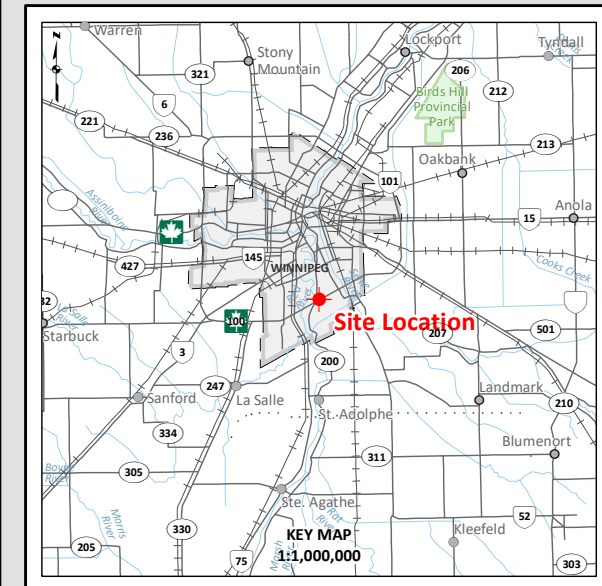


APPENDIX

A FIGURES





Legend

- Project Study Area
- Interchange Alignment
- Natural Area**
- Oak
- Riverbottom
- Wetland

Reference: City of Winnipeg, MLI, NRCAN, WSP

Draft

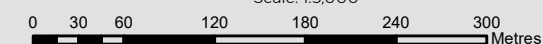


Targeted Species at Risk (SAR) Surveys

Figure 1 - Study Area

**OE PTH 100 and PR 200 (St. Mary's Road)
Winnipeg, Manitoba**

Scale: 1:5,000

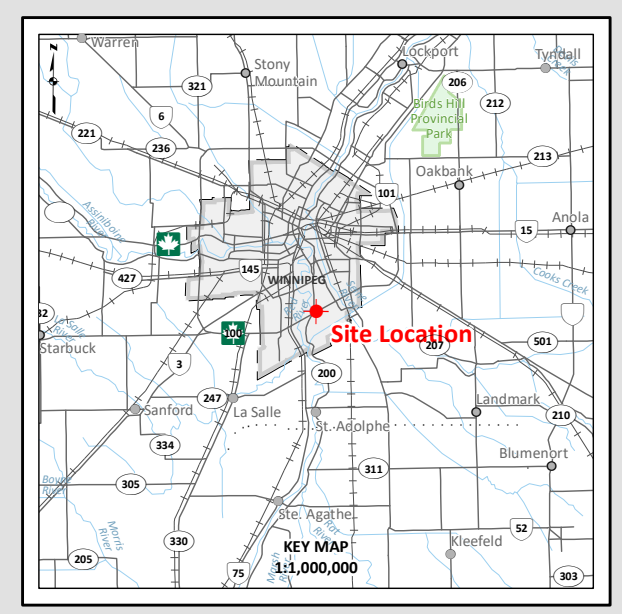


Universal Transverse Mercator (Zone 14)
North American Datum (1983)



Report By: BM
Drawn by: JH
Reviewed By: DS
WSP Job #: 211-00229-00
Date: July 14, 2021
Office: Winnipeg

Notes: Imagery Source: ESRI Imagery Service [2020]



- Legend**
- Project Study Area
 - Interchange Alignment
 - Transect
 - Transect Start/End Point
- Natural Area**
- Oak
 - Riverbottom
 - Wetland

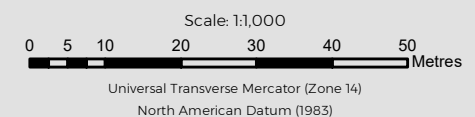
Reference: City of Winnipeg, MLI, NRCAN, WSP

Draft



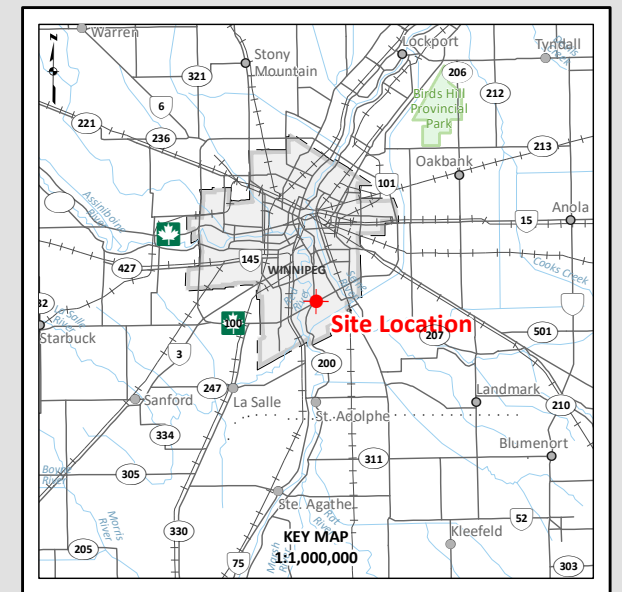
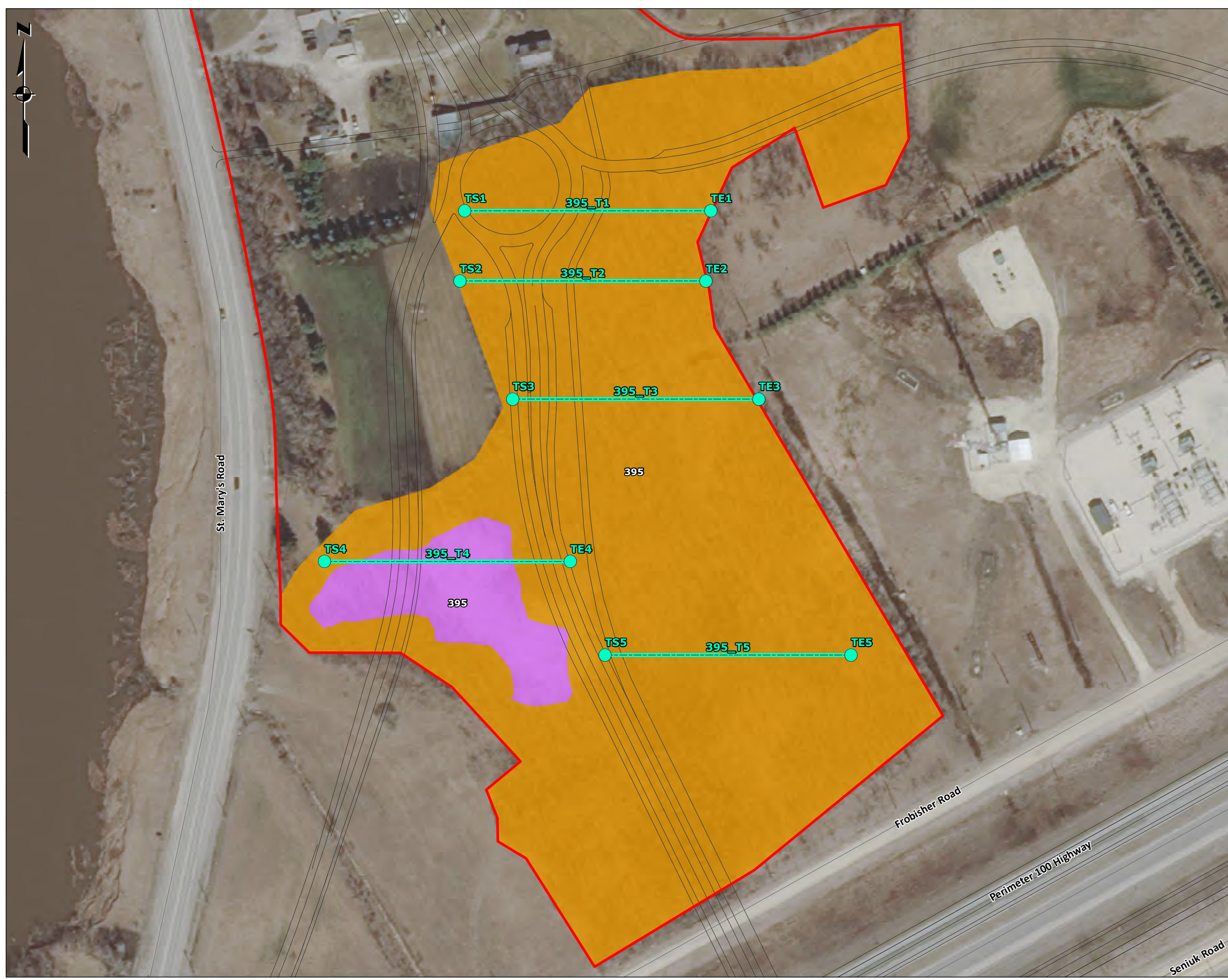
Targeted Species at Risk (SAR) Surveys

Figure 2A - Directed Rare Plant Survey
OE PTH 100 and PR 200 (St. Mary's Road)
Winnipeg, Manitoba



wsp Report By: BM WSP Job #: 211-00229-00
 Drawn by: JH Date: July 14, 2021
 Reviewed By: DS Office: Winnipeg

Notes: Imagery Source: ESRI Imagery Service [2020]



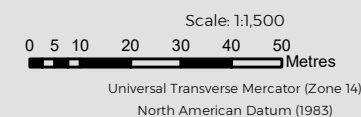
- Legend**
- Project Study Area
 - Interchange Alignment
 - Transect
 - Transect Start/End Point
- Natural Area**
- Oak
 - Wetland
- Reference: City of Winnipeg, MLI, NRCAN, WSP*

