

Appendix B

Biological Inventory and Assessment of the Proposed Tailings Management Area Expansion at Bissett, Manitoba (Green Spaces Environmental Consulting)

Biological Inventory and Assessment of the Proposed Tailings Management Area Expansion at Bisset, Manitoba

for

AECOM 99 Commerce Drive Winnipeg, MB R3P 0Y7

by

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Introduction

The project area is located primarily on the north side of Manitoba Hwy #304. The community of Bisset is located to the southwest. On the western extremity of the project area is the most eastern portion of the tailings pond for the San Gold Mine.

At N51° 01.598 and W95° 39.569 is the location on Hwy #304 where a road crosses the highway and extends north to the tailings pond while a second road extends southward. This location has willow and sedge lowlands extending to the west and to the east is a transition zone from the sedge-willow community into the more wooded communities.

At N51° 01.888 and W95° 36.620 is the eastern extremity of the project area along Hwy #304. This site is approximately 127 kms east, along Hwy #304, from the northern edge of the bridge over the Winnipeg River at Powerview.

Green Spaces Environmental Consulting, under contract to AECOM, did a biological inventory of the project area, with the field work commencing in late May and concluding at the end of September, 2008. The area experienced far above normal rainfall during the time of the study which resulted in field work having to be extended over a number of days. The twenty-five days spent in the project area were:

- ✤ May 28–30
- June 10, 11
- June 18–20
- ✤ June 26–28
- ✤ July 10, 11
- ✤ July 16, 17
- ✤ July 24, 25
- August 5–7
- August 27–29
- September 16, 17

This is very challenging terrain because in many place the vegetation is extremely thick and the actual terrain varies from rock outcroppings to bogs. The study team crisscrossed all of the project area in an effort to walk as much of it as possible. This meant systematically doing north-south transects across the property and then doing east-west transects. Because of the rocky terrain and, in other cases, swampy areas that were too boggy to walk, some liberties had to be employed in undertaking the transects. The purpose of walking all of the area was to try to record as many plant and wildlife species as possible and to determine their status. Particularly in the case of birds, this often meant stopping to spend periods of time listening to bird sounds.

The study team spent time in the project area ranging from an hour prior to sunrise, during entire daylight hours plus periodic trips during the night. This technique was imperative because it permitted the team to hear bird calls from species that have particular times of calling and could be missed if one worked only in daylight hours. This technique also allowed the team to hear all the species of frogs calling at their peak and to record such species as bats which can normally only be spotted at dusk.

The following is a description of all of the species that were detected. The names utilized and the ranking given follow the standard set by the Manitoba Conservation Data Centre. In the Appendix is a section dealing with the Conservation Data Centre ranking and is taken verbatim from their introduction.

Plants

A total of 251 plant species were identified within the project area. The project area is a tremendous mosaic of plant communities with the most prominent communities being:

- Balsam Fir
- Black Spruce
- Tamarack
- Jack Pine
- Mixed woods–deciduous and coniferous
- Balsam Poplar
- Aspen Poplar
- Sedge-Willow

The topography in the project area shows great diversity and that results in the occurrence of a rich mosaic of plant communities. The project area is located in the Precambrian Shield and consequently there are major outcrops of bare rock, particularly on the north and northeast sides of the study area. The lower lying areas have places where there are small creeks, bogs and even pockets of sand. In addition to this there is a waste disposal site that has been heavily impacted by human activity. Near the southeast area there are several borrow pits where sand and/or gravel has been extracted.

Even though there are several species that are on the edge of their documented range in Manitoba, there are no species that are listed specifically as "rare" under the provincial or federal governments' rare species legislation.

Some of the species that are of particular interest are given special attention below.

Smooth Sumac (Rhus glabra) was highly localized but always found on rock outcroppings.

Showy Milkweed (Asclepias speciosa) was often encountered in open patches where the species received a lot of sunlight. This was particularly true in places, such as cut lines, which had been cleared in previous years and had grown back.

Pearly Everlasting (Anaphalis margaritacea) was often found around rock outcroppings or in clearings adjacent to Hwy #304.

Swamp Fleabane (Erigeron elatus) was particularly localized and growing in wet areas often in association with a wide variety of other plant species. It most frequently was found adjacent to small streams or springs.

Many-flowered Aster (Sympyotrichum eritoides), although classed as "S4", was common in the areas in which it was encountered.

New England Aster (Sympyotrichum novae-angliae) was almost invariably closely associated with water whether it was growing in clumps of higher ground in swamps or along the edge of streams.

False Mayweed (Tripleurospermum maritimum) was not common but when encountered was in association with wet or damp areas.

Red Elderberry (Sambucus racemosa) was a very scarce species and only located in one place where there were several plants growing on sandy soil.

Nannyberry (Viburnum lentago) is a tall shrub that occurred in a variety of habitats ranging from mixed woods to the sides of rock outcroppings.

Round-leaved Dogwood (Cornus rugosa) was frequently encountered in quite a diversity of habitats including mixed woods, Aspen Poplar woods and the periphery of Jack Pine stands interspersed with rock outcroppings.

Inland Sedge (Carex interior) is probably easily overlooked but was growing in the sedgewillow community.

Thin-leaved Cotton-grass (Eriophorum viridicarinatum) was not common anywhere but was found in a variety of habitats because it likes wet sites. It was recorded in the sedge-willow community, Tamarac community and mixed woods community in places that had springs, streams or simply wet ground.

Fragrant Shield Fern (Dryopteris fragrans) was found around and on the rock outcroppings, which were frequently associated with stands of Jack Pine (Pinus Banksiana). The outcroppings were a treasure-house for fern species.

Blue Flag (Iris versicolor) was only found three times and always adjacent to running water. Twice it was encountered in mixed woods and once in a sedge-willow community.

Wood Lilly (Lilium philadelphicum) was found on a cut line in a very sandy area that was reverting to a natural state. The habitat around it was mixed woods.

Fairybells (Prosartes trachycarpa) was regularly encountered in mixed woods and on the very edge of Balsam Fir and Black Spruce communities.

Black Ash (Fraxinus negra) was always associated with mixed woods and, in one case, was in a low lying area in a transition zone between mixed woods and a Tamarac community.

Calypso (Calypso bulbosa) and Ram's Head Lady's-slipper (Cypripedium arietinum) were both found growing along the lower portion of rock outcroppings. In the case of the former, they were growing primarily in a mixed woods situation where Aspen Poplar (Populus tremuloides) predominated but where Jack Pine was within ten meters. In the case of the latter, the lady's-slippers were growing on a much higher elevation of rock outcroppings where Jack Pine was the sole dominant species.

Stemless Lady's-slipper (Cypripedium acaule) is a common plant on rock outcroppings where Jack Pine predominates. It, however, in the project area, utilizes a variety of habitats. Provided there are little glades, where it can get sunlight during parts of the day, it was also found in mixed woods, on the edge of transitions between mixed woods and willow communities, plus in a semi-open mature White Spruce (Picea glauca) community.

Yellow Lady's-slipper (Cypripedium parviflorum) and Large Yellow Lady's-slipper (Cypripedium parviflorum var. pubescens) were both found on old cut lines where the vegetation was reverting to a natural state. Both species were growing in sunny glades along these cut lines, often in areas that were surrounded by heavy tree cover. Both species also occurred along the edge of Hwy #304 where the vegetation had recently been cut back or bulldozed. It showed that these two species have the ability to take advantage of suitable habitat in situations even when other members of their species do not appear to be growing nearby to provide a seed source.

Showy Lady's-slipper (Cypripedium reginea) is a species that needs sunlight and was found both in mixed wood and in sedge-willow communities. It was recorded only in five locations with a total of eighteen flower-stems.

Scratch Grass (Muhlenbergia asperifolia) was regularly encountered in both sedge-willow communities and on some cut lines.

Prince's-pine (Chimaphila umbellata) was regularly encountered on rock outcroppings where Jack Pine was the prominent species.

Agrimony (Agrimonia striata) was found blooming in only two locations and both times in rejuvenated vegetation on cut lines in mixed woods.

Mountain Ash (Sorbus decora) is highly localized in the project area but where it is found there were often a number of individuals. In one location it was thriving at the base of a rock outcrop and in five places it was located in mixed woods where there was a predominance of shrubs.

Grass of Parnassus (Parnassia palustris) commonly occurred where it gets enough sunlight and was found in many damp areas of the project area.

Narrow-leaved Cattail (Typha angustifolia) was growing sporadically in some natural wet locations and revegetating some borrow pits.

American Elm (Ulnus americana) had not been touched by Dutch Elm disease in this area and, although it is not a common species locally, it was seen in several places with a wide range from very young to mature trees present.

All of the plants recorded are given in Tables #1a and #1b below. Table #1a lists the species by family name in alphabetical order and Table 1b lists the species by genus in alphabetical order. The second column gives the scientific name; the third column gives the common name.

The last column gives the provincial status rank for each species and that status ranking is detailed in the appendix.

