wildlife and wildlife habitat in the winnipeg region

by E.F. Bossenmaier and C.G. Vogel

wildlife and wildlife habitat in the winnipeg region

by E. F. Bossenmaier and C. G. Vogel

Resources Planning, Manitoba Department of Mines, Resources and Environmental Management

Winnipeg, May 1974

Hon. Sidney Green, Q.C.
Minister

James T. Cawley, P. Eng.
Deputy Minister

Contents

List of Figures

Introduction

This report is meant for anyone who may have an interest in the wildlife and wildlife habitat of the Winnipeg region. This interest may spring from concern for environmental quality, from a desire to conserve, preserve or manage wildlife, or from a wish to use wildlife for hunting, viewing, trapping, educational or scientific purposes. Land developers in the Winnipeg region will learn in a broad way the potential impact of their schemes on wildlife and its habitat.

Stated in another way, the purpose of this report is to present a broad picture of the wildlife and wildlife habitat in the Winnipeg region for planning purposes. If one's interest is (a) recreational use of wildlife, that is viewing or hunting; (b) economic use, such as trapping; (c) educational or scientific use; (d) development of wildlife; or (e) environmental management, this report should serve as an inventory of opportunities in the region. Further, if a person is curious about the potential impact of a proposed development on wildlife or wildlife habitat in the Winnipeg region, this report should provide an insight into the likely impact while the development is still in a conceptual stage.

Many questions were beyond the scope of this study and therefore this report may seem deficient in some respects. An exhaustive inventory of wildlife enhancement opportunities is not to be found here nor does this paper contain specific guidelines that land developers should heed in order to lessen adverse impact on—or to benefit—wildlife resources.

Throughout this report the terms wildlife and wildlife habitat are used with equal emphasis. This is done so that the intimate relationship between the two is kept in sight. The kind and distribution of food, shelter, water and space in different climatic zones determine habitat type which in turn sets the stage for specific kinds of wildlife. Sometimes we are inclined wrongly to attribute loss of wildlife

to over-hunting, predators or disease where in fact it was caused by alterations in habitat—such as cultivation of grassland, drainage of wetland or clearing of forested land. At other times hunting, disease, predators or disturbance may be the factor that is limiting wildlife populations. The job of the wildlife manager and the ecologist is to diagnose accurately the situation in order to identify the limiting factor and devise corrective procedures. In the case of the Winnipeg region, wildlife change over the years has been linked so intimately with habitat change that the two are given equal emphasis in this report.

This report should be viewed as an initial and broad informational source for anyone who is concerned with management, use, preservation or development of wildlife and wildlife habitat in the Winnipeg region. Rarely will the information be adequate by itself. In almost all instances there will have to be follow-up studies of a refined nature. As a next step, we recommend that specific concerns be brought to the attention of the Manitoba Government field biologist responsible for wildlife management in the area. He is in a position to advise on all aspects of wildlife management on specific sites.

One final introductory thought. Hopefully, as a result of this examination, appreciation for our wildlife endowment will increase and we will become more aware than we were in the past of the actual and potential effects of our actions on wildlife and wildlife habitat.

The Study Approach

The nature of today's wildlife resources in the Winnipeg region is the result of many factors, not the least of which is man. In fact, man's influences have been so great that it is advisable to present a picture of the wildlife resources before European settlement. Beginning with the situation

in the 17th Century, this study will move to the present day and describe existing wildlife and habitat and some special wildlife areas.

Sources of Information

No new field studies were undertaken for this project. The pre-settlement picture was put together from references contained in existing publications that are listed in the bibliography. Current habitat was mapped and described from information contained in recent reports, as credited in the bibliography, in government files and in authors' notes collected over the past 15 years. The material in the section on "Some Special Wildlife Habitats" was assembled from the authors' files and from information generously provided by several wildlife specialists familiar with the Winnipeg region, namely H. Copland, K. Johnson and R. Wrigley, of the Manitoba Museum of Man and Nature; and D. Caswell, V. Crichton, B.C. Gillespie, H. Goulden, R.C. Goulden, J.L. Howard, H. Laws, I.J. Milliken, R. Nero, T. Schindler, R.K. Schmidt, C. Scott, E.J. Searle, M.W. Shoesmith, C.K. Smith, R. Stardom and H.C. Tirschmann, all employees of the Manitoba Department of Mines, Resources and Environmental Management.

General Considerations - What is Wildlife?

Wildlife means different things to different people. Some people think of deer and ducks in the country, others of sparrows and robins in the city, and still others of all animals ranging from butterflies to moose. The time is long past when people of Manitoba, especially those of the Winnipeg region, should be interested primarily in game animals. Hunters and trappers, of course, think first of game and fur, but wildlife to Manitobans as a whole should mean all animals living free in the wild: mammals, birds,

lower vertebrates and invertebrates.

This broader view of wildlife is rapidly entering our culture. Our understanding and appreciation of natural systems, food webs and energy cycles are expanding. Animals that once were ignored or considered useless or nuisances, such as insects, toads, snakes, sparrows and wolves, are suddenly assuming roles of importance in the minds of more people. There is far more to this change in attitude than mere "love of nature". We are beginning to see clearly a connection between the survival of the human race and the survival of other animals, plants and whole ecosystems.

Unfortunately the concept of ecosystems and the significance of the health of these ecosystems to human survival are not sufficiently developed to be used as the basis for this study. It would have been preferable to prepare a report on the "Ecosystems of the Winnipeg Region" rather than one on "Wildlife Habitat", but our understanding of the former is much less advanced than of the latter. Even in the case of wildlife a true picture is not presented when deer and ducks, but not microorganisms and insects, are discussed. The reader will note an emphasis in this report on the more commonly known and observed species of wildlife, a step taken in the hope of making the report more meaningful. This emphasis should not be construed as a rating of species according to their intrinsic value to humans.

Pre-Settlement Natural Habitat Types

The Winnipeg region prior to European settlement was an area of tremendous wildlife abundance and diversity, a reflection of rich and varied habitat. Several major habitat types occurred side by side in the region. In the center were grasslands and vast marshes. Along the western edge, in the northwest and in the immediate east were broadleaf parklands and forests. To the north and in the east were

mixed broadleaf-coniferous forests, while almost pure tracts of coniferous forest were found along the eastern boundary.

Many water courses with their fertile banks and valleys passed through the Winnipeg region. In addition, the area was endowed with portions of Lakes Manitoba and Winnipeg, with the extensive marshes at the southern ends of these two lakes, with the Shoal Lakes complex and with numerous other smaller lakes, marshes, fens and bogs. Two maps are included that depict these several habitat types. Figure 1 shows the wet prairie zones and outlines the permanent and semi-permanent marshes[1/] that existed here before drainage. Figure 2 illustrates the wildlife habitat types of the Winnipeg region before settlement.

Wildlife, of course, was a significant feature of all these habitat types. Bison, pronghorn (antelope) and gray wolves were prominent species on the grasslands. Elk (wapiti), mule deer, moose and black bear were found in the broadleaf parklands and forests. Moose and gray wolves were animals of the mixed forest, while caribou were found in the coniferous forest. These animals were not confined solely to their characteristic habitats and often lived in adjoining types. Riparian habitat (along water courses) provided extensions of range for many species of wildlife into otherwise sub-optimum environments. Ducks, geese and swans were abundant on the wetlands of the region as were beaver, muskrat, river otter and numerous other animals.