Draft



Targeted Species at Risk (SAR) Surveys

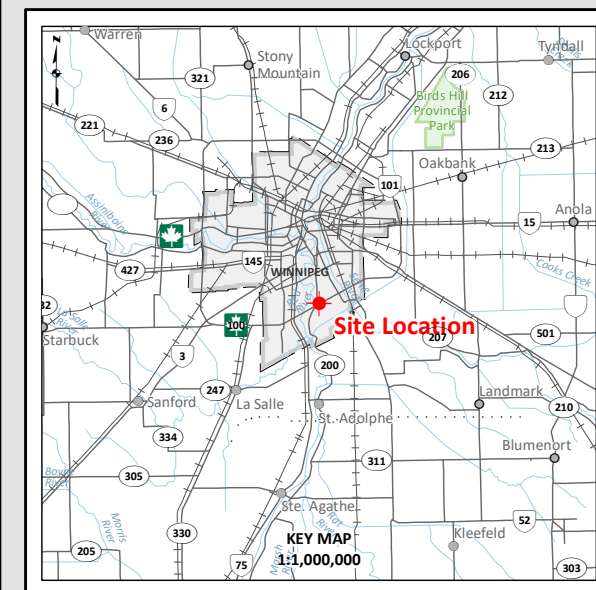
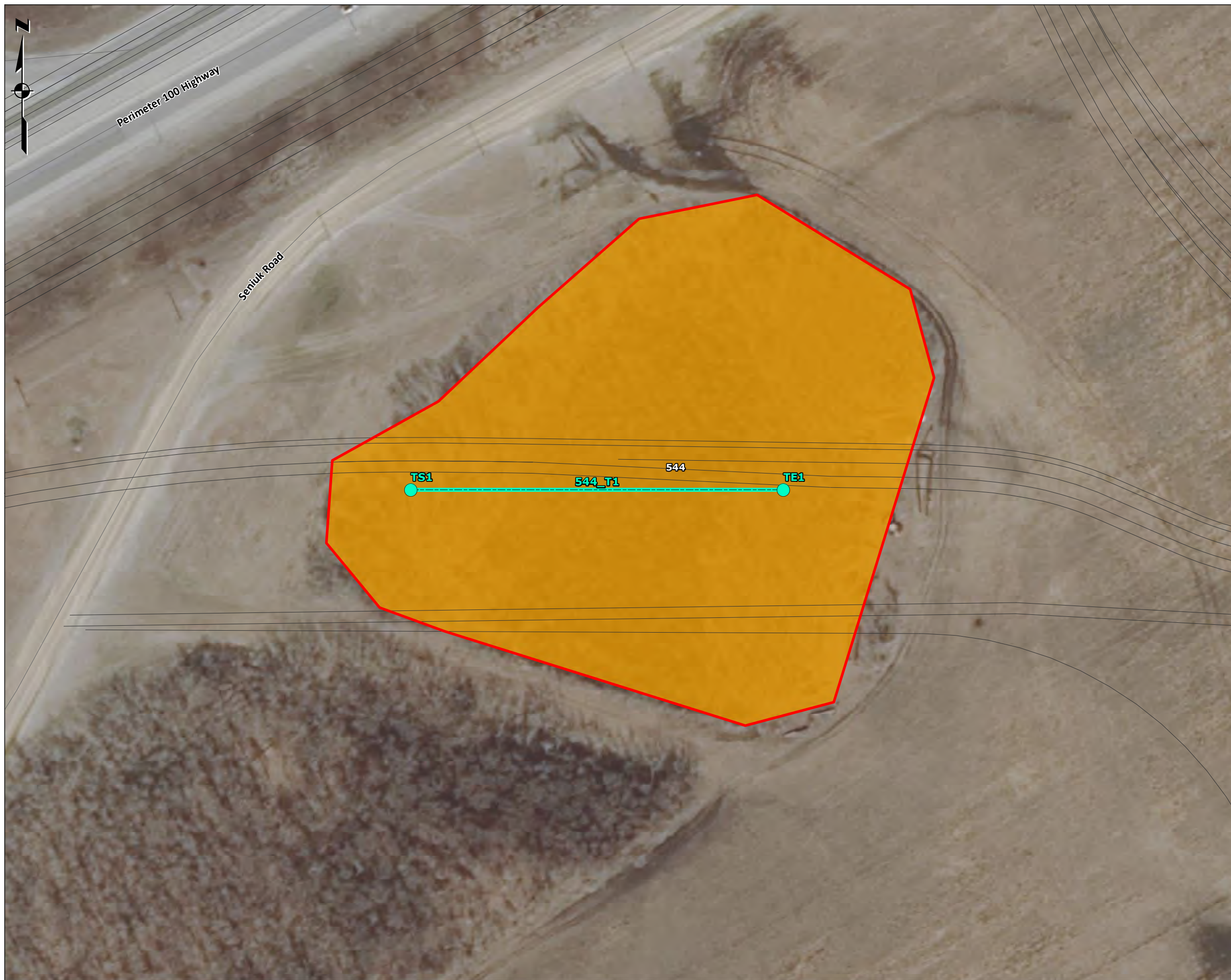
Figure 2B - Directed Rare Plant Survey
OE PTH 100 and PR 200 (St. Mary's Road)
Winnipeg, Manitoba



Report By: BM
 Drawn by: JH
 Reviewed By: DS

WSP Job #: 211-00229-00
 Date: July 14, 2021
 Office: Winnipeg

Notes: Imagery Source: ESRI Imagery Service [2020]



Legend

- Project Study Area
- Interchange Alignment
- Transect
- Transect Start/End Point
- Natural Area**
- Oak

Reference: City of Winnipeg, MLI, NRCAN, WSP

Draft

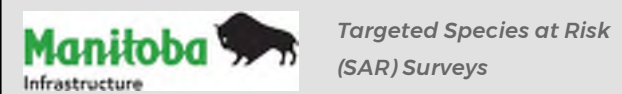
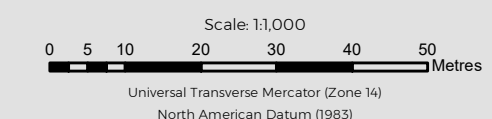


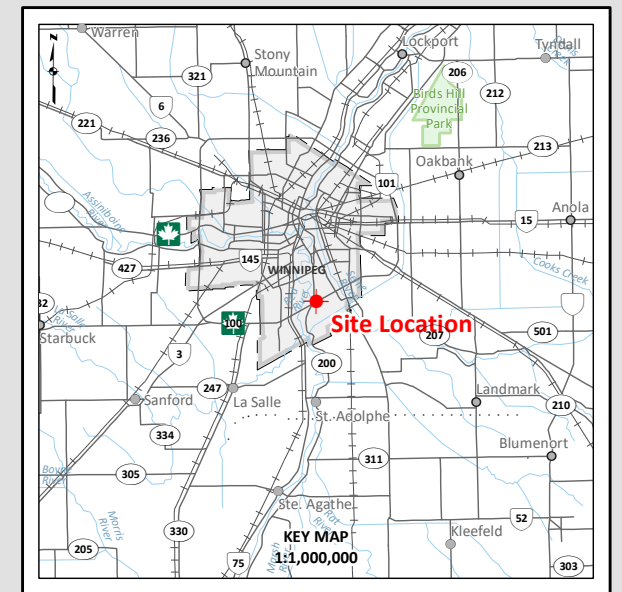
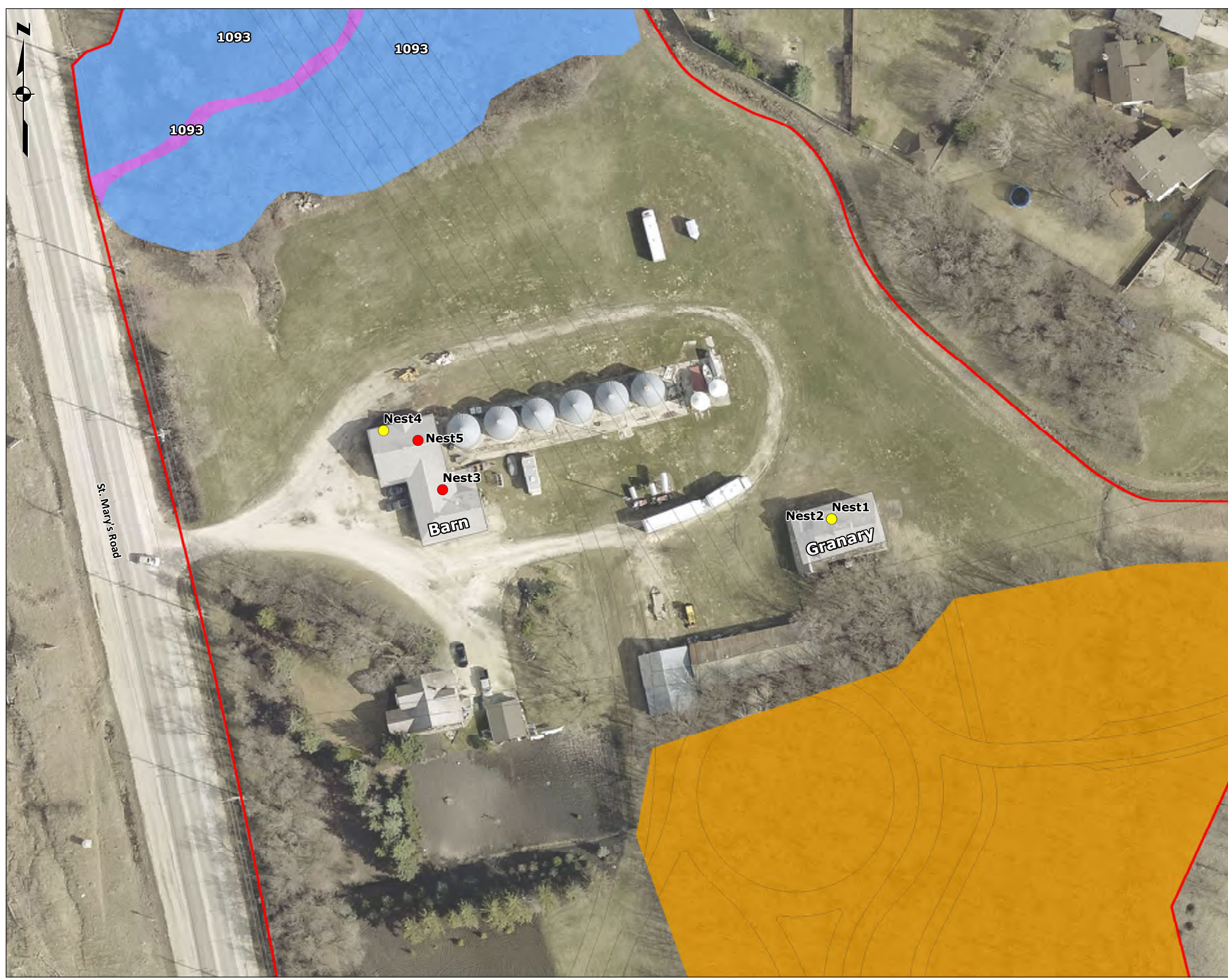
Figure 2C - Directed Rare Plant Survey
OE PTH 100 and PR 200 (St. Mary's Road)
Winnipeg, Manitoba



wsp Report By: BM WSP Job #: 211-00229-00
 Drawn by: JH Date: July 14, 2021
 Reviewed By: DS Office: Winnipeg

Notes: Imagery Source: ESRI Imagery Service [2020]

Figure 3 removed from report to protect location of active Swainson's Hawk Nest.



- Legend**
- Project Study Area
 - Building
 - Interchange Alignment
- Barn Swallow Survey**
- Active
 - Not Active
- Natural Area**
- Oak
 - Riverbottom
 - Wetland

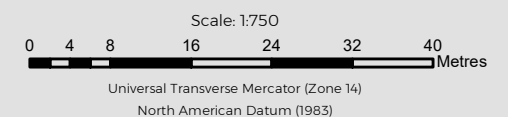
Reference: City of Winnipeg, MLI, NRCAN, WSP