Mammals

Detailed mammal surveys, that involved small mammal trapping, were not undertaken. Consequently, this mammal list is by no means complete for small species. Fleeting looks at shrews were obtained but not enough details were ever observed to identify any of them. Tracks of many species were observed and species such as Mink were only included in Table #2 because the study team identified their tracks. The late evening skies in the project area are characterized by the presence of many bats but only the Little Brown Myotis (Bat) and the Big Brown Bat were positively identified.

The project area is characterized by a tremendously diverse mosaic of plant communities and consequently supports a very diverse wildlife population. Species like Red Squirrels and Eastern Chipmunks lend themselves to being easy to observe, partly because they are so trusting by nature, but also because their habits bring them into the open with more frequency. Because the vegetation was so dense however, large species like Moose, White-tailed Deer and Black Bear were viewed on only a few occasions. These species can readily detect a study team member moving through the vegetation and simply move out of sight long before a person can see them. There were eighteen mammalian species recorded.

The Grey Wolf (Canis lupus) could possibly occur in this area but the study team never heard any nor saw their tracks during the study. There were many dog tracks because a lot of people take their dogs out for runs. Local residents with whom we spoke said it is unusual to ever see or hear a wolf near Bisset, although many inexperienced visitors often reported "wolves".

Table #2 lists all of the mammalian species recorded in the project area. In all of the tables the species are not listed in taxonomic order but rather are listed in the format utilized by the Manitoba Conservation Data Centre. Consequently, the first column on the left lists the families that occur in the project area in alphabetical order. The second column gives the scientific name and these are listed in alphabetical order with respect to the families in which they occur. The third column lists the common name for that species. The final column gives the provincial status rank for each species and that ranking system is detailed in the appendix.

Birds

A total of 130 bird species were recorded in the project area and are listed in Table #3. The format of this Table follows that described under the section dealing with mammals, with one exception. There is an extra column in the bird table. This column is termed REMARKS and gives five different symbols with respect to the various species. These symbols are explained as follows:

All of the species listed were recorded on or over the project area during the 2008 survey.

B - there was evidence that this species did breed in the project area during our study. Either an actual nest was found, parents were seen feeding young and/or they were recorded on territory.

PB - symbolizes the species that possibly breed on the project area some years. All were seen during the study but there was no evidence to substantiate that it was

breeding on the property in 2008. It is a species however that does breed in the Bisset area.

BL - this species definitely breeds in the Bisset area and was seen on or over the project area but there was no evidence to prove that it actually bred in the project area in 2008.

M - this species was recorded on spring and/or fall migration.

T - this species was recorded on or over the project area but there was no evidence to indicate that it may be breeding on the property. For example, on more than one occasion during the nesting season, Common Terns flew over the project area but there was no suitable habitat in the project area or in the immediate vicinity for them to breed so they were classed as transients.

The number of species recorded is impressive but it definitely is not the total number of species that one would find if the project was visited on a number of years. For example, a few species of warblers were never detected. There are a couple of explanations for this. They either never breed in the project area or they were missed during the spring and fall migration. The study team was not in the project area every week and consequently it is easy to miss the major part of a species' migration through the area if the team is absent when the vast majority pass through.

If one examines closely the species' list, it gives a fair amount of information but a few additional comments are necessary.

During late May, June and early July a Red-tailed Hawk was seen and/or heard over the project area on a regular basis. This bird was always recorded near the northwest edge and probably simply used the edge of the property as a feeding area because no nest was ever detected and the bird always seemed to come and go from the north east.

A pair of Broad-winged Hawks definitely utilized the project area on a regular basis. They preyed heavily on Red-sided Garter Snakes and on four different dates one was seen to perch in the same Aspen tree and feed on its snake prey. This bird never acted territorially and it is probable that it was feeding along the road, where we actually saw it catch a snake, and was nesting some distance away.

Wood Ducks, American Wigeon and Blue-winged Teal were classed as "transient" because they were frequently seen flying over the project area but were never recorded on the ground.

At least nine pairs of Canada Geese had broods on the two tailing ponds along the west side of the project area.

Both Whip-poor-will and Common Nighthawks were heard in goodly numbers after dark in the project area. The peak night-count was on June 16, when at least three Common Nighthawks and five Whip-poor-wills could be heard calling as the project team slowly drove the length of the road skirting the project area. None of these birds heard by the project team were necessarily breeding in, but could be heard from, the project area. One Common Nighthawk nest was located on an extensive rock outcropping on July 8 when a study team member nearly stepped on the bird before it flushed off its next containing two eggs. The bare rock outcrop had a few Common Juniper growing on it and some debris spread amongst the sparse vegetation. This nest was 2.5 meters from a juniper and extremely conspicuous once one knew where it was as there very little vegetation around it. A Black-billed Cuckoo called often from the property on June 26 and 27 but was never recorded again so its status is uncertain. One pair of Baltimore Orioles nested in a clump of Balsam Poplar adjacent to the road in a mixed-wood area. One normally does not encounter this species nesting in such habitat in eastern Manitoba. It is a species that prefers farm growth, towns and rows of trees rather than an extensive tract of native woods such as the project area.

Magnolia Warblers were particularly common in the project area and two nests, both on the ground, were discovered on June 18th and 19th. Both nests were in mixed coniferous/deciduous woods in mossy vegetation.

Ruffed Grouse did not appear to be particularly common in the early part of the season but had spectacular success during the breeding season and on September 17th seven covies were encountered.

A surprising number of members of the wader or shorebird family were observed during August feeding along the edge of the tailing pond. These are species that normally would not use the project area. However, the shoreline of the tailings pond was attractive to them. These same tailings ponds had Lesser Yellowlegs at them throughout June, July and August. These birds were either non-breeders or birds nesting the general vicinity.

Northern Saw-whet Owls were nesting on the property and on June 10 the nightly survey recorded four birds on territory within the project area. Great Grey Owls were heard regularly in the early part of the nesting season in Tamarack swamps but no nest was located.

Great Grey Owls were heard on the property and possibly nested in the Tamarac lowlands, which is the habitat they prefer as nesting sites in this part of the province. Placing of manmade nesting platforms in Tamaracs has proved very successful in providing this species with a secure nesting site in the general area surrounding Bisset and the Winnipeg River.

Amphibians

The general area bounded by the Winnipeg River to the south and Wallace Lake-Bisset-Wanipigow is very rich biologically and this is particularly true for amphibians. Seven species were recorded in the project area and are listed in Table #4. The species are listed in alphabetical order under the family names with the first column being the family name, the second column being the scientific name, the third the common name and the final column being the species ranking within the province of Manitoba. Seven species of amphibians were recorded in the project area.

The Blue-spotted Salamander was only recorded once in the project area but it is very easy to be overlooked. The species is very small and secretive. The one observed was found when a small, moss-covered log was moved at the edge of a boggy area. The habitat in this immediate area was a transition zone between deciduous-coniferous woods on sandy soil bordering the edge of a rock outcropping on one side and a sedge/alder-filled area on the other side. The species at Bisset is probably close to the northern extremity of its known range in Manitoba.

Grey Tree Frogs and Boreal Chorus Frogs were present in the project area in such large numbers that no estimate can be given because they were singing in one huge chorus. Of course, the Boreal Chorus Frogs were singing much earlier in the season than the Grey Tree Frogs although the two species did overlap. The Grey Tree Frogs also were found primarily in wooded areas while the Boreal Chorus Frog were found in all types of wet habitat but particularly in sedge and grass areas that were temporarily benefiting from spring runoff or rain.

Wood Frogs were regularly heard throughout the area and called from May even to the end of September. They are relatively conspicuous because they can often be seen crossing roads or moving through the vegetation when they are disturbed. Northern Leopard Frogs were not near as frequently seen but were well-distributed in wet areas and, like the Wood Frog, were often encountered along the highway traversing the southern edge of the project area.

The highlight of the amphibian portion of the study was encountering a Mink Frog crossing the highway at 1:20 a.m. in a light rain on July 22. Members of the study team had been hearing frog noises the identity of which they were not certain. Consequently they drove back and forth along the road catching frogs attempting to cross it. The vast majority of the ones caught were Wood Frogs and, to a lesser extent, Leopard Frogs. Then suddenly, they were rewarded in securing a Mink Frog. This species at Bisset is definitely at the northern extremity of its documented range in Manitoba.

Reptiles

Only two species of reptiles were recorded in the project area and both of these are in listed in Table #5 using the same format as described for the Amphibian Table.

Red-sided Garter Snakes occur in good numbers in the project area and were seen on a daily basis. Although they definitely were observed more frequently around wet areas they were also recorded on and around rock outcroppings.

Western Painted Turtles were frequently observed sunning themselves on floating logs located in the two sediment ponds located closest to the western extremity of the project area.

Conclusion and Recommendations

The Bisset project area contains a wide array of plant, mammal, bird, amphibian and reptile species. This statement, however, can be made for the entire general area bordering Manitoba Hwy #304 between the bridge, over the Winnipeg River at Powerview to the west, and Wallace Lake to the east. The project area is a small segment of this area. None of the species identified in this project area are termed "rare" provincially. One of the species, the Northern Leopard Frog (Rana pipiens), is listed under federal legislation as a species of "special concern".

