

PIPESTONE ROCKS
IMPORTANT BIRD AREA
(Lake Winnipeg, Manitoba)



Photo, E.T. Jones

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For

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Executive Summary

Pipestone Rocks Important Bird Area

The Important Bird Area Program

The Canadian Important Bird Areas Program (IBA) was established by the Canadian Birdlife Partners, the Canadian Nature Federation and Bird Studies Canada, as part of an international effort to identify and conserve sites important to all bird species worldwide. Initiated in August of 1999, the Manitoba IBA program is being delivered and administered by the Manitoba Naturalists Society.

Goals of the Canadian IBA Program

The goals are to identify a network of sites that conserve the natural diversity of Canadian bird species and are critical to the long-term viability of naturally occurring bird populations. To determine the type of protection or stewardship required for each site, and ensure the conservation of each site through partnerships with local stakeholder groups who develop and implement an on-the-ground community conservation plan.

Pipestone Rocks IBA

Pipestone Rocks are small islands located in Lake Winnipeg (north of Deer Island) near the northeastern end of Hecla / Grindstone Natural Park. The habitat represents a significant nesting habitat for colonial nesting waterbirds and is especially important for the American White Pelican.

Significant Bird Species

Pipestone Rocks represent a "*nationally significant*" breeding habitat for the American White Pelican. It is recognized within the Canadian IBA congregatory species category. At one time the Pipestone Rocks represented the most eastern population of breeding American White Pelicans.

Pipestone Rocks are recognized as a priority site for breeding colonial waterbirds by Poston et al. (1990) for the American White Pelican. Within Manitoba, the American White Pelican is considered "Uncommon" (defined as between 20 and 100 occurrences in Manitoba and susceptible to large-scale disturbances) (Duncan 1996).

Pipestone Rocks also is home to a diversity of other waterbirds including Herring Gulls, Ring-billed Gulls, Double-crested Cormorants and Common Terns.

Threats

Human disturbance remains the primary threat for Pipestone Rocks. Changing water levels and chemical pollutants such as DDT (dichlorodiphenyltrichloro-ethane) threatened the continental population of pelicans until the early 1970's. Habitat degradation, pollution, pesticide contamination, destruction of food sources through overfishing, and deliberate control measures are human activities are potential threats to the other colonial waterbirds using Pipestone Rocks.

Existing Conservation Measures

The conservation of colonial nesting waterbird populations breeding on the Pipestone Rocks as well as protection of the habitat comprising the Pipestone Rocks will further contribute to the overall protection of Manitoba's natural areas and biological diversity.

Currently, the Pipestone Rocks are afforded protection by being within the Hecla/Grindstone Natural Park. Pipestone Rocks are hence legally protected from logging, mining, and hydroelectric development by virtue of designation as a Backcountry Land Use Category within the Park.

The Ecological Reserves Advisory Committee has recommended that Pipestone Rocks be designated as an Ecological Reserve - Ecological Reserve Status is the highest level of protection available within the province of Manitoba.

Conservation Actions

The objective of this community conservation plan (CCP) is to recognize and conserve the Pipestone Rocks as a breeding habitat of national significance for the American White Pelican. The American White Pelican will be

recognized as the "*Keystone Species*" of this CCP. There are also large assemblages of other colonial nesting waterbirds using the habitat.

The two main tenets of this conservation plan are provisions for monitoring bird populations and community education. There is a need to collect basic population data on the avian assemblages using Pipestone Rocks. Educational efforts will increase awareness of Pipestone Rocks and colonial nesting waterbirds.

It is hoped that by recognizing Pipestone Rocks as a nationally significant Canadian IBA site, this document will lend support to the nomination of Pipestone Rocks as an Ecological Reserve within the province of Manitoba.

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1.0 Introduction

Pipestone Rocks are small islands located in Lake Winnipeg (north of Deer Island) near the northeastern end of Hecla / Grindstone Provincial Park (Appendix I).

The Management Plan for Hecla / Grindstone Provincial Park describes the area as:

"Pipestone Rocks at the northern extremity of Hecla Park is a significant nesting area for Pelicans, Cormorants and Gulls. Sandy Point, a sand spit at the southwestern corner of Hecla Island, is an important nesting area for terns and gulls. These areas offer excellent opportunities for close observations of many species, disturbance of the colonies even briefly may be disastrous. If eggs or young are left by their parents even for a short time, they may be killed by other birds, or perish from either excessive cold or heat. By observing the colonies from a distance, and avoiding these areas during critical nesting periods, visitors may still enjoy spectacular sights. Public access to these nesting-bird colonies at Sandy Point and Pipestone Rocks will not be allowed from May to August without a permit from the Director of Parks (p. 29)."
"Tours will be conducted so that the colonies are observed from a safe distance in order to avoid disrupting nesting birds (p. 44)".

Existing Conservation Measures. Pipestone Rocks are afforded protection by being within the Hecla/Grindstone Provincial Park and are legally protected from mining, logging, and hydroelectric development (through its Backcountry Land Use Category). The Ecological Reserves Advisory Committee (Appendix IV) has recommended that Pipestone Rocks be designated as an Ecological Reserve (Helios Hernandez, personal communication 1999). Ecological Reserve Status is the highest level of protection available within the province of Manitoba. Neither of the above levels of protection have attempted to construct a long-term sustainable conservation strategy specifically for Pipestone Rocks. There is a need for a community conservation plan that focuses on the breeding birds and that will dovetail and support existing and potential designations afforded to Pipestone Rocks.

2.0 The IBA Program

The IBA program is an international initiative coordinated by BirdLife International, a global partnership of over 100 countries seeking to identify and protect sites important to the conservation of bird species worldwide. Through the protection of birds and habitats, IBA's also promote the conservation of the world's biodiversity. IBA programs are currently in place in Europe, Africa, the Middle East, Asia, and the Americas.

The Canadian IBA Program was initiated in 1996 by two Canadian environmental non-government organizations - Bird Studies Canada (BSC) and the Canadian Nature

Federation (CNF). BSC will focus on data collection, site evaluation, and research of Canadian IBAs. The CNF works on policy development, advocacy, communications, and development and implementation of IBA conservation plans. The Canadian IBA program forms part of the Americas IBA program which includes the United States, Mexico, and 17 countries in Central and South America.

The goals of the Canadian IBA program are to:

- identify a network of sites that illustrate and conserve the natural diversity of Canadian bird species and are critical to the long-term viability of naturally occurring bird populations;
- determine the type of protection or stewardship required for each site, and ensure the conservation of sites through partnerships between local stakeholder groups who develop and implement appropriate on-the-ground conservation plans; and
- establish ongoing local involvement in site protection and monitoring.

IBA sites are identified by the presence of birds falling under one or more of the following internationally agreed-upon categories:

- 1) Sites regularly holding significant numbers of an endangered, threatened, or vulnerable species,
- 2) Sites regularly holding an endemic species, or species with restricted-ranges,
- 3) Sites regularly holding an assemblage of species largely restricted to biome.
- 4) Sites where birds congregate in significant numbers when breeding, in winter, or during migration.

For further information on the IBA Program visit:

www.ibacanada.com

2.1 IBA Manitoba

The Manitoba Naturalists Society (MNS) is cooperating with the Canadian Nature Federation and Bird Studies Canada to deliver the conservation planning component of the Manitoba IBA program. The MNS is a non-profit organization made up of individuals who share a common concern for the well-being of Manitoba's nature. It was founded in 1920 for the popular and scientific study of nature. The MNS believes that the chance to experience an undamaged environment in peace and tranquility is a joy and a privilege. It also believes in the importance of sound stewardship, the wise use of our natural resources, fostering an awareness and appreciation of the natural environment and an understanding of humanity's place therein.

The objectives of the MNS include providing an association and a voice for those interested in natural history and the outdoors; to cooperate with individuals and organizations with similar objectives; to arrange educational and recreational programs and field trips to promote an understanding of the natural environment; to stimulate research and to record and preserve data and material in natural history and allied subjects; and to work for the preservation of our natural environment.

