Rare Species Surveys and Stewardship Activities by the Manitoba Conservation Data Centre, 2009

Manitoba Conservation Data Centre Report No. 2009-04
Chris Friesen and Colin Murray

Manitoba Conservation
Data Centre
Box 24, 200 Saulteaux Crescent
Winnipeg, Manitoba
R3J 3W3

Manitoba

Please cite as:

Friesen, C. & Murray, C. 2010. Rare Species Surveys and Stewardship Activities by the Manitoba Conservation Data Centre, 2009. Report No. 2009-04. Manitoba Conservation Data Centre, Winnipeg, Manitoba. 20 pp.

Images:

Cover image: White Flower Moth, *Schinia bimatris*, at Spruce Woods Provincial Park, 2007. Courtesy of Chris Friesen.

Executive Summary

Information on 99 rare and uncommon plant and animal species was documented by the Manitoba Conservation Data Centre (MBCDC) in 2009 through field surveys, acquisition of data from partners, and reports submitted to the CDC by other sources.

Field surveys conducted by CDC staff were focused on Canadian Species at Risk in Manitoba. Provincially rare species were surveyed as time permitted. Four plant species specifically targeted in 2009 were:

Rough agalinis (*Agalinis aspera*)

Gattinger's agalinis (*Agalinis gattingeri*)

Small white lady's-slipper (*Cypripedium candidum*)

Western silvery aster (*Symphyotrichum sericeum*)

In addition to these species, the CDC conducted surveys for a number of plant, butterfly and moth species in the mixed-grass and sandhill prairie areas of Manitoba. Plant species of particular interest in these areas included Hairy prairie clover (*Dalea villosa* var. *villosa*) and Western spiderwort (*Tradescantia occidentalis*). However, the primary targets of surveys in these prairie areas were the following Lepidoptera (butterfly and moth) species:

Dakota skipper (*Hesperia dacotae*)

Ottoe skipper (*Hesperia ottoe*)

Uncas skipper (*Hesperia uncas*)

White flower moth (*Schinia bimatris*)

Verna's flower moth (*Schinia verna*)

Gold-edged gem (*Schinia avemensis*)

Dusky dune moth (*Copablepharon longipenne*)

Pale yellow dune moth (*Copablepharon grandis*)

A total of 94 sites were surveyed for these species by the CDC, 35 of which were privately owned. Data collected in the field by the CDC on targeted plant species resulted in updates to 27 previously known occurrences and the documentation of four new occurrences. Lepidoptera specimens are awaiting identification by a taxonomic expert. A summary of other species and occurrences surveyed by the CDC and associates are also included.

Highlights include the confirmation of a Small white lady's-slipper occurrence near Emerson and the discovery of four new Rough agalinis (*Agalinis aspera*) occurrences.

Acknowledgements

As the lead contributor to this project and written report, I would like to thank Colin Murray for sharing in field work and data entry. Following his departure, Derrick Ko Heinrichs also assisted with data entry and mapping for this project.

Several other associates joined CDC staff in the field as well as providing habitat and rare species information. Richard Staniforth and Jessica Elliott joined us in the field for surveys of ferns. Dave Roberts facilitated an on-site meeting with managers of a Small white lady's-slipper occurrence. Laura Reeves and Christie Borkowsky of the Tall Grass Prairie Preserve provided data on rare occurrences in and around the preserve as well as reviewing management summaries. Elizabeth Punter of the University of Manitoba Herbarium provided assistance with the identification of *Agalinis* specimens. Paul Goossen of the Canadian Wildlife Service spent a day with us during our Lepidoptera surveys and also provided the CDC with data regarding the Gold-edged gem in Spruce Woods. Special thanks to Dr. Richard Westwood at the University of Winnipeg for his assistance with the Lepidoptera surveys.

I would also like to thank the following individuals for providing information on rare species occurrences and habitats: Doris Ames, Nancy Bremner, Dan Chranowski, Doug Collicutt, Nicole Firlotte, Jason Greenall, Cary Hamel and Eugene Reimer.

My appreciation extends to all landowners who granted permission to access private land for rare species surveys.

Support for this project was provided by the Critical Wildlife Habitat Program, Manitoba Habitat Heritage Corporation, the Habitat Stewardship Program of Environment Canada, the Manitoba Conservation Data Centre, and the Wildlife and Ecosystem Protection Branch of Manitoba Conservation.

- Chris Friesen, March 2010

Table of Contents

List of Figures

List of Tables

Introduction and Methods

This report summarizes rare species surveys and stewardship activities conducted by the Manitoba CDC in 2009. As a project funded in part by the Habitat Stewardship Program, priority was given to species designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as nationally "at risk" (Environment Canada 2007; COSEWIC 2008). Information on provincially rare species was collected in the field as time permitted. Much of the information on provincially rare species was gathered from data submitted to the CDC from other sources.

CDC surveys of the 12 target species (4 plants, 8 Lepidoptera) were focused on searching for new occurrences as well as monitoring and expanding existing occurrences. Searches were conducted in appropriate habitat in the southwest (Small white lady's-slipper, Lepidoptera species), Birds Hill Provincial Park and environs (Western silvery aster), southeastern Manitoba (Small white lady's-slipper) and the southern Interlake region (Gattinger's agalinis, Rough agalinis, Small white lady's-slipper) from June through August.