A number of these species, however, represent species on the edge of their known documented range. For example, this study provided excellent enhancement of the provincial knowledge of the distribution of the Blue-spotted Salamander (Ambystoma laterale) and the Mink Frog (Rana septemtronalis) in Manitoba.

If parts of this area are to be developed as a tailings pond it is important that the low-lying areas be utilized. This would protect many of the orchid species which were frequently growing at higher elevations and often in association with rock outcroppings.

If the trees were cut in these low-lying areas the wood could be utilized for commercial and personal use and would prevent wastage.

APPENDICES

MB CDC Species of Conservation Concern

The term "species of conservation concern" includes species that are rare, disjunct, or at risk throughout their range or in Manitoba and in need of further research. The term also encompasses species that are listed under the Manitoba Endangered Species Act (<u>MBESA</u>), or that have a special designation by the Committee on the Status of Endangered Wildlife in Canada (<u>COSEWIC</u>).

Conservation Data Centre Ranks (Global and Provincial)

Species are evaluated and ranked by the Conservation Data Centre on the basis of their range-wide (global - G) status, and their province-wide (subnational - S) status according to a standardized procedure used by all Conservation Data Centres and Natural Heritage Programs. These ranks are used to determine protection and data collection priorities, and are revised as new information becomes available.

For each level of distribution—global and provincial—species are assigned a numeric rank ranging from 1 (very rare) to 5 (demonstrably secure). This reflects the species' relative endangerment and is based primarily on the number of occurrences of that species globally or within the province. However, other information, such as date of collection, degree of habitat threat, geographic distribution patterns and population size and trends, is considered when assigning a rank. The numbers of occurrences listed below are suggestions, not absolute criteria.

For example, the Green Frog (*Rana clamitans*) is ranked G5, S2. That is, globally the species is abundant and secure, while in Manitoba it is rare and may be vulnerable to extirpation.

Rank	Definition
1	Very rare throughout its range or in the province (5 or fewer occurrences, or very few remaining individuals). May be especially vulnerable to extirpation.
2	Rare throughout its range or in the province (6 to 20 occurrences). May be vulnerable to extirpation.
3	Uncommon throughout its range or in the province (21 to 100 occurrences).
4	Widespread, abundant, and apparently secure throughout its range or in the province, with many occurrences, but the element is of long-term concern (> 100 occurrences).
5	Demonstrably widespread, abundant, and secure throughout its range or in the province, and essentially eradicable under present conditions.
U	Possibly in peril, but status uncertain; more information needed.
н	Historically known; may be rediscovered.

X	Believed to be extinct; historical records only, continue search.
SNR	A species not ranked. A rank has not yet assigned or the species has not been evaluated.
SNA	A conservation status rank is not applicable to the element.

Other Heritage Codes

Code	Definition
G#G# S#S#	Numeric range rank: A range between two of the numeric ranks. Denotes range of uncertainty about the exact rarity of the species.

Subrank

Code	Definition
т	Rank for subspecific taxon (subspecies, variety, or population); appended to the global rank for the full species, e.g. G4T3.

Qualifiers

Code	Definition
В	Breeding status of a migratory species. Example: S1B,SZN - breeding occurrences for the species are ranked S1 (critically imperilled) in the province, nonbreeding occurrences are not ranked in the province.
N	Non-breeding status of a migratory species. Example: S1B,SZN - breeding occurrences for the species are ranked S1 (critically imperilled) in the province, nonbreeding occurrences are not ranked in the province.
Q	Taxonomic questions or problems involved, more information needed; appended to the global rank.
т	Rank for subspecific taxon (subspecies, variety, or population); appended to the global rank for the full species.
#	A modifier to SX or SH; the species has been reintroduced but the population is not yet established.
?	Inexact or uncertain; for numeric ranks, denotes inexactness.

Table #1a

Plants of the Bisset Project Area

(alphabetical by family name)

FAMILY	SCIENTIFIC NAME	COMMON NAME	RANK
Aceraceae	Acer negundo	Manitoba Maple	S5
Aceraceae	Acer spicatum	Mountain Maple	S5
Alismataceae	Alisma triviale	Common Water-plantain	S5
Alismataceae	Sagittaria cuneata	Arum-leaved Arrowhead	S5
Anacardiaceae	Rhus glabra	Smooth Sumac	S4
Apiaceae	Cicuta maculata	Water-hemlock	S5
Apiaceae	Heracleum maximum	Cow-parsnip	S5
Apiaceae	Sanicula marilandica	Snakeroot	S5
Apiaceae	Sium suave	Water-parsnip	S5
Apiaceae	Zizia aptera	Heart-leaved Alexanders	S5
Apocynaceae	Apocynum androsaemifolium	Spreading Dogbane	S5
Araceae	Calla palustris	Water-arum	S5
Araliaceae	Aralia nudicaulis	Wild Sarsaparilla	S5
Asclepiadaceae	Asclepias speciosa	Showy Milkweed	S4
Asteraceae	Achillea millefolium	Common Yarrow	S5
Asteraceae	Achillea sibirica	Many-flowered Yarrow	S5
Asteraceae	Anaphalis margaritacea	Pearly Everlasting	S4
Asteraceae	Bidens cernua	Stick-tight	S5
Asteraceae	Cirsium arvense	Canada Thistle	SNA
Asteraceae	Conyza canadensis	Horse-weed	S5
Asteraceae	Doellingeria umbellata	Flat-topped White Aster	S5
Asteraceae	Erigeron elatus	Swamp Fleabane	S4
Asteraceae	Eupatorium maculatum	Spotted Joepyeweed	S5

Asteraceae	Helianthus maximiliani	Narrow-leaved Sunflower	S5
Asteraceae	Lactuca tatarica	Wild Lettuce	S5
Asteraceae	Matricaria discoidea	Pineappleweed	SNA
Asteraceae	Petasites frigidus var. palmatus	Palmate-leaved Colt's-foot	S5
Asteraceae	Petasites frigidus var. sagittatus	Arrow-leaved Colt's-foot	S5
Asteraceae	Senecio congestus	Marsh-fleabane	S5
Asteraceae	Senecio vulgaris	Common Groundsel	SNA
Asteraceae	Solidago canadensis	Canada Goldenrod	S5
Asteraceae	Solidago rigida	Stiff Goldenrod	S5
Asteraceae	Sonchus oleraceus	Common Sow-thistle	SNA
Asteraceae	Symphyotrichum boreale	Northern Bog Aster	S5
Asteraceae	Symphyotrichum ciliolatum	Lindley's Aster	S5
Asteraceae	Symphyotrichum ericoides	Heath or Many-flowered Aster	S4
Asteraceae	Symphyotrichum laeve	Smooth Aster	S5
Asteraceae	Symphyotrichum lanceolatum	Panicles Aster	S5
Asteraceae	Symphyotrichum novae-angliae	New England Aster	S4
Asteraceae	Taraxacum officinale	Common Dandelion	S5
Asteraceae	Tragopogon dubius	Goat's-beard	SNA
Asteraceae	Tripleurospermum maritimum	False Mayweed	S3
Balsaminaceae	Impatiens capensis	Spotted Touch-me-not	S5
Betulaceae	Alnus incana ssp. rugosa	Speckled Alder	S5
Betulaceae	Betula glandulosa	Dwarf Birch	S5
Betulaceae	Betula occidentalis	River Birch	S4S5
Betulaceae	Betula papyrifera	White Birch	S5
Betulaceae	Corylus cornuta	Beaked Hazelnut	S5
Boraginaceae	Mertensia paniculata	Tall Lungwort	S5
Brassicaceae	Arabis divaricarpa	Purple Rock Cress	S5
Brassicaceae	Arabis holboellii var. retrofracta	Holboell's Rock Cress	S5

Brassicaceae	Lepidium densiflorum	Common Pepper-grass	S5
Brassicaceae	Rorippa palustris	Bog Yellowcress	S5
Brassicaceae	Thlaspi arvense	Field Pennycress	SNA
Campanulaceae	Campanula rotundifolia	Bluebell	S5
Campanulaceae	Lobelia kalmii	Kalm's Lobelia	S5
Caprifoliaceae	Diervilla lonicera	Bush-honeysuckle	S5
Caprifoliaceae	Linnaea borealis	Twinflower	S5
Caprifoliaceae	Lonicera dioica	Limber or Twining Honeysuckle	S5
Caprifoliaceae	Lonicera villosa	Mountain-fly-honeysuckle	S5
Caprifoliaceae	Sambucus racemosa	Red Elderberry	S4
Caprifoliaceae	Symphoricarpos albus	Snowberry	S5
Caprifoliaceae	Symphoricarpos occidentalis	Western Snowberry	S5
Caprifoliaceae	Viburnum edule	Lowbush-cranberry	S5
Caprifoliaceae	Viburnum lentago	Nannyberry	S4
Caprifoliaceae	Viburnum opulus	Highbush-cranberry	S5
Caryophyllaceae	Cerastium arvense	Field Chickweed	S5
Caryophyllaceae	Silene csereii	Smooth Catchfly	SNA
Caryophyllaceae	Stellaria longifolia	Long-leaved Stitchwort	S5
Caryophyllaceae	Stellaria longipes	Long-stalked Stitchwort	S5
Chenopodiaceae	Chenopodium album	Lamb's-quarters	SNA
Cornaceae	Cornus canadensis	Bunchberry	S5
Cornaceae	Cornus rugosa	Round-leaved Dogwood	S3
Cornaceae	Cornus sericea	Red Osier Dogwood	S5
Cupressaceae	Juniperus communis	Common Juniper	S5
Cyperaceae	Carex aquatilis	Water Sedge	S5
Cyperaceae	Carex atherodes	Awned Sedge	S5
Cyperaceae	Carex bebbii	Bebb's Sedge	S5