In 1996 a number of Manitoba birders gathered to begin identification of possible Manitoba IBA's. By 1999, over 100 locations were nominated for IBA status in Manitoba. In August of 1999, the MNS began IBA community conservation planning with the hiring of a conservation biologist. Shortly after, strategy meetings were held to further identify Manitoba IBA's with local community interest. Advice was solicited from the Canadian Wildlife Service, Ducks Unlimited Canada, Manitoba Conservation, The Nature Conservancy of Canada, Manitoba Habitat Heritage Corporation and local birders.

3.0 IBA Site Information

Name:	Pipestone Rocks
IBA site number:	MB012N
Central Coordinates (Lat/Lon):	51° 03' N; 96° 32' W
NTS Sheet or other site map:	62P/7

Habitat

Pipestone Rocks are 3-4 small granite islands in the southern portion of Lake Winnipeg, north of Deer Island, near the northern end of Hecla/Grindstone Provincial Park boundaries (see Appendix I). Pipestone Rocks are within Lake Winnipeg, one of the largest

freshwater lakes in the world. The general habitat characteristics of Pipestone Rocks can be found in Table 1.

Table 1: Birdlife International IBA habitat types at the global and local IBA level (global habitats are in bold face while local habitats are nested below). Pipestone Rocks habitat types are identified by shaded area(s).

<p>Forest and Woodland Deciduous woods Coniferous woods Mixed Woods Other</p>	<p>Non-tidal Wetlands Freshwater marsh Bog (raised, blanket) Rivers and streams Other</p>	<p>Rocky Areas (cont.) Inland cliffs Scree and boulders Permanent ice/snowfield Islands</p>
<p>Scrub Scrub</p>	<p>Tidal Wetlands Tidal rivers, estuaries Mud flats and sand flats Salt marshes Other</p>	<p>Artificial Landscapes Improved grasslands Arable/cultivated land Perennial crops, orchards, etc Urban parks and gardens, etc.</p>
<p>Savanna Savanna</p>	<p>Marine/Lacustrine Open sea Inlets and coastal features Freshwater lake Inland saline lake Other</p>	<p>Introduced/Exotic Vegetation Not including forestry</p>
<p>Grasslands Tall-grass prairie Short-grass prairie Tundra Alpine grassland Other</p>	<p>Rocky Areas Coastal cliffs/rocky shores</p>	<p>Other Other</p>
<p>Desert Desert Semi desert</p>		

4.0 IBA Bird Species Information

Pipestone Rocks have traditionally been utilized by the American White Pelican, Herring Gull, Ring-billed Gull, Common Tern, and the Double-crested Cormorant (see Appendix III). Of these waterbirds, it is the American White Pelican that meets the Canadian IBA criteria under the congregatory species category. The American White Pelican will be recognized as the keystone species for this site. However, the conservation of all of the above species and the natural habitat would seem the most logical way to maintain the present biological diversity (Noss et al. 1997).

4.1 American White Pelican
***Pelecanus erythrorhynchos* (Gmelin)**
Family Pelecanidae



American White Pelicans are large birds with black primaries and outer secondaries, enormous bills with distensible gular pouch and totipalmate webbed feet.

They are a highly gregarious bird that does not breed prior to three years of age. American White Pelicans breeding on the Pipestone Rocks meet the Canadian IBA Criteria for Congregatory Species (Appendix II). The Congregatory Species category identifies species that concentrate in significant numbers (> 1% of their continental or national population) at an IBA site. Under these criteria the Pipestone Rocks represent a ***nationally important*** breeding habitat for the American White Pelican. We can extrapolate from the data made available through the Manitoba Conservation Data Center indicating a total of 713 American White Pelican chicks were observed on the Pipestone Rocks in 1990. If we assume that only one chick survives per clutch of eggs, then in 1990 there were approximately 1426 adult pelicans present on Pipestone Rocks in 1990. These numbers are just short of recognizing Pipestone Rocks as a globally significant IBA for the American White Pelican (see Appendix II). Unless otherwise indicated, the natural history information for the American White Pelican is taken from summaries compiled by Evans and Knopf (1993) and Godfrey (1986).

Population Trends. Populations of the American White Pelican began to decline in the early 1900's due to unrestricted hunting, many harvested birds were left to rot and not eaten. By the mid-1970's the Canadian population was estimated at 16,000 pairs and in 1978 COSEWIC (Committee on the Status of Endangered Wildlife in Canada) assigned the pelican *threatened* status (Government of Canada 1991). However, numbers of breeding pelicans have increased over its range in the last 20 years. Sidle and Ferguson (1982) reported that intensive aerial surveys of colonies in Canada during 1979 and 1980 revealed 32,907 pelican nests (Sidle and Ferguson referenced K. Roney (Saskatchewan) and W. Koonz (Manitoba) for these figures). By 1987, the populations had recovered to over 50,000 breeding pairs and the American White Pelican was removed from the COSEWIC list. Sloan (1973) reported that the largest nesting colony of American White Pelicans in North America is at Chase Lake National Wildlife Refuge on the Missouri Coteau in North Dakota estimated to be 10,000 breeding pelicans in 1972.

Reported Canadian Population Status

1967-1969	14,103 nests (estimate 28,206 breeding pairs)
Mid 1970's	16,000 pairs
1979-1980	32,907 nests (estimate 65,814 breeding pairs)
1987	50,000 pairs

Reported Manitoba Population Status

1969	6,800 nests (Vermeer 1970)
1971	7,388 nests (Boeker 1972)
1979	14,021 nests (Koonz and Rakowski 1985)

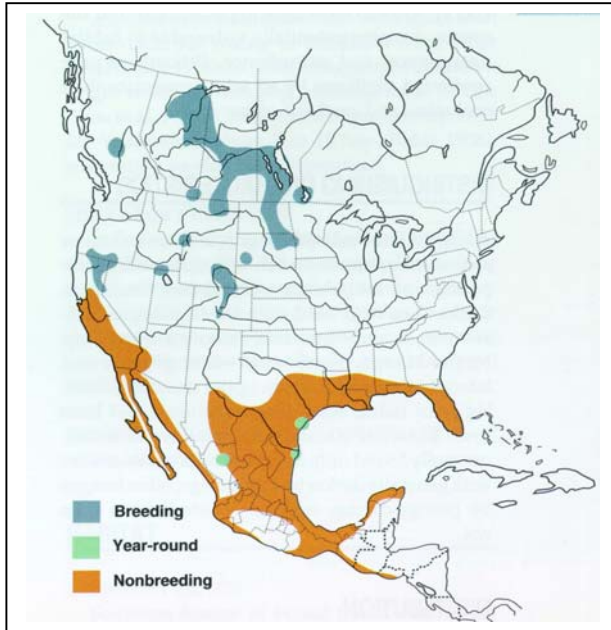
In 1969, Vermeer (1970) used visual estimates and found 15 Manitoba nesting islands totaling 6,800 nests on 8 lakes. In 1971, Boeker (1972) used air photos and counted 7,388 nests on 5 lakes where Vermeer (1970) previously reported 5,760 nests. Koonz and Rakowski (1985) surveyed 36 islands, found 14,021 nests with a range from one to 2,004 nests per breeding island. The American White Pelican in Manitoba was considered near population peaks in 1979 by Koonz and Rakowski (1985).

Food Habits. While the main food is fish, pelicans will also eat frogs, crayfish and salamanders. Studies indicate that preferences are for minnows and slow-moving non-game fish of little interest to humans. Evans and Knopf (1993) report that pelicans forage on mainly rough fish of low economic value. Nocturnal foraging is common during the breeding season.

Migration. Pelicans return from northern breeding grounds before the lakes are free of ice but when many rivers have some open water available for foraging (Vermeer 1970). First arrivals in Manitoba are during the first 2 weeks of April with the majority of pelicans arriving April 15 to early May of each year (Evans and Knopf 1993).

Nesting. It is known that pelicans are monogamous. Adult birds arrive at nesting colonies in small numbers 3 weeks prior to breeding. Courting and pairing then occur at the colony usually between April 15th - 26th in southern Manitoba. The first egg is laid about one day after nest completion. The incubation period is about 30 days. Altricial young are totally dependent upon the parents for food, warmth, and protection. Generally only one of the two young survives, a form of siblicide. The first-hatched chick normally grows significantly faster than the second-hatched chick, which usually dies. The older sibling typically harasses younger sibling by biting and pecking the head, neck and back (Evans and Knopf 1993). Creches or pods of young form by about 17 days as parents start to leave the nest site unattended (Evans and Knopf 1993). Fledgling occurs at about 10-11 weeks of age, 1 week or more after first flights and in late August or early September.