Information associated with previously documented rare plant and Lepidoptera occurrences and geospatial data such as aerial photographs, land use, water, elevation and land tenure were used to determine potential survey sites. Where required, landowners were contacted by telephone prior to surveys. Most Lepidoptera sites were visited several times over the course of the summer to maximize the chance that at least one survey would be conducted during the flight period and in appropriate weather conditions. Data collected while surveying an occurrence included location (mapped with a GPS), plant abundance, habitat characteristics, threats, photographs and specimens when necessary to confirm identification (as was the case for all Lepidoptera). For species tracked in the CDC's database, data gathered in the field and from other sources were entered into the geographic information system (GIS) and associated database (Biotics) using NatureServe's standard methodology (NatureServe 2008). Information on negative search results was entered into a separate GIS theme.

Each species has been assigned global, national and subnational ranks (G, N and S ranks, respectively) to indicate the status of the species at each geographic scale. The rank is a number (1-5) following a letter (G, N or S) and the lower the number, the rarer the species. For more information on species ranks, see NatureServe's explanation of ranks (http://www.natureserve.org/explorer/ranking.htm) or that of the Manitoba CDC (http://web2.gov.mb.ca/conservation/cdc/consranks.html).

Results

The results of surveys for the four rare plant species targeted by the CDC are summarized in Table 1 with detailed descriptions for these species provided in separate sections below. A summary of other occurrences updated or documented by the CDC is provided in Table 2. While results of the Lepidoptera surveys are pending identification of specimens by a specialist, background information and detailed survey methodology can be found in the section on Lepidoptera surveys.

Table 1. Summary of CDC surveys for priority rare plant species, 2009.

Scientific Name	Common Name	Sites* Surveyed	Private Land Parcels Surveyed	Known Occurrences** Monitored	New Occurrences** Documented
Agalinis aspera	Rough agalinis	25	6	7	4
Agalinis gattingeri	Gattinger's agalinis	8	2	3	0
Cypripedium candidum	Small white lady's-slipper	31	13	14	0
Symphyotrichum sericeum	Western silvery aster	11	4	4	0
Total		**75**	**25**	**27**	**4**

*Sites are defined as discrete survey locations. Each parcel of private land was considered a site. Sites surveyed for one Agalinis species were often surveyed for the other as well, and these are counted twice in this table.

**A plant occurrence is generally defined as a plant population that is separated by 1 km from the next nearest population when the habitat between the two is not suitable, OR by 2 km when the intervening habitat is suitable. An occurrence may be comprised of one or more sites.

Table 2. Summary of rare and uncommon occurrences updated or documented using data collected by or submitted to the CDC (other than the occurrences listed in Tables 1 and 2).

Scientific Name	Common Name	Conservation Status	Known Occurrences Updated	New Occurrences Documented
Plants				
Achnatherum hymenoides	Indian rice grass	S2	2	0
Agalinis tenuifolia	Narrow-leaved gerardia	S2S3	2	2
Alisma gramineum	Narrow-leaved water-plantain	S1	1	0
Andropogon hallii	Sand bluestem	S2S3	2	0
Antennaria plantagnifolia	Plantain-leaved everlasting	S1S2	0	1
Aristida purpurea var. *longiseta*	Red three-awn	S1	3	0
Artemisia cana	Silver sagebrush	S2	1	0
Asarum canadense	Wild ginger	S3S4	0	3
Asclepias lanuginosa	Hairy milkweed	S2	2	5
Asclepias verticillata	Whorled milkweed	S3	1	0
Asclepias viridiflora	Green milkweed	S3	2	0
Atriplex argentea	Saltbrush	S2	2	0
Bidens amplissima	Beggar-ticks	SNA	1	0
Boltonia asteroides var. *recognita*	White boltonia	S2S3	1	0
Botrychium campestre	Prairie moonwort	S1	1	0
Bouteloua curtipendula	Side-oats grama	S2S3	4	0
Bromus pubescens	Canada brome grass	SNA	1	0
Calamagrostis montanensis	Plains reed grass	S3	4	0
Carex crytolepis	Northeastern sedge	S1	1	0
Carex hallii	Hall's sedge	S3	1	0
Carex hystericina	Porcupine sedge	S3?	1	0
Carex parryana	Parry's sedge	S3?	1	0
Carex supina var. *spaniocarpa*	Weak sedge	S2?	2	0
Ceanothus herbaceous	New Jersey tea	S3	1	0
Clematis ligusticifolia	Western virgin's-bower	S1	1	0
Coryphantha vivipara	Pincushion cactus	S2	2	0
Cycloloma atriplicifolium	Winged pigseed	S2	2	0
Cymopterus acaulis	Plains cymopterus	S2S3	2	0
Cyperus schweinitzii	Schweinitz's flatsedge	S2	4	1
Cypripedium arietinum	Ram's head lady's-slipper	S2S3	0	2
Dalea villosa var. *villosa*	Silky prairie-clover	S2S3	6	0
Desmodium canadense	Beggar's-lice	S2	1	0
Festuca hallii	Plains rough fescue	S3	3	0
Krigia biflora	Cynthia	S2	1	0
Lomatium foeniculaceum	Hairy-fruited parsley	S3	1	1
Lomatium macrocarpum	Long-fruited parsley	S3	2	1
Lomatium oreintale	White-flowered parsley	S1	6	0
Luzula wahlenbergii	Wahlenberg's wood-rush	S2?	0	2
Mertensia lanceolata	Tall lungwort	S2	1	0
Mimulus glabratus	Smooth monkeyflower	S1	5	0
Mimulus glabratus var. *jamesii*	Smooth monkeyflower	S1	1	0
Myosurus minimus ssp. *minimus*	Least mousetail	S1	1	0
Nassella viridula	Green needle grass	S3	2	0
Orobanche ludoviciana	Louisiana broom-rape	S2	2	1