Draft



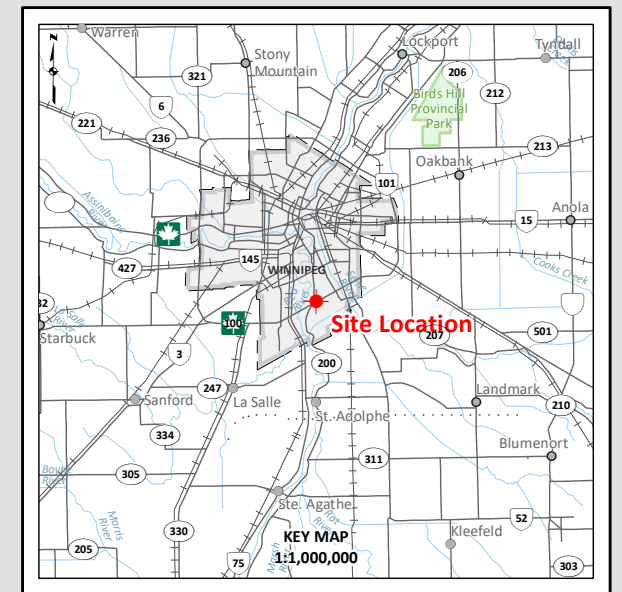
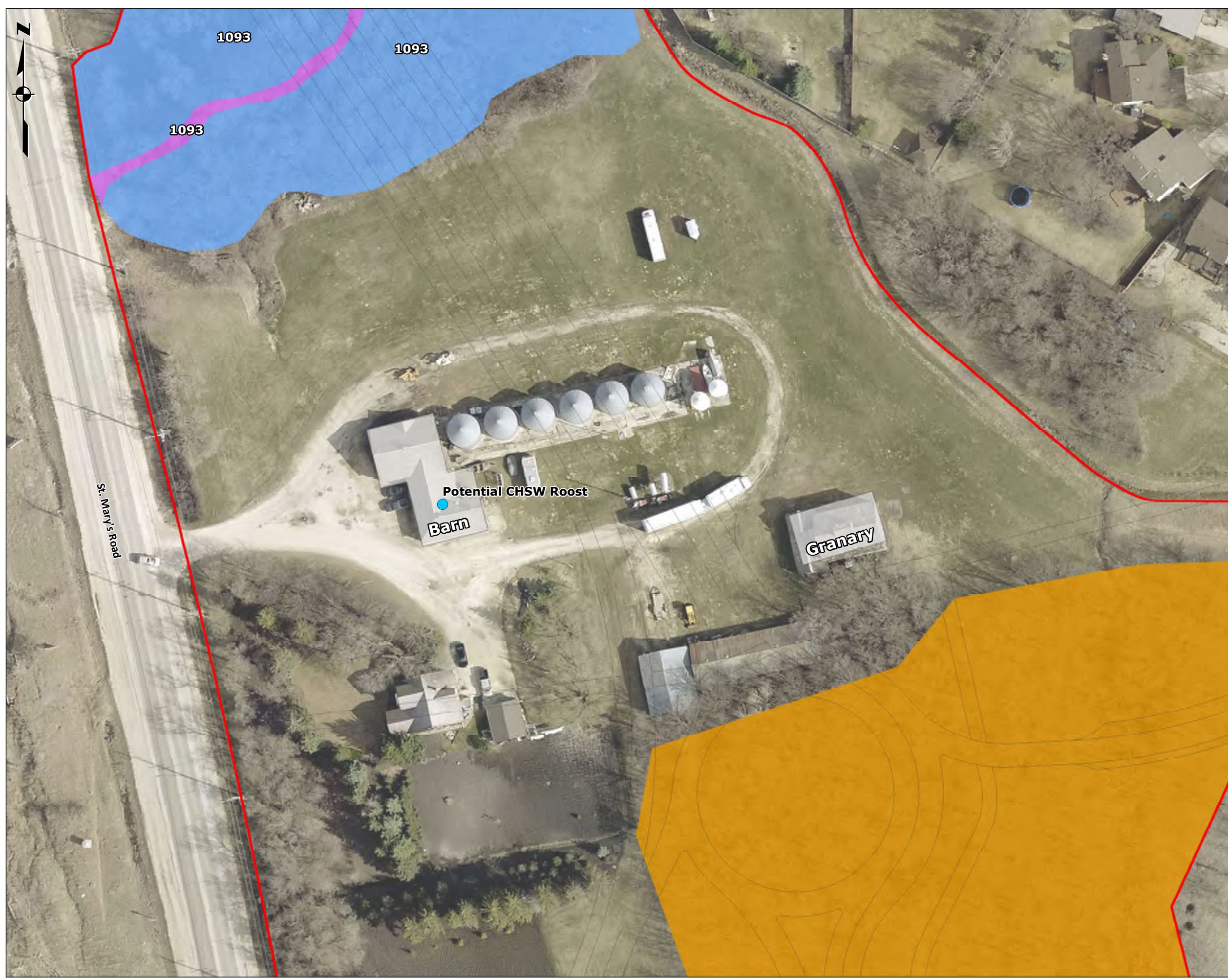
Targeted Species at Risk (SAR) Surveys

Figure 4 - Barn Swallow Survey
 OE PTH 100 and PR 200 (St. Mary's Road)
 Winnipeg, Manitoba



wsp Report By: BM WSP Job #: 211-00229-00
 Drawn by: JH Date: July 14, 2021
 Reviewed By: DS Office: Winnipeg

Notes: Imagery Source: ESRI Imagery Service [2020]



Legend

- Project Study Area
- Building
- Interchange Alignment

Chimney Swift Survey

- Not Active

Natural Area

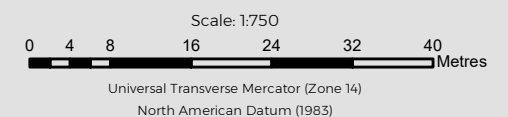
- Oak
- Riverbottom
- Wetland

Reference: City of Winnipeg, MLI, NRCAN, WSP

Draft

Manitoba Infrastructure *Targeted Species at Risk (SAR) Surveys*

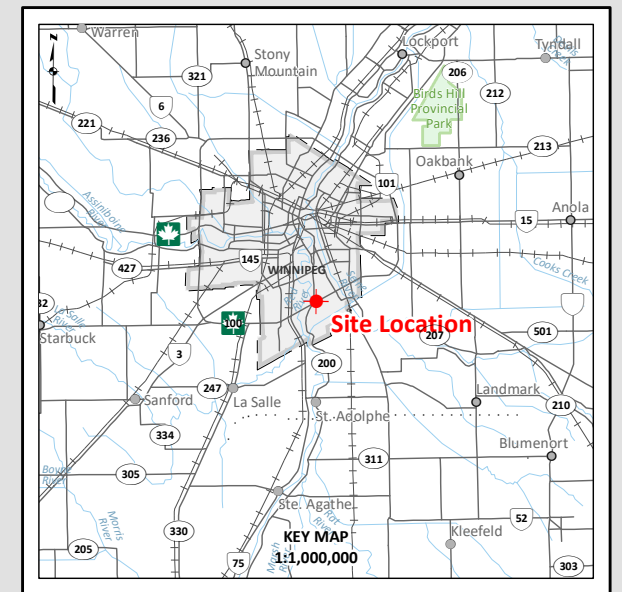
Figure 5 - Chimney Swift Survey
OE PTH 100 and PR 200 (St. Mary's Road)
Winnipeg, Manitoba



wsp

Report By: BM WSP Job #: 211-00229-00
 Drawn by: JH Date: July 14, 2021
 Reviewed By: DS Office: Winnipeg

Notes: Imagery Source: ESRI Imagery Service [2020]



- Legend**
- Project Study Area
 - Building
 - Interchange Alignment
- Bat Survey**
- ARU Location
 - Building (Potential Roost Site)
- Natural Area**
- Oak
 - Riverbottom
 - Wetland

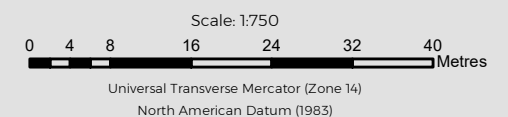
Reference: City of Winnipeg, MLI, NRCAN, WSP

Draft



Targeted Species at Risk (SAR) Surveys

Figure 6 - Bat Survey
OE PTH 100 and PR 200 (St. Mary's Road)
Winnipeg, Manitoba



wsp Report By: BM WSP Job #: 211-00229-00
 Drawn by: JH Date: July 14, 2021
 Reviewed By: DS Office: Winnipeg

Notes: Imagery Source: ESRI Imagery Service [2020]

APPENDIX

B PHOTOGRAPHS



June 1, 2021



Photograph 1 – 1093_T1 – Early Rare Survey
Looking east at the dense Caragana at the western end of the transect.

June 1, 2021



Photograph 2 – 395_T1 – Early Rare Survey
Looking west part way through the transect.

June 1, 2021



Photograph 3 – 395_T2 – Early Rare Survey

Looking west at a typical site located in natural area 395. Sparse ground cover.

June 1, 2021



Photograph 4 – 395_T3 – Early Rare Survey

Forest floor of the transect with a sparser canopy allowing for more diverse forbs/graminoids.

June 1, 2021



Photograph 5 – 395_T4 – Early Rare Survey
Looking west across Class II wetland. Very dry at the time of the site visit.

June 1, 2021



Photograph 6 – 395_T5 – Early Rare Survey
Central portion of the transect, looking upwards at the forest canopy.

June 1, 2021



Photograph 7 – 544_T1 – Early Rare Survey

Looking south at a typical site located centrally in natural area 544. Little ground cover and extensive canopy.

July 13, 2021



Photograph 8 – 1093_T1 – Late Rare Survey

Looking east at central forest portion, note dry swale in centre of photo.

July 13, 2021



Photograph 9 – 395_T1 – Late Rare Survey

Milkweed at eastern edge of transect where forest transitions to grasses near the Hydro substation.

July 13, 2021



Photograph 10 – 395_T2 – Late Rare Survey

Looking west from the center of the transect.

July 13, 2021



Photograph 11 – 395_T3 – Late Rare Survey
Looking east at center of transect.

July 13, 2021



Photograph 12 – 395_T4 – Late Rare Survey
Looking west across Class II wetland. Still very dry.

July 13, 2021



Photograph 13 – 395_T5 – Late Rare Survey
Looking east at the western edge of the transect.

July 13, 2021



Photograph 14 – 544_T1 – Late Rare Survey
Looking east at center of transect.

June 18, 2021



Photograph 15 – BASW Survey – 2433 St. Mary's Road
Active Nest 3 located on east side of barn under the eaves. Young-of-year present.

June 18, 2021



Photograph 16 – BASW Survey – 2433 St. Mary's Road
Looking at Nest 1 and Nest 2, non-active nests present in the granary.

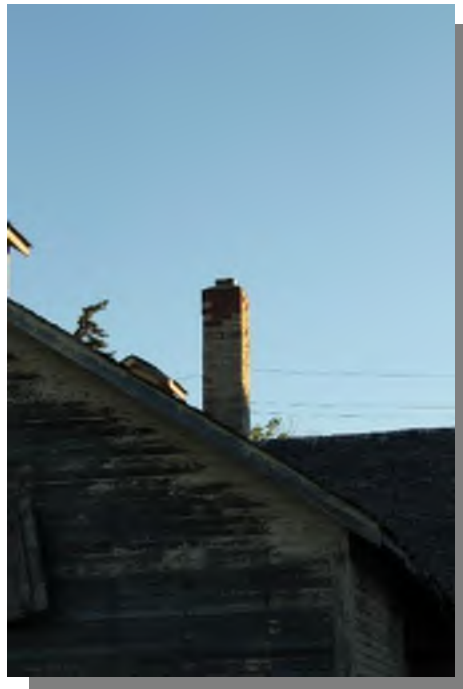
July 13, 2021



Photograph 17 –2433 St. Mary's Road

Active barn swallow nest (Nest 5) located inside the barn in the hay loft located centrally in photograph.

June 14, 2021



Photograph 18 –2433 St. Mary's Road

Masonry chimney present atop barn building. Potential for chimney swift roosting site.

May 31, 2021



Photograph 19 – 2433 St. Mary's Road

Looking south at the old granary building at 2433 St. Mary's Road during CHSW survey. Potential bat roost location.

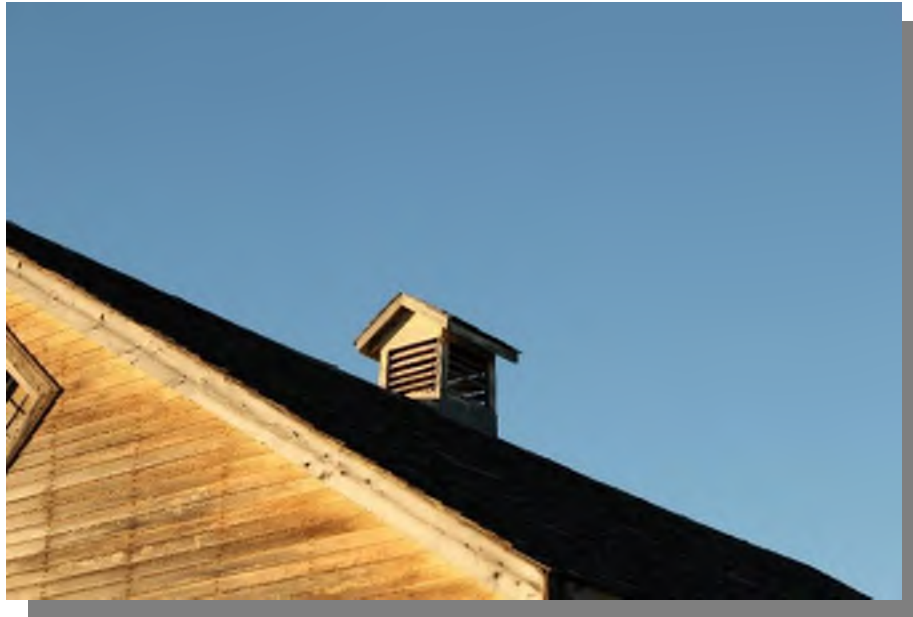
May 31, 2021



Photograph 20 – 2433 St. Mary's Road

Looking west at the old barn building at 2433 St. Mary's Road during CHSW survey. Note masonry chimney at center. Potential bat roost location.