In summary, the pre-settlement habitat of the Winnipeg region supported complex communities of interrelated and interdependent plants and animals, the latter consisting of

1/ Permanent marshes are those that contain water even in severe drouths. Semi-permanent marshes usually dry in severe drouths. Temporary marshes are spring occurrences and usually dry by late summer.

figure 1

Legend

Wet Prairie Zones of the Winnipeg Region showing Temporary, Semi-permanent and Permanent Wetlands before Settlement and Drainage

Outer Boundary of Wet Prairie Zones
Temporary Wetland
Semi-permanent Wetland
Permanent Wetland
Names Applied to Wetland Areas by Early Residents — Boyne Marsh

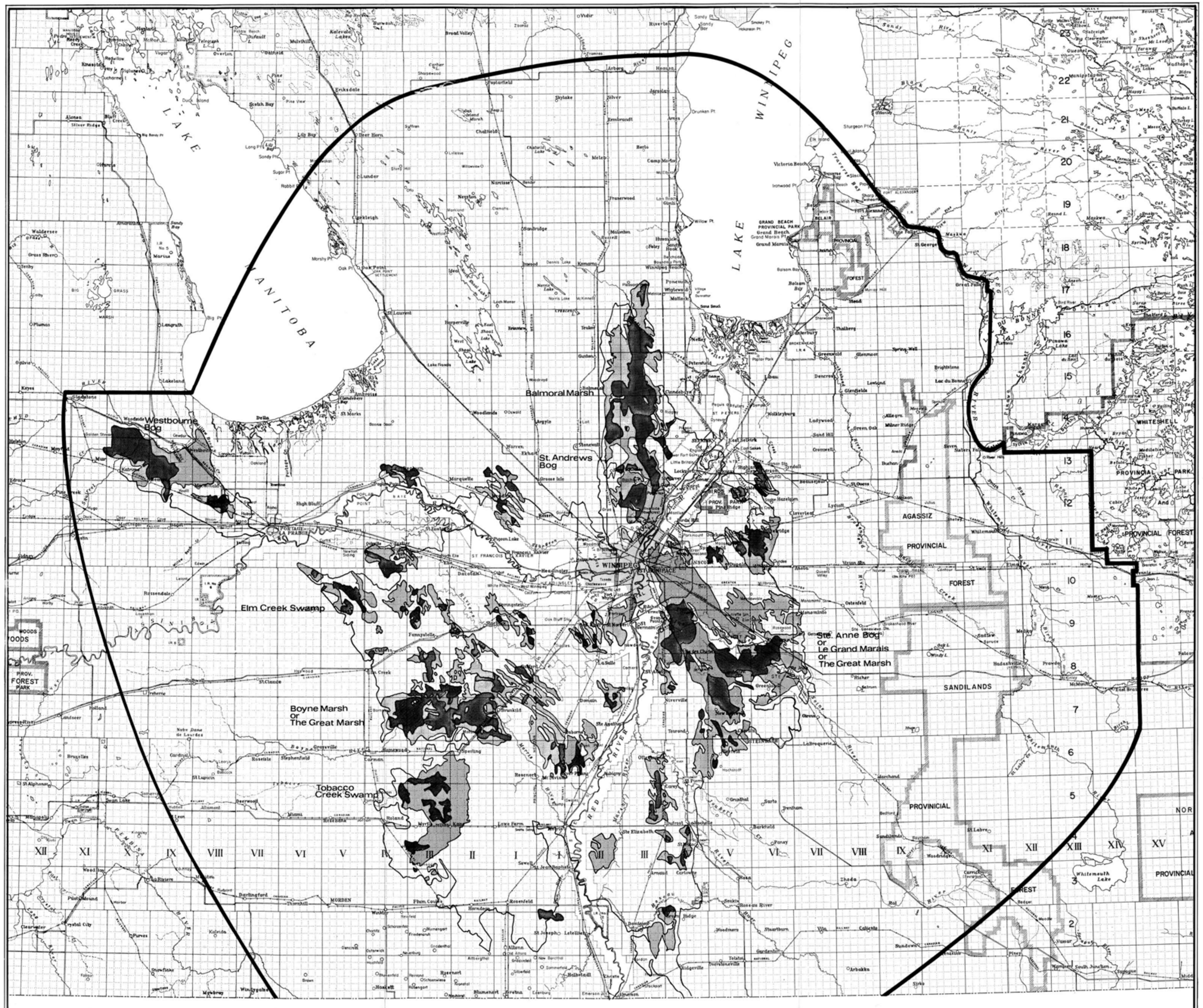


figure 2

Legend

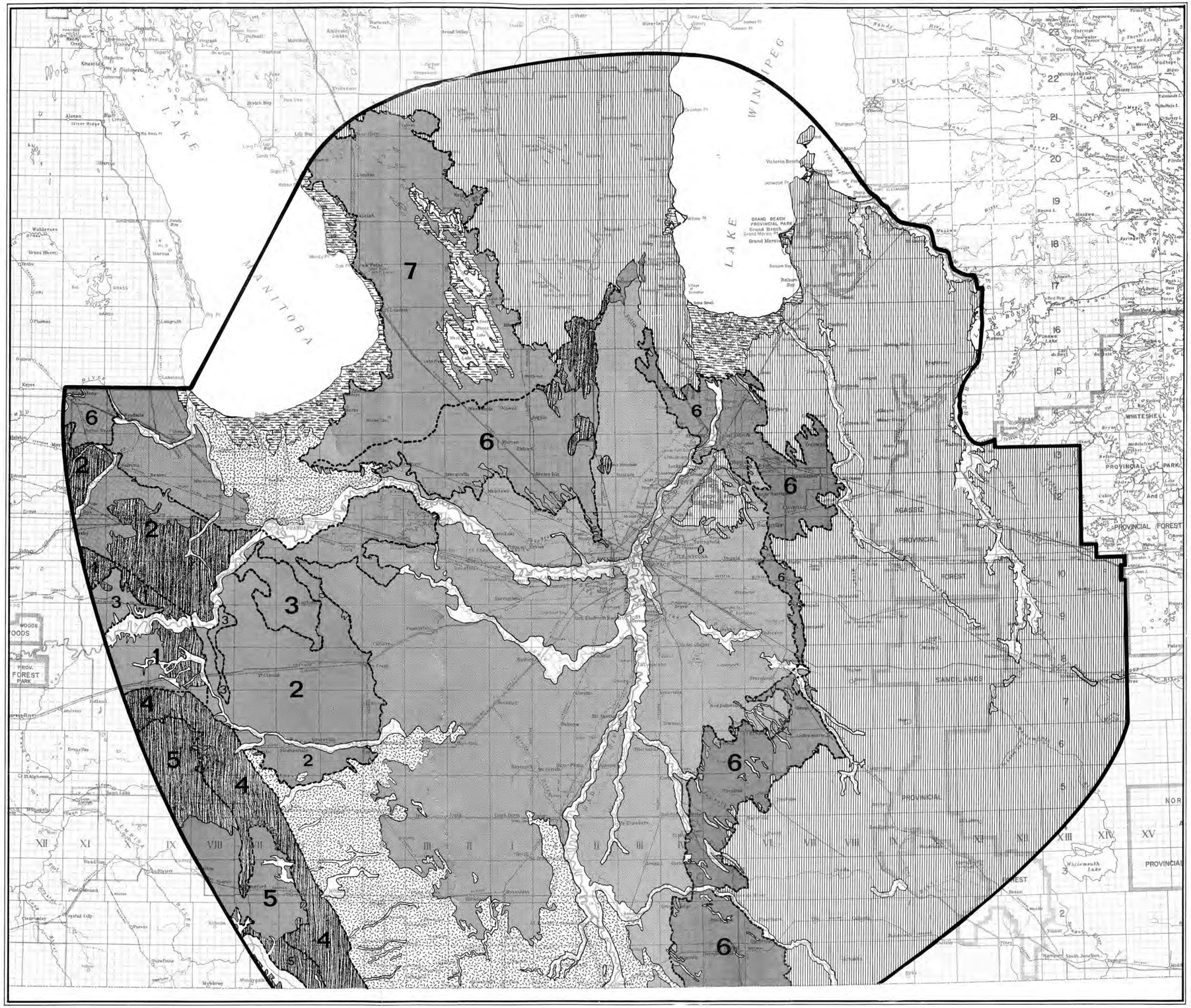
Wildlife Habitat Types of the Winnipeg Region before Settlement (including location of landforms mentioned in text)