Phegopteris connectilis	Northern beech fern	S2	0	1
Phryma leptostachya	Lopseed	S3	1	0
Pinus resinosa	Red pine	S2S3	4	1
Piptatherum micranthum	Little-seed rice grass	S2	2	0
Plagiobothrys scouleri var. *scouleri*	Scouler's allocarya	S1	1	0
Plantago elongata ssp. *elongata*	Linear leaved-plantain	S2	1	0
Platanthera orbiculata	Round-leaved bog orchid	S2	1	0
Poa fendleriana	Mutton grass	S2	2	0
Pogonia ophioglossoides	Rose pogonia	S1	0	1
Polanisia dodecandra ssp. *dodecandra*	Clammyweed	S1	4	0
Polanisis dodecandra ssp. *trachysperma*	Clammyweed	S1	1	2
Ranunculus cymbalaria var. *saximontanus*	Seaside crowfoot	S1S2	1	0
Ranunculus pallasii	Pall's buttercup	S2	0	1
Rhynchospora alba	White beakrush	S3?	0	1
Sanguinaria canadensis	Blood-root	S2	2	1
Schedonnardus paniculatus	Tumble-grass	S2	2	0
Schinnersoseris rostrata	Annual skeletonweed	S1S2	1	0
Sisyrinchium campestre	White-eyed grass	SU	1	0
Spiranthes magnicamporum	Great Plains ladies'-tresses	S1S2	0	1
Thermopsis rhombifolia	Golden bean	S2	2	1
Townsendia exscapa	Silky townsend-daisy	S2	5	2
Tradescantia occidentalis	Western spiderwort	S1	1	0
Uvularis sessilifolia	Small bellwort	S2	1	0
Verbena bracteata	Bracted vervain	S3	2	0
Vernonia fasciculata ssp. *corymbosa*	Western ironweed	S1	1	0
Total Plants			**116**	**31**
Animals				
Ammodramus bairdii	Baird's sparrow	S1B	15	3
Ammodramus savannarum	Grasshopper sparrow	S2B	2	9
Anthus spragueii	Sprague's pipit	S2B	9	0
Athene cunicularia	Burrowing owl	S1B	0	1
Buteo regalis	Ferruginous hawk	S1S2B	1	0
Chaetura pelagica	Chimney swift	S2B	5	1
Contopus cooperi	Olive-sided flycatcher	S3S4B	0	2
Coturnicops noveboracensis	Yellow rail	S3S4B	1	0
Erynnis lucilius	Columbine dusky wing	S2S3	0	1
Erynnis martialis	Mottled dusky wing	S2	0	2
Eumeces septentrionalis	Prairie skink	S1	1	3
Hesperia dacotae	Dakota skipper	S2S3	1	0
Liocholorphis vernalis	Smooth green snake	S3S4	1	0
Melanerpes erythrocephals	Red-headed woodpecker	S2B	0	2
Sayornis saya	Say's phoebe	S2S3B	0	1
Schinia avemensis	Gold-edged gem	S1	0	1
Storeria occipitomaculata	Northern redbelly snake	S3S4	1	0
Strophitus undulates	Creeper	SNR	1	0
Total Animals			**38**	**26**
TOTAL			**154**	**57**

Rough Agalinis (*Agalinis aspera*)

Canada's *Species at Risk Act*: Endangered
NatureServe status: G5, N1, S1S2

In Manitoba Rough agalinis usually occurs in moist, calcareous, sparsely vegetated tall grass prairie areas. Prior to 2009, Rough agalinis was only known from two areas in Manitoba: the south Interlake and Brandon.

Six known occurrences in the south Interlake were surveyed in 2009 between August 10 and 17. All of these occurrences are primarily in roadside ditches and counts were generally similar to or more than those of previous years. Four plants were found at the Grosse Isle occurrence after several years of none being found. Two new roadside ditch occurrences were discovered in the south Interlake: one just north of Warren and one north of Poplar Point with respective stem counts of 182 and 12. One quarter section near Poplar Point was surveyed for Rough agalinis, however the habitat was not appropriate and no plants were found. Two occurrences in Manitoba (one in the Interlake and one near Brandon) also support the rare Small white lady's-slipper (*Cypripedium candidum*). One other Small white lady's-slipper occurrence in the south Interlake not previously surveyed for Rough agalinis was thus searched for the species on August 12, but no plants were found. More suitable habitat appears to be present in the southern Interlake and should be surveyed to determine the extent of Rough agalinis in this area.

The single previously known occurrence near Brandon was surveyed on August 13. This occurrence consists of a single roadside ditch site that also supports Small white lady's-slippers. Only five plants were found at this site in 2009, which is similar to previous surveys. Several other Small white lady's-slipper sites in the Brandon area were also surveyed for Rough agalinis. Of these, one road side ditch site near Wawanesa was found to support over 50 Rough agalinis plants. Future surveys in both the south Interlake and Brandon area should include Small white lady's-slipper sites.

