EXTINCT AND ENDANGERED MAMMALS AND BIRDS
OF THE UPPER GREAT LAKES REGION
A. W. SCHORGER

The early French voyageurs called the Chippewa River Bon Secours (Good Succor) since in its valley game could be obtained without fail and in abundance. Subject to seasonal wanderings, the prairies and oak openings contained large herds of deer, elk, and bison. The black bear was common in all the wooded areas, while moose and caribou were to be found towards Lake Superior. Fur-bearing animals were abundant. Game-birds, though numerous, were seldom molested since the ball required to secure a sharp-tailed grouse could fell a deer as readily.

The advent of settlement initiated vast changes in the flora and fauna, and the end is not yet. The attitude towards conservation must be realistic. Agriculture is incompatible with great herds of elk and bison, and darkening flocks of pigeons. Whether a more satisfactory compromise than the present could have been reached by a premeditated plan is conjectural.

Today, among the mammals, the native stock of the bison, elk, and cougar is extinct. The restoration of the bison and cougar is impractical. The same may be said of the elk except for a few special areas.

In the preservation of most species two factors loom large. The obvious one is a favorable habitat. The other, a population “reservoir” from which a species can draw recruits, is more often overlooked. The reservoirs no longer exist and the remnants live precariously.

The elk actually flourished only in the oak openings and on the prairies. Today we try to preserve the elk in unsuitable environments. The elk placed on Grand Island have disappeared, while those introduced into the northern portion of the southern peninsula of Michigan appear to be stationary in numbers. In Wisconsin, the elk did not receive permanent protection until 1913, long after the native stock was exterminated. In 1917, forty-one elk from the Yellowstone National Park were placed on the state game farm in Vilas County. Approximately one-half
of the animals died following release, yet in 1924 it was thought
that the drove had increased to 75. At the present time there are
possibly 35 elk in Vilas and Oneida Counties. The elk received
permanent protection in Minnesota in 1890, again too late to
save the native stock. In 1935, twenty-seven elk, obtained origi-
ally from Jackson’s Hole, were released in the northwestern
part of Minnesota. Now there are about 90 elk ranging that area.

The caribou was never numerous in Wisconsin and Michigan.
The small population that did exist was maintained unques-
tionably by infiltrations from Ontario and Minnesota. The latter
state alone has sufficient muskeg country to perpetuate the spe-
cies. The various species of reindeer moss (Cladonia) appear
to be essential winter foods for this animal in the wild. Recently
ten caribou trapped in Saskatchewan were brought to Minnesota
for eventual release in an attempt to secure a natural increase of
the native residue represented by three cows. In view of the fact
that Canadian caribou no longer wander into the region, the
experiment will be watched with interest.

The moose received permanent protection in Wisconsin in
1907 and in Minnesota in 1922. No native stock exists in Wiscon-
sin or in Michigan except on Isle Royale. Minnesota is in an
enviable position. The moose is still sufficiently numerous that
there is no apparent danger of a serious decrease. The difficulties
in introduction are great. Eighteen moose trapped on Isle Royale
in the winter of 1935-36 were liberated along the Escanaba River
in the spring of 1936. A bull moose injured in transport was not
released until a year later. The bull and four cows eventually
wandered southward into Florence County, Wisconsin. In the
fall of 1937, the bull was found shot, and in the fall of 1939, a
cow met a similar fate. At times, an adequate public respect for
game seems distant. All the painstaking and costly efforts to
perpetuate a species can be annulled in a brief time by a few
thoughtless individuals. There is hope that the moose can be
restored permanently on some of the state and national forests,
but the wandering habit of the animal provides another difficulty
with which to cope.

The timber wolf exists in sufficient numbers that there is no
immediate danger of extinction. Cessation of trapping could
increase the population readily. Fortunately it is possible to
exercise complete control on the national forests. Elsewhere,
where there is damage to stock, the coyote and timber wolf decline together. Deer are sufficiently numerous so that only under exceptional conditions will it be necessary to control the timber wolf on this account, should the point be reached where its existence is endangered.

The restoration of the fur-bearing mammals, the fisher and the marten, is an especially difficult problem. They were protected permanently in Minnesota in 1933 and in Wisconsin in 1921. The intervening years offer no hope of a substantial increase in their numbers in the sections where a few individuals presumably still exist. The introduction of Canadian stock into the national forests would be an experiment well worth the effort.

Many attempts have been made by states and private individuals to restock the north central states with wild turkeys. All have been failures. Habitats suitable for restoration no longer exist. Hatchery stock, aside from a pronounced tendency to end up in a barnyard with domesticated turkeys, is seldom sufficiently hardy. Experience teaches that it is necessary to start with wild, trapped birds. The expense involved and the slender chances of success scarcely justify the effort.

Man by a single plowing permanently destroyed the virgin prairie. All the knowledge of prairie ecology acquired during the past century is insufficient to enable him to restore it should there be the will. With the destruction of the prairie, the prairie chicken was forced northward into what was formerly ultra-marginal territory. What with drainage and drought even this territory is being made distinctly less favorable through the growth of brush. Judicious burning and flooding appear to be essential if the prairie chicken is to be preserved. Whether the disease cycle is recent in the history of the species and whether it is becoming more or less severe in its effects are still unknown factors. The serious study that has been given to the prairie chicken should eventually bear fruit provided that “patient money” continues to be available.