Wildlife Habitat Types

- Wet Prairie
- Delta Grassland
- Broadleaf Deciduous Forest
- Broadleaf Deciduous Parkland
- Mixed Forest
- Marsh, Swamp, Bog
- River Valley

Landforms

- Upper Assiniboine Delta 1
- Lower Assiniboine Delta 2
- Sand Dunes 3
- Escarpment 4
- Pembina Till Plain 5
- Glacial Lake Terrace 6
- Interlake Till Plain 7



innumerable kinds ranging from insects and other invertebrates to the prominent species mentioned above. The most noteworthy feature of these communities, as of all natural communities, was their ability to be self-supporting without dependence on controls and additional energy supplied by man.

Wildlife and Habitat Changes since Settlement

The previous section mapped and listed pre-settlement natural habitat types of the Winnipeg region. Figure 3 shows the location, distribution and abundance of present wildlife habitat types in the region. The transition from pre-settlement to present habitat and the impact on wildlife are discussed in this section by major habitat types.

River Valleys

River valleys, or better termed "water courses" where valleys are lacking, are excellent wildlife habitat because of their diversity. The deeper valleys, such as the Pembina and Assiniboine west of the Red River prairie, provide wooded slopes, wooded flood plains, occasional marshes and lakes and flowing water. Even the valleys with little relief, such as the Roseau, Rat and Whitemouth Rivers and Hazel Creek are rich arteries of wildlife habitat.

Dominant trees of the river valleys that pass through the grassland and broadleaf parkland and forest are Manitoba maple, white elm, green ash, basswood, plains cottonwood, aspen, balsam poplar, white birch and bur oak. In the valleys of the mixed forest, black ash, white spruce, balsam fir, largetooth aspen and jack pine are also found.

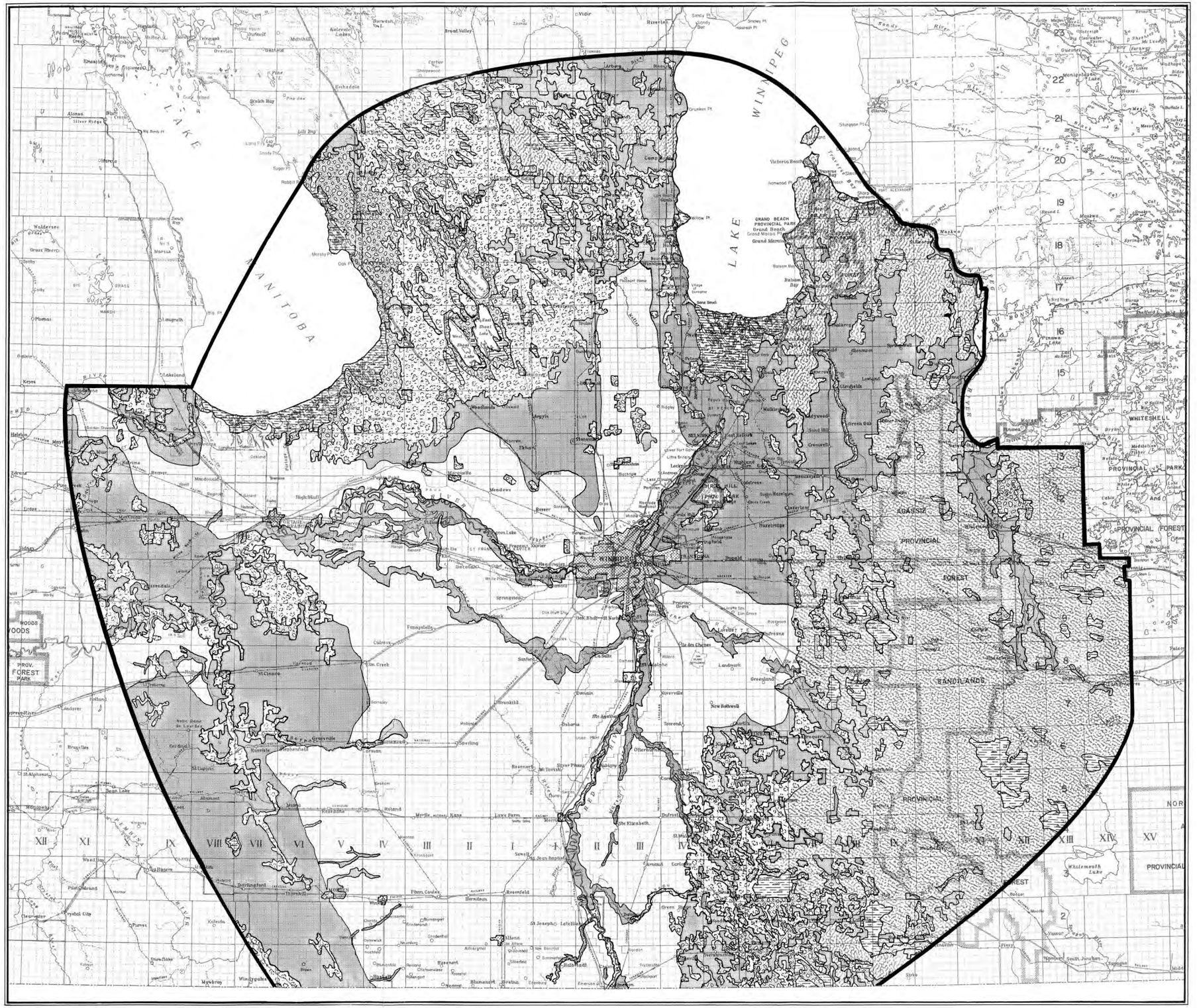
River valley, or riparian habitat, supports aquatic, semi-aquatic and upland wildlife communities in close proximity to one another. Many of the valleys in the Winnipeg region still have a wild character and support

figure 3

Legend

Present Wildlife Habitat Types
of the Winnipeg Region

- Built-up Areas
- Cropland
- Wooded Cropland
- Natural Grassland
- Broadleaf Deciduous Woods
- Mixed Woods
- Swamp, Marsh, Bog
- Excavations (Mines, Quarries, Sand, Gravel)



large and varied wildlife populations—particularly where they pass through the mixed forest—although of a different composition than in pre-settlement times. In agricultural and urban parts of the region, the valleys provide critical daily and seasonal refuge for wildlife. Grizzly bear, bison, elk, mule deer, caribou and passenger pigeons are gone from the region's river valleys. White-tailed deer are relatively recent arrivals. Moose, gray wolves, beaver, river otter, muskrat, mink, raccoon, coyote, black bear, lynx, bobcat, waterfowl, grouse and many other species have survived since pre-settlement times but their distribution and abundance have changed in most cases.