		Heir like Sedae	S.E.
Cyperaceae	Carex capillaris	Hair-like Sedge	S5
Cyperaceae	Carex deweyana	Dewey's Sedge	S5
Cyperaceae	Carex disperma	Two-seeded Sedge	S5
Cyperaceae	Carex interior	Inland Sedge	S4?
Cyperaceae	Carex lacustris	Lakeshore Sedge	S5
Cyperaceae	Carex magellanica	Bog Sedge	S5
Cyperaceae	Carex utriculata	Beaked Sedge	S5
Cyperaceae	Eleocharis palustris	Creeping Spike-rush	S5
Cyperaceae	Eriophorum angustifolium	Tall Cotton-grass	S5
Cyperaceae	Eriophorum viridicarinatum	Thin-leaved Cotton-grass	S4
Cyperaceae	Schoenoplectus tabernaemontani	Soft-stem Bulrush	S5
Cyperaceae	Scirpus microcarpus	Small Fruited-bulrush	S5
Dennstaedtiaceae	Pteridium aquilinum	Bracken Fern	S4S5
Droseraceae	Drosera rotundifolia	Round-leaved Sundew	S5
Dryopteridaceae	Dryopteris carthusiana	Spinulose Wood Fern	S5
Dryopteridaceae	Dryopteris fragrans	Fragrant Shield Fern	S3S4
Dryopteridaceae	Matteuccia struthiopteris	Ostrich Fern	S5
Dryopteridaceae	Woodsia ilvensis	Rusty Woodsia	S5
Empetraceae	Empetrum nigrum	Black Crowberry	S5
Equisetaceae	Equisetum arvense	Common Horsetail	S5
Equisetaceae	Equisetum fluviatile	Swamp Horsetail	S5
Ericaceae	Chamaedaphne calyculata	Leather-leaf	S5
Ericaceae	Gaultheria hispidula	Creeping Snowberry	S5
Ericaceae	Kalmia polifolia	Bog-laurel	S5
Ericaceae	Ledum groenlandicum	Labrador-tea	S5
Ericaceae	Vaccinium myrtilloides	Velvet-leaf Blueberry	S5
Ericaceae	Vaccinium oxycoccos	Small Cranberry	S5

Ericaceae	Vaccinium uliginosum	Bog Whortleberry	S5
Fabaceae	Lathyrus ochroleucus	Pale Vetchling	S4S5
Fabaceae	Lathyrus venosus	Wild Peavine	S5
Fabaceae	Medicago lupulina	Black Medick	SNA
Fabaceae	Medicago sativa	Alfalfa	SNA
Fabaceae	Melilotus albus	White Sweet Clover	SNA
Fabaceae	Melilotus officinalis	Yellow Sweet Clover	SNA
Fabaceae	Vicia americana	Common Vetch	S5
Fagaceae	Quercus macrocarpa	Bur Oak	S5
Fumariaceae	Corydalis aurea	Golden Corydalis	S5
Fumariaceae	Corydalis sempervirens	Pink Corydalis	S5
Gentianaceae	Halenia deflexa	Spurred Gentian	S5
Geraniaceae	Geranium bicknellii	Bicknell's Geranium	S5
Grossulariaceae	Ribes americanum	Wild Black Currant	S5
Grossulariaceae	Ribes glandulosum	Skunk Currant	S5
Grossulariaceae	Ribes hudsonianum	Northern Wild Black Currant	S5
Grossulariaceae	Ribes oxyacanthoides	Bristly Wild Gooseberry	S5
Grossulariaceae	Ribes triste	Wild Red Currant	S5
Haloragaceae	Myriophyllum sibiricum	Spiked Water-milfoil	S5
Hippuridaceae	Hippuris vulgaris	Mare's-tail	S5
Iridaceae	Iris versicolor	Blue Flag	S4
Iridaceae	Sisyrinchium montanum	Common Blue-eyed Grass	S5
Juncaceae	Juncus nodosus	Knotted Rush	S5
Juncaginaceae	Triglochin maritima	Seaside Arrow-grass	S5
Lamiaceae	Agastache foeniculum	Blue Giant Hyssop	S5
Lamiaceae	Lycopus uniflorus	Northern Bugle-weed	S5
Lamiaceae	Mentha arvensis	Common Mint	S5

Lamiaceae	Stachys palustris	Marsh Hedge-nettle	S5
Lemnaceae	Lemna minor	Lesser Duckweed	SNA
Lentibulariaceae	Pinguicula vulgaris	Common Butterwort	S5
Lentibulariaceae	Utricularia macrorhiza	Greater bladderwort	S5
Liliaceae	Lilium philadelphicum	Wood Lily	S4
Liliaceae	Maianthemum canadense	Two-leaved Solomon's-seal	S5
Liliaceae	Maianthemum stellatum	Star-flowered Solomon's-seal	S5
Liliaceae	Maianthemum trifolium	Three-leaved Solomon's-seal	S5
Liliaceae	Prosartes trachycarpa	Fairybells	S4
Liliaceae	Triantha glutinosa	Sticky False Asphodel	S5
Nymphaeaceae	Nuphar variegata	Yellow Pond-lily	S5
Oleaceae	Fraxinus nigra	Black Ash	S3
Oleaceae	Fraxinus pennsylvanica	Green Ash	S5
Onagraceae	Chamerion angustifolium	Fireweed	S5
Onagraceae	Epilobium angustifolium ssp. angustifolium	Fireweed	S5?
Onagraceae	Epilobium ciliatum ssp. glandulosum	Willow-herb	S5
Onagraceae	Oenothera biennis	Evening-primrose	S5
Ophioglossaceae	Botrychium virginianum	Rattlesnake Fern	S5
Orchidaceae	Amerorchis rotundifolia	Small or Round-leaved Orchis	S5
Orchidaceae	Calypso bulbosa	Calypso	S4
Orchidaceae	Coeloglossum viride	Frog-orchis	S5
Orchidaceae	Corallorhiza trifida	Early Coralroot	S5
Orchidaceae	Cypripedium acaule	Stemless Lady's-slipper	S4
Orchidaceae	Cypripedium arietinum	Ram's Head Lady's-slipper	S2?
Orchidaceae	Cypripedium parviflorum	Yellow Lady's-slipper	S5?
Orchidaceae	Cypripedium parviflorum var. pubescens	Large Yellow Lady's-slipper	S5?
Orchidaceae	Cypripedium reginae	Showy Lady's-slipper	S3

Orchidaceae	Platanthera hyperborea	Northern Green Orchid	SNA
Orchidaceae	Platanthera obtusata	Small Northern Bog Orchid	S5
Orchidaceae	Spiranthes romanzoffiana	Hooded Ladies'-tresses	S5
Pinaceae	Abies balsamea	Balsam Fir	S5
Pinaceae	Larix laricina	Tamarack	S5
Pinaceae	Picea glauca	White Spruce	S5
Pinaceae	Picea mariana	Black Spruce	S5
Pinaceae	Pinus banksiana	Jack Pine	S5
Plantaginaceae	Plantago major	Common Plantain	SNA
Poaceae	Agrostis stolonifera	Creeping Bent Grass	SNA
Poaceae	Beckmannia syzigachne	Slough Grass	S5
Poaceae	Bromus ciliatus	Fringed Brome	S5
Poaceae	Bromus inermis	Smooth Brome	SNA
Poaceae	Calamagrostis canadensis	Marsh Reed Grass	S5
Poaceae	Calamagrostis stricta ssp. inexpansa	Northern Reed Grass	S5
Poaceae	Glyceria grandis	Tall Manna Grass	S5
Poaceae	Hordeum jubatum	Wild Barley	S5
Poaceae	Koeleria macrantha	June Grass	S5
Poaceae	Muhlenbergia asperifolia	Scratch Grass	S4
Poaceae	Phalaris arundinacea	Reed Canary Grass	S5
Poaceae	Phleum pratense	Common Timothy	SNA
Poaceae	Phragmites australis	Common Reed	S5
Poaceae	Piptatherum pungens	Northern Rice Grass	S5
Poaceae	Poa pratensis	Kentucky Blue Grass	S5
Poaceae	Spartina pectinata	Slough Grass	S5
Polygonaceae	Persicaria amphibia	Water Smartweed	S5
Polygonaceae	Persicaria maculosa	Spotted Lady's-thumb	SNA