Nesting populations are regulated by water levels that flood nests or allow nesting islands to be connected to the mainland and accessible to predators (Evans and Knopf 1993). Populations are able to shift to more favorable breeding areas. Evans and Knopf (1993) reported that the largest colonies are characterized by stable nesting habitat, food supplies and experience minimal disturbance.



Breeding Ranges. Godfrey (1986) reported that the American White Pelican breeds locally from southwestern Canada south to southern California, northern Utah, southern Montana and South Dakota, while wintering in the United States and Guatemala. The breeding distribution map indicates the American White Pelican breeds through central and southern Manitoba. While Pelicans have not been known to breed in the eastern portion of the province (precambrian shield region), however birds have been observed in the Lac du Bonnet, Bird River area, as well as along the Winnipeg River as far as the Ontario border (personal observation). Nesting colonies have been reported from Lake

of the Woods in June 1938 and 1954 on Dream Island, Burton Island in 1982 and Three Sisters Islands - these may represent the most eastern breeding range of the pelican (Cadman et al. 1987). At one time the Pipestone Rocks represented the most eastern population of breeding American White Pelicans. Above figure represents breeding and wintering ranges of the American White Pelican (Evans and Knopf 1993).

Threats. Combinations of changing water levels, human disturbances, and chemical pollutants such as DDT (dichlorodiphenyltrichloro-ethane) threatened the continental population of pelicans until the early 1970's. DDT is a synthetic insecticide introduced for widespread use after World War II. Chlorinated organic compound is persistent and bioaccumulates hence the use of DDT was banned in 1974. However, use and sales of existing stocks of DDT were allowed until December 31, 1990. Human interference (fisherman, birders, ecotours, researchers) may cause adults to desert increasing the probability of mortality from exposure or predation by gulls (of young and eggs).

Management Concerns. Protection of breeding colonies from human disturbance remains the primary management concern (Evans and Knopf 1993). Improved protection through legislation and greater public awareness have contributed significantly to population growth after the 1960's (Koonz 1987). Sidle and Ferguson (1982) concluded that management of pelican colonies required accurate monitoring of population numbers, protection of the immediate environment and restriction of human visitation.

Protection. The White Pelican is not protected under the Migratory Birds convention Act of 1916 due to the erroneous belief that they consume large quantities of commercial and sport fish. However, it does receive full protection under the Provincial Wildlife Act (Markham 1978). The American White Pelican was not officially protected in Manitoba until 1963, when they received provincial protection under Division 6 of The Wildlife Act (Koonz and Rakowski 1985).

Educational Videos. Stakeholders are encouraged to view two videos that are available through Manitoba Conservation in Winnipeg. "*Pelicans and Cormorants: Prairie Scapegoats*" was produced by The Nature of Things with David Suzuki and documents Pelican and Cormorant issues on Lake Winnipegosis (Manitoba) documenting the interactions with the commercial fishery, human disturbances at breeding colonies, impacts of pesticides such as DDT, and interactions with commercial fisheries along the Mississippi Delta. The second video entitled "*Traditions of the Pelican*" was produced by the World Wildlife Fund and documents general pelican biology and threats to breeding colonies.

4.2 Double-crested Cormorant *Phalacrocorax auritus* (Lesson) Family Anhingidae

Cormorants are protected under wildlife acts in many provinces, however they do not have protection under the 1916 Migratory Birds Convention Act. They are named for the inconspicuous tuft of feathers on either side of the head that is found on adults in the spring and shed early in the nesting season.



"Breed in Manitoba beginning in June. Cormorants nest in colonies, constructing large nests using twigs and various plant materials. Nests are used year after year and are re-lined each season with fine plant material. Nests may be constructed in trees, on cliffs, or on rocky islands. They usually lay 3-4 pale-blue eggs which soon become nest stained. Both parents incubate for 24-25 days. The young are born naked and helpless. They learn to fly at 5-6 weeks, but learn to dive earlier. In the recent past, cormorants along with pelicans have been persecuted by commercial fishermen who viewed these birds as competitors. However, they prefer to feed on fish species which are of no economic importance, such as carp".

(Source http://www.chin.gc.ca/~anana/MMMN/English/a_pelican.html)

Population Trends. Cormorant populations occur in all 10 Canadian provinces and four sub-populations are recognized: East Coast, Great Lakes, Prairie and West Coast (Koonz and Rakowski 1985). Manitoba Status Rank and Conservation Issues (Duncan 1996) list the Double-crested Cormorant as "Apparently Secure". Poston et al. (1990) list the Double-crested Cormorant at Pipestone Rocks as a species of "Regional Importance" (criteria: 500 to 2000 nests).

Historical Populations of Cormorants in Manitoba		
1936	9,320 nests on 27 islands	Mendall (1936)
1969	4,772 nests on 37 island and 13 Lakes	Vermeer (1969)
1979	22,642 nests on 60 colonies	Koonz and Rakowski (1985)

Koonz and Rakowski (1985) surveyed 60 colonies in 1979 reporting 22,642 nests with a range from 11 to 2,481 nests per island (see above Table). Colonies were usually on major lakes and on barren islands. Koonz and Rakowski (1985) reported that cormorant numbers in Manitoba were considered near their peak in 1979. Similar population increases have been documented for the Canadian Great Lakes area from as little as 34% on Lake Superior to as much as 387% on Lake Erie (Weseloh et al 1999).

Management Concerns. Blokpoel and Weseloh (1999) suggested that increasing Double-crested Cormorant populations present an urgent management problem in that they are impacting Smallmouth Bass (*Micropterus dolomeiui*) populations, destroying nest trees, replacing nesting Black-crowned Night Herons, and impacting limited Carolinian habitat.

Commercial Fishery. In the recent past, cormorants along with pelicans, have been persecuted by commercial fishermen in Manitoba who viewed these birds as competitors. Studies by H.F. Lewis in eastern Canada revealed cormorants do little harm to commercially important fish species. During the open water season it is very common to see gulls, terns, pelicans and cormorants circling the fishing yawls waiting for the coarse fish (fish of low commercial value) to be discarded into the water. These fish are promptly eaten by the colonial birds. By July 1st, most of the young of the year are either fledged or close to being fledged, hence the disposal of commercial fishing bycatch is probably contributing to an increase in survival of colonial nesting birds on Lake Winnipeg (Pat Rakowski, personal communication, 2000).

The following paragraph is taken verbatim from Koonz and Rakowski (1985). "The cormorant has been accused of causing declines in Manitoba's commercial fishery. This contention has not been disproven to the satisfaction of fisherman. In the late 1940's to mid-1950s the provincial government assisted in cormorant colony destruction on Lake Winnipegosis (McLeod 1943; 1954; McLeod and Bondar 1953). Numbers of adults on Lake Winnipeg were considered reduced from 39,448 to 18,624 between 1945 and 1951.

Commercial fishermen and recently Manitoba's trout farmers continue to exert pressure for provincial sanction and assistance in eliminating the "Crowduck menace" (p. 21)."

Breeding Range. Godfrey (1986) reports the Double-crested Cormorant breeds from southwestern Alaska, central Alberta, James Bay, and Newfoundland south to Mexico and the Bahamas. The breeding distribution map indicates that the Double-crested Cormorant breeds throughout southern Manitoba.

Indicator Species. The Double-crested Cormorant was selected as a national indicator species for organochlorine levels in wildlife because of its broad distribution across Canada and because it is a top predator and eats live fish. The main breakdown product of DDT is dichlorodiphenyldichloroethylene (DDE), a compound that interferes with enzymes necessary of the production of calcium carbonate in female Double-crested Cormorants and other birds such as the American White Pelican. Eggshells with less calcium carbonate are thinner and more likely to crack to break during incubation. Other threats include PCBs that have been linked to defects in cormorant chicks (The State of Canada's Environment 1996).

4.3 Herring Gull

Larus argentatus (Pontoppidan)

Family Laridae

A large broadly distributed gull known as the "sea-gull" (Godfrey 1986). Adults are white with light grey back, black wingtips, pink legs and the bill is yellow with a red spot on the lower mandible.