The complete disappearance of breeding sandhill cranes would create a deplorable gap in our fauna. Whoever has heard the sonorous cries of a flock of cranes circling high overhead will never forget the experience. The few cranes that remain are a tribute to the thoughtfulness of landowners. If left unmolested by man, especially the poacher, there is no doubt but that the sandhill crane would multiply satisfactorily. It is known that
this bird requires large areas of grasslands and marshes with pools of water, but it will be a sad commentary on our civilization if we must resort to management.

The vast environmental changes produced by man have reduced many species to remnants. Conservation since its inception under the mantle of game laws has been a continual compromise with the hunter and the poacher. The zealous attempts of a few to preserve our residual fauna for future generations is being rewarded by the gradual development of a public conscience. When the great majority of the people realize that a spruce grouse has more aesthetic than culinary value, that a fisher in the wilderness is as deserving of preservation as a squirrel in the park, then the aims of conservation can be achieved.

MARTEN (*Martes americana americana* Turton)

The marten, or American sable, occurred originally in all the timbered areas of Minnesota, Wisconsin, and Michigan. It had a decided preference for conifers and even penetrated the strip of pine timber that ran along the shore of Lake Michigan, in Illinois and Indiana.

The virtual extinction of the marten was due to the demands of the fur trade coupled with the ease with which it could be trapped. A bloody bait was irresistible. A Vermont trapper who plied his trade on the Black River, Wisconsin, in 1866, had a cruel but effective procedure. A hole was bored into the base of a tree and filled with the livers of red squirrels. "Around this hole would be driven a row of nails sharpened at the end and so turned and bent that while the marten could get his head through to reach the liver it was impossible to withdraw it, on account of the sharpened nails."1

The marten population is subject to violent fluctuations, passing through an 8 to 10-year cycle. No adequate explanation of this phenomenon has been advanced unless it be the fluctuations in number of its main food, rabbits. Another important food was the red squirrel. The cutting of the virgin coniferous forests, destroying habitat and food supply simultaneously, was a factor in the decline.

The marten appears to have been much more numerous than its relative, the fisher, judging from the returns of trappers and traders. This is shown in the following table:
<table>
<thead>
<tr>
<th>Author</th>
<th>Station</th>
<th>Year</th>
<th>Marten</th>
<th>Fisher</th>
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<tr>
<td>Currit²</td>
<td>Yellow River, Wis.</td>
<td>1804</td>
<td>3</td>
<td>13</td>
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<tr>
<td>Malhot³</td>
<td>Lac du Flambeau, Wis.</td>
<td>1804-5</td>
<td>63</td>
<td>9</td>
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<tr>
<td>Dubuque⁴</td>
<td>Prairie du Chien, Wis.</td>
<td>1807</td>
<td>62</td>
<td>70</td>
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<tr>
<td>Porlier³</td>
<td>Green Bay, Wis.</td>
<td>1814</td>
<td>123</td>
<td>29</td>
</tr>
<tr>
<td>Paul⁵</td>
<td>Superior</td>
<td>1856</td>
<td>1000</td>
<td>...</td>
</tr>
<tr>
<td>Paul⁵</td>
<td>Superior*</td>
<td>1857</td>
<td>1600</td>
<td>200</td>
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<tr>
<td>Cartwright⁷</td>
<td>Elk River, Wis.</td>
<td>1858-9</td>
<td>18</td>
<td>2</td>
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<tr>
<td>Cartwright⁷</td>
<td>St. Croix Valley</td>
<td>1870</td>
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<td>8</td>
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The place that the marten held in the fur trade may be judged from the fact that the skins were sorted into fourteen grades depending on color and quality.⁸

A shipment of furs from Chippewa Falls, Wisconsin, in 1871, stated to have been one of the largest ever sent from the place, contained but 60 marten skins. Preferential trapping could not have been an important factor for in trade a fisher skin was valued at one and one-half to twice as much as the marten. By 1920 the marten was close to extinction in Wisconsin. Trappers, for the season 1919-20, reported taking but 21 marten, and during the last legal season, 1920-21, none. The last known capture for the state is the one shipped from Maple, Douglas County, in 1925.⁹

During the past few years I have made special inquiry at the Apostle Islands regarding the marten. In 1934, a fisherman from Madeline Island stated that a Frenchman spent a winter on Outer Island during the World War and trapped several martens. No later report was obtained. It is difficult to explain the presence of marten on islands such as Outer and Isle Royale, except by crossing on the ice.

The decline in Minnesota was almost as rapid. Errington¹⁰ spent seven months, in the fall and spring of 1920-21, north and east of Red Lake. His trapping grounds were in Beltrami and Koochiching Counties. There were no marten left at that time. According to Surber,¹¹ the species still existed in southern Beltrami County up to the spring of 1918. W. J. Breckenridge¹² informs me that while there is no positive evidence of its existence in Minnesota, trappers and wardens report that a few marten remain in the Superior Forest and in the Chippewa National Forest near Leech Lake. A few were trapped the winter of 1939-40 in Ontario just north of Lake Saganaga, one being obtained for the Museum of Natural History, University of Minnesota.