Figure 1. A Rough agalinis ditch site near St. Laurent. The plants occur on the back-slope of the ditch (right side of the photo).

While conducting surveys for Western silvery aster (*Symphyotrichum sericeum*) south of Birds Hill Provincial Park, *Agalinis* plants were found at several sites and subsequently identified as Rough agalinis. Approximately 200 plants were counted. This is the first known occurrence of Rough agalinis east of the Red River in Manitoba.

Gattinger's Agalinis (*Agalinis gattingeri*)

Canada's *Species at Risk Act*: Endangered
NatureServe status: G4, N2, S1

In Manitoba Gattinger's agalinis occurs in habitats similar to that of Rough agalinis, and the two species occur together at a site near St. Laurent. The other two known occurrences in Manitoba are also near the southeast corner of Lake Manitoba in the south Interlake.

All three known occurrences were surveyed in 2009 between August 10 and 17. The extent of the occurrence east of St. Laurent was expanded somewhat and 23 plants were found. The occurrence south of Lake Francis, which is the only known Manitoba occurrence not in a road allowance, was in similar condition to 2008 with well over 100 plants. Approximately 50 plants were found at the occurrence southwest of Woodlands, whereas 100 plants had been found at the site in 2008. One quarter section north of Poplar Point was surveyed for *Agalinis* species, however the habitat was not appropriate and none were found. Additional surveys in the south Interlake are necessary to better determine the extent of this recently discovered species in Manitoba.

Figure 2. The Gattinger's agalinis occurrence near Lake Francis.

Small White Lady's–slipper (*Cypripedium candidum*)

Canada's *Species At Risk Act*: Endangered
Manitoba's *Endangered Species Act*: Endangered
NatureServe Status: G4, N2, S2

Like Rough agalinis, Small white lady's-slipper (SWLS) usually occurs in moist, calcareous, sparsely vegetated tall grass prairie areas. It is currently known from three areas of the province: south of Winnipeg from Kleefeld to the Unites States border, north of Winnipeg in the southern Interlake, and the Brandon area. In 2009 surveys for SWLS were conducted between June 9 and 23.

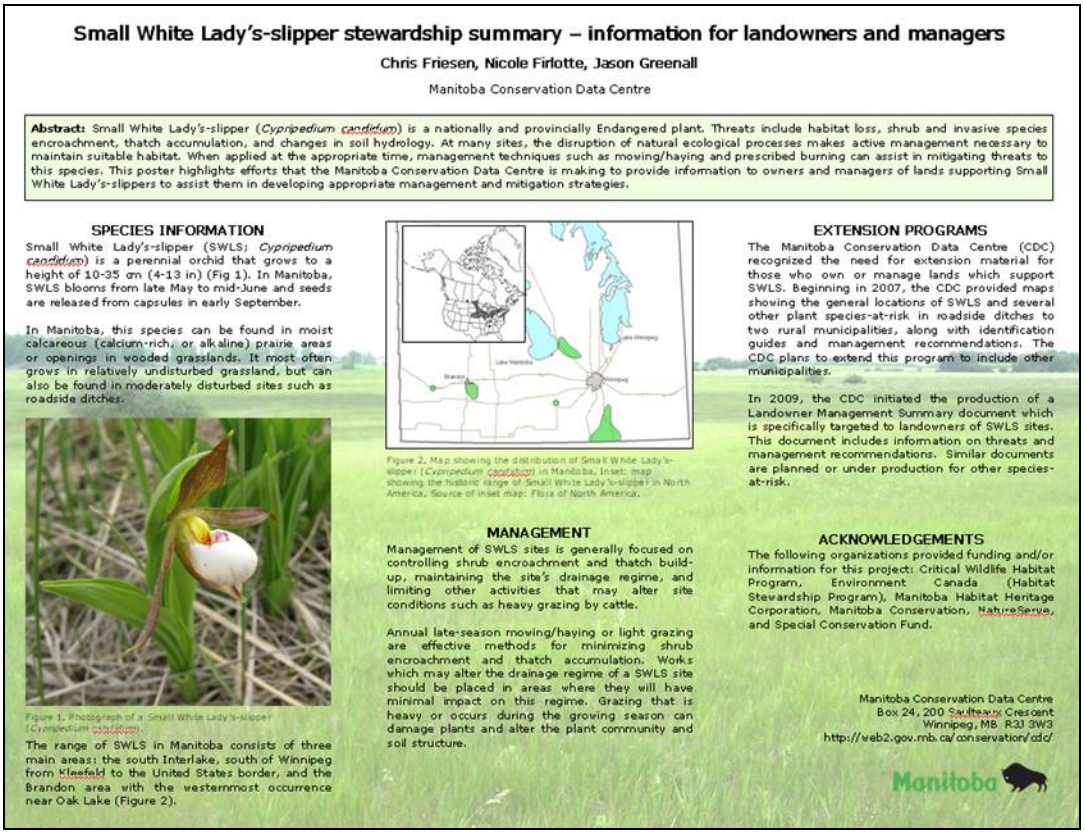
Occurrences surveyed south of Winnipeg in 2009 include one near Kleefeld, one at Emerson, and three in the RM of Franklin. At the Kleefeld occurrence, which consists of a single site in a roadside ditch, 266 stems were observed. Previous stem counts for this site range from 250 (2001) to 683 (1987), with older counts tending to be higher. While the occurrence at Emerson had been reported to the CDC in 2001, subsequent surveys recorded only Yellow lady's-slippers (*Cypripedium parviflorum*) and/or stems that could not be positively identified due to flowers being in poor condition. The survey in 2009 found 72 SWLS stems, along with some Yellow lady's-slippers and hybrids. The vegetation on much of the site was thick and overgrown. The occurrences surveyed in the RM of Franklin included two small roadside ditch occurrences which were in similar condition to past years. The third occurrence surveyed is on private land and was reported to the CDC in fall of 2008. It is comprised of an untilled low area with adjacent areas planted to tame hay. The number of stems was estimated to be 150.