"Herring Gulls return to Manitoba around the 2nd week of April, and usually begin breeding in May. They usually nest in colonies near water, often on grassy or rocky islands. The nest consists of a depression, built up with grasses, mosses and weeds, and lined with finer grasses and possibly feathers. The female usually lays 2 - 3 olive-colored eggs, heavily blotched with brown and black, which both sexes incubate for 25 - 27 days. The young are tended by both parents, and first fly at about 6 weeks of age."

(Source http://www.chin.gc.ca/~anana/MMMN/English/a_pelican.html)

Predominantly islands including offshore islands, rocky islets, dredge tailings, marshy hummocks and barrier beaches (Pierotti and Good 1994). The Pipestone Rocks are recognized by Poston et al. (1990) as a site of national importance for the Herring Gull (criteria: national importance > 200 nests). Numbers of Herring Gulls breeding on Pipestone Rocks do not meet any IBA thresholds.

Habitat and Food Habits. The Herring Gull is a generalist predator on pelagic and intertidal marine invertebrates, fish, insects, other seabirds, as well as adults, eggs and young of their own species, carrion, and human refuse (Pierotti and Good 1994). Herring gulls will forage up to 100 km from breeding colonies. Godfrey (1986) reports that the Herring Gull is largely a scavenger at garbage dumps while also eating fish, freshwater invertebrates and eggs and young of other birds. Vermeer (1973) examined the food habits of Herring gulls feeding at Kawinaw Lake in Manitoba. He reported Herring Gulls fed on dead and dying Suckers (Catostomidae) in creeks and Perch (Percidae). Vermeer (1973) further reported a shift from voles and fish early in the laying season to mostly fish later on, and an additional shift from Suckers during the laying season to Perch when the chicks were being raised.

Vocalizations and Behavior. The Herring gull has been extensively studied by researchers such as N. Tinbergen in his 1960 book "The Herring Gull's World". A number of vocalizations have been identified, primarily by N. Tinbergen, including the long call, long-call note, warning call, mew call, begging call, copulation call, choking, alarm call, charge call and shrill waver. Tinbergen (1960) also described a number of communicative interactions including an upright posture, alert posture, oblique posture, silent squat, grass-pulling, choking, mew-call posture, head-tossing, facing away, and anxiety posture.

Breeding. Pair formation takes place in March or April on the male's territory or loafing areas. Males first breed in fourth year of life, females in fifth. Most clutches are initiated in May and birds require 3-4 d to lay 3-egg clutch. Incubation periods tends to be 30-31 days. Incubation is shared by both the male and female. Chicks are nidifugous, semiprecocial with open eyes. Pairs nesting successfully use the same breeding territory until male dies or deserts (Tinbergen 1960).

Manitoba Breeding Range. Vermeer (1973) observed breeding Herring Gulls on Pelican Lake and at the southern half of Lake Manitoba. The breeding range of Herring Gulls coincided with the distribution of larger lakes in the Canadian prairie provinces (Vermeer 1973). Godfrey (1986) reported that the Herring Gull breeds across southern Manitoba (Lake Winnipeg and Shoal Lake).

Population Trends. In a survey conducted in 1979, Koonz and Rakowski (1985) reported 50 colonies with 1,791 nests in Manitoba, with colonies found across southern Manitoba except for the southwestern portion of the province. They noted that Herring Gulls are low-density nesters which make colony identification and number estimates difficult, especially from aerial surveys. Herring Gull populations on the Canadian Great Lakes are at least stable with overall slight decreases of 2% (Weseloh et al 1999).

Threats. Herring Gulls were actively hunted for eggs and feathers during the nineteenth century, however, are now protected from both of these forms of exploitation (Pierotti and Good 1994). Oil pollution, pesticide contamination, destruction of food sources through overfishing, and deliberate control measures are human activities impacting the Herring Gull.

4.4 Ring-billed Gull

Larus delawarensis (Ord)
Family Laridae



The Ring-billed Gull is probably the most abundant gull in North America. It is medium sized, white headed gull that frequents garbage dumps, parking lots, and southern beaches in large numbers in the winter (Ryder 1993). The Ring-billed Gull is 15% larger, heavier-bodied, and with thicker, black-ringed bill than the Common Gull (Ryder 1993). Ring-billed Gulls are highly gregarious nesting in colonies from 20 to 70,000-80,000 pairs, and as many as 50,000 nonbreeding individuals at landfill sites. Ring-billed Gulls have been well studied, with one review paper citing 333 references. The biology and ecology of this species has been summarized by Ryder (1993).

Poston et al. (1990) lists The Pipestone Rocks as an area of "Regional Importance" (criteria: 2000 to 8000 nests) for the Ring-billed Gull.

Breeding Biology. Ring-billed Gulls are monogamous, 62% of 29 pairs retained the same mate in a subsequent year, and they share in incubation and brood rearing duties. Birds pair just prior to arrival on breeding sites. Peak of egg laying occurs in Manitoba in late May. Clutch sizes usually 2-4 eggs with a mean of 2.8-2.9 (Vermeer 1970b). In Ontario, the incubation period ranges from 20-31 days with a mean of 26 days (Ryder 1993; Vermeer 1970b). Young are born semiprecocial, eyes closed until dry and stay in the nest until able to walk (nidifugous).

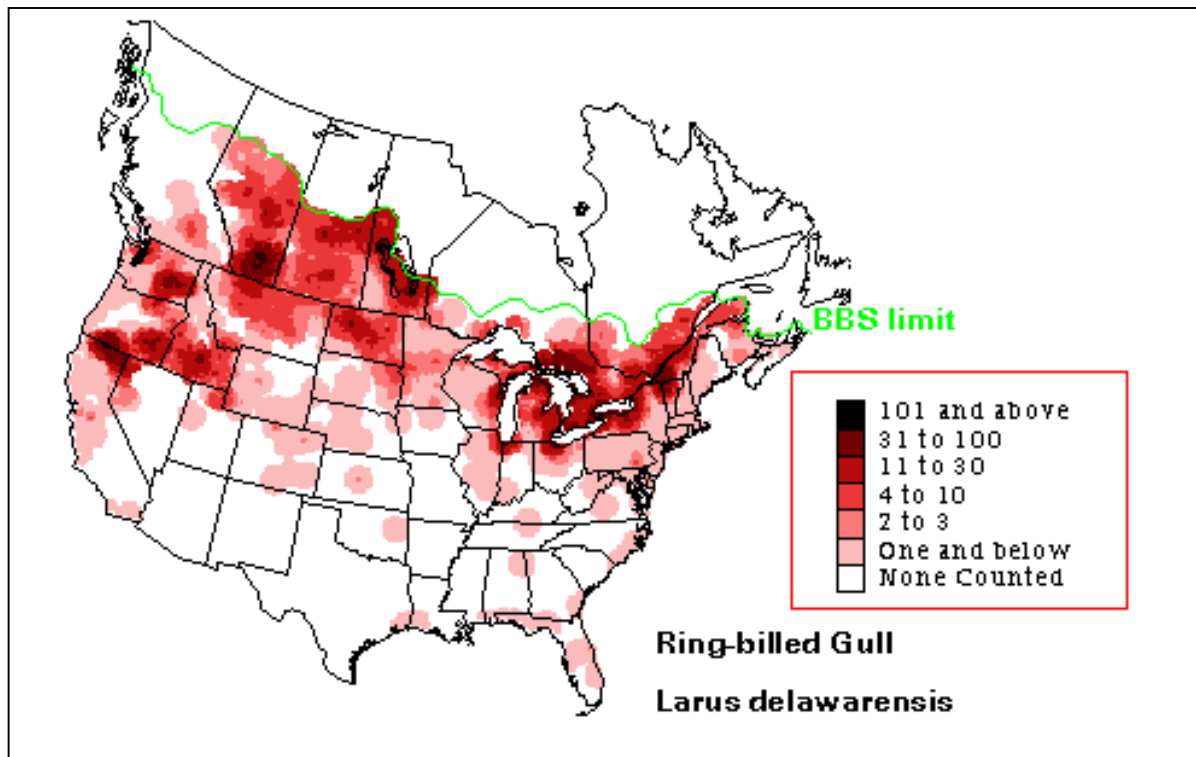
"Breeds in Manitoba beginning in May. They usually nest in large colonies of thousands of pairs, on islands or along shores of freshwater lakes. The nest is constructed on the ground or on floating mats of vegetation, using weeds, grasses or other debris. They usually lay 3 olive-buff eggs, speckled with brown, and the incubation period is about 21 days. The young are downy and somewhat independent at hatching, able to swim at an early age. Both parents tend to the young until they are able to fly"

(Source http://www.chin.gc.ca/~anana/MMMN/English/a_pelican.html).