* Collected from five posts in Minnesota.
The marten declined in Michigan as rapidly as it did in Wisconsin. Very recently W. E. Scott of the Wisconsin Conservation Department obtained the important information that the marten is not extinct. W. R. Spellum, taxidermist and collector of Viroqua, wrote that on November 27, 1939 while hunting in southeastern Sawyer County he saw a marten catch and eat a red squirrel; and on November 29, watched it attempt to catch a ruffed grouse.

**FISHER (Martes pennanti pennanti Erxleben)**

The fisher had much the same range as the marten. While never as numerous as the marten it was far more common than the latter in the hardwood timber. Returns from trading posts located on Lake Superior show but few fisher skins. In mixed conifers and hardwoods, especially along the river valleys, both mammals were once fairly common. Anderson,¹³ who spent the winter of 1806-07 fifty miles above the mouth of the Minnesota River, mentions that both fisher and marten were trapped occasionally. Bunnell,¹⁴ coming to the present site of La Crosse in 1842, found fisher “numerous” in the big timber of the Mississippi bottoms. While the occurrence of the marten in southern Wisconsin is conjectural, there are definite statements of the occurrence of the fisher in Milwaukee and Jefferson Counties as late as 1852;¹⁵ and it was formerly numerous in Sauk County.¹⁶

A gradual change in the numerical status of the marten and fisher took place as the coniferous timber was cut and replaced by the growth of hardwoods. In the season 1917-18, Wisconsin trappers reported the capture of 559 fisher* and only 48 marten. There is then a surprisingly rapid decline to 3 fisher for 1920-21, the last legal season.¹⁷

Two fisher were trapped at Huron Mountain, Michigan, during the winter of 1930-31. Leopold¹⁸ states that fish was found there along the Salmon Trout River about 1936. The fisher is reported to exist still in Michigan and Wisconsin; however the only positive statement for the entire area is that of Manweiler¹⁹ who mentions it as part of the present fauna of the “Big Bog” in Minnesota.

* This figure must be accepted with reservation. The otter, though on the protected list at this time, was taken frequently and reported as “fisher”.
WOLVERINE (Gulo luscus Linn.)

The wolverine is the imp of the forest. In view of all the traits attributed to it by the French-Canadians, it is surprising that they did not give to it the name enfant du diable (child of the devil) rather than to the wild cat. There is ample evidence of its malicious destruction of property but it is doubtful if it should carry the name glutton. Its appetite is sharp but no more so than that of the wolf and several other animals. Schoolcraft,20 while in Minnesota in 1820, seems to have discussed this subject for he states: “The Indians said there was no animal in their country deserving this name [glutton]; the only animal they knew deserving of it, was the horse, which was eating all the time.”

The wolverine was a rare animal south of Lake Superior. Doty,21 in 1820, stated specifically that it did not occur at the head of Lake Superior but was to be found in the vicinity of Leech and Sandy Lakes in Minnesota. Michigan has been on the defensive as to its right to be called the wolverine state. Recently there was found a clear description of the capture of a specimen near Marquette in February, 1860.22

The most circumstantial account of the occurrence of the animal in Wisconsin relates the capture of “a large wolverine or glutton” by Charles Carron on Big Rib River in the spring of 1870. This stream rises in the eastern part of Taylor County and enters the Wisconsin at Wausau, so that the animal was taken most probably in Marathon County. The rarity of the animal was recognized and it was placed on exhibition in Stevens Point.23 Hoy24 states that it is occasionally taken in the timber and that one was secured in La Crosse County in 1870. The Milwaukee Public Museum, according to Cory,25 contains two specimens labeled “Wisconsin,” but lacking dates and localities. There are other and more recent reports, but some without doubt are due to confusion with the badger.

The wolverine was much more abundant in Minnesota where it persisted longer. Cory26 quotes E. G. Kingsford to the effect that about 1895 to 1897 it was quite common in northern Minnesota. Surber26 likewise states that it was quite common up to about 1897. The last acceptable record is for northern St. Louis County where one was taken in 1918.27 There is always the possibility that the wolverine will enter Minnesota from Canada.
TIMBER WOLF (Canis lycaon Schreber)

The timber wolf ranged formerly throughout the entire timbered areas of Wisconsin, Minnesota, and Michigan and was not uncommon in the prairie regions of these states. It lived mainly on deer and rabbits. Decrease in the food supply coupled with poisoning and trapping has reduced its numbers to the point where extinction has been feared. Its smaller relative the coyote or brush wolf (Canis latrans latrans Say) is much more adaptable to changed conditions and is in no danger of extermination. Ranging widely, it is occasionally reported from even the oldest communities.

Under primitive conditions, Seton estimated that there was one timber wolf to two and one-half square miles. There are insufficient data to furnish a satisfactory estimate of the original population in Wisconsin. The state, in 1865, paid bounties on only 225 “wolves,” mainly from the southern counties. Those reporting the highest individual numbers were Lafayette, Grant, and Dane. This is a small number compared with the 1,587 wolves submitted for bounty during the season 1938-39. Trappers’ returns for the same period show the taking of 65 timber wolves.