Grasslands

While river valleys of the Winnipeg region still exhibit a good degree of naturalness, the pristine grasslands have been largely converted into cropland. The wet prairie zones were drained and plowed—Oak Hammock Marsh is the final remnant of the once vast system of semi-permanent and permanent marshes on the Red River prairie—while the delta grassland zones formed by the Pembina and Assiniboine Rivers generally required only plowing for conversion.

Big bluestem and little bluestem grasses dominated the plant associations of the delta grassland zones and of the drier portions of the wet prairie zones. Semi-permanent wetlands were covered by tall cord grasses, switch grass, slough grass, whitetop, manna grass, reed grasses, baltic rush and sedges. Permanent wetlands contained a mixture of the marsh grasses listed above with giant reed grass, cattail, bulrushes, rushes, sedges and submerged plants, such as pondweeds, where water depth permitted.

These lush wetlands and grasslands supported large populations of wildlife—dominated by waterfowl, furbearers, large ungulates and their predators—most of which are either gone or greatly reduced. In their place we now have wildlife

populations that are adaptable to these man-sustained habitats. Greater prairie chicken that spread northward from the United States were an important addition to the fauna of the Winnipeg region's grasslands during the days of pioneer agriculture, but they too disappeared as agricultural intensity increased. Hungarian partridge were introduced and survived as did the Norway rat, house mouse, house sparrow and starling.

Wetlands

Although many large pre-settlement marshes have been drained, the Winnipeg region still possesses many wetlands with high degrees of naturalness. Noteworthy among these are Lakes Winnipeg and Manitoba, the Shoal Lakes complex, Netley-Libau Marsh, Delta-Lake Francis Marsh, Willow Point Marsh, Oak Point Marsh, St. Labre Bog and numerous other smaller lakes, marshes, fens and bogs.

The decrease in numbers of breeding ducks, geese and swans in the Winnipeg region over the years was caused by habitat conversion and excessive exploitation. It has been estimated that 10 to 15 per cent of the semi-permanent and permanent marshes of the wet prairie zones were drained before 1900. By 1940, 85 per cent were drained and the remainder went soon after World War II. When the extent of these marshes and their suspected high capability for waterfowl production are considered, it is easy to visualize the huge losses in waterfowl that must have occurred in the Winnipeg region solely as a result of drainage. But drainage was not alone in reducing numbers of waterfowl. Heavy hunting pressure is held responsible for recent declines, particularly of ducks.

Many kinds of wildlife which occurred on the edge of the marshes, such as bison and greater prairie chicken, are gone. White-tailed deer arrived after settlement began. Other species of both marsh and edge are still present

although distribution and abundance may be drastically different from what they were 300 years ago.

Broadleaf Parkland and Forest

These habitat types, dominated by aspen, bur oak and balsam poplar, occurred on several landforms in the Winnipeg region prior to settlement. Broadleaf parkland and forest are still found in a high state of naturalness on the sand dunes south and southwest of Portage la Prairie, on the Escarpment rising above the southwestern edge of the Red River prairie, on rough topography on the Lower Assiniboine Delta north of the Assiniboine River (Seton's "The Bad Woods"), and on the Interlake Till Plain.

Some landforms that supported extensive tracts of excellent broadleaf parkland and forest before settlement have been mostly cleared and broken for cropland. These are the Pembina Till Plain west of the Escarpment, most of the Upper and Lower Assiniboine Deltas and the glacial lake terraces.

Prior to European settlement the broadleaf parklands and forests supported large wildlife communities. Favorable sites within these broad habitat types had numbers of bison, mule deer, moose, elk, pronghorn, black bear, grizzly bear, gray wolves, beaver, muskrat, wolverine, snowshoe hare, porcupine, grouse, passenger pigeons, Canada geese, ducks, trumpeter swans, whooping cranes, sandhill cranes and numerous other species.

Even the most natural broadleaf parklands and forests today in the Winnipeg region contain only remnants of previous wildlife communities. Most of the large mammals are gone as are several of the birds. Many species remain, of course, although current distribution and abundance are markedly different. Some new species have entered the communities, such as white-tailed deer, Hungarian partridge and wild turkeys.

Mixed Forest

Mixed-forest habitat in the Interlake and eastern zones of the Winnipeg region consists of various forest and bog types, such as pine forests, dominated by jack pine; spruce-fir forests, dominated by white spruce and balsam fir with admixtures of broadleaf trees; and conifer bog, dominated by black spruce, tamarack and white cedar. The term "mixed forest" applies to the combination of broadleaf trees and coniferous trees found growing in this habitat type in proportions ranging from 100 per cent broadleaf to 100 per cent coniferous.

Much of the mixed-forest habitat of the Winnipeg region, especially that in the east, is little changed from pre-settlement times. Agriculture has displaced some tracts while fire and logging have altered others. On the whole, however, the mixed-forest habitat has undergone less change than the other habitat types of the Winnipeg region with the possible exception of some wetlands.

Certain of the large mammals common in other parts of the region, such as bison and pronghorn, may have entered mixed-forest habitat only peripherally or not at all. Species such as mule deer, elk, moose, caribou and bear were common within it.

Populations of many native animals have been reduced or eliminated by destruction of habitat or overharvest. Caribou, mule deer and elk (except for a few in the Interlake zone) have all disappeared. However, where natural mixed-forest habitat remains—and a substantial proportion of it still does—wildlife populations are quite reminiscent of pre-settlement times. All the native grouse, ducks, Canada geese and such large mammals as black bear, moose, gray wolves, coyote and lynx occur commonly in this habitat. White-tailed deer, as elsewhere in the Winnipeg region, have entered the mixed forest since the advent of European settlement.

Urban

The city of Winnipeg, like outlying wheat fields, is largely a man-controlled environment but the city is so diverse that it provides suitable habitat for a large variety of wildlife. Many species in the urban setting are native forms that were able to adapt while other kinds are exotic forms that found favorable living conditions here. River corridors, parks and other open spaces, backyard gardens and frontyard shrubbery, treed boulevards, low and high buildings, warm chimneys and wildlife feeding stations all contribute to habitat and species diversity in Winnipeg.