June 14, 2021



Photograph 21 – 2433 St. Mary's Road

Cupola structure on roof of barn building for ventilation. Potential bat roosting location. Chicken wire present on inside.

June 14, 2021



Photograph 22 – 2433 St. Mary's Road

Looking northward at granary building at location of Bat 1 ARU attached to Manitoba maple.

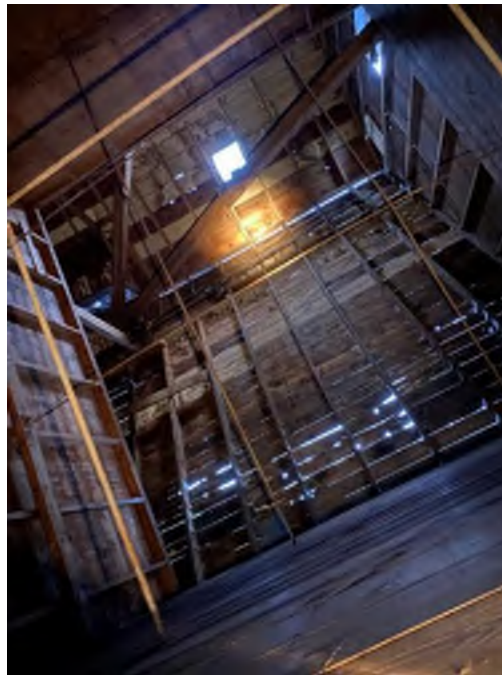
June 14, 2021



Photograph 23 – 2433 St. Mary's Road

Looking south from gravel driveway at location of Bat 2 ARU attached to an old winchable bird feeder.

July 13, 2021



Photograph 24 – 2433 St. Mary's Road

Looking up at the interior ceiling of the granary building to assess for roosting bats at dusk.

July 13, 2021



Photograph 25 – 2433 St. Mary's Road

Looking through old hay loft door of barn building to assess for roosting bats at dusk.

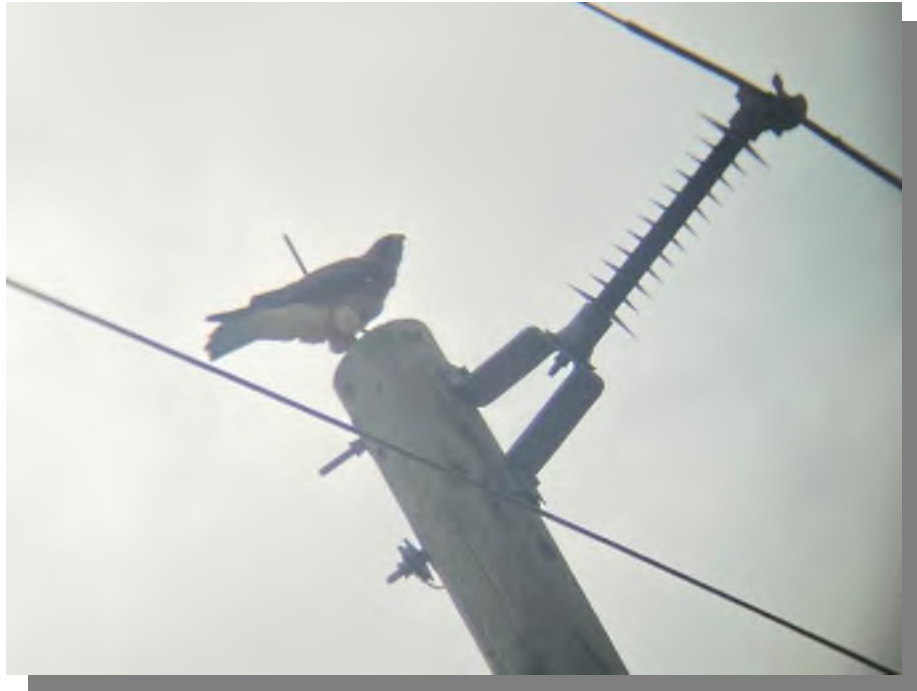
May 19, 2021



Photograph 26 – Nest 3 – Stick-nest Survey - Natural Area 395

Looking north at the active Swainson's hawk nest at the top of an oak tree.

May 19, 2021



Photograph 27 – Nest 3 – Stick-nest Survey - Natural Area 395
Swainson's hawk perched atop distribution line nearby nest.

APPENDIX

C SURVEY SUMMARIES



Table 1. Site information for the rare plant survey transects

Site ID	Zone	Easting	Northing	Slope	Surface Expression	MB FEC	Stewart & Kantrud	Moisture	Nutrient	Drainage
1093_T1	14U	635681	5517896	1-5%	Bisected	V3		Mesic	Rich	Imperfect
395_T1	14U	635790	5517721	<1%	Level	V3		Mesic	Rich	Imperfect
395_T2	14U	635788	5517693	<1%	Level	V3		Mesic	Rich	Imperfect
395_T3	14U	635809	5517645	<1%	Level	V3		Mesic	Medium	Imperfect
395_T4	14U	635833	5517579	<1%	Depressional		Class I	Mesic	Rich	Imperfect
395_T5	14U	635847	5517541	<1%	Level	V3		Mesic	Rich	Imperfect
544_T1	14U	635788	5517162	<1%	Level	V3		Mesic	Rich	Imperfect

Project Name: OE PTH 100 at PR 200
Project Agency: Manitoba Infrastructure
Project Coordinator: WSP Canada Inc.
Location Name: 2433 St. Mary's Road **Location UTM:** 14U 635765 E; 5517798 N
Location Description: Historic Dairy Farm; old wooden farm structures; grain bins
 Grassed yardsite surrounded by deciduous trees with proximity to the Red River
Region: Manitoba - Prairies Ecozone
Natural Region(s): Lake Manitoba Plain Ecoregion
Natural Subregion(s): Winnipeg Ecodistrict

Survey Period: **Start Date** 26-May-21 **End Date** 08-Jul-21
Survey Type: Visual survey
Target Taxa: Barn swallow (*Hirundo rustico*)
Survey Objectives: Determine whether barn swallows are using on-site structures for breeding purposes
 Determine the number of breeding pairs, active nests and locations

Session Label	Date	Surveyors	Time of Observation	Cloud Cover (%)	Wind (Beaufort)	Precip	Temp (C)
BASW1	26-May-21	B.Moons	9:00	4	3	None	3
BASW2	18-Jun-21	B.Moons	11:00	3	5	None	20
BASW3	08-Jul-21	B.Moons	9:00	0	2	None	20

	BASW1	BASW2	BASW3
	4 (2 pair)	4 (2 pair)	4 (2 pair)
	4	4	5
	1	2	2

Active Nests	Location	UTM	Comments
Nest 3	Barn	14 U; 635738 E; 5517791 N	With young, adults observed feeding young; Located underneath the eaves on east side of barn
Nest 5	Barn	14 U; 635733 E; 5517805 N	Presumed to be inside of barn in hay loft as adults carrying food observed flying in and out of open window in hay loft

Non-active Nests	Location	UTM	Comments
Nest 1	Granary	14 U; 635817 E; 5517788 N	Inside of main entrance of granary building; Deceased individual hanging out of nest
Nest 2	Granary	14 U; 635817 E; 5517788 N	Inside of main entrance of granary building; First two surveys appeared active as one individual visited it several times. No activity at the third visit and no evidence of use.
Nest 4	Barn	14 U; 635733 E; 5517805 N	Inside of barn on the north wall; Nest cup remnants present on rafters but appeared partially removed

Project Name: OE PTH 100 at PR 200
Project Agency: Manitoba Infrastructure
Project Coordinator: WSP Canada Inc.
Location Name: 2433 St. Mary's Road **Location UTM:** 14U 635765 E; 5517798 N
Location Description: Historic Dairy Farm; old wooden farm structures; grain bins
 Grassed yardsite surrounded by deciduous trees with proximity to the Red River
Region: Manitoba - Prairies Ecozone
Natural Region(s): Lake Manitoba Plain Ecoregion
Natural Subregion(s): Winnipeg Ecodistrict

Survey Period: **Start Date** 31-May-21 **End Date** 24-Jun-21
Survey Type: Visual roosting survey
Target Taxa: Chimney swift (*Chaetura pelagica*)
Survey Objectives: Determine if chimney swift are nesting or roosting within the masonry chimney of the old barn

Session Label	Start Date	End Date	Duration	Surveyors	Timing
CHSW1	31-May-21	31-May-21	57 min	B.Moons; D.Sahulka	Roosting Hour
CHSW2	14-Jun-21	14-Jun-21	1 hr 15 min	B.Moons; D.Sahulka	Roosting Hour
CHSW3	24-Jun-21	24-Jun-21	54 min	B.Moons	Roosting Hour

Session Label	Time of Observation	Cloud Cover (%)	Wind (Beaufort)	Precip	Start Temp (C)	Sunset Time	Time	Entry or Exit	No. of CHSW	Comments
CHSW1	20:57 to 21:54	0 - 24	1	None	20.7	21:27	-	-	0	None observed
CHSW2	21:00 to 22:15	0 - 24	1	None	20.7	21:27	-	-	0	None observed
CHSW3	21:11 to 22:05	25 - 50	0	None	20.7	21:27	-	-	0	None observed

Project Name: OE PTH 100 at PR 200
Project Agency: Manitoba Infrastructure
Project Coordinator: WSP Canada Inc.
Location Name: 2433 St. Mary's Road **Location UTM:** 14U 635765 E; 5517798 N
Location Description: Historic Dairy Farm; old wooden farm structures; grain bins
 Grassed yard site surrounded by deciduous trees with proximity to the Red River
Region: Manitoba - Prairies Ecozone
Natural Region(s): Lake Manitoba Plain Ecoregion
Natural Subregion(s): Winnipeg Ecodistrict

Survey Period: **Start Date** 10-Jun-21 **End Date** 13-Jul-21
Survey Type: Roost Count / Maternity Roost
Target Taxa: Little brown myotis (*Myotis lucifugus*) Norther myotis (*Myotis septentrionalis*)
Survey Objectives: Determine if any bat species are using the abandoned farm building for roosting or maternity roost colonies.
 Two on-site buildings identified as high potential for bat roosting.