The report of O. L. Coleman on the control of predators in Wisconsin, November, 1930, states that of the wolves presented for bounty only two percent were timber wolves while trappers take as high as 20 percent. The difference may be due to a greater effort on the part of trappers in the wildest regions to take timber wolves. W. E. Scott, to whom I am indebted for the recent data on wolves, estimates the timber wolf population of Wisconsin at 150 to 200.

The decline of the timber wolf in Wisconsin has been gradual. Quarles, who settled on the prairies of Kenosha County in 1837, wrote two years later of the prairie wolf and mentions that there are “some of the large kind.” The black phase, once fairly common, is now reported rarely. Timber wolves were killed in Dane and Waukesha Counties in 1871 and one as late as 1880 in Jefferson County. At the present time it is confined to about twelve of the northernmost Wisconsin counties.

The timber wolf was considered common in Gogebic and Ontonagon Counties, Michigan, in 1920. The present state of the species in the Upper Peninsula parallels that in northern Wisconsin.
In Minnesota, Herrick mentions that wolves were especially numerous in Wright County in the winter of 1884-85. More recently, Surber reports the timber wolf as still fairly common in the remote sections of the northern third of the state. It was found occasionally in Pine County as late as 1918. The species will always be in a favored position in Minnesota due to potential immigration from Canada. The timber wolves of northern Wisconsin and Upper Michigan are virtually isolated.

**COUGAR (Felis concolor couguar Kerr)**

The cougar, commonly known as panther, was the largest member of our cat family. The reputation that it bore as a dangerous animal was without foundation as frequently a small dog would cause it to take refuge in a tree. The popular nomenclature, e.g. catamount, of the early narratives renders it difficult to decide if the cougar was intended always. The chief prey of the cougar was the deer, so that it occurred chiefly in the hardwood belt on the southern edge of the coniferous forest. It was not confined strictly to heavy timber, but ranged into the oak openings of the prairie where also deer were common.

The cougar was a rare animal in the Upper Peninsula of Michigan where it was observed last about 1850. There are so many records for Wisconsin that the species cannot have been especially rare there in the early days. Most of the records come from the Lake Winnebago district and from the valleys of the Chippewa and St. Croix Rivers. The Museum of Lawrence College at Appleton has a mounted cougar killed locally by Samuel P. Hart on November 22, 1857. This is the only specimen extant for the entire region under consideration. Richard Dart came to Green Lake County in 1840. That fall two panthers roaming in the vicinity were killed by the Indians. In 1839, Locke examined the effigy mounds near Blue Mounds, Dane County and stated that they might have been intended for the cougar, “an animal still existing in that region.” Carver mentions seeing one on an island in the Chippewa River in 1767, and Fonda tells of shooting one on an island in the Mississippi, near Trempealeau Mountain, in 1839. An “enormous catamount” that prowled about the Upper St. Croix River in the winter of 1866-67 was finally killed by a posse from Stillwater. The mounted animal was presented to Mr. L. A. Taylor, editor of the Prescott Journal. The last acceptable record for the state is the cougar measuring “nine
feet" in length, killed near Butternut, Ashland County, in Febru-
ary, 1884.48 There are comparatively few records for Minnesota. Herrick49
considered the cougar killed in Chisago County in 1875 as a late
occurrence. The species did not become extinct until long after-
wards. Wilcox50 mentions one killed in Becker County, in 1882,
and another shot in 1897.

ELK (Cervus canadensis canadensis Erxleben)

The elk is the most magnificent of the American stag. Except
for its greater size it resembles the European stag or red stag,
names that it carried frequently in colonial times. It occurred
throughout the entire region under consideration but never was
common in the heavily forested areas, particularly those occupied
by conifers. The favored habitats were the park-like areas and
prairies. Here it was to be found in droves of hundreds, mingling
freely with the bison.

The elk disappeared rapidly from southern Wisconsin after
1800. In 1837 it was considered extinct in Illinois;41 however,
during the winter of 1827-28, Fonda42 found some Indians starv-
ing between Milwaukee and Chicago "though the country was
feeling with deer, wild turkeys, and elk." Le Clair43, who went
to Milwaukee in 1800, stated that at that time there were no
elk or buffalo. In 1823, when Hollman44 settled at Platteville, bear,
elk, etc. were to be found in "astonishing quantities." When Hoff-
man45 was at Prairie du Chien in February, 1834, he mentions the
necessity of going to a distance to secure this game. Dogs for
running elk were kept by the officers at Fort Crawford.