Polygonaceae	Polygonum amphibium	Water Smartweed	S5
Polygonaceae	Rumex occidentalis	Western Dock	S5
Polypodiaceae	Polypodium virginianum	Rock Polypody	S5
Primulaceae	Lysimachia ciliata	Fringed Loosestrife	S5
Primulaceae	Lysimachia thyrsiflora	Tufted Loosestrife	S5
Primulaceae	Trientalis borealis	Northern Starflower	S5
Pyrolaceae	Chimaphila umbellata	Prince's-pine	S4S5
Pyrolaceae	Moneses uniflora	One-flowered Pyrola	S5
Pyrolaceae	Orthilia secunda	One-sided Pyrola	S5
Pyrolaceae	Pyrola asarifolia	Pink Pyrola	S5
Pyrolaceae	Pyrola chlorantha	Greenish-flowered Wintergreen	S5
Ranunculaceae	Actaea rubra	Red Baneberry	S5
Ranunculaceae	Anemone canadensis	Canada Anemone	S5
Ranunculaceae	Anemone quinquefolia	Wood Anemone	S5
Ranunculaceae	Aquilegia canadensis	Wild Columbine	S5
Ranunculaceae	Caltha palustris	Marsh Marigold	S5
Ranunculaceae	Ranunculus aquatilis	White Water Crowfoot	S5
Ranunculaceae	Ranunculus gmelinii	Small Yellow Water Buttercup	S5
Ranunculaceae	Ranunculus sceleratus	Cursed Crowfoot	S5
Ranunculaceae	Thalictrum dasycarpum	Tall or Purple Meadow-rue	S5
Rhamnaceae	Rhamnus alnifolia	Alder-leaved Buckthorn	S5
Rosaceae	Agrimonia striata	Agrimony	S4
Rosaceae	Amelanchier alnifolia	Saskatoon	S5
Rosaceae	Argentina anserina	Silverweed	S5
Rosaceae	Comarum palustre	Marsh Five-finger	S5
Rosaceae	Crataegus succulenta	Long-spined Hawthorn	S4
Rosaceae	Dasiphora fruticosa	Shrubby Cinquefoil	S5

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Rosaceae	Fragaria virginiana	Smooth Wild Strawberry	S5
Rosaceae	Geum aleppicum	Yellow Avens	S5
Rosaceae	Potentilla norvegica	Rough Cinquefoil	S5
Rosaceae	Prunus pensylvanica	Pin Cherry	S5
Rosaceae	Prunus virginiana	Choke Cherry	S5
Rosaceae	Rosa acicularis	Prickly Rose	S5
Rosaceae	Rosa woodsii	Wood's Rose	S4
Rosaceae	Rubus idaeus	Wild Red Raspberry	S5
Rosaceae	Rubus pubescens	Dewberry	S5
Rosaceae	Sibbaldiopsis tridentata	Three-toothed Cinquefoil	S5
Rosaceae	Sorbus decora	Mountain-ash	S4
Rosaceae	Spiraea alba	Meadowsweet	S5
Rubiaceae	Galium boreale	Northern Bedstraw	S5
Rubiaceae	Galium triflorum	Sweet-scented Bedstraw	S5
Salicaceae	Populus balsamifera	Balsam Poplar	S5
Salicaceae	Populus tremuloides	Trembling Aspen	S5
Salicaceae	Salix amygdaloides	Peach-leaved Willow	S4
Salicaceae	Salix bebbiana	Bebb's or Beaked Willow	S5
Salicaceae	Salix discolor	Pussy Willow	S5
Salicaceae	Salix exigua	Sandbar Willow	S5
Salicaceae	Salix fragilis	Brittle Willow	SNA
Salicaceae	Salix petiolaris	Basket Willow	S4
Salicaceae	Salix pseudomonticola	False Mountain Willow	S4S5
Salicaceae	Salix pyrifolia	Balsam Willow	S5
Santalaceae	Geocaulon lividum	Northern Comandra	S5
Saxifragaceae	Heuchera richardsonii	Alumroot	S5
Saxifragaceae	Mitella nuda	Mitrewort	S5

Saxifragaceae	Parnassia palustris	Grass of parnassus	S4
Scrophulariaceae	Melampyrum lineare	Cow-wheat	S5
Sparganiaceae	Sparganium angustifolium	Narrow-leaved Bur-reed	S5
Typhaceae	Typha angustifolia	Narrow-leaved Cat-tail	S4
Typhaceae	Typha latifolia	Common Cat-tail	S5
Ulmaceae	Ulmus americana	American Elm	S4
Urticaceae	Urtica dioica	Stinging Nettle	S5
Violaceae	Viola adunca	Early Blue Violet	S5
Violaceae	Viola canadensis var. rugulosa	Canada Violet	S5
Violaceae	Viola nephrophylla var. nephrophylla	Northern Bog Violet	S5
Violaceae	Viola renifolia	Kidney-shaped Violet	S5

Table #1b

Plants of the Bisset Project Area

(alphabetical by first scientific name)

FAMILY SCIENTIFIC NAME **COMMON NAME** RANK Pinaceae Abies balsamea Balsam Fir S5 S5 Aceraceae Manitoba Maple Acer negundo S5 Aceraceae Acer spicatum Mountain Maple S5 Asteraceae Achillea millefolium Common Yarrow Asteraceae Achillea sibirica Many-flowered Yarrow S5 Ranunculaceae Actaea rubra **Red Baneberry** S5 Lamiaceae Agastache foeniculum Blue Giant Hyssop S5 Rosaceae Agrimonia striata Agrimony S4 Poaceae **Creeping Bent Grass** SNA Agrostis stolonifera S5 Alismataceae Alisma triviale Common Water-plantain Speckled Alder S5 Betulaceae Alnus incana ssp. rugosa Rosaceae Amelanchier alnifolia Saskatoon S5 Orchidaceae Amerorchis rotundifolia Small or Round-leaved Orchis S5 Asteraceae Anaphalis margaritacea Pearly Everlasting S4 Ranunculaceae Anemone canadensis Canada Anemone S5 Ranunculaceae Anemone guinguefolia Wood Anemone S5 S5 Apocynaceae Apocynum androsaemifolium Spreading Dogbane Ranunculaceae Wild Columbine S5 Aquilegia canadensis Brassicaceae S5 Arabis divaricarpa Purple Rock Cress Brassicaceae Arabis holboellii var. retrofracta Holboell's Rock Cress S5 S5 Araliaceae Aralia nudicaulis Wild Sarsaparilla S5 Rosaceae Argentina anserina Silverweed S4 Asclepiadaceae Asclepias speciosa Showy Milkweed S5 Poaceae Beckmannia syzigachne Slough Grass Dwarf Birch S5 Betulaceae Betula glandulosa Betulaceae Betula occidentalis **River Birch** S4S5 S5 Betulaceae Betula papyrifera White Birch Asteraceae Bidens cernua Stick-tight S5 Ophioglossaceae Botrychium virginianum Rattlesnake Fern S5 S5 Poaceae Bromus ciliatus Fringed Brome Poaceae Bromus inermis Smooth Brome SNA Poaceae Calamagrostis canadensis Marsh Reed Grass S5 Poaceae Northern Reed Grass S5 Calamagrostis stricta ssp. inexpansa S5 Araceae Calla palustris Water-arum Ranunculaceae S5 Caltha palustris Marsh Marigold Orchidaceae Calypso bulbosa Calypso S4

Campanulaceae	Campanula rotundifolia	Bluebell	S5
Cyperaceae	Carex aquatilis	Water Sedge	S5
Cyperaceae	Carex atherodes	Awned Sedge	S5
Cyperaceae	Carex bebbii	Bebb's Sedge	S5
Cyperaceae	Carex capillaris	Hair-like Sedge	S5
Cyperaceae	Carex deweyana	Dewey's Sedge	S5
Cyperaceae	Carex disperma	Two-seeded Sedge	S5
Cyperaceae	Carex interior	Inland Sedge	S4?
Cyperaceae	Carex lacustris	Lakeshore Sedge	S5
Cyperaceae	Carex magellanica	Bog Sedge	S5
Cyperaceae	Carex utriculata	Beaked Sedge	S5
Caryophyllaceae	Cerastium arvense	Field Chickweed	S5
Ericaceae	Chamaedaphne calyculata	Leather-leaf	S5
Onagraceae	Chamerion angustifolium	Fireweed	S5
Chenopodiaceae	Chenopodium album	Lamb's-quarters	SNA
Pyrolaceae	Chimaphila umbellata	Prince's-pine	S4S5
Apiaceae	Cicuta maculata	Water-hemlock	S5
Asteraceae	Cirsium arvense	Canada Thistle	SNA
Orchidaceae	Coeloglossum viride	Frog-orchis	S5
Rosaceae	Comarum palustre	Marsh Five-finger	S5
Asteraceae	Conyza canadensis	Horse-weed	S5
Orchidaceae	Corallorhiza trifida	Early Coralroot	S5
Cornaceae	Cornus canadensis	Bunchberry	S5
Cornaceae	Cornus rugosa	Round-leaved Dogwood	S3
Cornaceae	Cornus sericea	Red Osier Dogwood	S5
Fumariaceae	Corydalis aurea	Golden Corydalis	S5
Fumariaceae	Corydalis sempervirens	Pink Corydalis	S5
Betulaceae	Corylus cornuta	Beaked Hazelnut	S5
Rosaceae	Crataegus succulenta	Long-spined Hawthorn	S4
Orchidaceae	Cypripedium acaule	Stemless Lady's-slipper	S4
Orchidaceae	Cypripedium arietinum	Ram's Head Lady's-slipper	S2?
Orchidaceae	Cypripedium parviflorum	Yellow Lady's-slipper	S5?
Orchidaceae	Cypripedium parviflorum var. pubescens	Large Yellow Lady's-slipper	S5?
Orchidaceae	Cypripedium reginae	Showy Lady's-slipper	S3
Rosaceae	Dasiphora fruticosa	Shrubby Cinquefoil	S5
Caprifoliaceae	Diervilla Ionicera	Bush-honeysuckle	S5
Asteraceae	Doellingeria umbellata	Flat-topped White Aster	S5
Droseraceae	Drosera rotundifolia	Round-leaved Sundew	S5
Dryopteridaceae	Dryopteris carthusiana	Spinulose Wood Fern	S5
Dryopteridaceae	Dryopteris fragrans	Fragrant Shield Fern	S3S4