Session Label	Start Date	End Date	Duration	Surveyors
Session 1, Night 1 (Bat 1)	10-Jun-21	10-Jun-21		B.Moons; D.Sahulka
Session 1, Night 2 (Bat 2)	14-Jun-21	14-Jun-21		B.Moons; D.Sahulka
Session 2, Night 1 (Bat 3)	24-Jun-21	24-Jun-21		B.Moons

Study Site Name	Study Site UTM	Location Description
Barn	14U: 635733 E; 5517792 N	Two storey barn; wood with cupola vents (mesh); some windows and holes present in siding
Granary	14U: 635818 E; 5517786 N	Granary building with old upper level silo for grain storage; wood; lots of holes and entry points

Habitat Description (dominant)					
Forest	Shrub	Herb	Aquatic	Barren	Other
Open Deciduous	Open Tall	Dry Graminoid	n/a	n/a	Farmyard

Roost Name Barn **Type** Building **Possible Use** Summer day roost; maternity roost; summer night roost

	Date	Time	Cloud Cover	Wind	Precip	Temp (C)	Sunset Time	Lunar Phase	Roost Emergence (#s)	Comments
Start	10-Jun-21	21:20	Mostly cloudy	4 km/ hr NNE	None	20.1	21:36	New moon	0	No bats observed during observation period. No guano observed inside barn.
End	10-Jun-21	22:00	Mostly cloudy	No change	None	19.2				
	Date	Time	Cloud Cover	Wind	Precip	Temp	Sunset Time	Lunar Phase	Roost Emergence (#s)	Comments
Start	14-Jun-21	21:10	Clear	2.6 km/h NE	None	23.1	21:38	Waxing Crescent	0	-
End	14-Jun-21	22:02	Clear	2.3 km/h NE	None	20.9				
	Date	Time	Cloud Cover	Wind	Precip	Temp	Sunset Time	Lunar Phase	Roost Emergence (#s)	Comments
Start	24-Jun-21	21:11	50% cover	Calm	None	24.5	21:41	Waning Crescent	0	-
End	24-Jun-21	22:05	50% cover	Calm	None	19				

Roost Name Granary **Type** Building **Possible Use** Summer day roost; maternity roost; summer night roost

	Date	Time	Cloud Cover	Wind	Precip	Temp	Sunset Time	Lunar Phase	Roost Emergence (#s)	Comments
Start	10-Jun-21	21:20	Mostly cloudy	4 km/ hr NNE	None	20.1	21:36	New moon	0	No bats observed during observation period. No guano observed inside granary.
End	10-Jun-21	22:00	Mostly cloudy	No change	None	19.2				
	Date	Time	Cloud Cover	Wind	Precip	Temp	Sunset Time	Lunar Phase	Roost Emergence (#s)	Comments
Start	14-Jun-21	21:10	Clear	2.6 km/h NE	None	23.1	21:38	Waxing Crescent	0	-
End	14-Jun-21	22:02	Clear	2.3 km/h NE	None	20.9				
	Date	Time	Cloud Cover	Wind	Precip	Temp	Sunset Time	Lunar Phase	Roost Emergence (#s)	Comments
Start	24-Jun-21	21:11	50% cover	Calm	None	24.5	21:41	Waning Crescent	0	-
End	24-Jun-21	22:05	50% cover	Calm	None	19				

Summary of Results from Manual Vetting of BAT ARU Data

Bat Species:

Big brown bat <i>(Eptesicus fuscus)</i> (S4/S5)	Eastern red bat <i>(Lasiurus borealis)</i> (S3B)	Hoary bat <i>(Lasiurus cinereus)</i> (S3B)	Silver-haired bat <i>(Lasionycteris noctivagans)</i> (S3/S4B)	Little brown myotis <i>(Myotis lucifugus)</i> (S2N/S5B)	Northern myotis <i>(Myotis septentrionalis)</i> (S3/S4N, S4B)
---	--	--	---	---	---

Verification Procedure:

A manual vetting process was completed for quality control of the Auto-ID function whereby an experienced WSP bat biologist reviewed and manually vetted the data. This involved comparison of known echolocation sonogram graphs to the sonogram data collected and analysed by the Kaleidoscope software. The vetting included:

- All the NoID were manually vetted;
- All autoID *Myotis* calls were manually vetted; and,
- Manually vetted all other calls starting with those with the smallest matching ratio until 25% of all sonograms (excluding noise) were reviewed.

Summary of BAT1 Automated Recording Unit (ARU) Data Vetted:

- 1698 recordings were made between June 10, 2021 and June 23, 2021.
- No Northern myotis or little brown myotis detected by ARU.

Of the 77 “No ID” detected by BAT1:

- 17 recordings were determined to be either “Noise” (4 recordings) or “No ID”.
- Two recordings were determined to be a *Myotis* species (either little brown or northern myotis; ID could not be verified 100%).
- One recording was determined to be silver-haired bat.
- Twenty-one were determined to be silver-haired bat.
- One recording was determined to be hoary bat.
- One recording was determined to be big brown or silver-haired bat or hoary bat (ID could not be verified 100%).
- Twenty-six were determined to be either silver-haired bat or big brown bat (ID could not be verified 100%).
- Eight were determined to be big brown bat.

Of the other recordings vetted (25% of recordings), the following was determined:

Vetting of little brown myotis recording (total of one of one recording vetted:

- One confirmed recording of little brown myotis.

Vetting of silver-haired bat recordings (total of 239 of 702 recordings vetted:

- 107 confirmed recordings of silver-haired bat.
- One recording identified as silver-haired was determined to be not a bat.
- 105 recordings of silver-haired bat, vetted to be either big brown bat or silver-haired bat (ID could not be verified 100%).

- 26 recordings of silver-haired bat, vetted to be big brown bat.

Vetting of hoary bat recordings (total of 58 of 357 recordings vetted):

- 38 hoary bat recordings vetted to be hoary bat.
- Two hoary bat recordings vetted to be noise.
- One hoary bat recording vetted to be No ID.
- 12 hoary bat recordings vetted to be silver-haired bat.
- Two hoary bat recordings vetted to be either hoary bat or silver-haired bat (ID could not be verified 100%).
- Two hoary bat recordings vetted to be either big brown bat or silver-haired bat (ID could not be verified 100%).
- One hoary bat recording vetted to be big brown bat.

Vetting of big brown bat recordings total of 13 of 15 recordings vetted):

- One big brown bat vetted to be big brown bat.
- Two big brown bat recordings vetted to be No ID.
- 10 big brown bat recordings vetted to be either big brown bat or silver-haired bat (ID could not be verified 100%).

Summary of BAT2 Automated Recording Unit (ARU) Data Vetted:

- 1656 recordings were made between June 10, 2021 and June 23, 2021.
- No Northern myotis or little brown myotis detected by ARU or manually vetted.

Of the 93 “No ID” detected by BAT1:

- Three recordings were vetted to be No ID.
- One recording was determined to be not a bat.
- Three recordings were determined to be silver-haired bat.
- Five were determined to be hoary bat.
- Two were determined to be either silver-haired bat or big brown bat (ID could not be verified 100%).
- Two were determined to be big brown bat.

Of the other recordings vetted (25% of recordings), the following was determined:

Vetting of silver-haired bat recordings (total of 259 of 720 recordings vetted):

- 215 confirmed recordings of silver-haired bat.
- One recording identified as silver-haired was determined to be noise.
- Six recordings identified as silver-haired was determined to be No ID.
- 31 recordings of silver-haired bat, vetted to be either big brown bat or silver-haired bat (ID could not be verified 100%).
- Six recordings of silver-haired bat, vetted to be big brown bat.

Vetting of hoary bat recordings (total of 127 of 648 recordings vetted):

- 108 hoary bat recordings vetted to be hoary bat.
- Seven hoary bat recordings vetted to be not a bat.
- Six hoary bat recording vetted to be No ID.
- Seven hoary bat recordings vetted to be silver-haired bat.
- Five hoary bat recordings vetted to be either hoary bat or silver-haired bat (ID could not be verified 100%).

- One hoary bat recording vetted to be either big brown bat or hoary bat (ID could not be verified 100%).

Vetting of big brown bat recordings total of 7 of 8 recordings vetted):

- Seven big brown bat recordings vetted to be big brown bat.
- One big brown bat recording vetted to be silver-haired bat.

Vetting of eastern red bat recordings total of 7 of 7 recordings vetted):

- Two eastern red bat recordings vetted to be not a bat.
- One eastern red bat recording vetted to be noise.
- Four eastern red bat recordings vetted to be eastern red bat.

APPENDIX

D SAR SPECIES DESCRIPTIONS



SPECIES AT RISK DESCRIPTIONS

WILDLIFE – BATS

Manitoba is home to six bat species, silver-haired bat (*Lasionycteris noctivagans*), red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), big brown bat (*Eptesicus fuscus*), northern myotis (*Myotis septentrionalis*) and little brown myotis (*Myotis lucifugus*). The silver-haired, red and hoary bats are migratory whereas the big brown, northern myotis and little brown myotis bats are non-migratory (and during the fall travel to limestone caves on the western side of Lake Winnipeg to hibernate (Vonhof, 2006). Throughout Manitoba, bats are most commonly observed flying from dusk to dawn in clearing and by rivers and lakes between May and the beginning of August. Several species of bats may use abandoned buildings and large trees with shaggy, peeling bark or cavities as roosting habitats during the day. Little brown myotis and northern myotis are both federal species at risk that are listed as Endangered under the *Species at Risk Act (SARA)*. These species were added to the list of Wildlife Species at Risk in Canada by an emergency listing order in 2014 because their survival is being primarily threatened by a deadly and highly contagious disease known as white-nose syndrome. Both are also listed as threatened under Manitoba's ESEA.

WILDLIFE – BIRDS

Barn swallow is listed federally under SARA as threatened and is provincially ranked as S4B. This species inhabits agricultural areas that contain available buildings and/or bridges for nest construction. Nests are constructed from mud and any structure with a large opening or over-hanging roof can provide a suitable nesting site for these birds (Poole, 2018). Nests of this species were observed within three separate outbuildings at the historic dairy farm site during the February 11, 2021 site visit (COSEWIC, 2011).

The **chimney swift** is federally listed under SARA and COSEWIC as threatened and is provincially ranked as S2B. This bird historically would have nested within large deciduous tree cavities but is now most commonly associated with urban brick chimneys to carry out nesting. Chimney swift numbers have declined, and it may be attributed to a reduction in flying insects from the use of insecticides and the capping or removal of brick chimneys (Poole, Stewart and Stewart, 2018).

PLANTS

False indigo is a perennial shrub in the pea family Fabaceae, known to grow in moist soils along shores, riverbanks and at edges of wooded areas. It can be recognized by purple or reddish brown spiked flower clusters that generally bloom in June and July (Chayka and Dzuik, 2018). This species is ranked provincially by the MB CDC as S1S2. Historic sightings for the false indigo have been recorded from 1909-2013 within the PSA near the Red River Crossing west of St. Mary's Road according to MB CDC data results. It was also observed in a City's NSB natural area report for Natural Area 544 in 2002. No observations were made of this species during the 2018 field surveys completed for the Project.

This species has the potential to occur within the natural areas associated with the PSA.

Climbing bittersweet is a perennial vine in the family Celastraceae. This species is provincially ranked as S3S5 and was reported within Natural Area 544 in 2002 by the NSB. The species has a terminal panicle inflorescence and flowers in spring to summer. The species is known to occur in thickets, margins of woodlands and on roadsides and is often associated with rich soils (eFlora, 2021).

This species has the potential to occur within the natural areas associated with the PSA.

1600 Buffalo Place
Winnipeg, MB
Canada R3T 6B8

T: +1 204 477-6650
F: +1 204 474-2864
wsp.com

Succulent hawthorn is a shrub within the Rose family and is provincially ranked as S3S4. This species was reported within Natural Area 544 in 1995 by the NSB. It is identified as a shrub that can grow to five meters tall with thorns that are greater than three cm long. The leaves of succulent hawthorn are alternately arranged on the stem and its flowers are white with five petals and sepals. Fruits are red and berry-like and the seeds are yellow-brown and pitted (SASK Herbarium, 2021).

This species has the potential to occur within the natural areas associated with the PSA.

Graceful mannagrass is a perennial grass species with rough sheaths and a loose panicle inflorescence (eFlora BC, 2021). This species is provincially ranked as S2S3 and was reported within Natural Area 544 in 1995 by the NSB. This species is known to occur in wet areas and meadows of Boreal forest (Looman and Best, 1979).

This species has the potential to occur within the wetland areas associated with the PSA.

Heart-leaf arnica is a yellow flowered plant that is provincially ranked as S1. It was previously reported by the NSB in the Maple Grove Park grassland (Natural Area #955) in 2004. The genus can be identified as being the only genus with yellow-rayed composites while also having opposite and simple leaves. Heart-leaf arnica has basal leaves that have deep, heart-shaped notches at their base and have long petioles. This species is known to occur in forests, thickets and stream-sides often in alpine locations (USDA, 2021).

It is unlikely that this species is present in association with the project footprint given its habitat preference.

Canada moonseed is a climbing vine that is provincially ranked as S3. It was previously reported by the CNSB in Maple Grove Park (Natural Area #410) in 1994. The species produces poisonous black berries and flowers in June to July with small cluster of greenish-white flowers. It is known to inhabit woodland edges, thickets and streambanks (Lady Bird Johnson Wildflower Center, 2021).