There is no more complex biological community in the Winnipeg region than Winnipeg itself. Perhaps there is no more valuable community either, since not only is urban wildlife a part of our everyday lives, it also is an indicator of the quality of the city as an environment for humans. Wildlife needs clean air, clean water, greenery and space, and so do we. Better that we maintain and improve human and wildlife habitats in Winnipeg than overlook these aspects of the city in our preoccupation with rural environments.

Some Special Wildlife Habitats

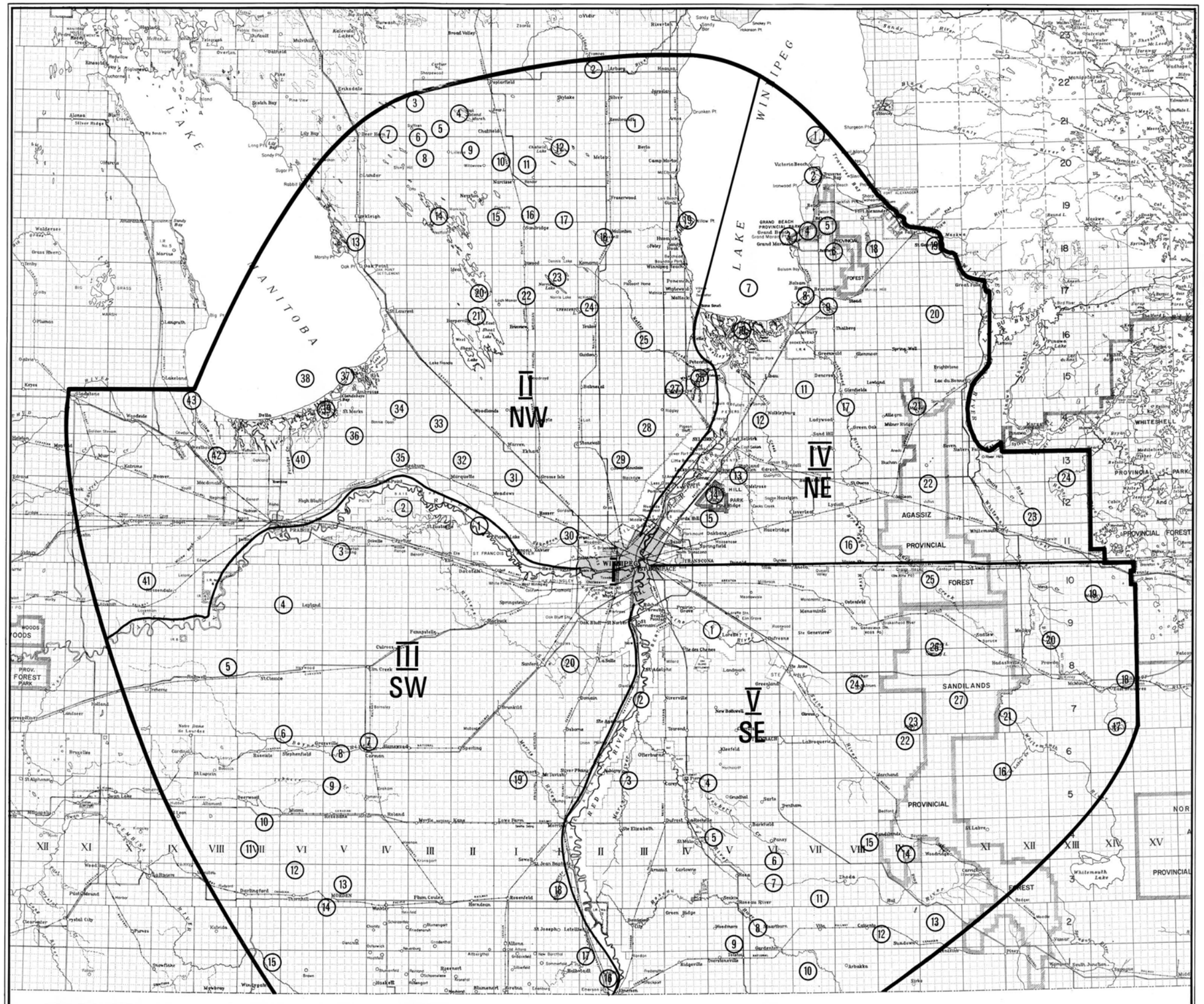
Figure 4, entitled "Some Special Wildlife Habitats", spotlights over 100 areas in the Winnipeg region that have unusual or above-average wildlife endowment. Although these areas are something special, they are by no means the only areas supporting valuable wildlife in the Winnipeg region. Wildlife is everywhere and the most valuable to some persons may be the robins which frequent their back yards in Fort Garry or St. Boniface. However, some habitats, because they are extremely productive of wildlife, provide unusual use opportunities, or support rare, endangered or unusual species or communities, have significance to society as a whole, and even on occasion may have provincial, national or international interest. The list is certainly not complete;