Elk were plentiful in the Chippewa valley at this time and
continued common until about 1860. Copway,46 who was at the
foot of Lake Pepin in 1837, mentions seeing a drove of 500. The
last dependable record for the state is for the fall of 1866 when
nine were killed out of a drove of twelve found fifteen miles
west of Menomonie.47 In April, 1886, six elk, reputed to have
been killed in "the Lake Superior regions", were shipped through
Chetek48, Barron County. They came most probably from Minne-
sota. Brayton,49 in 1882, quoted a statement from B. H. Van Vleck
that the elk is still found in the vicinity of Green Bay. Being the
oldest settled community in the state, the elk disappeared rela-
tively early, and it is highly improbable that its presence in 1882
would have escaped mention elsewhere.
Elk were formerly very abundant in Minnesota. Pond,\textsuperscript{50} in his quaint orthography states that "the Read and Moose Dear are Plentey hear, Espeshaley the former. I have seen forty Kild in One Day By Surrounding a drove on a low spot By the River side in the Winter Season." Pike \textsuperscript{51} depended largely on the elk for food. They were still common in certain sections of the state in 1885.\textsuperscript{52} The elk was seen last in Marshall County in 1887\textsuperscript{53} while the latest unquestionable record for the state is 1890. According to Surber,\textsuperscript{54} the reports of one shot in 1908, and of three seen in Beltrami County in 1917, are open to doubt and may in actuality refer to the moose.

**MOOSE (Alces americana americana Clinton)**

Originally the moose was found throughout the Upper Peninsula of Michigan and in Wisconsin from Green Bay southwest to Green Lake County, thence northwest through Clark, Barron, and Polk Counties, to northwestern Minnesota. The ancient range in Minnesota is uncertain. Pond,\textsuperscript{55} who was on the Minnesota River in 1773-75, mentions the "Moose Dear" among the game animals. This would extend the southern boundary appreciably. In 1857 the line extended from the extremity of Pine County to the northeastern corner of Kittson County.\textsuperscript{56}

The presence of moose as far south as Green Lake County, Wisconsin, in 1840, is mentioned by Richard Dart:\textsuperscript{57} "Elk and Moose were found upon Willow River, and occasionally around Green Lake." Its presence around Lake Winnebago is established by finds of moose antlers in streams and in Indian burials. It had become so rare in Polk County by 1866 that the killing of one elicited the statement that it was the first killed in the county.

There is no information on which to base an opinion that the moose was ever more than fairly common in Wisconsin and Michigan. Malhiot,\textsuperscript{58} who had charge of the trading post at Lac du Flambeau from August, 1804 to June, 1805, records but 10 moose in the form of skins and meat. In the fall and winter of 1884 a hunter had exceptional success in the killing of five moose in Douglas County.\textsuperscript{59} The largest population was to be found in the northwestern part of the state where undoubtedly the species was reinforced frequently by arrivals from Minnesota. In the early days the region west of Superior was excellent moose territory. Few if any native Wisconsin moose existed after 1900. From that time to the present, an occasional moose has wandered
into the state from Minnesota. In 1921, a moose swimming across Allouez Bay, near Superior, to the Wisconsin shore was drowned after being roped and towed by a launch.\textsuperscript{60}

The native stock in Michigan is extinct except on Isle Royale where the moose is still numerous.

Minnesota is in a splendid position in that it possesses a greater population of moose than all the other states of the union combined. In 1932 a careful estimate placed the number at 4000. Most of the moose are to be found in the northern tier of counties, especially Lake and Cook.

**CARIBOU (Rangifer caribou caribou Gmelin)**

The caribou was abundant formerly in Minnesota but never so in northern Wisconsin and the Upper Peninsula of Michigan. It does not thrive except in a muskeg country. Crespal,\textsuperscript{61} who was with the French expedition sent in 1728 to chastise the Fox Indians in Wisconsin, compares a caribou, killed by the Indians in the Upper Peninsula, with a moose: "The caribou is not so tall and shaped more like the ass ..." This is not an individual flight of French fancy for Lahontan refers specifically to the caribou as the "wild ass". Still earlier, the winter of 1661-62, Radisson\textsuperscript{62} was in the St. Croix River district where the Indian party killed "Carriboucks."

Acceptable records for the southern shore of Lake Superior are few. Doty,\textsuperscript{63} in 1820, listed the "rein deer" for Leech and Sandy Lakes but not for the head of Lake Superior. It was given, however, as an inhabitant of the latter area in 1831 by Schoolcraft.\textsuperscript{64} Florantha Sproat,\textsuperscript{65} writing from Fond du Lac (Superior) on April 18, 1842, mentions seeing a reindeer, a "beautiful animal of silver gray," just killed by an Indian. While at the Carp River, Chippewa County, Michigan, in March, 1849, Rev. Pitezel\textsuperscript{66} was served Cariboo meat. Wood\textsuperscript{67} mentions that the caribou has been recorded for Keweenaw (Isle Royale), Charlevoix (Beaver Island), Luce, Chippewa, and Dickinson Counties, Michigan. According to Cory,\textsuperscript{68} a cow caribou was killed near Ralph, Dickinson County, in November, 1905. He with others mentions the killing of caribou in Wisconsin in 1910. These records are questionable. In 1906, twenty Newfoundland caribou were placed on the Pierce estate on the Brule River, Douglas County. While all of them are supposed to have died on the estate, several may have escaped.
The caribou was once numerous in northern Minnesota and was common until about 1900. Johnson mentions that in the winter of 1895 two trappers located about 25 miles northeast of Upper Red Lake furnished sleighloads of moose and caribou meat to a lumbering camp. One drove of fully 500 caribou was seen. The men did not like the caribou meat as it had “a rank taste of peat or moss.” Breckenridge in 1935 reported that at least six native caribou remained in Minnesota in the muskeg country between Upper Red Lake and Lake of the Woods. This number had decreased to three by 1939 when several caribou were imported from Saskatchewan in an attempt to perpetuate the species.

