787.1349

If you have any further permitting questions, please contact:
Penny Lalonde, penny.lalonde@gov.sk.ca, 306.787.6218

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Reporting (General)

- Data must be submitted to the Saskatchewan Conservation Data Centre (http://www.biodiversity.sk.ca) in a timely manner, and can be done using the information provided on the Rare Species Occurrence data form (http://www.biodiversity.sk.ca/Docs/speciesreportform.pdf). In place of this form, clients may create their own spreadsheet containing columns of the same fields identified in the form, and rows of multiple observations for tracked species. Clients who do not return data to the CDC risk having their accounts suspended.

- There are a number of other taxa that the CDC tracks, such as breeding birds and amphibians. These can also be reported to the CDC using the Rare Species Occurrence data form or for multiple observations, a custom built spreadsheet.

For further information on reporting, please contact:
Ben Sawa, ben.sawa@gov.sk.ca, 306.787.1142

Flora

- Surveys should be done in all habitats, not just native prairie. If you are describing an area with, for example, "excessive invasion by exotic species" then you must outline which criteria are used to define this habitat. We would like to ensure that large cultivated and areas with small areas dominated by invasive plants do not support rare species such as buffalo grass.

- Ensure that you closely follow the rare plant survey guidelines found on the CDC website http://www.biodiversity.sk.ca/Docs/rareplantsurveyguidelines.pdf. If you are unable to do so, you must provide appropriate justification and should contact the CDC to ensure that your survey will be accepted during the technical review of your proposal.

- If a small quadrat size (20 x 10 cm) is used to estimate species abundance, we recommend using several quadrats within each community type. A species area curve analysis can be used to determine appropriate sampling effort.

- A measure of percent foliar cover is preferable to frequency within a quadrat.

- The population size of each rare plant occurrence should be reported (area covered), as well as the number of individual plants in that occurrence.

- The phenology/life stage of each rare plant should also be reported.

Fauna

- Wildlife surveys should be focused on species-at-risk (see the Species at Risk list on the CDC website). Because the majority of rare species are avian, a general breeding bird survey should be conducted to screen for all species of concern. Anuran studies may also be conducted during breeding bird surveys to detect Northern leopard frog or local populations of additional amphibians. If work is proposed for areas occupied by swift fox, Ord's kangaroo rat, or other mammals of concern, it should also be designed to maximize their detection. Surveys should be done throughout the project area and not just in representative habitats to ensure that any rare species are adequately detected.

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Fauna (continued)

- An updated list of Species at Risk that occur in Saskatchewan can be found on the CDC website http://www.biodiversity.sk.ca/Docs/SpeciesAtRiskinSK.pdf. Please note that this list does not include all of the S1-S3 species ranked by the CDC, which should still be identified in survey efforts.

- To generate both a species list for the impacted area as well as their relative numbers, we recommend using systematic, standardized point count surveys along line transects. For species such as Burrowing Owls that may be in an area, their presence can be confirmed by meandering searches and inspecting roost and nest burrows (*e.g.*: pellets, feathers, whitewash), or by using call playback surveys (Note that a Scientific Research Permit is required for this). It is essential that only qualified persons inventory wildlife that may be in the project area.

- All breeding bird surveys must be done during the appropriate times of the year (mid May – 1st week in July for songbirds) and day (up to 4 hours after sunrise for diurnal species; from 2 hours before sunset for crepuscular/nocturnal species), and only during acceptable weather conditions (see Table 1). Surveys should be done twice during the breeding season, at least 2 weeks apart.

- Amphibians are also most easily detected using auditory point counts and by conducting visual surveys for adults and larvae in appropriate habitats. We suggest following the North American Amphibian Monitoring Protocol guidelines for surveying frogs in Saskatchewan (USGS, 2005; found online at: http://www.pwrc.usgs.gov/NAAMP/protocol/index.html). In general, a biologist will listen for 5 minutes at all wetlands or potential habitats in the project area, and place their survey points ~ 500 m - 800 m apart. The best time to survey is after a rainfall, and approximately 30 minutes after sunset or in the evening. At each survey station, biologists will record an amphibian calling index for each species heard (*e.g.*: individuals can be distinguished vs. constant chorus). Surveyors are also pointed to pay particular attention paid to the appropriate weather conditions for conducting these surveys (sky, wind and noise index).

- Proponents must also identify any migratory staging areas for birds that may be impacted by the development; consider proximity and noise levels when determining if an area may be impacted (*i.e.*: survey the areas surrounding the development).

- Activity restriction guidelines have been identified for many sensitive taxa and can be found on the CDC website at: http://www.biodiversity.sk.ca/Docs/SKactivityrestrictions.pdf. These buffer zones should be respected when conducting surveys. If they must be breached, a Scientific Research Permit may be required.

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Table 1. Acceptable and unacceptable weather conditions for conducting songbird surveys in Saskatchewan

	Acceptable	**Unacceptable**
Wind **(Beaufort Scale)**	Beaufort 1 (<2 km/hr). Calm. Smoke rises vertically. Beaufort 2 (2 - 5 km/hr). Very slight, occassional breeze. Smoke drift indicates wind direction. Beaufort 3 (6 - 12 km/hr). Light breeze. Wind felt onface, leaves rustle, vanes begin to move.	Beaufort 3 (12 - 19 km/hr). Gentle breeze, leaves and twigs constantly move. Beaufort 4 (20 - 29 km/hr). Moderate breeze, small branches move, dust rises. Beaufort 5 (30 - 39 km/hr). Fresh breeze, small trees sway. White caps form on water bodies. Beaufort >5
Precipitation	None Light fog Misty drizzle Drizzle	Light rain Hard rain Snow Heavy fog
Temperature	> 6 º C	< 6 º C
Ambient Noise	No noise. Faint noise. Likely can't hear birds beyond 400 m.	Moderate noise. Likely can't hear birds beyond 200 m. Loud noise. Likely can't hear birds beyond 100 m.

For more information contact the Fish and Wildlife Branch in Regina at: (306) 787- 2314.