figure 4

Some Special Wildlife Habitats in the Winnipeg Region

SITE	SIGNIFICANT FEATURES							
	Duck Breeding	Canada Goose Breeding	Waterfowl Staging	Grouse	Deer	Moose	Bearers Fur	OTHER
I. GREATER WINNIPEG (INSIDE PERIMETER)			•					URBAN WILDLIFE
II. NORTHWEST QUADRANT								
1 – REMBRANDT RIDGE				x	x			
2 – ICELANDIC RIVER								RIPARIAN HABITAT
3 – SHARPEWOOD WILDLIFE MANAGEMENT AREA				x	x			BLACK BEAR; ELK
4 – OAK ISLAND MARSH	x		x				x	
5 – BURNT LAKE	x		x				x	
6 – SWAN LAKE	x		x				x	
7 – ISLAND LAKE	x		x				x	
8 – LUNDAR WILDLIFE MANAGEMENT AREA				x	x			
9 – LONG LAKE	x						x	
10 – NARCISSE WILDLIFE MANAGEMENT AREA	x			x	x			PARKLAND HABITAT; BLACK BEAR; DEER WINTERING AREA; GARTER SNAKE DENS
11 – NARCISSE COMMUNITY PASTURE	x			x	x			PARKLAND HABITAT; BLACK BEAR; GARTER SNAKE DENS
12 – CHATFIELD LAKE	x		x				x	FROG WINTERING AREA
13 – MARSHY POINT	x	x	x				x	
14 – MANY-LEGGED MARSH	x		x				x	
15 – CLEMATIS WILDLIFE MANAGEMENT AREA				x	x			DEER WINTERING AREA
16 – SANDRIDGE WILDLIFE MANAGEMENT AREA				x	x			DEER WINTERING AREA
17 – DENNIS LAKE	x	x	x				x	
18 – RUSSELL LAKE	x		x					
19 – WILLOW POINT	x		x				x	SHOREBIRD AND SONGBIRD STAGING AREA
20 – HARPERVILLE WILDLIFE MANAGEMENT AREA				x	x			
21 – SHOAL LAKES COMPLEX	x		x	x				GRASSLAND HABITAT; PELICAN NESTING COLONY; CORMORANT NESTING COLONY; SHOREBIRD STAGING AREA
22 – INWOOD WILDLIFE MANAGEMENT AREA				x	x			GARTER SNAKE DENS
23 – NORRIS LAKE	x		x					
24 – CRESCENT LAKE	x		x					
25 – NETLEY CREEK								RIPARIAN HABITAT
26 – NETLEY-MAVEY-MEDICINE MUCKLE CREEKS								RIPARIAN HABITAT; WOOD DUCK NESTING
27 – CLANDEBOYE PITS	x			x	x			
28 – ST. ANDREWS BOG (OAK HAMMOCK MARSH)	x		x	x	x		x	INTENSIVE DEVELOPMENT FOR WILDLIFE
29 – STONY MOUNTAIN				x			x	
30 – STURGEON CREEK								RIPARIAN HABITAT
31 – GRANTS LAKE	x		x				x	
32 – ROSSER – READBURN CROPLAND			x					GOOSE STAGING AREA IN SPRING
33 – WOODLANDS-READBURN POPLAR PT. ESCARPMENT	x			x	x			DEER WINTERING AREA
34 – WOODLANDS COMMUNITY PASTURE	x			x	x		x	PARKLAND HABITAT
35 – LONG CREEK								RIPARIAN HABITAT
36 – PORTAGE COMMUNITY PASTURE	x			x	x		x	PARKLAND HABITAT
37 – ST. AMBROISE GAME BIRD REFUGE	x		x		x		x	SONGBIRD STAGING AREA
38 – LAKE MANITOBA	x	x	x				x	PELICANS
39 – DELTA MARSH – LAKE FRANCIS	x	x	x		x		x	WESTERN GREBE NESTING; PELICANS; GREATER PRAIRIE CHICKEN UNTIL 1950's; FRANKLIN'S GULL NESTING COLONY
40 – PORTAGE CREEK								RIPARIAN HABITAT
41 – ROSSENDALE ESCARPMENT				x	x			DEER WINTERING AREA
42 – WILLOW BEND CREEK								RIPARIAN HABITAT; HUNGARIAN PARTRIDGE
43 – WHITEMUD RIVER								RIPARIAN HABITAT
III. SOUTHWEST QUADRANT								
1 – ASSINIBOINE RIVER								RIPARIAN HABITAT
2 – MILL CREEK								RIPARIAN HABITAT
3 – ELM RIVER								RIPARIAN HABITAT
4 – PORTAGE SANDHILLS				x	x			
5 – ST. CLAUDE SANDHILLS								ONLY CANADIAN RECORD OF FOX SQUIRREL; ISOLATED PERIPHERAL POPULATION OF WESTERN JUMPING MOUSE AND PRAIRIE VOLE
6 – STEPHENFIELD RESERVOIR	x		x					
7 – CARMAN WILDLIFE REFUGE								URBAN WILDLIFE
8 – BOYNE RIVER – MORRIS RIVER								RIPARIAN HABITAT
9 – TOBACCO CREEK								RIPARIAN HABITAT
10 – PEMBINA ESCARPMENT				x	x			WILD TURKEYS; DEER WINTERING AREA
11 – LIZARD LAKE	x		x				x	SHOREBIRD STAGING AREA; FRANKLIN'S GULL NESTING COLONY
12 – SHANNON CREEK								RIPARIAN HABITAT
13 – DEAD HORSE CREEK								RIPARIAN HABITAT
14 – LAKE MINNEWASTA	x		x					
15 – PEMBINA RIVER								RIPARIAN HABITAT; WILD TURKEYS; DEER WINTERING AREA
16 – LOUISE LAKE	x		x					
17 – RIVIERE AUX MARAIS								RIPARIAN HABITAT
18 – PLUM RIVER								RIPARIAN HABITAT
19 – LITTLE MORRIS RIVER								RIPARIAN HABITAT
20 – LA SALLE RIVER								RIPARIAN HABITAT
IV. NORTHEAST QUADRANT								
1 – ELK ISLAND	x							NESTING OSPREY
2 – HILLSIDE BEACH MARSH	x		x					
3 – GRAND BEACH MARSH	x		x					
4 – GRAND BEACH PROVINCIAL PARK				x	x			BLACK BEAR
5 – BELAIR FOREST RESERVE				x	x	x	x	MIXED FOREST HABITAT; BLACK BEAR
6 – JACKFISH LAKE	x	x	x				x	
7 – LAKE WINNIPEG	x		x				x	PELICANS
8 – BEACONIA MARSH	x		x				x	
9 – GULL LAKE	x		x					
10 – NETLEY – LIBAU MARSH	x		x		x		x	PELICANS; BLACK-CROWNED NIGHT HERON NESTING COLONY; FRANKLIN'S GULL NESTING COLONY
11 – MARS HILL				x	x	x	x	BLACK BEAR
12 – DEVIL CREEK								RIPARIAN HABITAT
13 – COOKS CREEK								RIPARIAN HABITAT
14 – BIRDS HILL				x	x			
15 – BIRDS HILL PITS	x							
16 – CEDAR LAKE	x		x					
17 – BROKENHEAD RIVER								RIPARIAN HABITAT; WOOD DUCK NESTING; RIVER OTTER
18 – CATFISH CREEK								RIPARIAN HABITAT
19 – WINNIPEG RIVER								RIPARIAN HABITAT
20 – RED DEER HILL				x	x	x	x	GRAY WOLVES; BLACK BEAR
21 – MOOSWA LAKE	x							
22 – AGASSIZ FOREST RESERVE				x	x	x	x	MIXED FOREST HABITAT; WOODCOCK; GRAY WOLVES; BLACK BEAR
23 – BOG RIVER								RIPARIAN HABITAT
24 – RENNIE RIVER								RIPARIAN HABITAT; CANADA GOOSE NESTING; RIVER OTTER
V. SOUTHEAST QUADRANT								
1 – SEINE RIVER								RIPARIAN HABITAT
2 – RED RIVER								RIPARIAN HABITAT; HAWK MIGRATION CORRIDOR; EASTERN COTTONTAIL
3 – MARSH RIVER								RIPARIAN HABITAT
4 – JOUBERT CREEK								RIPARIAN HABITAT
5 – ST. MALO RESERVOIR	x		x					
6 – PANSY COMMUNITY PASTURE				x	x			GRASSLAND HABITAT
7 – RAT RIVER								RIPARIAN HABITAT
8 – ROSEAU RIVER								RIPARIAN HABITAT
9 – N.E. EMERSON CROPLAND								SOLE RANGE OF PLAINS POCKET GOPHER IN CANADA
10 – GARDENTON COMMUNITY PASTURE				x	x	x		GRASSLAND HABITAT; SANDHILL CRANE NESTING
11 – VITA COMMUNITY PASTURE				x	x			GRASSLAND HABITAT
12 – CALIENTO MARSHES	x		x				x	
13 – HORSESHOE LAKE	x		x				x	
14 – SAND RIVER								RIPARIAN HABITAT
15 – WATSON P. DAVIDSON WILDLIFE MANAGEMENT AREA				x	x	x	x	BLACK BEAR
16 – ST. LABRE BOG	x	x					x	FEN HABITAT; CARIBOU UNTIL LATE 1930'S
17 – BIRCH LAKE	x		x				x	
18 – BOGGY RIVER								RIPARIAN HABITAT; WOODCOCK; RIVER OTTER
19 – MOSS LAKE	x		x					
20 – BIRCH RIVER								RIPARIAN HABITAT
21 – WHITEMOUTH RIVER								RIPARIAN HABITAT; CANADA GOOSE NESTING; RIVER OTTER
22 – LA BROQUERIE BOG	x	x	x					
23 – HUGO LAKE	x		x					
24 – SALMON LAKE	x		x					
25 – HAZEL CREEK								RIPARIAN HABITAT; RIVER OTTER
26 – OAK AND WINDY LAKES	x		x				x	
27 – SANDILANDS FOREST RESERVE				x	x	x	x	MIXED FOREST HABITAT; GRAY WOLVES; BLACK BEAR

Legend



these are all we could identify during the course of this project and suggestions for additions are invited.