Three known occurrences in the south Interlake were surveyed in 2009. The trail and ditch occurrences noted in past reports (Foster 2008; Krause Danielsen & Friesen 2009) had stem counts of 146 and 285, respectively. These counts are in line with previous surveys. As has been noted in past reports, the trail occurrence is threatened by shrub encroachment and thatch build-up. On June 18, CDC staff met on site with regional staff and trail managers to review management options. The third occurrence surveyed is on private land near St. Laurent. Patches of SWLS are scattered over approximately half a section and 1375 stems were counted. This was the first detailed count of stems at this occurrence.

Figure 3. Small white lady's-slippers at the south Interlake ditch site.

Five occurrences in the Brandon area were surveyed in 2009, as well as Manitoba's westernmost occurrence near the community of Oak Lake. Sites near Brandon generally had stem counts similar to those of past years. Four parcels of private land adjacent to ditch populations of SWLS were surveyed; three were found to support SWLS. Two of these properties supported very few SWLS, while the third had approximately 130 stems. All SWLS found on these properties were more or less immediately adjacent to the ditch. The Oak Lake site was reported to the CDC in 2008 and was first visited by CDC staff in 2009. Approximately 20 stems were identified as SWLS; more *Cypripedium* stems were present but their identity could not be confirmed to due frost damage on flowers.

The CDC compiled and synthesized information regarding the management of lands supporting SWLS with the goal of producing a management summary that could be distributed to landowners/managers. Several draft versions have been produced and a final version is expected in the coming months. A poster regarding this management summary was presented at the 9th Prairie Conservation and Endangered Species Conference, February 25-27, in Winnipeg (Figure 4).



Small White Lady's-slipper stewardship summary – information for landowners and managers

Chris Friesen, Nicole Firlotte, Jason Greenall

Manitoba Conservation Data Centre

Abstract: Small White Lady's-slipper (*Cypripedium candidum*) is a nationally and provincially Endangered plant. Threats include habitat loss, shrub and invasive species encroachment, thatch accumulation, and changes in soil hydrology. At many sites, the disruption of natural ecological processes makes active management necessary to maintain suitable habitat. When applied at the appropriate time, management techniques such as mowing/haying and prescribed burning can assist in mitigating threats to this species. This poster highlights efforts that the Manitoba Conservation Data Centre is making to provide information to owners and managers of lands supporting Small White Lady's-slippers to assist them in developing appropriate management and mitigation strategies.

SPECIES INFORMATION

Small White Lady's-slipper (SWLS; *Cypripedium candidum*) is a perennial orchid that grows to a height of 10-35 cm (4-13 in) (Fig 1). In Manitoba, SWLS blooms from late May to mid-June and seeds are released from capsules in early September.

In Manitoba, this species can be found in moist calcareous (calcium-rich, or alkaline) prairie areas or openings in wooded grasslands. It most often grows in relatively undisturbed grassland, but can also be found in moderately disturbed sites such as roadside ditches.

Figure 1. Photograph of a Small White Lady's-slipper (*Cypripedium candidum*).

The range of SWLS in Manitoba consists of three main areas: the south Interlake, south of Winnipeg from Kleefeld to the United States border, and the Brandon area with the westernmost occurrence near Oak Lake (Figure 2).

Figure 2. Map showing the distribution of Small White Lady's-slipper (*Cypripedium candidum*) in Manitoba. Inset: map showing the historic range of Small White Lady's-slipper in North America. Source of inset map: Flora of North America.

MANAGEMENT

Management of SWLS sites is generally focused on controlling shrub encroachment and thatch build-up, maintaining the site's drainage regime, and limiting other activities that may alter site conditions such as heavy grazing by cattle.

Annual late-season mowing/haying or light grazing are effective methods for minimizing shrub encroachment and thatch accumulation. Works which may alter the drainage regime of a SWLS site should be placed in areas where they will have minimal impact on this regime. Grazing that is heavy or occurs during the growing season can damage plants and alter the plant community and soil structure.

EXTENSION PROGRAMS

The Manitoba Conservation Data Centre (CDC) recognized the need for extension material for those who own or manage lands which support SWLS. Beginning in 2007, the CDC provided maps showing the general locations of SWLS and several other plant species-at-risk in roadside ditches to two rural municipalities, along with identification guides and management recommendations. The CDC plans to extend this program to include other municipalities.