This species has the potential to occur within the natural areas associated with the PSA.

Blunt-fruited sweet cicely is a perennial herb from a well-developed taproot and is provincially ranked as S2. This species was previously reported by the NSB in 2002 in Maple Grove Park (Natural Area #410). It is identified as having basal leaves and stem leaves that are divided twice into three's. The inflorescence is a loose compound umbel that produce cub-shaped fruits that are widest at the apex. It can be found in rich woods and flowers in June to July.

REFERENCES

- Bird Studies Canada. 2021. Atlas of the Breeding Birds of Manitoba. Accessed February 18, 2021 from: https://www.birdatlas.mb.ca/index_en.jsp
- Chayka, K. and Dziuk, P. 2018. Minnesota Wildflowers: a field guide to the flora of Minnesota. Retrieved from: <https://www.minnesotawildflowers.info>
- Cornell Lab of Ornithology. 2019. All About Birds. Cornell Lab of Ornithology, Ithaca, New York. Retrieved February 2021 from: <https://www.allaboutbirds.org>
- COSEWIC. 2011. COSEWIC assessment and status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix. 37 pp. (www.sararegistry.gc.ca/status/status/e_cfm).
- COSEWIC. 2013. COSEWIC assessment and status report on the Little Brown *Myotis lucifugus*, Northern *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subflavus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.
- eFlora. 2021. Flora of North America. Accessed February 2021. Retrieved from: http://www.efloras.org/flora_page.aspx?flora_id=1
- eFlora BC. 2021. Electronic Atlas of the Flora of British Columbia. Accessed February 2021 from: https://linnet.geog.ubc.ca/DB_Query/QueryForm.aspx
- Lady Bird Johnson Wildflower Center. 2021. Plant Database, The University of Texas South. Accessed February 2021 from: https://www.wildflower.org/plants/result.php?id_plant=meca3
- Looman, J. and Best, K.K., 1979. Budd's flora of the Canadian prairie provinces. Publication 1662. *Agriculture Canada, Research Branch, Hull, Canada*.
- Poole, T. F. 2018. Barn Swallow in Artuso, C., A. R. Couturier, K. D. De Smet, R. F. Koes, D. Lepage, J. McCracken, R. D. Mooi, and P. Taylor (eds.). *The Atlas of the Breeding Birds of Manitoba, 2010-2014*. Bird Studies Canada. Winnipeg, Manitoba.



Retrieved from:

<http://www.birdatlas.mb.ca/accounts/speciesaccount.jsp?sp=BARS&lang=en>

- Poole, T. F., B. E. Stewart, and R. E. A. Stewart. 2018. Chimney Swift in Artuso, C., A. R. Couturier, K. D. De Smet, R. F. Koes, D. Lepage, J. McCracken, R. D. Mooi, and P. Taylor (eds.). The Atlas of the Breeding Birds of Manitoba, 2010-2014. Bird Studies Canada. Winnipeg, Manitoba. Retrieved from:
<http://www.birdatlas.mb.ca/accounts/speciesaccount.jsp?>
- SASK Herbarium. 2021. Virtual Herbarium of Plants at Risk in Saskatchewan: A Natural Heritage. University of Saskatchewan. Accessed February 2021 from:
http://www.usask.ca/biology/rareplants_sk/root/
- USDA. 2021. United States Department of Agriculture, Natural Resources Conservation Service. Plant Profile: *Arnica cordifolia*. Accessed February 2021 from:
<https://plants.usda.gov/core/profile?symbol=arco9>
- Vonhof, M. 2006. Handbook of Inventory Methods and Standard Protocols for Surveying Bats in Alberta. Edmonton, Alberta.: Alberta Environment and Parks, Fish and Wildlife Branch.

APPENDIX

E REGULATORY SETTING

A large, white, diagonal shape that resembles a stylized 'V' or a folded corner, positioned in the lower-left quadrant of the page. It is composed of two white triangles meeting at a point at the bottom center.

REGULATORY REQUIREMENTS – ADDITIONAL INFORMATION

1.1 FEDERAL

1.1.1 MIGRATORY BIRDS CONVENTION ACT, 1994 (S.C. 1994, C.22)

The *Migratory Birds Convention Act* (MBCA) was implemented in 1917 after the signing of the Migratory Bird Convention treaty between Canada and the United States and was designed to protect migratory birds and their nests, and established the Canadian government with jurisdiction over coastal and inland bird habitats (Government of Canada, 2016). The Act is regulated by Environment and Climate Change Canada and is applicable to all activities associated with organizations, industries and individuals and to all lands and water bodies in Canada.

Under Section 2 of the Act “migratory bird” means a migratory bird referred to in the Convention, and includes the sperm, eggs, embryos, tissue cultures and parts of the bird (Government of Canada, 2016). Under Article V of the Act “the taking of nests or eggs of migratory game or insectivorous or nongame birds shall be prohibited, except for scientific or propagating purposes under such laws or regulations as the High Contracting Powers may severely deem appropriate” (Government of Canada, 2016). The “taking” of nests or eggs from a site during the avian breeding season, is generally prohibited from early April until late August in Canada for most species; however, removal of nests for species that reuse the same nests in subsequent years should be avoided and nests of species listed under the *Species at Risk Act* are protected at all times when the species usually reuses its nest (Note: proponents should refer to the Government of Canada website to determine breeding bird nesting calendars in their area). Activities which may disturb nests and nesting birds include:

- Land disturbance (i.e., building roads, clearing trees and vegetation).
- Infrastructure rehabilitation and decommissioning disturbances (i.e., bridge replacement, building removal).
- Sensory disturbance (i.e., noises, lights, and other human activities).
- Emergency incidents (i.e., fires, spills, hazardous materials).

It is the responsibility of a project proponent to ensure compliance with the MBCA through demonstration and documentation of a due diligence approach. The Government of Canada has also published “avoidance guidelines” to aid proponents in project planning to reduce detrimental effects to migratory birds, and their nests and eggs. If there is to be risk of non-compliance to the MBCA, a project specific assessment and mitigation approach must be developed by a professional avian biologist or other qualified professional. It is not recommended that pre-clearing nest searches be conducted as means of demonstration for compliance of the Act.

1.1.2 SPECIES AT RISK ACT (S.C. 2002, C.29)

The *Species at Risk Act* (SARA) was proclaimed in June 2003 to prevent Canadian indigenous species, subspecies, and distinct populations from becoming extirpated or extinct, to provide for the recovery of endangered or threatened species, and encourage the management of other species to prevent them from becoming at risk (Government of Canada, 2016[b]). This applies to all species on the List of Wildlife Species at Risk, Schedule 1 of the Act. Essentially SARA protects species and their residences making it an offense to kill, harm, harass, capture, collect, possess, buy, etc., an individual of a listed endangered, threatened or extirpated species or damage or destroy its residence (Government of Canada, 2016 [b]).

In most cases, SARA does not apply on private land. SARA prohibitions apply to all species on federal land (e.g. National Parks), all aquatic species everywhere in Canada, and all migratory birds listed under the *Migratory Bird Convention Act* everywhere in Canada (Manitoba Conservation and Climate, n.d.[d]); however, all Canadian Provinces and territories have signed an Accord for the Protection of Species at Risk in Canada. The Accord fosters co-operations between the federal, provincial and territorial governments to ensure that species at risk are protected throughout Canada (Manitoba Conservation and Climate, n.d.[d]). In addition, SARA applies automatically on

provincial/territorial lands and waters for species covered under the *Migratory Bird Convention Act* or the federal *Fisheries Act*. Generally, provinces and territories work in-conjunction with the federal government and SARA to protect species and critical habitat on non-federal lands. Often a species protected under SARA is likely protected under provincial legislation as well. For example, the Baird's sparrow (*Ammodramus bairdii*) is protected under both SARA and Manitoba's *Endangered Species and Ecosystems Act*.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) constitutes a group of academics, consultants and non-governmental organization biologists, and biologists from federal, provincial, and territorial governments that was created in 1977 to develop a single, official, scientifically sound, national classification of species at risk in Canada and to assess and designate Canadian wildlife species based on this classification system. In June 2003, the SARA established COSEWIC as an advisory body to provide the federal Minister of Environment and Climate Change Canada (ECCC) with recommendations regarding the status of species at risk extinction in Canada and the threats that they face in order to assist with establishing the legal list of species at risk (Schedule 1) (Government of Canada , 2016). Status categories established by COSEWIC are provided in the Table 1 below.

Table 1. COSEWIC Status Categories

Category	Definition
Wildlife Species	A species, subspecies, variety, or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus, that is wild by nature and it is either native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.
Data Deficient	A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.
Not at Risk	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Special Concern	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
Threatened	A wildlife species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
Endangered	A wildlife species facing imminent extirpation or extinction.
Extirpated	A wildlife species no longer existing in the wild in Canada but exists elsewhere.
Extinct	A wildlife species that no longer exists.

¹Taken from: Government of Canada, COSEWIC, Wildlife Species Status Categories and Definitions Website. 2016-09-14. Retrieved from: <https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife/wildlife-species-status-categories-definition.html>. Retrieved on: September 10, 2019.

If future SOCC assessment(s) are completed or mitigations measures are implemented in support of the Project that require disturbance, capture or handling of a SOCC, a permit from ECCC and / or the Wildlife and Fisheries Branch of Manitoba Agriculture and Resource Development Manitoba (MARD) (if species is listed under Manitoba Endangered Species and Ecosystems Act) may be required.

1.2 PROVINCIAL

1.2.1 THE WILDLIFE ACT (C.C.S.M. C.W130)

In Manitoba, protection of wildlife and their habitat is covered under The Wildlife Act, the scope of which includes the management of wildlife, wildlife research and the protection of property and persons. This is achieved through the regulating/restricting/permitting/licensing of activities such as hunting and trapping, importing/exporting and buying/selling of wildlife and the enforcement of regulations/restrictions pertaining to these activities. Under the Act it is also prohibited to possess or destroy the nest or eggs of any game birds or any bird listed in Division 6 of Schedule A of the Act (Manitoba Conservation and Climate, n.d. [e]).

1.2.2 ENDANGERED SPECIES AND ECOSYSTEMS ACT (C.C.S.M. C. E111)

The *Endangered Species and Ecosystem Act* of Manitoba (ESEA) was enacted in 1990 and is administered by the Wildlife and Fisheries Branch of MARD. The purposes of the ESEA “are to ensure the protection and enhance the survival of threatened and endangered species as well as species of special concern in Manitoba. This Act is to aid in enabling the reintroduction of provincially extirpated species and to protect endangered and threatened ecosystems in the province along with the recovery of those ecosystems. Under the Act, a species is protected once it has been declared by regulation to be threatened, endangered, extirpated or extinct (Manitoba Conservation and Climate (2), n.d.). Once a species has been declared by regulation, “it is unlawful to kill, injure, possess, disturb or interfere with the species; destroy, disturb or interfere with the habitat of the species; or damage, destroy, obstruct or remove a natural resource on which the species depends for its life and propagation” (Government of Manitoba, n.d.). The Act applies to all lands in Manitoba for species listed under the Act, and only on Crown lands for ecosystems listed under the Act.

This Act is applicable to any mammal, bird, reptile, amphibian, fish, or plant, living or dead and to any ecosystem described in the regulation. Several historical sightings for SOCC have been recorded within the PSA that would be subject to this Act and may require special mitigation measures to be included. If future SOCC assessment(s) are completed or mitigations measures are implemented in support of the Project that require disturbance, capture or handling of a SOCC, a permit from ECCC and / or MARD (if species is listed under Manitoba Endangered Species and Ecosystems Act) may be required.