Persons interested in the exact locations and boundaries of these special habitats should consult with Regional Staff of the Manitoba Department of Mines, Resources and Environmental Management. You may wonder why only a few kinds of wildlife are listed under "Significant Features" on Figure 4. Mention of some species and not others reflects, in part, the personal biases of contributors, and an attempt to respond to public attitudes regarding species of economic or recreational importance and species which are considered rare, endangered or unusual.

The kinds listed are by no means the only interesting ones found in these habitats. Coyotes, red and gray foxes, ravens, lynx, bobcats, porcupines, raccoons, beaver, squirrels, weasels, striped skunks, gulls and terns, fisher, badger, yellow-headed blackbirds and others are equally "interesting" and occur in suitable habitats in the Winnipeg region.

Plant and animal lists are the traditional way of describing different habitats and the "Special Wildlife Habitat" approach used in this paper is a modification of the "list" approach. The method we would have liked to use is that of the "biotic community" where *all* the components are viewed as interrelated to form a self-perpetuating ecological system. The truth is, however, that this latter approach is as yet highly conceptual and not perfected to the point where it could be used to advantage in this project.

Further development of the Winnipeg region should proceed on the basis not only that there are special areas of wildlife habitat, but also that the entire region is wildlife habitat of one sort or another. Designation of special areas serves to alert developers to potential

problems at the time their projects are initially conceived. Where such designation is not indicated, developers may proceed initially with less caution but they should introduce concern for wildlife in an early planning stage when projects are still on the drawing board and long before they receive final approval.

A recognized deficiency of this report is its failure to spotlight specific sites within larger habitat types. For example, there are key tracts of river-bottom forest along the Red and Assiniboine Rivers that stand out in the otherwise average riparian habitat. Learys' Valley is an outstanding tract of wooded habitat on the escarpment west of Carman. The wooded cropland area around Roseisle has certain above-average sites. All the major habitat types have degrees of habitat quality within them, from poor to excellent, that were beyond the scope of this study to delineate.

This report also lacks information regarding wildlife enhancement opportunities. Rivers can be dammed and run-off contained to develop wetlands for wildlife, while land can be developed for deer, moose and other upland wildlife, but such opportunities in the Winnipeg region were not inventoried as part of this study. We would have liked, for example, to locate specific sites for trial reintroductions of greater prairie chicken and woodland caribou.

Significance of Degree of Development

An analysis of the Special Wildlife Habitats reveals a relationship between degree of development and wildlife significance. In general, the less the development the greater the wildlife significance. Outstanding areas in this regard are Wildlife Management Areas, the large wetlands, Forest Reserves, Community Pastures, Birds Hill Provincial Park and the Shoal Lakes complex.

Cultivation, water impoundments and quarries are developments that have had greatest adverse impact on native upland wildlife, while drainage has had the most adverse impact on wetland wildlife. Logging and fire may merely set back plant succession and this can be either favorable or unfavorable depending on the wildlife management objectives for the area. Grazing of domesticated cattle on otherwise undisturbed natural habitats may have no greater impact than former grazing by wild herbivores except that a tendency for some cattlemen in Manitoba is to overgraze severely.

Roads have a far greater impact on wildlife than is generally realized. They are significant in that they usually cut across and disrupt animal communities. Faint trails are not as damaging as divided freeways but even the lightest track has its wildlife implications.

It is no mere coincidence that every special upland wildlife habitat in the Winnipeg region that has significance for large mammals is roadless or nearly so. Some species, such as caribou, have low tolerance for the kind of disturbances that come with roads. Other species like gray wolves and moose have large home ranges that may be cut up and interfered with by roads. Furthermore, roads provide hunter access which can lead to wildlife decimation, especially near areas of high human concentration such as Winnipeg. Considerably more thought should be given in the future to the direct and indirect impact of roads on wildlife in the Winnipeg region.

Relative lack of development, besides being favorable to wildlife, adds considerably to environmental quality and amenity. These factors are more or less intangible but mean a great deal to people who use open space and its plant and animal constituents to obtain a psychological break from the anxieties of modern-day life.

We do not wish to suggest that development is necessarily synonomous with total wildlife destruction. Development almost invariably means disruption of natural communities but it also means creation of new habitats. For example, when riparian habitat along the Boyne River was flooded by Stephenfield Reservoir, deer and grouse gave way to waterfowl and muskrats. Whether or not this exchange is good from a public standpoint has to be judged for each particular case. When Number 1 Highway east of Winnipeg was divided, the median strip was landscaped with shrubs. These shrubs became the nesting sites for numerous small birds. Although it is true that man both destroys and creates wildlife habitats, it is wrong to assume simply that this balances the ledger. Some habitats are far more valuable to man than others and it is within our power to control development so that wildlife values are maintained at desirable levels.

Bibliography

Adams, G.D., R.C. Hutchison, and R. McLandress. 1972. Evaluation of wetland ecosystems and migratory bird use in the Roseau River Basin, Manitoba. Preliminary assessment and inventory. Report prepared by the Canadian Wildlife Service for the International Roseau River Engineering Board.

Bird, J.B. 1972. The natural landscapes of Canada, a study in regional earth science. Wiley Publishers of Canada Ltd., Toronto.

Bird, R.D. 1961. Ecology of the Aspen Parkland of western Canada, in relation to land use. Research Station, Canada Department of Agriculture, Publication 1066, Ottawa.

Canada Land Inventory Project. 1966. General description of the Brandon map sheet area, 62G. *In* Soil Capability for Agriculture, Brandon 62G, ARDA, Ottawa.

_____. 1972. Present land use map, southern Manitoba. Canada Land Inventory Project, Department of Mines, Resources and Environmental Management, Province of Manitoba, Winnipeg.

Deville, E. 1915. Extracts from reports on townships east of the principal meridian, received from surveyors to July 1, 1914. Compiled in the Office of the Surveyor-General, Topographical Surveys Branch, Canada Department of the Interior, Ottawa.

Ducks Unlimited (Canada). 1963. Preliminary evaluation of the wetlands of the Interlake Section of Manitoba for waterfowl production. Mimeographed report, Ducks Unlimited (Canada), Winnipeg.

Ehrlich, W.A., E.A. Poyser, L.E. Pratt, and J.H. Ellis. 1953. Report of reconnaissance soil survey of Winnipeg and Morris map sheet areas. Soils Report No. 5, Manitoba Soil Survey, Manitoba Department of Agriculture, Winnipeg.

_____, _____, and _____. 1957. Report of reconnaissance soil survey of Carberry map sheet area. Soils Report No. 7, Manitoba Soil Survey, Manitoba Department of Agriculture and Immigration, Winnipeg.