In 2009, the CDC initiated the production of a Landowner Management Summary document which is specifically targeted to landowners of SWLS sites. This document includes information on threats and management recommendations. Similar documents are planned or under production for other species-at-risk.

ACKNOWLEDGEMENTS

The following organizations provided funding and/or information for this project: Critical Wildlife Habitat Program, Environment Canada (Habitat Stewardship Program), Manitoba Habitat Heritage Corporation, Manitoba Conservation, NatureServe, and Special Conservation Fund.

Manitoba Conservation Data Centre
Box 24, 200 Saulteaux Crescent
Winnipeg, MB R3J 3W3
http://web2.gov.mb.ca/conservation/cdc/

Manitoba

Figure 4. Poster presented at the 9th Prairie Conservation and Endangered Species Conference.

Western Silvery Aster (*Symphyotrichum sericeum*)

Canada's *Species At Risk Act*: Threatened
Manitoba's *Endangered Species Act*: Threatened
NatureServe Status: G5, N2, S2S3

In Manitoba Western silvery aster (WSA) is known from three main areas: northeast of Winnipeg (especially in and around Birds Hill Provincial Park), near Richer, and the area south of St. Pierre to the United States border.

The focus of 2009 surveys was the area in and around Birds Hill Provincial Park. A number of known sites in the park were visited and mapped in greater detail. Many of the sites in the park are small and tend to have dense grass cover, but at least one is very large both in area (approximately 29 ha) and number of stems (thousands of stems in 2009). Western silvery aster was also found in a number of road allowances south of the park. The species is known from a number of private land parcels in this area, but most of these have not been adequately surveyed to determine areal extent or number of plants. Gravel extraction south of the park is a potential threat to the species. The development of best practice guidelines for landowners and gravel pit operators should be prioritized in order to preserve these vulnerable populations. The occurrences near Beausejour and Richer were also briefly surveyed and appeared to be in conditions similar to past years.

As in past years, the CDC provided maps showing right-of-way occurrences of WSA to two rural municipalities to assist with the management of these populations.

Figure 5. Western silvery aster near Richer.

Lepidoptera Surveys

Background

A number of rare butterfly and moth species occur in the mixed grass and sandhill prairie areas of southwestern Manitoba. The CDC surveyed for eight of these species (three butterflies and five moths) in 2009 (Table 3).

Table 3. Lepidoptera species surveyed for by the Manitoba CDC in 2009.

Scientific Name	Common Name	Status Rank	COSEWIC[1] status	SARA[2] status	ESA[3] status
Hesperia dacotae	Dakota skipper	S2S3	Threatened	Threatened	Threatened
Hesperia ottoe	Ottoe skipper	S1	Endangered	Endangered	Threatened
Hesperia uncas	Uncas skipper	S1S2	none	none	Endangered
Schinia avemensis	Gold-edged gem	S1	Endangered	Endangered	none
Schinia bimatris	White flower moth	S1	Endangered	Endangered	none
Schinia verna	Verna's flower moth	S1	Threatened	Threatened	none
Copablepharon longipenne	Dusky dune moth	S1	Endangered	Endangered	none
Copablepharon grandis	Pale yellow dune moth	S1	Special Concern	Special Concern	none

[1]Committee On the Status of Endangered Wildlife In Canada
[2]Canada's *Species At Risk Act*
[3]Manitoba's *Endangered Species Act*

Dakota skippers (Figure 6) tend to prefer mesic prairies and are found in the south Interlake, south of Oak Lake in the southwest, and in the vicinity of the Tall Grass Prairie Preserve in the southeast (although recent surveys have not found them at this location) (COSEWIC 2003). Ottoe skippers (Figure 6) are a mixed-grass prairie species and known historically from the area around Spruce Woods Provincial Park (SWPP) and CFB Shilo (Klassen *et al*. 1989). The species has not been observed in Manitoba since the late 1980's (COSEWIC 2005a). Recent surveys for this species in SWPP and on the military base did not result in new records (Westwood & Friesen 2007). Uncas skippers (Figure 6) prefer dry prairie areas and most Manitoba records are from the Carberry area (Klassen *et al*. 1989).

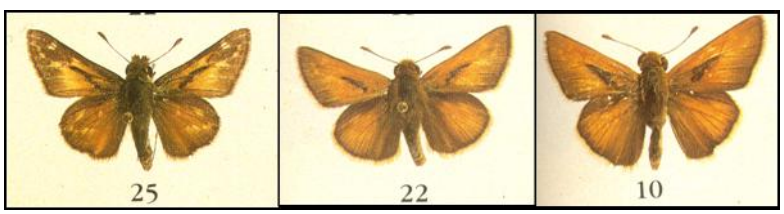


Figure 6. Specimen photographs of skipper species surveyed for by the CDC in 2009. From left to right: male Uncas Skipper, male Dakota Skipper, male Ottoe Skipper. Photos © The Manitoba Museum, Winnipeg, MB, used with permission.