Manitoba Conservation Data Centre

The Manitoba Conservation Data Centre (MB CDC) maintains information on Manitoba’s biodiversity including plant and animal species and natural plant communities. The MB CDC is part of a network of biodiversity centers across Canada, the United States and Latin America known as NatureServe (NatureServe Canada). The MB CDC has developed a list of plant and animal species also known as elements of diversity found in Manitoba. Each of these elements is assigned a conservation status rank endorsed by NatureServe based on how rare the species or community is in Manitoba. The MB CDC database contains information on the status, location (by Ecoregion) and ecology of species with a focus on those deemed to be at risk (Manitoba Conservation and Climate (2), n.d.). Conservation status ranks measure extinction or extirpation risk of species/communities at three geographic scales including: global (G-rank), national (N-rank) and subnational (S-rank) (NatureServe, n.d.). The MB CDC provides G-ranks, N-ranks and S-ranks. Details on the S-rank species ranking system utilized by the MB CDC for species of conservation concern is provided below in Table 2.

Table 2. Subnational Conservation Status Rank for MB CDC Listed Species¹

Subnational Conservation Status Rank	
Rank	Definition
S1	Critically imperiled – At a 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.
S2	Imperiled – At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, very steep declines, severe threats or other factors.

Subnational Conservation Status Rank	
Rank	Definition
S3	Vulnerable - At a 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
S4	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.
S5	Secure - At a 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.
SU	Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SX	Presumed Extirpated—Species or ecosystem is believed to be extirpated from the jurisdiction (i.e., nation, or state/province). 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].
SH	Possibly Extirpated – Known from only historical 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 or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.
SNR	Unranked – National or subnational conservation status not yet assessed.
SNA	Not Applicable - A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities (e.g., long distance aerial and aquatic migrants, hybrids without conservation value, and non-native species or ecosystems (see Master et al. 2012, Appendix A, pg. 70 for further details).
Breeding Status Qualifiers	
B	Breeding - Conservation status refers to the breeding population of the species in the nation or state/province.
N	Non-breeding - Conservation status refers to the non-breeding population of the species in the nation or state/province.
M	Migrant - Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the nation or state/province.

¹Taken From: NatureServe. n.d. Conservation Status Assessment Website. Retrieved from: <https://www.natureserve.org/conservation-tools/conservation-status-assessment>. Retrieved on: September 10, 2019.

1.2.3 THE WATER RIGHTS ACT C.C.S.M. C. W80

The Water Rights Act and Regulation (amended 2019) regulates use and diversion of water in Manitoba, including water diversion created by infilling or alteration of wetlands. Permission (rights) to remove wetlands must be obtained by a license under *The Water Rights Act*, for loss or alteration of ‘sensitive’ wetlands and particularly Class III, IV, and V wetlands (Stewart and Kantrud, 1971). Wetland impacts include reduction in the physical size or a

change that would affect the wetland classification (e.g., a change to hydrology that would alter duration of inundation). A new regulation under this Act, enabled by the *Sustainable Watersheds Act* (2019) streamlines the approval process for lower risk, lower impact drainage projects and water control works that meet certain requirements. These require a registration, while more complex, higher impact works require more through review and licensing. Projects that eliminate or alter Class III, IV and V wetlands, or drain Class 6 or 7 soils or unimproved organic soils (e.g. peatlands) must proceed through the licensing process. Compensation can be through two options:

- Self directed project, described in a compensation plan, or
- Financial payment based on the area of impact paid under an agreement negotiated with an approved wetland restoration or enhancement agency (currently only the Manitoba Habitat Heritage Corporation [MHHC]).

1.2.4 NOXIOUS WEEDS ACT (C.C.S.M. C. N110) AND REGULATIONS

The purpose of the *Noxious Weed Act* is to aid in controlling the spread of noxious weeds in Manitoba. Under the Act, occupants or owners of lands are required to destroy all noxious weeds growing on their land as often as necessary to prevent the growth, maturing and dispersion of weeds or weed seeds (Government of Manitoba (3), n.d.). As the owner of the land upon which the roadway is to be constructed, MI will be responsible for the control of noxious weeds within the project footprint. A weed management plan will likely be required for the Project at the time of the construction.

Table 3. List of Manitoba Noxious Weed Species by Tier

Designated Tier 1 Noxious Weeds		Area for which Designation applies
Common name	Scientific name	
Amaranth, Palmer	<i>Amaranthus palmeri</i>	Whole province
Bartsia, red	<i>Odontites vernus</i>	All areas of the province outside the Municipality of Bifrost-Riverton and the RMs of Armstrong, Fisher, Gimli, Rockwood, St. Andrews and St. Clements
Crupina, common	<i>Crupina vulgaris</i>	Whole province
Cupgrass, woolly	<i>Eriochloa villosa</i>	Whole province
Goatgrass, jointed	<i>Aegilops cylindrica</i>	Whole province
Hawkweed, orange	<i>Hieracium aurantiacum</i>	Whole province
Hogweed, giant	<i>Heracleum mantegazzianum</i>	Whole province
Hound's-tongue	<i>Cynoglossum officinale</i>	Whole province
<u>Knapweed, diffuse</u>	<i>Centaurea diffusa</i>	Whole province
Knapweed, Russian	<i>Acroptilon repens</i>	Whole province
Knapweed, spotted	<i>Centaurea stoebe</i>	Whole province
Knapweed, squarrose	<i>Centaurea virgata</i>	Whole province
Knotweed, Japanese	<i>Fallopia japonica</i>	Whole province
Mile-a-minute weed	<i>Persicaria perfoliata</i>	Whole province
Mustard, garlic	<i>Allaria petiolata</i>	Whole province
Patterson's curse	<i>Echium plantagineum</i>	Whole province
Pigweed, smooth	<i>Amaranthus hybridus</i>	Whole province
Saltcedar	<i>Tamarix ramosissima</i>	Whole province
Star-thistle, yellow	<i>Centaurea solstitialis</i>	Whole province
Tussock, serrated	<i>Nassella trichotoma</i>	Whole province
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	Whole province

Designated Tier 2 Noxious Weeds		Area for which Designation applies
Common name	Scientific name	
Alyssum, hoary	<i>Berteroa incana</i>	Whole province
Baby's-breath	<i>Gypsophila paniculata</i>	Whole province
Bartsia, red	<i>Odontites vernus</i>	Municipality of Bifrost-Riverton and the RMs of Armstrong, Fisher, Gimli, Rockwood, St. Andrews and St. Clements
Bouncingbet	<i>Saponaria officinalis</i>	Whole province
Brome, downy	<i>Bromus tectorum</i>	Whole province
Brome, Japanese	<i>Bromus japonicas</i>	Whole province
<u>Campion, bladder</u>	<i>Silene vulgaris</i>	Whole province
<u>Chamomile, scentless</u>	<i>Matricaria perforata</i>	Whole province
Common reed, invasive	<i>Phragmites australis australis</i>	Whole province
Daisy, ox-eye	<i>Leucanthemum vulgare</i>	Whole province
<u>Nutsedge, yellow</u>	<i>Cyperus esculentus</i>	Whole province
Scabious, field	<i>Knautia arvensis</i>	Whole province
Spurge, Cypress	<i>Euphorbia cyparissias</i>	Whole province
<u>Spurge, leafy</u>	<i>Euphorbia esula</i>	Whole province
St. John's-wort	<i>Hypericum perforatum</i>	Whole province
Tansy, common	<i>Tanacetum vulgare</i>	Whole province
<u>Thistle, nodding</u>	<i>Carduus nutans</i>	Whole province
Toadflax, Dalmatian	<i>Linaria dalmatica</i>	Whole province
Designated Tier 3 Noxious Weeds		Area for which Designation applies
Common name	Scientific name	
Absinth	<i>Artemisia absinthium</i>	Whole province
Barberry	<i>Berberis vulgaris</i>	Whole province
<u>Barley, foxtail</u>	<i>Hordeum jubatum</i>	Whole province
Bellflower, creeping	<i>Campanula rapunculoides</i>	Whole province
Buckthorn, European	<i>Rhamnus cathartica</i>	Whole province
<u>Burdock, common</u>	<i>Arctium minus</i>	Whole province
Burdock, greater	<i>Arctium lappa</i>	Whole province
Burdock, woolly	<i>Arctium tomentosum</i>	Whole province
Campion, biennial	<i>Silene dioica</i>	Whole province
<u>Catchfly, night-flowering</u>	<i>Silene noctiflora</i>	Whole province
<u>Cleavers</u>	<i>Galium aparine</i>	Whole province
Cleavers, false	<i>Galium spurium</i>	Whole province
<u>Cockle, white</u>	<i>Silene alba</i>	Whole province
<u>Dandelion</u>	<i>Taraxacum officinale</i>	Whole province
Dodder	genus <i>Cuscuta</i>	Whole province

Designated Tier 3 Noxious Weeds		Area for which Designation applies
Common name	Scientific name	Common name
Fleabane, Canada	<i>Conyza canadensis</i>	Whole province
<u>Flixweed</u>	<i>Descurainia sophia</i>	Whole province
<u>Hawk's-beard, narrow-leaved</u>	<i>Crepis tectorum</i>	Whole province
Hemlock, poison	<i>Conium maculatum</i>	Whole province
<u>Hemp-nettle</u>	<i>Galeopsis tetrahit</i>	Whole province
Hoary-cress	<i>Cardaria draba</i>	Whole province
Jimsonweed	<i>Datura stramonium</i>	Whole province
<u>Kochia</u>	<i>Kochia scoparia</i>	Whole province
<u>Lamb's quarters</u>	<i>Chenopodium album</i>	Whole province
Lettuce, prickly	<i>Lactuca serriola</i>	Whole province
<u>Milkweed, common</u>	<i>Asclepias syriaca</i>	Whole province
Milkweed, showy	<i>Aslepias speciosa</i>	Whole province
<u>Mustard, wild</u>	<i>Sinapis arvensis</i>	Whole province
Nightshade, American black	<i>Solanum americanum</i>	Whole province
Nightshade, cutleaf	<i>Solanum triflorum</i>	Whole province
Nightshade, hairy	<i>Solanum sarachoides</i>	Whole province
Parsnip, wild	<i>Pastinaca sativa</i>	Whole province
Ragweed, common	<i>Ambrosia artemisiifolia</i>	Whole province
Ragweed, false	<i>Iva xanthifolia</i>	Whole province
Ragweed, giant	<i>Ambrosia trifida</i>	Whole province
<u>Sow-thistle, annual</u>	<i>Sonchus oleraceus</i>	Whole province
<u>Sow-thistle, perennial</u>	<i>Sonchus arvensis</i>	Whole province
Sow-thistle, spiny annual	<i>Sonchus asper</i>	Whole province
<u>Stinkweed</u>	<i>Thlaspi arvense</i>	Whole province
<u>Stork's bill</u>	<i>Erodium cicutarium</i>	Whole province
Thistle, bull	<i>Cirsium vulgare</i>	Whole province
<u>Thistle, Canada</u>	<i>Cirsium arvense</i>	Whole province
<u>Thistle, Russian</u>	<i>Salsola pestifer</i>	Whole province
Toadflax, yellow	<i>Linaria vulgaris</i>	Whole province
Water hemlock, bulb-bearing	<i>Cicuta bulbifera</i>	Whole province
Water hemlock, northern	<i>Cicuta virosa</i>	Whole province
Water hemlock, spotted	<i>Cicuta maculata</i>	Whole province
Water hemlock, western	<i>Cicuta douglasii</i>	Whole province
Whitetop, hairy	<i>Cardaria pubescens</i>	Whole province
Whitetop, lenspod	<i>Cardaria chalapensis</i>	Whole province

²Taken from: Declaration of Noxious Weeds in Manitoba. Retrieved from: <https://www.gov.mb.ca/agriculture/crops/weeds/declaration-of-noxious-weeds-in-mb.html>

REFERENCES


- Government of Canada. (2016, December 2). *Migratory Birds Convention Act*. Retrieved December 2, 2016, from Justice Laws Website: <http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>
- Government of Canada (2). (2016, December 2). *Species at Risk Act*. Retrieved December 2, 2016, from Justice Laws Website: <http://laws-lois.justice.gc.ca/eng/acts/s-15.3/>
- Government of Manitoba. (n.d.). *Legislation and Permits - The Wildlife Act*. Retrieved December 2, 2016, from Wildlife Branch, Sustainable Development: http://www.gov.mb.ca/sd/wildlife/legislation/wildlife_act.html
- Government of Manitoba (3). (n.d.). *The Noxious Weed Act*. Retrieved from Manitoba Laws: <https://web2.gov.mb.ca/laws/statutes/ccsm/n110e.php>
- Manitoba Conservation and Climate. (n.d.). *Legislation and Permits*. Retrieved from Wildlife Branch: <https://www.gov.mb.ca/sd/wildlife/index.html>.