It is of interest that centuries ago the range of the caribou extended to Polk County, Wisconsin. Among the bones of an extinct bison (Bison antiquus) found in a marl deposit near Osceola were a few of the caribou.

Caribou formerly crossed from Canada to Isle Royale on the ice. The last acceptable record for the island is 1905 when a drove of nine was seen.

**BISON (Bison bison bison Linn.)**

The bison or buffalo, in the popular mind, is associated with the great plains, and a statement that it once ranged nearly to the Atlantic Ocean is received with scepticism. In early days it was abundant on the prairies and “openings” of Wisconsin and Minnesota.

The range in Wisconsin has been worked out in detail. Marquette, in 1674, found it on the shore of Lake Michigan at modern Racine. The bison occurred as far north as Lake Winnebago where Dablons found and described it in 1670-71. Writing of the fur trade along the Wisconsin River on August 22, 1682, La Salle mentions “the great number of buffaloes, which are taken there every year, almost beyond belief.” This indicates how early the slaughter began.

The Indian as a conservationist is somewhat of a myth. Hennepin mentions that at Lake Pepin the Sioux would kill forty or fifty buffaloes and in their haste to move onward take only the tongues and some other of the best pieces. In Minnesota in March, 1807, the deer were powerless due to a deep, crusted snow through which they sank. Anderson relates that the Indians tomahawked the deer for sheer sport and that as a result during the next winter not a deer was to be seen. The acquisition of
firearms by the Indians, coupled with the size and unwariness of the bison, brought about its extinction in southern Wisconsin by about 1800.

Many of the early writers tell of the abundance of game in the Chippewa valley. Here, says Carver,7 "larger droves of buffaloes and elks were feeding, than I had observed in any other part of my travels." In this region the bison persisted longest. The last were killed in Trempealeau County in 1832.

The French,80 in 1700, built a fort near the present site of Mankato, Minnesota. While the fort was being built one-half of the men spent their time hunting buffalo, 400 of which were killed for use during the winter. Sibley81 accompanied the Sioux on a hunt southeast of this locality in the winter of 1841. A large amount of game was killed but it included only "a few buffaloes." By 1821 the bison no longer occurred on the east bank of the Mississippi River in Minnesota. Lt. Allen,82 while near the junction of the Crow Wing with the Mississippi in 1832, learned that during severe winter storms herds of bison sought shelter in the belt of timber on the right bank and occasionally penetrated to the river. None were seen by Featherstonhaugh83 during his trip up the Minnesota River in the fall of 1835.

Small herds of buffalo were found occasionally in western Minnesota subsequent to 1850. According to Surber84 the last living bison was observed in Norman County in the summer of 1880. Johnson85 states that the bison was killed last in Marshall County in 1878 but that a small band was seen in the spring of 1881.

CANADA SPRUCE GROUSE (Canachites canadensis canace Linn.)

The spruce grouse is a bird of the coniferous forest. Its favorite haunt is a dense swamp of arbor vitae, spruce and tamarack. My first grouse was found near Lake Gogebic in a stand of hemlock bordering a swamp. On a mossy log, in this damp and gloomy place, strutted a handsome male. The notable decrease in numbers may be explained best, perhaps, through its common name "fool hen." Foolish it was not under primitive conditions or the species would not have survived. Man was simply another animal to be avoided by a few feet. Even today it has not learned the danger of the hurled stick or slipnoose on the end of a pole.

Its status is given succinctly by Dr. Roberts:86 "The Spruce Grouse is in Minnesota, as elsewhere, a disappearing bird." Kum-
lien and Hollister, writing of the bird in Wisconsin in 1903, state that it has been decreasing during the past twenty-five years, the rapid decline being difficult to explain.

The former abundance and range are based largely on general assumptions. Barrows states that it was once a common bird throughout the pine regions of Michigan and abundant in the Upper Peninsula. As to Wisconsin it is very doubtful if it followed the conifers as far south as Adams County. Hoy, in 1852, reported it as common about the headwaters of Wolf River and in the vicinity of Lake Superior. Writing in 1891, Kumlien stated that the spruce grouse is never found in southern and central Wisconsin, and according to his observations was "far more abundant" in the Upper Peninsula of Michigan than in Wisconsin. In Minnesota about seventy years ago Trippé found it abundant from Carlton County westward to the Mississippi River.

During the past two decades the spruce grouse has become a rare bird. Breckenridge, while along the north shore of Lake Superior in May, 1928, failed to find it though he was informed that a few occurred inland. The species has a good chance of survival in the large swamps of northern Minnesota. Manweiler listed recently the gallinaceous birds of the "Big Bog" in the following order of abundance: sharp-tailed grouse, ruffed grouse, spruce grouse, pinnated grouse.