Habitat and Food Habits. This species nests on the ground close to water, mostly on low elevation islands with sparse or wood vegetation (Ryder 1993). In western U.S., there is a strong tendency for colonies to be within 36 km radius of towns. Ryder (1993) reports the Ring-billed Gull is an opportunistic feeding on fish, insects, earthworms, rodents and grain. Vemeer (1970b) found Ring-billed gulls diet includes grain, insects, rodents, birds, and bird

eggs. It is a common sight in Manitoba to see flocks of Ring-billed Gulls in pastures and ploughed fields foraging for grains, anthropods and earthworms.

Range. The Ring-billed Gull nests across southern Canada and the northern United States. Godfrey (1986) reports the breeding range of the Ring-billed Gull covers most of southern Canada and the majority of southern Manitoba at least as far north as Southern Indian Lake (see figure below). It winters on the shores and also up to hundreds of kilometers inland. The West Coast portion of its winter range includes coast from southern British Columbia to central Mexico and here it overlaps with the California Gull. In addition, the Ring-billed Gull frequents coastline in the United States. along the Gulf of Mexico and the Atlantic, and winters inland on the southern Great Plains and the Atlantic shelf. Banding studies indicate two main wintering areas along the Pacific coast of California and Mexico and Florida (Ryder 1993).



Historical Population Changes. Ryder (1993) describes historical changes in Ring-billed Gull distributions. Population numbers declined from 1840s to 1920s from persecution by use of plumage for millinery trade, eggs for food, and encroachment of nesting habitat by human settlers. As a result by the 1920s Ring-billed Gulls had disappeared from many breeding sites. In the Great Lakes region, population increases were attributed to the 1916

Migratory Birds Convention Act, the introduction and spread of Rainbow Smelt (*Osmerus mordax*) in 1922; the introduction of Alewives (*Alosa pseudoharengus*) in 1950; and the creation of nesting islands during low water periods in the early 1970s. Populations continued to grow due to agricultural expansion which provided grain, tilling that exposed other food sources in fields, the creation of islands through reservoir construction, the stocking of reservoirs with fish, and the growth of garbage dumps and wasted food.

Population Trends. The Canadian breeding distribution includes colonies on the prairies, the Great Lakes and along the east coast (Koonz and Rakowski 1985). Ryder (1993) estimated a world population of 3-4 million individuals with 70% nesting in Canada and 30% nesting in the U.S. Breeding bird surveys indicate the population numbers are on the rise. Colonies such as the Little Gallo Island colony in the U.S. can be as high as 82,000 pairs. Koonz and Rakowski (1985) found 25 colonies with an estimated 30,000 breeding pairs (or 60,000 individuals) in southern Manitoba in 1984 (colonies in northern Manitoba were not included in their survey so the estimate should be considered conservative). They reported that populations were restricted to islands and larger lakes where as many as 12,000 and as few as 8 nests, and an average of 1,200 nests per colony. Koonz and Rakowski (1985) reported that areas colonized by Ring-billed Gulls are soon after used by other colonial nesting birds. Based on population numbers presented by Ryder (1993), there were an estimated 829,000 pairs in Canada (survey data collected between 1976 and 1988) hence, Manitoba has 3.6% of the Canadian breeding population of Ring-billed Gulls. Populations in Manitoba are considered high by Koonz and Rakowski (1985), and on the rise. Similar population growth patterns have been reported in Alberta where numbers increased from 20,000 pairs in 1968 to nearly 40,000 pairs in 1977. The continent-wide population explosion has seen the Ring-billed Gull displacing the Common Tern in mixed colonies and is considered a management problem (Blokpoel and Weseloh 1999).

Threats. Ring-billed Gulls were impacted by poly-chlorinated biphenyl pesticides as were many other birds. In 1979 and 1984, analyses of Ring-billed Gulls from Lake Ontario for DDE indicated PCB levels have declined by 80% since 1960s.

Management. There is no continent-wide management program for Ring-billed Gulls other than the Migratory Birds Convention Act. "In Ontario, recent concerns with gull numbers in urban and suburban areas associated with airline flight safety, human health, agricultural and horticultural damage, nesting on urban roofs and interfering with industrial operations, incompatibility with land use (parks), and encroachment on Common Tern nesting habitat, are dealt with on a case by case basis" (Ryder 1993). Depending on need, special permits have been issued to control gulls using a variety of methods including noise and distress calls, falconry, prevention of nesting by stretching monofilament lines over the nesting area, removal or oiling of eggs, or the destruction of nesting habitat. Killing gulls, other than through falconry, has not been permitted by the Canadian Wildlife Service, but in the United States kill permits have been issued at airports and orchards.

4.5 Common Tern

Sterna hirundo Linnaeus

Family Laridae



The Common Tern is a breeding resident of the Pipestone Rocks (W. Koonz, personal communication, 2000). It builds a nest in shallow depressions in sand, gravel, turf or rock (Godfrey 1986). Godfrey (1986) describes the Common Tern as similar to the Arctic Tern with a black and crown and nape, grey back and primaries, tail forked with a red bill. Adults have a black patch that extends from in front of the eye around the back of the head. Its diet is comprised of almost exclusively fish and aquatic invertebrates.

Breeding. Usually nests at age 3. Clutch size usually 3 olive or brown eggs laid from late May to early June. The incubation period is 21-28 days and is carried out by both parents, fledging occurs around 28 days after hatching. Nest is a slight depression in soil lined with grasses, seashells, or bits of seaweeds. Nest in colonies often with other terns (Godfrey 1986).

Range. Breeding widely across Northern Hemisphere from Alberta east to Newfoundland (Godfrey 1986).

Population Status. Rose and Scott (1997) provide a rough estimate of 100,000 birds in North America. Numbers in Manitoba appear to be in decline (Koonz and Rakowski 1985). In a survey conducted by Koonz and Rakowski (1985) in 1979, they found 24 colonies totaling 3,684 nests with colonies ranging in size from 20 to 1,000 nests.

Threats. Koonz and Rakowski (1985) cited water-level manipulations and human disturbance the major threats to Manitoba's Common Terns. Common Tern populations on the Canadian Great Lakes are also declining, with the main stress on populations being invasion of colonies by Ring-billed Gulls and/or vegetation (Blokpoel and Weseloh 1999).

Management Considerations. Habitat loss, prolonged inclement weather, nest predation, human disturbance, displacement by gull species, and possibly chemical contaminants are factors affecting nesting terns. Human disturbance near colonies during the nesting season should be prevented. Preferred nesting sites contain 10-30% vegetative cover. Sites should be managed accordingly to provide sparsely vegetated areas that are free of avian and mammalian predators, such as great horned owls, minks, rats, raccoons, and red foxes.

Summary of Pipestone Rocks breeding bird species assemblages.

Species: Common Name	IBA Category	Numbers Reported	Year of Occurrence	Reference Source
American White Pelican	4	1000+	1997	D.R.M. Hatch
American White Pelican	4	500-2000 nests	n/a	Poston et al 1990
American White Pelican	4	713 Young	1990	MBCDC Sept. 1999
Herring Gull	4	> 200 nests	n/a	Poston et al 1990
Herring Gull	4	225 young	1990	MBCDC Sept. 1999
Ring-billed Gull	4	2000-8000 nests	n/a	Poston et al 1990
Double-crested Cormorant	4	500-2000 nests	n/a	Poston et al 1990
Double-crested Cormorant	4	150 birds	n/a	Lewis (1929)
Double-crested Cormorant	4	128 birds	n/a	Rogers, unpub
Double-crested Cormorant	4	260 nests	n/a	Vermeer (1969)
Double-crested Cormorant	4	507 nests	1990	MBCDC Sept 1999
Common Tern	4	n/a	n/a	n/a

5.0 Land Ownership and Use

5.1 Land ownership

Pipestone Rocks are presently Crown Land within the Hecla / Grindstone Provincial Park. The area including Black Island and Deer Island is under considered for transfer to the federal government as part of a new proposed national park.