APPENDIX

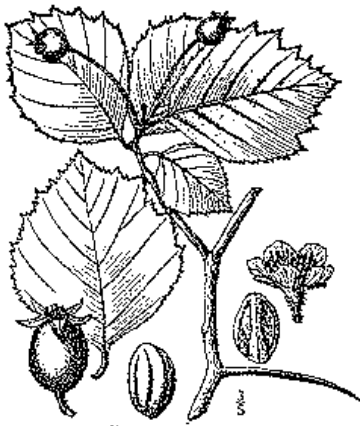

F


RARE PLANT


“CHEAT SHEET”


<p>Amorpha fruticosa</p>	<p>False indigo</p>	<p>False indigo-bush is a 6-10 ft., loose, airy shrub which often forms dense thickets. Plants develop a leggy character with the majority of their pinnately compound, fine-textured foliage on the upper third of the plant. Leaflets velvety on the lower surface, margins frequently almost parallel, often abruptly rounded at both ends and with a notch at the tip. Flowers small, purple to dark blue with yellow stamens extending beyond the single petal, crowded in narrow, 3-6 in., spikelike clusters at or near the ends of the branchlets, appearing from April to June. Fruit small, up to 3/8 inch long and with blisterlike glands visible under a 10x hand lens. This is a deciduous plant.</p> <p>This shrub, which often forms thickets on riverbanks and islands, can be weedy or invasive in the northeast. Another False Indigo (<i>A. herbacea</i>) has whitish to blue-violet flowers in fan-like masses on top of the plant and gray-downy foliage with up to 40 leaflets. The genus name, from the Greek <i>amorphos</i> (formless or deformed), alludes to the fact that the flower, with only a single petal (the banner or standard), is unlike the typical pea flowers of the family.</p>	<p>S1S2</p>		<p>Riverbanks</p>	<p>Apr-June</p>


Celastrus scandens	Climbing bittersweet	<p>Branching cluster to 6 inches long of stalked flowers, forming at the tip of this year's side branches of older woody stems. Flowers are about ¼ inch across, have 5 green to whitish petals and 5 green sepals, with male and female flowers on separate plants. Male flowers have 5 stamens with yellow tips.</p> <p>Female flowers have 5 short, non-functioning stamens surrounding a stout style with a lobed stigma at the top.</p> <p>Leaves are alternate, 2 to 4 inches long and about half as wide, generally oblong-elliptic or sometimes widest above the middle, finely serrated around the edges, hairless, rounded or slightly tapered at the base, often with a long taper to the sharply pointed tip (acuminate), on a hairless stalk about ¾ inch long. Leaves turn yellow in fall.</p> <p>New stems are green becoming gray-brown and woody with age, the bark lightly textured with scattered grayish pores (lenticels), and peeling or flaking on older stems. The trunk can grow to 2½ inches in diameter. Stems loosely twine around trees and other structures for support, but as a supporting tree expands the vine does not loosen its grip, which can constrict the expansion of the tree but not usually kill it. In more open areas plants sprawl across the ground and become more shrub-like.</p> <p>Fruit is round, about ½ inch in diameter, initially green, the outer casing turning orange to red in late summer, splitting open in fall to reveal the 3-sectioned, bright red, berry-like fruit inside. Fruits persist through winter.</p>	S3S5		part shade, sun; woodland edges, thickets, fields, prairies	May - June

Scientific Name	Common Name	Description	MB Status	Photo	Habitat (range)	Flower Period
Crataegus succulenta	Succulent hawthorn	<p>Shrubs or trees, 40–80 dm. Stems: <older trunks usually bearing compound thorns>; twigs: new growth reddish green, glabrous, 1-year old dark, shiny red-brown, 2–3-years old becoming dark gray, older ± paler gray; thorns on twigs numerous, usually recurved, shiny, 1-year old dark blackish brown, stout, 3–6(–8) cm. Leaves: petiole 1–2 cm, <narrowly winged distally>, glabrous, eglandular; blade rhombic-elliptic to broadly rhombic-ovate or elliptic, 4–7 cm <widest near middle>, subcoriaceous mature (then often blue-green), base cuneate (constricted), lobes 3–5 per side, obscure to well-marked, sinuses shallow, lobe apex usually subacute to obtuse, margins serrate except proximally, veins 6–8 per side, <impressed>, apex acute to subacute, rarely obtuse, abaxial surface glabrous, adaxial scabrate-pubescent young. Inflorescences 15–30-flowered; branches pubescent or glabrous; bracteoles linear, <1.7 cm>, margins glandular. Flowers 12–17 mm diam.; hypanthium glabrous or pubescent; sepals narrowly triangular, 4–6 mm, margins glandular-serrate to glandular-laciniate, abaxially glabrous, adaxial pubescence not recorded; stamens 20, anthers usually red or pink, rarely white, <0.5–0.7 mm>; styles 2 or 3. Pomes bright or deep red, lustrous, suborbicular, (4–)7–10(–14) mm diam., glabrous, rarely pubescent; <flesh mealy or succulent mature>; sepals spreading-reflexed; pyrenes 2 or 3, sides pitted. 2n = 51</p>	S3S4	 	Forest edges, forests, meadows and fields	

Scientific Name	Common Name	Description	MB Status	Photo	Habitat (range)	Flower Period
<i>Osmorhiza depauperata</i>	Blunt-fruited Sweet Cicely	<p>Perennial herb from a well-developed taproot, sometimes below a slightly branched stem-base; stems solitary or sometimes 2-3, 15-70 cm tall, branching. Leaves: Basal and stem leaves twice divided into 3's, leaflets coarsely toothed, 1.5-7 cm long, 1-4 cm wide, more or less hairy; thin basal leaves several, stalks long; stem leaves 1-3, stalks short. Flowers: Inflorescence of loose compound umbels; flowers greenish-white, sometimes pink or purple, inconspicuous; involucels lacking. Fruits: Club-shaped, 10-15 mm long, narrowing to a rounded or blunt end, the tip not beaklike.</p> <p>Similar species: There are three <i>Osmorhiza</i> species native to Saskatchewan. To identify them examine the fruit.</p> <p><i>Osmorhiza longistylis</i> has fruit with long styles. Also, this species has bracts subtending the flower umbels. This species is common.</p> <p><i>Osmorhiza depauperata</i> has fruit which are spatulate, widest at the apex. This species is uncommon.</p> <p><i>Osmorhiza berteroi</i> has fruit which are linear and narrow at the apex. This species is extremely rare.</p>	S2		Rich woods	Jun-Jul

Scientific Name	Common Name	Description	MB Status	Photo	Habitat (range)	Flower Period
<i>Arnica cordifolia</i>	Heart-leaf arnica	<p>General:</p> <p>Perennial herb from a long, branching rhizome; stems solitary or occasionally a few clustered together, sparsely hairy with multicellular hairs and often glandular, 10-60 cm tall.</p> <p>Leaves:</p> <p>Basal leaves heart-shaped, often produced on separate short shoots; stem leaves opposite, 2-3 (sometimes 1 or 4) pairs, larger than the basal ones, heart-shaped, becoming lance-shaped above, glandular to hairy, stalked below, unstalked above, coarsely toothed to entire.</p> <p>Flowers:</p> <p>Heads with ray and disk flowers, 1-3, rarely as many as 7, erect, the bases sparsely to densely hairy with long white hairs, often glandular; ray flowers yellow, usually 9-16, with conspicuous teeth; disk flowers yellow, sparsely hairy; involucre 13-22 mm tall, the bracts lanceolate to oblanceolate, gradually to abruptly pointed, sparsely to densely hairy, often glandular, the tips often fringed.</p> <p>Fruits:</p> <p>Achenes 4-8 mm long, moderately to densely stiff-hairy, often with stalked glands; pappus white, finely-barbed.</p>	S1		<p>gravelly clay loam in rocky,</p> <p>second-growth, dry-mesic northern forests</p>	May- July

Scientific Name	Common Name	Description	MB Status	Photo	Habitat (range)	Flower Period
Menispermum canadense	Canada moonseed	<p>Branching clusters up to 7 inches long arising from the leaf axils, with male and female flowers in separate clusters on the same or different plants. Flowers of both are less than ¼ inch across, somewhat bell-shaped with 4 to 9 greenish-white petals and 4 to 9 greenish-white sepals that are longer than the petals. Male flowers have a spray of 12 to 24 white stamens with yellow tips.</p> <p>Female flowers have 2 to 4 stout pistils with a somewhat ruffled stigma at their tips, and usually surrounded by several short, sterile stamens. Flower stalks are green and hairless to sparsely hairy with an oblong leaf-like bract at the base.</p> <p>Leaves are alternate, 3 to 8 inches long and about as wide, mostly heart-shaped at the base, with 7 to 12 primary veins radiating from the base. Leaf edges are toothless and have 3 to 7 shallow lobes, the lobe tips rounded to bluntly pointed. The upper surface is medium to dark green, hairless or becoming hairless with age, the lower surface paler and finely hairy, especially along the veins.</p> <p>Leaf stalks are up to 8 inches long and attached on the underside near but not at the base of the leaf (peltate). New stem growth is green and hairy turning reddish or purplish, woody and eventually hairless. Stems lack tendrils and twine around other vegetation for support or sprawl along the ground, and form loose colonies from spreading rhizomes.</p> <p>Fruit is a berry-like drupe about 1/3 inch diameter, ripening to blue-black with a white bloom, and very much resembling wild grape. Inside is a single, flat, crescent-shaped seed.</p> <p>Canada Moonseed leaves are rather variable in size and shape. The more deeply lobed leaves may resemble Wild Cucumber (<i>Echinocystis lobata</i>) or Wild Grape (<i>Vitis riparia</i>), while the less lobed leaves may resemble Bur Cucumber (<i>Sicyos angulatus</i>), or Wild Yam (<i>Dioscorea villosa</i>). Of these species, only Grape and Moonseed have woody stems. The unique leaf stalk attachment (peltate) and the single, crescent-shaped seed in the mature fruit further distinguishes Canada Moonseed from all the rest. The fruits are reportedly toxic and should not be eaten.</p>	S3		part shade, sun; moist woods, woodland edges, clearings, thickets	May - July

Scientific Name	Common Name	Description	MB Status	Photo	Habitat (range)	Flower Period
Glyceria pulchella	Graceful Manna Grass	<p>General: Perennial grass from rhizomes, often rooting at the lower nodes; stems erect, 40-100 cm tall. Leaves: Sheaths rough, the hairs angled backwards, open at least near the tops; blades 2-5 mm wide, flat, minutely rough on both surfaces; ligules (1.5) 2-4 mm long. Flowers: Inflorescence a loose panicle 15-25 cm long or more, the branches ascending to spreading-ascending; spikelets mostly 3- to 6-flowered, egg-shaped to cylindrical, compressed, 3.5-6 mm long; lower glumes 1.5-2 mm long, the upper ones 2-2.3 mm long; lemmas 1.6-2.2 mm long, prominently 7-nerved, the nerves finely rough; stamens 3; anthers about 0.6 mm long.</p>	S2S3		Wet woodlands, marshes, muskegs, and margins of lakes, ponds, and ditches	