In Wisconsin, Jackson failed to find it at Mamie Lake, Vilas County in 1917 and 1918 though he obtained reports of a bird killed in each of the years 1918 and 1919. W. E. Scott has collected data from wardens and others showing that during the past two years the spruce grouse has occurred in the following counties: Bayfield, Ashland, Iron, Vilas, Forest, Sawyer, Price, Oneida and Langlade. It would appear that less than 200 birds remain in the state but owing to the inaccessibility of the preferred habitat this figure may be wide of the mark.

This grouse, according to Van Tyne, is rare in Michigan south of the Straits of Mackinac, but there are recent records south to Ogemaw County.

Prairie Chicken (Tympanuchus cupido americanus Reich)

The prairies of Wisconsin once supported a large mixed population of prairie chicken and sharp-tailed grouse. Under primeval conditions Minnesota appears to have had the latter species only. With the beginning of agriculture the prairie chicken increased
greatly and pushed its range farther and farther north until it was overwhelmed by the same agency that had given it a "golden age."

The plow has destroyed its best habitat to the south, confining it to a northern belt that, if occupied at all under primitive conditions, would have been held most precariously. The bird now occupies a region far more suitable to the sharp-tailed grouse with which it is forced to compete.

It is difficult to estimate the population prior to settlement owing to the paucity of data. As early as 1842, prairie chickens were brought into Milwaukee by the sleighload and were considered as "common fare." A party of hunters at Kenosha, on September 12, 1843 had 515 "grouse" in a mixed bag of game. At Racine, in 1849, a single gun could obtain "sixty to ninety" daily. Prairie chickens continued abundant for three decades and during this period large numbers were killed for the market. The first sharp drop in numbers came in 1857. Since that date the species has gone through the well known cyclic fluctuations.

A census of the prairie chicken population of Wisconsin made in 1929, as reported by Leopold, totaled 54,850. The following year a detailed report on the species was prepared by Gross. During the past decade it has been the subject of continuous study and its present status leaves little room for optimism. It is a real question if the prairie chicken can be preserved as a game bird. Hamerstrom has shown clearly that the best habitat is being invaded rapidly by brush as a result of fire, drought and the activities of man.

The situation in Minnesota is identical with that in Wisconsin. Without the practice of conservation, "the days of the Prairie Chicken are numbered." In 1929 Gross wrote: "It is not only maintaining itself, but, unlike the nearly extinct Heath Hen, it is increasing its numbers." Today the heath hen is extinct and the prairie chicken shows a decline.

**Wild Turkey (Meleagris gallopavo silvestris Vieillot)**

This fine bird was once common in southern Wisconsin and in Iowa. The upper limit of its range may be defined by a line running southwest from Green Bay through Green Lake and Sauk Counties, thence due west along the Minnesota-Iowa boundary, through southwestern Minnesota and southeastern South Dakota.
In 1670, Allouez\textsuperscript{103} saw two turkeys in a tree at Lake Winneconne, Wisconsin. Dart\textsuperscript{104} found wild turkeys in Green Lake County in 1840; and according to Canfield,\textsuperscript{105} who came to Sauk County in 1842, turkeys occurred there formerly. An army officer\textsuperscript{106} stationed at Prairie du Chien in 1847 wrote that “turkeys and deer are plenty in the woods.” The early reports of Hennepin and Carver of the presence of turkeys at Lake Pepin are open to doubt.

Opinions on the range west of the Mississippi vary widely. Coues,\textsuperscript{107} in 1874, stated that the northern limit could not be far from the Minnesota boundary. This is certainly true of its old range. The prairie was not a barrier. Anderson,\textsuperscript{108} who spent the winter of 1801-2 at the present site of Des Moines states: “The little islands of wood, scattered over the boundless plains, were swarming with wild turkeys.” Owen,\textsuperscript{109} in 1852 reported briefly: “Only found on the south of the Upper Iowa.” This would bring the range into extreme northeastern Iowa. Leopold\textsuperscript{110} records its presence in Worth and Mitchell Counties about 1860. It was formerly abundant in Woodbury and Cherokee Counties. He reports one killed in the latter county as late as April, 1897. Mr. N. E. France\textsuperscript{111} was born near what is now Livermore, Humboldt County, Iowa, in 1857. A few years ago he wrote to me that at that period game was abundant and his father did much hunting and trapping. During the severe winter of 1860, droves of elk and flocks of wild turkeys were forced southward, only a few of which ever returned.

It is difficult to prove that the wild turkey occurred in Minnesota. Hatch\textsuperscript{112} mentions that it was reported as a resident of the extreme southwestern part of the state. Its presence there is highly probable in view of its former abundance in the Missouri valley up to southeastern South Dakota. The most definite statement is that of Peter Pond\textsuperscript{113} who wintered on the Minnesota River in 1773-5. As to game he mentions that there are “sum turkeas”. Being a New Engander, there is little likelihood of an error in identification. There must have been many advances and retreats on the northern border of the range of a species like the turkey; hence it is not improbable that there were many occasions on which it wandered into southern Minnesota.

Some idea of the former abundance of the turkey in Wisconsin may be gained from the following statement of Lockwood:\textsuperscript{114} “It
was not an uncommon thing to see a Fox Indian arrive at Prairie du Chien with a hand sled, loaded with twenty or thirty wild turkeys for sale, as they were very plenty about Cassville.”