Cyperaceae	Eleocharis palustris	Creeping Spike-rush	S5
Empetraceae	Empetrum nigrum	Black Crowberry	S5
Onagraceae	Epilobium angustifolium ssp. angustifolium	Fireweed	S5?
Onagraceae	Epilobium ciliatum ssp. glandulosum	Willow-herb	S5
Equisetaceae	Equisetum arvense	Common Horsetail	S5
Equisetaceae	Equisetum fluviatile	Swamp Horsetail	S5
Asteraceae	Erigeron elatus	Swamp Fleabane	S4
Cyperaceae	Eriophorum angustifolium	Tall Cotton-grass	S5
Cyperaceae	Eriophorum viridicarinatum	Thin-leaved Cotton-grass	S4
Asteraceae	Eupatorium maculatum	Spotted Joepyeweed	S5
Rosaceae	Fragaria virginiana	Smooth Wild Strawberry	S5
Oleaceae	Fraxinus nigra	Black Ash	S3
Oleaceae	Fraxinus pennsylvanica	Green Ash	S5
Rubiaceae	Galium boreale	Northern Bedstraw	S5
Rubiaceae	Galium triflorum	Sweet-scented Bedstraw	S5
Ericaceae	Gaultheria hispidula	Creeping Snowberry	S5
Santalaceae	Geocaulon lividum	Northern Comandra	S5
Geraniaceae	Geranium bicknellii	Bicknell's Geranium	S5
Rosaceae	Geum aleppicum	Yellow Avens	S5
Poaceae	Glyceria grandis	Tall Manna Grass	S5
Gentianaceae	Halenia deflexa	Spurred Gentian	S5
Asteraceae	Helianthus maximiliani	Narrow-leaved Sunflower	S5
Apiaceae	Heracleum maximum	Cow-parsnip	S5
Saxifragaceae	Heuchera richardsonii	Alumroot	S5
Hippuridaceae	Hippuris vulgaris	Mare's-tail	S5
Poaceae	Hordeum jubatum	Wild Barley	S5
Balsaminaceae	Impatiens capensis	Spotted Touch-me-not	S5
Iridaceae	Iris versicolor	Blue Flag	S4
Juncaceae	Juncus nodosus	Knotted Rush	S5
Cupressaceae	Juniperus communis	Common Juniper	S5
Ericaceae	Kalmia polifolia	Bog-laurel	S5
Poaceae	Koeleria macrantha	June Grass	S5
Asteraceae	Lactuca tatarica	Wild Lettuce	S5
Pinaceae	Larix laricina	Tamarack	S5
Fabaceae	Lathyrus ochroleucus	Pale Vetchling	S4S5
Fabaceae	Lathyrus venosus	Wild Peavine	S5
Ericaceae	Ledum groenlandicum	Labrador-tea	S5
Lemnaceae	Lemna minor	Lesser Duckweed	SNA
Brassicaceae	Lepidium densiflorum	Common Pepper-grass	S5
Liliaceae	Lilium philadelphicum	Wood Lily	S4

Caprifoliaceae Orchidaceae Campanulaceae Caprifoliaceae Caprifoliaceae Lamiaceae Primulaceae Primulaceae Liliaceae Liliaceae Liliaceae Asteraceae Dryopteridaceae Fabaceae Fabaceae Scrophulariaceae Fabaceae Fabaceae Lamiaceae Boraginaceae Saxifragaceae Pyrolaceae Poaceae Haloragaceae Nymphaeaceae Onagraceae Pyrolaceae Saxifragaceae Polygonaceae Polygonaceae Asteraceae Asteraceae Poaceae Poaceae Poaceae Pinaceae Pinaceae Lentibulariaceae Pinaceae Poaceae

Linnaea borealis Listera borealis Lobelia kalmii Lonicera dioica Lonicera villosa Lycopus uniflorus Lysimachia ciliata Lysimachia thyrsiflora Maianthemum canadense Maianthemum stellatum Maianthemum trifolium Matricaria discoidea Matteuccia struthiopteris Medicago lupulina Medicago sativa Melampyrum lineare Melilotus albus Melilotus officinalis Mentha arvensis Mertensia paniculata Mitella nuda Moneses uniflora Muhlenbergia asperifolia Myriophyllum sibiricum Nuphar variegata Oenothera biennis Orthilia secunda Parnassia palustris Persicaria amphibia Persicaria maculosa Petasites frigidus var. palmatus Petasites frigidus var. sagittatus Phalaris arundinacea Phleum pratense Phragmites australis Picea glauca Picea mariana Pinguicula vulgaris Pinus banksiana Piptatherum pungens

Twinflower	S5
Northern Twayblade	S2
Kalm's Lobelia	S5
Limber or Twining Honeysuckle	S5
Mountain-fly-honeysuckle	S5
Northern Bugle-weed	S5
Fringed Loosestrife	S5
Tufted Loosestrife	S5
Two-leaved Solomon's-seal	S5
Star-flowered Solomon's-seal	S5
Three-leaved Solomon's-seal	S5
Pineappleweed	SNA
Ostrich Fern	S5
Black Medick	SNA
Alfalfa	SNA
Cow-wheat	S5
White Sweet Clover	SNA
Yellow Sweet Clover	SNA
Common Mint	S5
Tall Lungwort	S5
Mitrewort	S5
One-flowered Pyrola	S5
Scratch Grass	S4
Spiked Water-milfoil	S5
Yellow Pond-lily	S5
Evening-primrose	S5
One-sided Pyrola	S5
Grass of parnassus	S4
Water Smartweed	S5
Spotted Lady's-thumb	SNA
Palmate-leaved Colt's-foot	S5
Arrow-leaved Colt's-foot	S5
Reed Canary Grass	S5
Common Timothy	SNA
Common Reed	S5
White Spruce	S5
Black Spruce	S5
Common Butterwort	S5
Jack Pine	S5
Northern Rice Grass	S5

Plantaginaceae Orchidaceae Orchidaceae Poaceae Polygonaceae Polypodiaceae Salicaceae Salicaceae Rosaceae Liliaceae Rosaceae Rosaceae Dennstaedtiaceae Pyrolaceae Pyrolaceae Fagaceae Ranunculaceae Ranunculaceae Ranunculaceae Rhamnaceae Anacardiaceae Grossulariaceae Grossulariaceae Grossulariaceae Grossulariaceae Grossulariaceae Brassicaceae Rosaceae Rosaceae Rosaceae Rosaceae Polygonaceae Alismataceae Salicaceae Salicaceae Salicaceae Salicaceae Salicaceae Salicaceae Salicaceae

Plantago major Platanthera hyperborea Platanthera obtusata Poa pratensis Polygonum amphibium Polypodium virginianum Populus balsamifera Populus tremuloides Potentilla norvegica Prosartes trachycarpa Prunus pensylvanica Prunus virginiana Pteridium aquilinum Pyrola asarifolia Pyrola chlorantha Quercus macrocarpa Ranunculus aquatilis Ranunculus gmelinii Ranunculus sceleratus Rhamnus alnifolia Rhus glabra Ribes americanum Ribes glandulosum Ribes hudsonianum Ribes oxyacanthoides Ribes triste Rorippa palustris Rosa acicularis Rosa woodsii Rubus idaeus Rubus pubescens Rumex occidentalis Sagittaria cuneata Salix amygdaloides Salix bebbiana Salix discolor Salix exigua Salix fragilis Salix petiolaris Salix pseudomonticola