The moth species listed in Table 3 all require open sand habitat, such as sand dunes and blowouts, or other sparsely vegetated sandy areas. All Manitoba records for these species are from the area in and around SWPP and CFB Shilo (COSEWIC 2005b; COSEWIC 2005c; COSEWIC 2006; COSEWIC 2007a; COSEWIC 2007b). Other than Verna's flower moth, all of these species have been confirmed present in Spirit Sands area of SWPP within the last 10 years (COSEWIC 2005b; COSEWIC 2005c; COSEWIC 2006; COSEWIC 2007a; COSEWIC 2007b; Westwood & Friesen 2007). Verna's flower moth was last collected in Manitoba in 1980 (COSEWIC 2005c). The two dune moths are nocturnal (COSEWIC 2007a; COSEWIC 2007b) while the Gold-edged gem and Verna's flower moth are diurnal (ie: day-flying) (COSEWIC 2005c; COSEWIC 2006). The White flower moth flies both during the day and at night (COSEWIC 2005b; Westwood & Friesen 2007).

CDC Surveys

The CDC conducted surveys for these species between June 22 and August 6, 2009; this period has considerable overlap with the flight periods of these species (COSEWIC 2003; COSEWIC 2005a; COSEWIC 2005b; COSEWIC 2006; COSEWIC 2007a; COSEWIC 2007b; Klassen *et al*. 1989) other than Verna's flower moth, the flight period of which may have ended prior to the surveys (COSEWIC 2005c).

Nineteen mixed grass and sandhill prairie sites in southwest and south-central Manitoba were selected for surveys (Figure 7). Factors influencing site selection included land use, the presence of Endangered or Threatened plant species, proximity to known occurrences of the target species, soil characteristics, and plant community composition using data from the Mixed Grass Prairie Inventory Project. Protected plant species known to occur in the study area include Western spiderwort (*Tradescantia occidentalis*), Hairy prairie clover (*Dalea villosa*), and Smooth goosefoot (*Chenopodium subglabrum*). Ten of the sites were on private land and nine were on public land (usually a Wildlife Management Area). Sites were visited approximately every two weeks during the survey period.

The skippers and diurnal moth species were collected in the field by CDC staff using nets. Two types of ultra-violet light traps (Luminoc© and bucket traps) were used to collect nocturnal moth species. The bucket trap was used on eight nights and at four sites. The Luminoc© traps were placed in the field at 3 sites in mid-July and operated until the end of the survey period. Light traps were placed in areas with at least some open and/or very sparsely vegetated sand at sites in the sandhill areas around Lauder, Routledge, Portage, and Treesbank (near CFB Shilo).

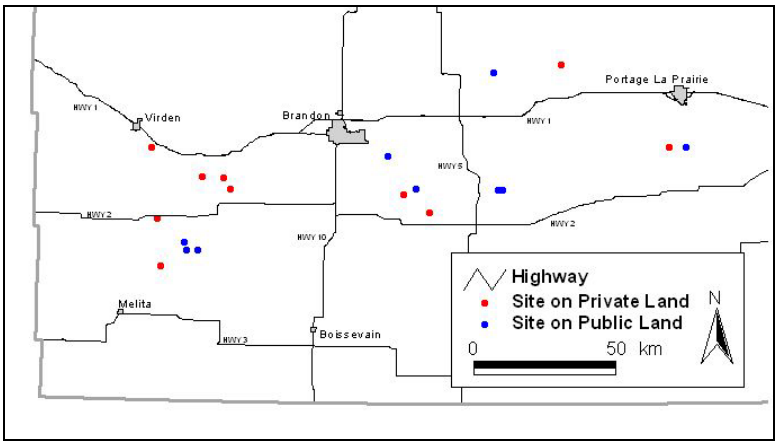


Figure 7. Map showing Lepidoptera survey sites in southern Manitoba.

Skippers are very difficult to identify, so individuals caught in the field needed to be spread and pinned in the lab and examined by a specialist. The same is true of four of the five moth species (the White flower moth is not easily confused with other Canadian species). All skipper and moth specimens have been given to a specialist and confirmation of their identities is expected in the near future. A number of Hairy prairie clover (*Dalea villosa* ssp. *villosa*) and Western spiderwort (*Tradescantia occidentalis*) occurrences were updated while conducting Lepidoptera surveys at several sandhill prairie sites.

Other Surveys

Steeprock

In 2008 the CDC received reports of rare species such as Leafy musineon (*Musineon divaricatum*; S2) and Plains cymopterus (*Cypmopterus acaulis*; S2S3) at a site near the town of Steeprock on Lake Manitoba. The site consists of limestone cliffs immediately adjacent to the lake (Figure 8). A CDC survey of the site on May 22, 2009 revealed that what had been reported as Leafy musineon was actually Hairy-fruited parsley (*Lomatium foeniculaceum*; S3), and what had been reported as Plains cymopteris was determined to be Long-fruited parsley (*Lomatium macrocarpum*; S3). The plants at the site were hairy, which is characteristic of the *Lomatium* species but not *M. divaricatum* or *C. acaulis* (Figure 9).

Figure 8. Habitat of Hairy-fruited parsley at Steeprock, MB.

Figure 9. Hairy-fruited parsley at Steeprock, MB. Inset: The particularly hairy leaves of one specimen.