5.2 Land and Water Use

Colonial Nesting Bird Species and Commercial Fishery

Lake Winnipeg supports an important commercial fishery that includes walleye, sauger, whitefish and tullibee as well as an important sport fishery that includes walleye, sauger, and northern pike. Lake Winnipeg is an important commercial fishing area and hence conflicts exist between commercial fisherman and bird species that are believed to forage on

and reduce the populations of commercially important fish species. For example, Keith (1995) reported that between the late 1940's and mid 1950's the Manitoba provincial government assisted commercial fisherman with the destruction of Cormorant colonies on Lake Winnipegosis reducing the number of adults from about 39,000 in 1945 to 19,000 in 1951. Over the past 10 years Pipestone Rocks have not been a target for colonial waterbird extermination and no reports were found documenting hostile interactions between commercial fisherman and breeding birds (Lynn Nolden, personal communication, October 1999).

Lake Winnipeg Water Regulation

Lake Winnipeg supports numerous islands used by colonial nesting waterbirds for breeding and these have been discussed by McLeod (1953) and Vermeer (1969). Lake Winnipeg water levels fluctuate considerably from year to year changing the size and shape of colonial nesting bird islands and reefs, some disappear entirely in years of high water (McLeod 1953). As a result, colonial nesting waterbirds will commonly move between islands to breed depending on water levels. For example, in a given year there may be 1000's of breeding birds on a particular island, but in the next year the habitat has changed and the birds move to more suitable habitats nearby. Depending upon water levels, the number of birds breeding on Pipestone Rocks changes accordingly.

Ecotourism: Tours of Pipestone Rocks Colonial Nesting Area

The Manitoba Parks Branch (1988) management plan included plans for ecotourism with excursions to the Pipestone Rocks. It was suggested that boat tours from Gull Harbour to the Pipestone Rocks could be provided and that tours will be conducted so that the colonies are observed from a safe distance in order to avoid disrupting nesting birds. Tours of Pipestone Rocks have not yet come to fruition (Lynn Nolden, personal communication, October 1999), however do represent a potential opportunity. Human disturbance of nesting habitat during the breeding period should however, be recognized as a potential threat to the assemblages of breeding birds.

5.3 Conservation Management Achieved at Site

The conservation of colonial nesting waterbird populations breeding on the Pipestone Rocks as well as protection of the habitat comprising the Pipestone Rocks will further contribute to the overall protection of Manitoba's natural areas and biological diversity. Conservation management has been achieved through the designation of the area as the Hecla / Grindstone Provincial Park. Additional conservation management may potentially be provided through the designation of Pipestone Rocks as an Ecological Reserve. Remoteness and difficult lake conditions limit visitation to the Pipestone Rocks and provide a degree of

protection since the rocks can only be accessed by boat or aircraft. There is a need to address Pipestone Rocks and its breeding birds as an independent entity.

5.4 Stakeholder Group

Hecla / Grindstone Provincial Park

The Pipestone Rocks are within the boundaries of the Hecla / Grindstone Natural Park (area of 1,084 km²). Changes in designation under a new Provincial Parks Act in 1997 resulted in Hecla and Grindstone parks combined forming the Hecla / Grindstone Natural Park. Hecla Island is on the eastern edge of sedimentary rocks that underlie the plains of southwestern Manitoba. On Black Island and along Lake Winnipeg's east shore, these sedimentary lowlands give way to the Precambrian Shield consisting of ancient granite and volcanic rocks (Hecla/Grindstone Provincial Park brochure 1998).

Pipestone Rocks are within the given Backcountry Land Use Category for Hecla/Grindstone Natural Park. One of the intentions of this category is to protect undisturbed habitat for wildlife including colonial nesting birds, bald eagles and moose. By recognizing Pipestone Rocks as a Manitoba IBA site, we can further emphasize the importance of colonial nesting waterbirds both within the park and across the province.

6.0 Opportunities

6.1 Educational Awareness

The Pipestone Rocks provide unique opportunities for interpretative programs that will foster a greater awareness of colonial nesting waterbirds in Manitoba. The colonial nesting waterbirds utilizing habitat on Pipestone Rocks represent an important element in Manitoba biodiversity. It would be generally safe to report that the majority of Manitoba residents are not aware of the Pipestone Rocks and are unfamiliar with colonial nesting waterbirds and their ecology. There is a need to increase educational programming both locally and regionally.

6.2 Research Opportunities

Opportunities for general scientific research on colonial waterbirds exist. Research initiatives should include long-term population monitoring in an effort to construct quantitative population databases. Population monitoring will provide ecological barometers that may provide information on local environmental conditions that may have indirect or direct impacts on bird populations. For example, the effect of increasing pesticide usage on

breeding waterbirds or the impacts of commercial fishing and/or commercial fisherman. Research can be as simple as collecting annual data on arrival dates of the breeding birds, number of pairs, number of nests and dates of fall migration. Potential research topics may examine:

- **Monitoring Site Fidelity.** There is evidence that some young will return to natal colony as breeders and some young will breed away from the natal colony. Pelicans banded as young in the late 1970's still breed at natal colony at East Shoal Lake (Manitoba) in 1993 (Evans and Knopf 1993). If birds use specific colonies on an annual basis conservation of these breeding habitats protects the genetic distinctness of that colony.
- Information on whether reported Ring-billed Gulls are displacing Common Terns in mixed colonies (see Blokpoel and Weseloh 1999) at Pipestone Rocks ?

In the event researchers must enter colonies, Evans and Knopf (1993) provided some general guidelines on how best to approach nesting colonies (also see Appendix VII):

- Avoid obtrusive entry to breeding colonies during first half of incubation period;
- Place a shroud over boat or walking in a portable blind aids access;
- Timing of courtship flights predicts reproduction behavior;
- Visits to colonies should be brief and not during inclement weather;
- Final approach should be on hands and knees;
- Counting all nests on ground rarely justified in view of aerial census methods.

6.3 Ecotourism

Ecotourism opportunities exist that may provide economic benefits to the local communities (Gimli and Riverton) and provincial park by generating revenues and creating additional employment. Colonial nesting waterbirds can provide unique wildlife-viewing opportunities. Ecotourism can foster a higher awareness of the Pipestone Rocks, the importance of colonial waterbirds in Manitoba, and the Hecla / Grindstone Provincial Park. However viewing opportunities must be strictly managed to eliminate any disturbances to the nesting birds.

7.0 Threats to the American White Pelican

Combinations of changing water levels, human disturbances, and chemical pollutants such as DDT threatened the continental population of American White Pelicans until the early 1970's. The population has since recovered and appears to have stabilized but the species remains potentially vulnerable to habitat degradation and disturbance (Evans and Knopf 1993).

Human Disturbance. The greatest threat to White Pelican populations appears to be increased human activity and disturbance at breeding colonies. Pelicans respond to human disturbance by deserting the nest, especially early in the nesting season. Evans and Knopf (1993) reported that parents will take flight and circle and may remain off nest for long periods when disturbed. Predation of eggs and young by gulls can be severe when parents are disturbed and respond by leaving the nest. Small nestlings are also eaten by gulls when evicted from the nest by older siblings. Embryos in eggs left unattended for long periods may be destroyed by temperature extremes. Evans and Knopf (1993) reported that motor boats passing by and low flying airplanes can cause upflights from colonies. Obtrusive entry into breeding colonies especially during courtship and incubation should be avoided.

Pesticides. Additional threats include toxic waste, pesticides, and general pollutants. As nesting colonies tend to be traditional sites, the pelican's breeding colonies may be particularly vulnerable to site specific disturbances such as toxic waste and pesticides. Pelicans are vulnerable to pollutants because of their water-based food chain. Urban, agricultural and industrial pollutants enter water ecosystems easily. In the case of pollutants that take a long time to degrade, such as persistent organochlorines (e.g. DDT) it could be shown that pelicans accumulate these chemicals. Rather than passing chemicals through their bodies, the physiology is such that chemicals are stored, often in body fat. When fat stores are used later, as during egg laying, these chemicals can be mobilized in amounts sufficient to cause harm (e.g. eggshell thinning leading to egg breakage).