Common Plantain	SNA
Northern Green Orchid	SNA
Small Northern Bog Orchid	S5
Kentucky Blue Grass	S5
Water Smartweed	S5
Rock Polypody	S5
Balsam Poplar	S5
Trembling Aspen	S5
Rough Cinquefoil	S5
Fairybells	S4
Pin Cherry	S5
Choke Cherry	S5
Bracken Fern	S4S5
Pink Pyrola	S5
Greenish-flowered Wintergreen	S5
Bur Oak	S5
White Water Crowfoot	S5
Small Yellow Water Buttercup	S5
Cursed Crowfoot	S5
Alder-leaved Buckthorn	S5
Smooth Sumac	S4
Wild Black Currant	S5
Skunk Currant	S5
Northern Wild Black Currant	S5
Bristly Wild Gooseberry	S5
Wild Red Currant	S5
Bog Yellowcress	S5
Prickly Rose	S5
Wood's Rose	S4
Wild Red Raspberry	S5
Dewberry	S5
Western Dock	S5
Arum-leaved Arrowhead	S5
Peach-leaved Willow	S4
Bebb's or Beaked Willow	S5
Pussy Willow	S5
Sandbar Willow	S5
Brittle Willow	SNA
Basket Willow	S4
False Mountain Willow	S4S5

Salicaceae	Salix pyrifolia	Balsam Willow	S5
Caprifoliaceae	Sambucus racemosa	Red Elderberry	S4
Apiaceae	Sanicula marilandica	Snakeroot	S5
Cyperaceae	Schoenoplectus tabernaemontani	Soft-stem Bulrush	S5
Cyperaceae	Scirpus microcarpus	Small Fruited-bulrush	S5
Asteraceae	Senecio congestus	Marsh-fleabane	S5
Asteraceae	Senecio vulgaris	Common Groundsel	SNA
Rosaceae	Sibbaldiopsis tridentata	Three-toothed Cinquefoil	S5
Caryophyllaceae	Silene csereii	Smooth Catchfly	SNA
Iridaceae	Sisyrinchium montanum	Common Blue-eyed Grass	S5
Apiaceae	Sium suave	Water-parsnip	S5
Asteraceae	Solidago canadensis	Canada Goldenrod	S5
Asteraceae	Solidago rigida	Stiff Goldenrod	S5
Asteraceae	Sonchus oleraceus	Common Sow-thistle	SNA
Rosaceae	Sorbus decora	Mountain-ash	S4
Sparganiaceae	Sparganium angustifolium	Narrow-leaved Bur-reed	S5
Poaceae	Spartina pectinata	Slough Grass	S5
Rosaceae	Spiraea alba	Meadowsweet	S5
Orchidaceae	Spiranthes romanzoffiana	Hooded Ladies'-tresses	S5
Lamiaceae	Stachys palustris	Marsh Hedge-nettle	S5
Caryophyllaceae	Stellaria longifolia	Long-leaved Stitchwort	S5
Caryophyllaceae	Stellaria longipes	Long-stalked Stitchwort	S5
Caprifoliaceae	Symphoricarpos albus	Snowberry	S5
Caprifoliaceae	Symphoricarpos occidentalis	Western Snowberry	S5
Asteraceae	Symphyotrichum boreale	Northern Bog Aster	S5
Asteraceae	Symphyotrichum ciliolatum	Lindley's Aster	S5
Asteraceae	Symphyotrichum ericoides	Heath or Many-flowered Aster	S4
Asteraceae	Symphyotrichum laeve	Smooth Aster	S5
Asteraceae	Symphyotrichum lanceolatum	Panicles Aster	S5
Asteraceae	Symphyotrichum novae-angliae	New England Aster	S4
Asteraceae	Taraxacum officinale	Common Dandelion	S5
Ranunculaceae	Thalictrum dasycarpum	Tall or Purple Meadow-rue	S5
Brassicaceae	Thlaspi arvense	Field Pennycress	SNA
Asteraceae	Tragopogon dubius	Goat's-beard	SNA
Liliaceae	Triantha glutinosa	Sticky False Asphodel	S5
Primulaceae	Trientalis borealis	Northern Starflower	S5
Juncaginaceae	Triglochin maritima	Seaside Arrow-grass	S5
Asteraceae	Tripleurospermum maritimum	False Mayweed	S3
Typhaceae	Typha angustifolia	Narrow-leaved Cat-tail	S4
Typhaceae	Typha latifolia	Common Cat-tail	S5

Ulmaceae	Ulmus americana	American Elm	S4
Urticaceae	Urtica dioica	Stinging Nettle	S5
Lentibulariaceae	Utricularia macrorhiza	Greater bladderwort	S5
Ericaceae	Vaccinium myrtilloides	Velvet-leaf Blueberry	S5
Ericaceae	Vaccinium oxycoccos	Small Cranberry	S5
Ericaceae	Vaccinium uliginosum	Bog Whortleberry	S5
Caprifoliaceae	Viburnum edule	Lowbush-cranberry	S5
Caprifoliaceae	Viburnum lentago	Nannyberry	S4
Caprifoliaceae	Viburnum opulus	Highbush-cranberry	S5
Fabaceae	Vicia americana	Common Vetch	S5
Violaceae	Viola adunca	Early Blue Violet	S5
Violaceae	Viola canadensis var. rugulosa	Canada Violet	S5
Violaceae	Viola nephrophylla var. nephrophylla	Northern Bog Violet	S5
Violaceae	Viola renifolia	Kidney-shaped Violet	S5
Dryopteridaceae	Woodsia ilvensis	Rusty Woodsia	S5
Apiaceae	Zizia aptera	Heart-leaved Alexanders	S5

Table #2	#2 Mammals of the Bisset Project Area		
Family	Scientific Name	Common Name	Rank
Canidae	Canis latrans	Coyote	S5
Canidae	Vulpes vulpes	Red Fox	S5
Castoridae	Castor canadensis	American Beaver	S5
Cervidae	Alces alces	Moose	S5
Cervidae	Odocoileus virginianus	White-tailed Deer	S5
Leporidae	Lepus americanus	Snowshoe Hare	S5
Mephitidae	Mephitis mephitis	Striped Skunk	S5
Muridae	Clethrionomys gapperi	Southern Red-backed Vole	S5
Muridae	Microtus pennsylvanicus	Meadow Vole	S5
Muridae	Peromyscus maniculatus	Deer Mouse	S5
Mustelidae	Mustela erminea	Ermine	S5
Mustelidae	Mustela vison	Mink	S5
Sciuridae	Tamias striatus	Eastern Chipmunk	S5
Sciuridae	Tamiasciurus hudsonicus	Red Squirrel	S5
Talpidae	Condylura cristata	Star-nosed Mole	S3
Ursidae	Ursus americanus	Black Bear	S5
Vespertilionidae	Eptesicus fuscus	Big Brown Bat	S4S5B
Vespertilionidae	Myotis lucifugus	Little Brown Myotis	S2N,S5B

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Table #3

Birds of the Bisset Project Area

Family Accipitridae Accipitridae Accipitridae Accipitridae Accipitridae Accipitridae Accipitridae Alcedinidae Anatidae Ardeidae Bombycillidae Caprimulgidae Caprimulgidae Cardinalidae Cathartidae Certhiidae Charadriidae Corvidae Corvidae Corvidae Corvidae Cuculidae Emberizidae

Scientific Name
Accipiter cooperii
Accipiter gentilis
Accipiter striatus
Buteo jamaicensis
Buteo platypterus
Circus cyaneus
Pandion haliaetus
Ceryle alcyon
Aix sponsa
Anas americana
Anas crecca
Anas discors
Anas platyrhynchos
Aythya affinis
Aythya collaris
Branta canadensis
Bucephala clangula
Chen caerulescens
Lophodytes cucullatus
Mergus merganser
Ardea herodias
Bombycilla cedrorum
Caprimulgus vociferus
Chordeiles minor
Pheucticus Iudovicianus
Cathartes aura
Certhia americana
Charadrius vociferus
Corvus brachyrhynchos
Corvus corax
Cyanocitta cristata
Perisoreus canadensis
Coccyzus erythropthalmus
Calcarius lapponicus

Common Name	MB Status	Remarks
Cooper's Hawk	S4S5B	PB
Northern Goshawk	S4	М
Sharp-shinned Hawk	S5B	М
Red-tailed Hawk	S5B	PB
Broad-winged Hawk	S4S5B	PB
Northern Harrier	S4B	BL
Osprey	S4S5B	Μ, Τ
Belted Kingfisher	S4S5B	Μ, Τ
Wood Duck	S5B	Т
American Wigeon	S5B	т
Green-winged Teal	S5B	PB
Blue-winged Teal	S5B	т
Mallard	S5B	PB
Lesser Scaup	S4S5B	М
Ring-necked Duck	S5B	т
Canada Goose	S5B	В
Common Goldeneye	S5B	PB
Snow Goose	S5B	М
Hooded Merganser	S5B	т
Common Merganser	S5B	M,T
Great Blue Heron	S4S5B	т
Cedar Waxwing	S5B	BL
Whip-poor-will	S4S5B	BL
Common Nighthawk	S4B	В
Rose-breasted Grosbeak	S4S5B	PB
Turkey Vulture	S4S5B	BL
Brown Creeper	S5	М
Killdeer	S5B	В
American Crow	S5B	BL
Common Raven	S5	BL
Blue Jay	S5	BL
Gray Jay	S5	BL
Black-billed Cuckoo	S3S4B	Т
Lapland Longspur	S4B	М