The severe winter of 1842-3 nearly exterminated the turkey in Wisconsin. At about this time also settlement of the country became vigorous so that the species never recovered. According to Hoy\textsuperscript{115} the last time that a turkey was killed near Racine was in the fall of 1846. It survived longest in Grant County where one was shot in the fall of 1872.

The turkey disappeared more gradually from Iowa. It was seen last in Appanoose County in 1902, Davis County in 1905, and Lucas County in 1910.\textsuperscript{116} The latter date marks the extermination of the native stock in the Upper Mississippi Valley.

**SANDHILL CRANE (Grus canadensis tabida Peters)**

The sandhill crane, up to 1850, was a common breeding bird in the states bordering the Upper Great Lakes. It occurred in largest numbers on the wide prairies, though confined to the marshes mainly during the nesting period. While having a varied diet, seeds are the preferred food in spring and fall. The decline in numbers is due to a variety of causes. Wary and intolerant of civilization, its habitat became restricted. Only two eggs are laid and the nest appears to be highly susceptible to predation and to abandonment on disturbance. It is a desirable bird for the table and large numbers were killed for this purpose. Today it is sometimes called “northern turkey” in the prairie provinces of Canada. Even here, where it occurs in far greater numbers than in the Lake States, there is distinct pessimism as to its survival.\textsuperscript{117}

The sandhill crane still nests in a few isolated areas in Wood, Jackson, Adams, Oconto, Marquette, and Green Lake Counties, Wisconsin, and along the St. Croix River. Henika\textsuperscript{118} believes that the total breeding population of Wisconsin is limited to 25 pairs. Hamerstrom\textsuperscript{119} reports approximately 12 pairs occupying the breeding areas northwest of Necedah in Jackson, Monroe, Wood, and Juneau Counties. The flocks of migrants numbering 25 to 300 birds that alight on the resting grounds in autumn give an erroneous impression as to the actual breeding population.

The situation in Minnesota and Michigan is no more favorable. One or two pairs still nest in Norman and Pennington Counties, Minnesota. It is doubtful if the entire state has more than 10 pairs of breeding birds. Michigan has approximately 10 pairs nesting
in the Seney marshes, Schoolcraft County, Upper Peninsula. In
the lower peninsula a few pairs still nest in Washtenaw, Living-
ston, Ingham, Jackson, and Calhoun Counties. The state has
possibly 20 breeding pairs.

The paper by Hamerstrom is one of the very few studies made
of the present habitat of the sandhill crane with a view to its
preservation. The size of the range of a pair of breeding birds is
impressive. Reversion of the areas studied to game and forestry
management would undoubtedly destroy a large part of the
present breeding grounds through the growth of brush.

**Passenger Pigeon (Ectopistes migratorius Linn.)**

No American bird has left as dramatic an impression as the
wild or passenger pigeon. The flocks numbered millions and the
nestings covered many square miles of forest. Their numbers
were so great that the belief existed that this was one bird that
could not be exterminated. Yet when the end was in sight, it is
astonishing how little comment was made on its disappearance
during the decade 1890 to 1900.

The passenger pigeon lived largely on beechnuts and acorns.
In the Upper Great Lakes region a good beechnut crop occurred
usually in the fall of odd years and thus provided abundant food
for nesting during the spring of even years. The beech being con-
finned in its range to Michigan and eastern Wisconsin, the nestings
took place in these states in even years. The nestings in the
remainder of Wisconsin and Minnesota depended upon the supply
of acorns. In Minnesota the nestings were confined largely to the
hardwood timber in the southeastern part of the state.

One of the largest nestings that has been described took place
in central Wisconsin in 1871. It is estimated that the nesting
area covered 850 square miles and contained 136,000,000 breeding
birds. The last nestings of large size occurred in the same region
in 1882.

It is a popular opinion that the end of the pigeon came sud-
denly as the result of a disease or a natural disaster such as
drowning. This is far from the truth. Man alone was responsible
for the extinction. Organized bands of trappers followed the
pigeons from their wintering grounds in the South to the nestings
in the North. Here the old birds were trapped and the squabs
removed from the nests by tens of thousands to supply the gun
clubs and city markets.
The data that has been assembled show a gradual and not a sharp decline. In 1885 there was a fairly large nesting in the southeastern corner of Langlade County, Wisconsin, and in 1887 an attempted nesting in Waushara County was broken up by indiscriminate shooting. In 1890, pigeons appeared at various places in Wisconsin, as many as "thousands" being reported. They arrived at Sparta in 1892 in sufficient numbers to raise the hope that there would be a nesting. The succeeding years produced reports of fewer and fewer birds up to 1899. In September of this year, the last "acceptable" pigeon for Wisconsin was killed near Babcock.122

The extinction of the passenger pigeon must be accepted as one of the inevitable accompaniments of civilization. This was a bird the very existence of which depended upon huge numbers. Before this was understood the population had been reduced to a point below which the single egg laid could not maintain the race. Agriculture could tolerate but a fraction of their primitive numbers as cutting of the forests reduced the natural food supply. Wilson estimated that a flock of 2,250,072,000 birds seen by him would consume daily 17,424,000 bushels of mash. We have our agriculture but have lost a fine species.

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