Hunting. Although hunting has not been reported to be a threat to pelicans at Pipestone Rocks, the largest known cause of pelican mortality is shooting, particularly by fishermen who believe the pelican to be a competitor. It has been reported that hunters occasionally shoot pelicans, mistaking them for snow geese (Source http://www.chin.gc.ca/~anana/MMMN/English/a_pelican.html).

8.0 Conservation Goals and Objectives

8.1 Vision

The Pipestone Rocks Community Conservation Plan is comprised of four general goals:

1. To protect colonial nesting waterbird populations and their use of the Pipestone Rocks;
2. To further protect the habitat recognized as the Pipestone Rocks;
3. To foster a greater awareness of the Pipestone Rocks and the associated colonial nesting waterbirds through educational endeavors that will further generate community support leading to sustained conservation actions as well as providing economic opportunities;
4. To encourage the implementation of basic research initiatives with emphasizes on annual population monitoring.

8.2 Conservation Goals and Objectives

1. Habitat Protection

<i>Item</i>	<i>Rationale</i>	<i>Current Status / Action</i>
Provide support for the Ecological Reserve Status application and future park management plans.	Layers of protection will foster conservation efforts and habitat protection.	<ul style="list-style-type: none"> • Pipestone Rocks are currently nominated for Ecological Reserve Status (see Appendix IV). This CCP will support the application for Ecological Reserve Status. <p>Lead Agency: Manitoba Conservation Ecological Reserve Committee.</p>

<p>Restrict access to Pipestone Rocks during critical bird breeding periods.</p>	<p>Minimize disturbances to colonial nesting waterbirds which commonly abandon nesting efforts if disturbed.</p>	<p>Establish a buffer zone around nesting islands. (see Visitation Protocol Appendix VII).</p> <p>Lead Agency: Manitoba Conservation.</p>
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2. Educational and Research Opportunities.

<i>Item</i>	<i>Rationale</i>	<i>Current Status / Action</i>
<p>Develop interpretative program for use within Hecla/Grindstone Parks on importance of colonial nesting waterbirds at Pipestone Rocks.</p> <p>Promote significance of Pipestone Rocks.</p>	<p>Interpreters serve to foster conservation awareness within the general community. Awareness builds support for wildlife policies and regulations and leads to conservation efforts.</p>	<ul style="list-style-type: none"> Utilize available videos within park programs. <p>Lead Agency: Manitoba Conservation Park Interpretative Staff.</p>
<p>The is a need to monitor population trends and breeding chronology of colonial nesting waterbirds using Pipestone Rocks.</p>	<p>Data will provide baseline information which will assist future management plans and assess overall health of bird populations.</p> <p>Are Ring-billed Gulls replacing Common Terns?</p>	<ul style="list-style-type: none"> Earlier studies (1929,1969) provide limited data on bird population. Updated data is required. Develop a annual monitoring program. See Appendix VI. <p>Lead Agency: Manitoba Conservation</p>

<p>Data should be housed at the Manitoba Conservation Data Center to ensure it is in a central location where data is available upon request.</p>	<p>The MBCDC is mandated to assist with conservation planning.</p>	<p>Information collected from annual monitoring program housed at the MBCDC.</p> <p>Lead Agency: Manitoba Conservation</p>
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Acknowledgements

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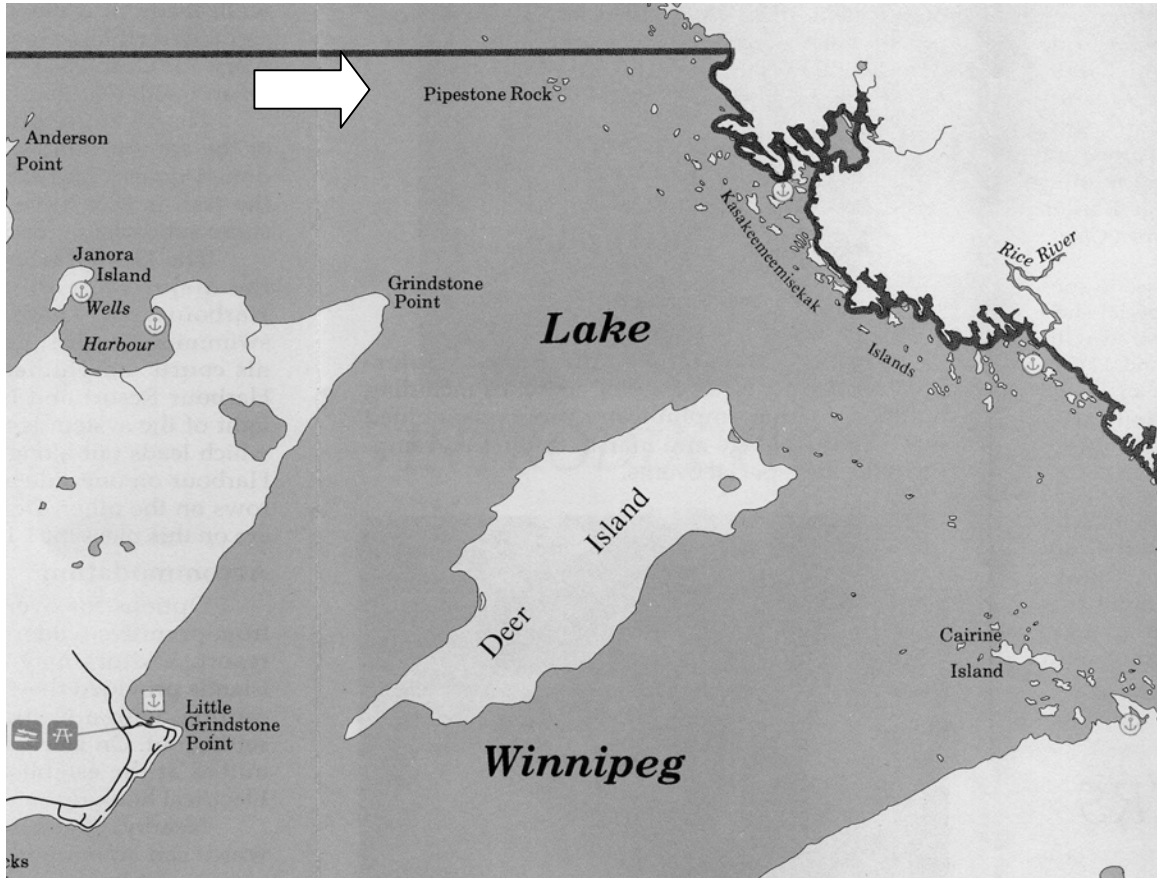
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Appendix I: Location of Pipestone Rocks



Appendix II: IBA Population Thresholds

Table. Population thresholds for Congregatory Species (Category 4) are based upon estimates of 1% of the biographical population, and the general, 20,000, 15,000, and 10,000 thresholds for sites of global, continental and national significance.

Species	Global	Cont'al	Nat'al
American White Pelican	1,500	n/a	500
Double-crested Cormorant	3,700	n/a	n/a
Herring Gull	3,500	n/a	1,250
Ring-billed Gull	20,000	15,000	10,000
Common Tern	1,000	n/a	n/a

Appendix III: Conservation Status Ranks of Bird Species present at Pipestone Rocks IBA as prepared by Manitoba Conservation Data Centre (Duncan 1996).

Scientific Name, Common Name	Manitoba Status Rank
<i>Pelecanus erythrorhynchos</i> , American White Pelican	Uncommon (S3B, SZN)
<i>Phalacrocorax auritus</i> , Double-crested Cormorant	Apparently Secure (S4B, SZN)
<i>Larus argentatus</i> , Herring Gull	Secure (S5B, SZN)
<i>Larus delawarensis</i> , Ring-billed Gull	Secure (S5B, SZN)
<i>Sterna hirundo</i> , Common Tern	Apparently Secure (S4S5B,SZN)

Conservation Status Ranks Definitions:

- S3 Uncommon (between 20 and 100 occurrences in Manitoba, may be susceptible to large-scale disturbances);
- S4 - Apparently Secure (Widespread, abundant usually more than 100 occurrences);
- S5 - Secure (Widespread, abundant, essentially ineradicable under present conditions);
- SZ - Zero occurrences (not of practical concern in the country);
- S4S5B,SZN - Apparently secure to secure, breeding, there is no non-breeding population here.