Western Ironweed

Western ironweed (*Vernonia facsiculata* ssp. *corymbose*) is very rare provincially (S1) and nationally (N1). Surveys by CDC staff in 2006 were unable to relocate historic occurrences of this species, but did find several previously unknown sites along the Rat River near Otterburne and Ste. Agathe (Foster & Reimer 2007). On July 16, 2009 CDC staff revisited the site near Ste. Agathe and found hundreds of stems. A new site consisting of several clumps was discovered two miles south of the Ste. Agathe site. On July 30, CDC staff canoed the Rat River from Otterburne to the new site south of Ste. Agathe. Ironweed was present along the banks the entire stretch, but was most abundant for the first half of the trip (Figure 10). Future surveys are recommended along the Rat River, both upriver from Otterburne and between the new Ste. Agathe site and the Red River. Other waterways in this area should also be surveyed.

Figure 10. Western ironweed on the banks of the Rat River near Otterburne. Inset: Western ironweed inflorescence.

Rare Ferns

Two locations were surveyed for a variety of rare ferns in 2009. The surveys were conducted with the help of Dr. Richard Staniforth.

The only known Manitoba occurrence of Prairie moonwort (*Boytrichium campestre*) was visited in spring. This occurrence consists of a single plant in Birds Hill Provincial Park which was first discovered by Dr. Staniforth in 2005 and reappeared each year through 2008. CDC staff, Jessica Elliott of Parks Branch, and Dr. Staniforth visited the site on May 28 and were unable to relocate the plant. Subsequent surveys by Dr. Staniforth were also unsuccessful.

A Northern adder's-tongue (*Ophioglossum pusillum)* occurrence near Rennie in Whiteshell Provincial Park was surveyed in late August. It is one of only three known occurrences in Manitoba. The known extent of this site, which is in a roadside ditch, was considerably expanded following surveys in 2008, and was again extended along the road following surveys in 2009. Given the amount of potential habitat in this area, future surveys for new occurrences should be systematic and based on soil characteristics and plant community type.

The moonwort (*Botrychium*) plants discovered last year near the Northern adder's-tongue site were confirmed to be the uncommon *B. multifidum* (S3) rather than very rare *B. oneidense* (S1?).

Partnerships

One of the CDC's partners in 2009 was the Nature Conservancy of Canada (NCC). The CDC provided NCC staff with a tour of several Agalinis sites in the south Interlake. The goal was to demonstrate field identification techniques and provide background information to NCC staff to assist them in their Agalinis survey work. The CDC remains a provider of rare species data to NCC to assist them in conservation planning.

For the Lepidoptera surveys conducted in 2009, the CDC partnered with the Centre for Forest Interdisciplinary Research (C-FIR) at the University of Winnipeg. Dr. Richard Westwood of C-FIR provided background information for several Lepidoptera species, trapping equipment, and specimen pinning and identification assistance.

Literature Cited

COSEWIC. 2003. COSEWIC assessment and status report on the Dakota skipper *Hesperia dacotae* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 35 pp.

COSEWIC. 2005a. COSEWIC assessment and status report on the Ottoe skipper *Hesperia ottoe* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 26 pp.

COSEWIC. 2005b. COSEWIC assessment and status report on the White Flower Moth *Schinia bimatris* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 20 pp.

COSEWIC. 2005c. COSEWIC assessment and status report on the Verna's Flower Moth *Schinia verna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 19 pp.

COSEWIC. 2006. COSEWIC assessment and status report on the Gold-edged Gem *Schinia avemensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 26 pp.

COSEWIC. 2007a. COSEWIC assessment and status report on the Pale Yellow Dune Moth *Copablepharon grandis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 28 pp.

COSEWIC. 2007b. COSEWIC assessment and status report on the Dusky Dune Moth *Copablepharon longipenne* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 33 pp.

COSEWIC. 2008. Committee on the Status of Endangered Wildlife in Canada. Assessment Process and Criteria. Available at: http://www.cosewic.gc.ca/eng/sct0/assessment_process_e.cfm (accessed March 2010).

Environment Canada. 2007. Canadian Wildlife Service, Habitat Stewardship Program for Species at Risk. Available at: http://www.cws-scf.ec.gc.ca/hsp-pih/default.asp?lang=En&n=59BF488F-1 (accessed March 2010).

Foster, C. 2008. Rare plant surveys and stewardship activities by the Manitoba Conservation Data Centre, 2007. MS Report 08-01. Manitoba Conservation Data Centre, Winnipeg, Manitoba. 35 pp.

Foster, C. and Reimer, E. 2007. Rare plant surveys by the Manitoba Conservation Data

Centre, 2006. MS Report 07-01. Manitoba Conservation Data Centre, Winnipeg, Manitoba. 53 pp.

Klassen, P.; Westwood, R.; Preston, B. and McKillop, B. 1989. The Butterflies of Manitoba. Manitoba Museum of Man and Nature. Winnipeg, Manitoba.

Krause Danielsen, A. and Friesen, C. 2009. Rare plant surveys and stewardship activities by the Manitoba Conservation Data Centre, 2008. Report No. 2008-04. Manitoba Conservation Data Centre, Winnipeg, Manitoba. 31 pp.

NatureServe. 2008. Natural Heritage Methodology. Available at: http://www.natureserve.org/prodServices/heritagemethodology.jsp (accessed March 2010).

Westwood, R. and Friesen, C. 2007. Ottoe skipper (*Hesperia ottoe*) and White flower moth (*Schinia bimatris*) surveys on CFB Shilo and Spruce Woods Provincial Park, Manitoba. Final report to the Canadian Wildlife Service. University of Winnipeg, Winnipeg, Manitoba.