Emberizidae	Junco hyemalis	Dark-eyed Junco	S5B	PB
Emberizidae	Melospiza georgiana	Swamp Sparrow	S5B	В
Emberizidae	Melospiza lincolnii	Lincoln's Sparrow	S5B	В
Emberizidae	Melospiza melodia	Song Sparrow	S5B	В
Emberizidae	Passerculus sandwichensis	Savannah Sparrow	S5B	В
Emberizidae	Plectrophenax nivalis	Snow Bunting	SNA	М
Emberizidae	Spizella arborea	American Tree Sparrow	S5B	М
Emberizidae	Spizella pallida	Clay-colored Sparrow	S4S5B	М
Emberizidae	Spizella passerina	Chipping Sparrow	S5B	BL
Emberizidae	Zonotrichia albicollis	White-throated Sparrow	S5B	В
Emberizidae	Zonotrichia leucophrys	White-crowned Sparrow	S5B	М
Emberizidae	Zonotrichia querula	Harris' Sparrow	S4B	М
Falconidae	Falco columbarius	Merlin	S4S5	BL
Falconidae	Falco sparverius	American Kestrel	S4S5B	BL
Fringillidae	Carduelis flammea	Common Redpoll	S5	М
Fringillidae	Carduelis pinus	Pine Siskin	S5	BL
Fringillidae	Carduelis tristis	American Goldfinch	S5B	BL
Fringillidae	Carpodacus purpureus	Purple Finch	S5B	М
Fringillidae	Coccothraustes vespertinus	Evening Grosbeak	S5	PB
Fringillidae	Loxia leucoptera	White-winged Crossbill	S5	BL
Gaviidae	Gavia immer	Common Loon	S4S5B	BL
Gruidae	Grus canadensis	Sandhill Crane	S5B	BL
Hirundinidae	Hirundo rustica	Barn Swallow	S5B	BL
Hirundinidae	Riparia riparia	Bank Swallow	S5B	BL
Hirundinidae	Tachycineta bicolor	Tree Swallow	S5B	BL
Icteridae	Agelaius phoeniceus	Red-winged Blackbird	S5B	В
Icteridae	Euphagus carolinus	Rusty Blackbird	S3S4B	Μ
Icteridae	lcterus galbula	Baltimore Oriole	S5B	BL
Icteridae	Molothrus ater	Brown-headed Cowbird	S5B	BL
Icteridae	Quiscalus quiscula	Common Grackle	S5B	BL
Laridae	Larus argentatus	Herring Gull	S5B	Т
Laridae	Larus delawarensis	Ring-billed Gull	S5B	Т
Laridae	Larus philadelphia	Bonaparte's Gull	S5B	BL
Laridae	Sterna hirundo	Common Tern	S4S5B	Т
Paridae	Poecile atricapilla	Black-capped Chickadee	S5	В
Paridae	Poecile hudsonica	Boreal Chickadee	S4S5	В
Parulidae	Dendroica coronata	Yellow-rumped Warbler	S5B	В
Parulidae	Dendroica fusca	Blackburnian Warbler	S5B	В
Parulidae	Dendroica magnolia	Magnolia Warbler	S5B	В
Parulidae	Dendroica palmarum	Palm Warbler	S5B	Μ

Parulidae	Dendroica pensylvanica	Chestnut-sided Warbler	S5B	В
Parulidae	Dendroica petechia	Yellow Warbler Black-throated Green	S5B	В
Parulidae	Dendroica virens	Warbler	S4S5B	В
Parulidae	Geothlypis trichas	Common Yellowthroat	S5B	В
Parulidae	Mniotilta varia	Black-and-white Warbler	S5B	В
Parulidae	Oporornis agilis	Connecticut Warbler	S4S5B	BL
Parulidae	Oporornis philadelphia	Mourning Warbler	S5B	В
Parulidae	Seiurus aurocapillus	Ovenbird	S5B	В
Parulidae	Seiurus noveboracensis	Northern Waterthrush	S5B	М
Parulidae	Setophaga ruticilla	American Redstart	S5B	BL
Parulidae	Vermivora celata	Orange-crowned Warbler	S5B	М
Parulidae	Vermivora peregrina	Tennessee Warbler	S5B	В
Parulidae	Vermivora ruficapilla	Nashville Warbler	S5B	В
Pelecanidae	Pelecanus erythrorhynchos	American White Pelican	S3S4B	Т
Phalacrocoracidae	Phalacrocorax auritus	Double-crested Cormorant	S5B	Т
Phasianidae	Bonasa umbellus	Ruffed Grouse	S4S5	В
Phasianidae	Falcipennis canadensis	Spruce Grouse	S4S5	В
Picidae	Colaptes auratus	Northern Flicker	S5B	В
Picidae	Dryocopus pileatus	Pileated Woodpecker	S5	В
Picidae	Picoides pubescens	Downy Woodpecker	S5	BL
Picidae	Picoides villosus	Hairy Woodpecker	S5	В
Picidae	Sphyrapicus varius	Yellow-bellied Sapsucker	S5B	BL
Podicipedidae	Podiceps grisegena	Red-necked Grebe	S4S5B	Т
Podicipedidae	Podilymbus podiceps	Pied-billed Grebe	S4S5B	Т
Rallidae	Porzana carolina	Sora	S5B	PB
Regulidae	Regulus calendula	Ruby-crowned Kinglet	S5B	В
Regulidae	Regulus satrapa	Golden-crowned Kinglet	S4S5B	М
Scolopacidae	Actitis macularia	Spotted Sandpiper	S5B	В
Scolopacidae	Calidris alpina	Dunlin	S4B	Т
Scolopacidae	Calidris melanotos	Pectoral Sandpiper	SNA	Т
Scolopacidae	Calidris minutilla	Least Sandpiper	S4S5B	Т
Scolopacidae	Calidris pusilla	Semipalmated Sandpiper	S3B	Т
Scolopacidae	Gallinago gallinago	Common Snipe	S5B	В
Scolopacidae	Tringa flavipes	Lesser Yellowlegs	S5B	
Scolopacidae	Tringa melanoleuca	Greater Yellowlegs	S5B	М
Sittidae	Sitta canadensis	Red-breasted Nuthatch	S5	В
Strigidae	Aegolius acadicus	Northern Saw-whet Owl	S4S5B	В
Strigidae	Bubo virginianus	Great Horned Owl	S5	BL
Strigidae	Strix nebulosa	Great Gray Owl	S4	BL
Sturnidae	Sturnus vulgaris	European Starling	SNA	Т
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Trochilidae	Archilochus colubris	Ruby-throated Hummingbird	S5B	BL
Troglodytidae	Cistothorus platensis	Sedge Wren	S5B	В
Troglodytidae	Troglodytes aedon	House Wren	S5B	BL
Troglodytidae	Troglodytes troglodytes	Winter Wren	S5B	В
Turdidae	Catharus fuscescens	Veery	S4S5B	В
Turdidae	Catharus guttatus	Hermit Thrush	S5B	PB
Turdidae	Catharus ustulatus	Swainson's Thrush	S5B	В
Turdidae	Turdus migratorius	American Robin	S5B	В
Tyrannidae	Contopus cooperi	Olive-sided Flycatcher	S4B	М
Tyrannidae	Empidonax alnorum	Alder Flycatcher	S5B	PB
Tyrannidae	Empidonax minimus	Least Flycatcher	S5B	PB
Tyrannidae	Myiarchus crinitus	Great Crested Flycatcher	S4S5B	PB
Tyrannidae	Sayornis phoebe	Eastern Phoebe	S5B	BL
Tyrannidae	Tyrannus tyrannus	Eastern Kingbird	S5B	BL
Vireonidae	Vireo gilvus	Warbling Vireo	S5B	В
Vireonidae	Vireo olivaceus	Red-eyed Vireo	S5B	В

Table #4	Amphibians of the Bisset Project Area		
Family	Scientific Name	Common Name	Rank
Ambystomatidae	Ambystoma laterale	Blue-spotted Salamander	S3S4
Hylidae	Hyla versicolor	Gray Tree Frog	S4
Hylidae	Pseudacris crucifer	Northern Spring Peeper	S4
Hylidae	Pseudacris triseriata maculata	Boreal Chorus Frog	S5
Ranidae	Rana pipiens	Northern Leopard Frog	S4
Ranidae	Rana septentrionalis	Mink Frog	S3
Ranidae	Rana sylvatica	Wood Frog	S5

Table #5Reptiles of the Bisset Project Area

Family	Scientific Name	Common Name	Rank
Colubridae	Thamnophis sirtalis	Red-sided Garter Snake	S3S4
Emydidae	Chrysemys picta bellii	Western Painted Turtle	S4