Appendix IV: Manitoba Ecological Reserves

(Information provided by Helios Hernandez, Manitoba Conservation, 1999 Draft)

Ecological Reserves are established under The Ecological Reserves Act. Ecological reserves preserve for posterity examples of Manitoba's unique or representative natural and modified ecosystems. An ecological Reserves Advisory Committee, appointed under the Act, provides advice to the Minister of Natural Resources regarding the establishment of ecological reserves and their stewardship. Parks and Natural Areas Branch of the Department of Conservation administers the program.

Ecological reserve programs began in the 1970s in Canada, as governments sought to protect ecologically significant areas. Manitoba's Ecological Reserves program began in 1973. Reindeer Island Ecological Reserve, a 13,860-ha island in the north basin of Lake Winnipeg, was the first in Manitoba. Established in May 1976, it was created under The Crown Lands Act, as were the next three reserves. Passage of the first Ecological Reserves Act in 1981 led to all subsequent reserves being designated under this legislation. To date, 16 ecological reserves have been created, bring the total protected area to almost 60,500-ha.

Ecological reserves may only be established on Crown Land. They preserve unique and rare natural (biological and geological) features of the province and examples of natural and modified ecosystems. These sites are set aside for ecosystem biodiversity, preservation, research, education and nature study. They are not intended to be for recreation, resource harvest or multiple-use areas.

Under the Act, approval from the Minister of Conservation is needed to conduct activities in ecological reserves. Generally, no damage may be caused to, nor may anything be taken from an ecological reserve without a permit. In most cases, permission by means of a general Ministerial Order allows travel through ecological reserves by people on foot. Access by motor vehicle is largely restricted to trails and routes that existed before the ecological reserve was established. Approval is needed to conduct scientific research. Hunting is generally prohibited in ecological reserves, but traditional use by Native people can be allowed on a case-by-case basis, depending on the ecological sensitivity of the area.

For more information see "The Ecological Reserves Act" R.S.M. 1987, Chapter E5.

Appendix V: CCP Contacts

Name	Organization	Telephone
Duncan, James	Manitoba Conservation 200 Saulteaux Crescent Winnipeg, Manitoba, R3J 3W3	(204) 945-7485
Hernandez, Helios	Parks and Natural Areas Committee Ecological Reserves Advisory Board 200 Saulteaux Crescent Winnipeg, Manitoba, R3J 3W3	(204) 945-4148 (204) 945-0012
Hecla Prov. Park	Manitoba Conservation Box 70, Riverton Manitoba R0C 2R0	(204) 378-2945
Koonz, Bill	Manitoba Conservation 200 Saulteaux Crescent Winnipeg, Manitoba, R3J 3W3	(204) 945-6811
Merkl, Tony	Central Region Manager Manitoba Conservation Gimli, Manitoba	(204) 642-6076
MB Naturalist Society	63 Albert Street Winnipeg, Manitoba	(204) 943-9029
Nolden, Lynn	Park Interpreter Hecla/Grindstone Park	(204) 378-2261 Fax: 204-378-5274
Rakowski, Pat	Canadian Wildlife Service 123 Main Street Winnipeg, Manitoba R3C 1A5	(204) 983-5264

Appendix VI: Monitoring American White Pelican Population using Aerial Photography

Past methods included walking through colony and counting number of nests. This method is very accurate however the end result may be nest abandonment by birds, breakage of eggs by parent when disturbed, gull predation, heat stress, food regurgitating, stampeding and trampling of young chicks, etc.. Hence, aerial photography is recommended as a standardized census technique for population analysis of colonial nesting birds in general (Nettleship 1976).

Methods Used by Sidle and Ferguson (1982) at Chase Lake, North Dakota.

- Overlapping photographs taken at 137-m altitude
- Some photos were taken at 70-m for comparisons
- Recommended altitude of 137-m for less frames required (depends on colony size)
- Nikon F2 35 mm camera (set at F stop 5.6, shutter speed 1000) with 135 mm lens
- Cessna 180 fixed wing aircraft
- Kodachrome II film taken at 0900-hrs on June 3rd
- Observed no disturbance or movement of pelicans during photographs
- August 10th at 137-m to photograph pre-fledgling juveniles
- Young were distinguished from adults on basis of external morphology
- Pelicans on nests could be distinguished from loafers, non-breeders or relieving adult mates
- Reported a 1% difference between aerial photographic and ground counts of nests.
- Resolution was adequate to enumerate nesting gulls and cormorants (June 3rd)
- Ring-billed Gulls were not distinguishable from California Gulls.
- Nest counts are only indicators of production, actual recruitment perhaps best estimated by photographs in early August close to time of fledging.

Appendix VII: Suggested Pipestone Rock Visitation Protocol

(Source: Sidle and Ferguson 1982)

1. Disruptive ground counts should be limited and aerial photography encouraged.
2. Pipestone Rocks should not be visited or disturbed until the end of July.
3. All visits to Pipestone Rocks should be accompanied and guided by Manitoba Conservation staff or approved personnel.
4. Visits should be no more than 4 per year and restricted to a small portion of the island.
5. Duration of visits should be no more than 15-mins and between 0600 and 0900-hrs.
5. Extended field observations for research should be conducted under concealment of a blind.

Appendix VIII: IBA Canada Partners

BirdLife International

A pioneer in its field, BirdLife International (BL) is the first non-government organization dedicated to promoting world-wide interest in and concern for the conservation of all birds and the special contribution they make to global biodiversity. BirdLife operates as a partnership of non-governmental conservation organizations, grouped together within geographic regions (e.g. Europe, Africa, Americas) for the purpose of planning and implementing regional programs. These organizations provide a link to on-the-ground conservation projects that involve local people with local expertise and knowledge. There are currently 20 countries involved in the Americas program throughout North, Central and South America.

For further information about BirdLife International, check the following web site: <<http://www.birdlife.net/>>.

The Canadian Important Bird Areas Program has been undertaken by a partnership of two lead agencies. The Canadian Nature Federation and Bird Studies Canada are the Canadian BirdLife International partners.

The Canadian Nature Federation (CNF)

The Canadian Nature Federation is a national conservation organization with a mission to be Canada's voice for the protection of nature, its diversity, and the processes that sustain it. The CNF represents the naturalist community and works closely with our provincial, territorial and local affiliated naturalists organizations to directly reach 100,000 Canadians. The strength of our grassroots naturalists' network allows us to work effectively and knowledgeably on national conservation issues that affect a diversity of ecosystems and human populations in Canada. The CNF also works in partnership with other environmental organizations, government and industry, wherever possible.

Our approach is open and cooperative while remaining firm in our goal of developing ecologically-sound solutions to conservation problems. CNF's web site is <<http://www.cnf.ca>>.

Bird Studies Canada (BSC)

The mission of Bird Studies Canada is to advance the understanding, appreciation and conservation of wild birds and their habitats, in Canada and elsewhere, through studies that engage the skills, enthusiasm and

support of its members, volunteers, staff and the interested public. Bird Studies Canada believes that thousands of volunteers working together, with the guidance of a small group of professionals, can accomplish much more than could the two groups working independently. Current programs collectively involve over 10,000 volunteer participants from across Canada.

Bird Studies Canada is recognized nation-wide as a leading and respected not-for-profit conservation organization dedicated to the study and understanding of wild birds and their habitats. Bird Studies Canada's web site is <<http://www.bsc-eoc.org/>

Appendix VIX: American White Pelican Web Sites

www.ecocanada.com/redberry/project/pelicans

The Redberry Pelican Project (Canada) Foundation

Head Office located at the Redberry Lake Research Station on the northwest shore of Redberry Lake, near Saskatoon, Saskatchewan, Canada

www.gov.ab.ca/env/fw/threatsp/index

Alberta's Threatened Wildlife

Manitoba Museum of Man and Nature - Online Field Guide to the Birds of Manitoba.

Checklists for Manitoba's best birder hotspots, descriptions of many Manitoba birds, and much more. www.chin.gc.ca/~anana/MMMN/English/index