Ellis, J.H., and W.H. Shafer. 1943. Report of reconnaissance soil survey of south-central Manitoba. Soils Report No. 4, Manitoba Soil Survey, Manitoba Department of Agriculture, Winnipeg.

Gill, C.B. 1960. The forests of Manitoba. Report No. 10, Forest Resources Inventory, Management Division, Forest Service, Manitoba Department of Mines and Natural Resources, Winnipeg.

Goulden, H.D., D.A. Davies, I.J. Milliken, L.M. Nelson, A.B. Ransom, and V.H. Scott. 1972. Wildlife section, Whitemud River watershed resource study, phase 1. Manitoba Department of Mines, Resources and Environmental Management, Winnipeg.

_____, I.J. Milliken, E.J. Searle, and R.K. Schmidt. 1973. Land capability classification for ungulate wildlife. A manual describing its application in Manitoba. Canada Land Inventory Report, Manitoba Department of Mines, Resources and Environmental Management, Winnipeg.

Grant, G.M. 1873. Ocean to ocean. Sanford Fleming's Expedition through Canada in 1872. Facsimile edition reprinted by Coles Publishing Company, Toronto. Originally published by James Campbell, Toronto, 1873.

Howard, J.L. 1966. Wildlife habitat evaluation of the Portage Sandhills. Biological Report, Wildlife Branch, Manitoba Department of Mines and Natural Resources, Winnipeg.

Johnson, Karen L. 1972. A proposal to establish a system of Ecological Reserves in the Province of Manitoba including specific site recommendations. The Manitoba Conservation of Terrestrial Ecosystems Subcommittee of the International Biological Programme (IBP-CT Manitoba) to the Manitoba Department of Mines, Resources and Environmental Management, Winnipeg.

Küchler, A.W. 1964. Potential natural vegetation of the coterminous United States. American Geographical Society, New York.

Michalyna, W., and R.E. Smith. 1972. Soils of the Portage la Prairie area. Soils Report No. 17, Manitoba Soil Survey, Manitoba Department of Agriculture, Winnipeg.

Mueller-Dombois, D. 1964. The forest habitat types of southeastern Manitoba and their application to forest management. Canadian Journal of Botany 42:1417-1444.

Pratt, L.E., W.A. Ehrlich, F.P. Leclaire, and J.A. Barr. 1961. Report of detailed-reconnaissance soil survey of Fisher and Teulon map sheet areas. Soils Report No. 12, Manitoba Soil Survey, Manitoba Department of Agriculture and Conservation, Winnipeg.

Ransom, A.B. 1971. Some interrelationships of vegetation, wildlife and settlement of the Whitemud River Watershed. Whitemud River Watershed Resource Study, Phase I, Historical Ecology. Resources Extension and Development Branch, Manitoba Department of Mines, Resources and Environmental Management, Winnipeg.

_____. 1973. Inventory and preliminary analysis of forestry, fisheries, recreational and wildlife resources of the Roseau River Basin in Manitoba. Submitted to the International Roseau River Engineering Board, Manitoba Water Resources Branch, Winnipeg.

Rowe, J.S. 1972. Forest regions of Canada. Department of the Environment, Canada Forestry Service Publication No. 1300, Ottawa.

Scoggan, H.J. 1957. Flora of Manitoba. National Museum of Canada, Department of Northern Affairs and National Resources. Bulletin No. 140, Biological Series No. 47, Ottawa.

Smith, R.E., and W.A. Ehrlich. 1964. Report of the soil survey of the southeastern map sheet area. Soils Report No. 14, Manitoba Soil Survey, Manitoba Department of Agriculture and Conservation, Winnipeg.

_____, and _____. 1967. Soils of the Lac du Bonnet area. Soils Report No. 15, Manitoba Soil Survey, Manitoba Department of Agriculture, Winnipeg.

Technical Committee for the Development of the Delta Marsh. 1968. The Delta Marsh: its values, problems and potentialities. Manitoba Department of Mines and Natural Resources, Winnipeg.

Warkentin, J., and R.I. Ruggles. 1970. Manitoba historical atlas, a selection of facsimile maps, plans, sketches from 1612 to 1969. Historical and Scientific Society of Manitoba, Winnipeg.

Watts, F.B. 1960. The natural vegetation of the southern Great Plains of Canada. Geographical Bulletin No. 14, Department of Mines and Technical Surveys, Ottawa.

Weir, T.R., ed. 1960. Economic atlas of Manitoba. Manitoba Department of Industry and Commerce, Stovel-Advocate Press, Winnipeg.

Wildlife Planning Task Force. 1972. Manitoba deer and waterfowl plans. Unpublished report, Manitoba Department of Mines, Resources and Environmental Management, Winnipeg.

Wrigley, R.E., and J.E. Dubois. 1973. Distribution of the Pocket Gophers *Geomys bursarius* and *Thomomys talpoides* in Manitoba. The Canadian Field-Naturalist 87(2):167-169.

Common and Scientific Names of Fauna and Flora

Plants

Aspen	*Populus tremuloides*
Balsam Fir	*Abies balsamea*
Balsam Poplar	*Populus balsamifera*
Baltic Rush	*Juncus balticus*
Basswood	*Tilia americana*
Big Bluestem	*Andropogon gerardi*
Black Ash	*Fraxinus nigra*
Black Spruce	*Picea mariana*
Bulrushes	*Scirpus acutus* and *S. validus*
Bur Oak	*Quercus macrocarpa*
Cattail	*Typha latifolia*
Giant Reed Grass	*Phragmites communis*
Green Ash	*Fraxinus pennsylvanica*
Jack Pine	*Pinus banksiana*
Largetooth Aspen	*Populus grandidentata*
Little Bluestem	*Andropogon scoparius*
Manitoba Maple	*Acer negundo*
Manna Grass	*Glyceria* spp.
Plains Cottonwood	*Populus deltoides*
Pondweeds	*Potamogeton* spp.
Reed Grasses	*Calamagrostis* spp.
Rushes	*Juncus* spp.
Sedges	*Carex* spp.
Slough Grass	*Beckmannia syzigachne*
Switch Grass	*Panicum virgatum*
Tall Cord Grasses	*Spartina* spp.
Tamarack	*Larix laricina*
White Birch	*Betula papyrifera*
White Cedar	*Thuja occidentalis*
White Elm	*Ulmus americana*
White Spruce	*Picea glauca*
Whitetop	*Scolochloa festucacea*

From: Scoggan, H.J. 1957. Flora of Manitoba. National Museum of Canada, Bulletin No. 140, Biological Series No. 47. Ottawa.

Mammals

Badger	*Taxidea taxus*
Beaver	*Castor canadensis*
Bison	*Bison bison*
Black Bear	*Ursus americanus*
Bobcat	*Lynx rufus*
Caribou	*Rangifer tarandus*
Coyote	*Canis latrans*
Eastern Cottontail	*Sylvilagus floridanus*
Fisher	*Martes pennanti*
Fox Squirrel	*Sciurus niger*
Gray Fox	*Urocyon cinereoargenteus*
Gray Wolf	*Canis lupus*
Grizzly Bear	*Ursus horribilis*
House Mouse	*Mus musculus*
Least Weasel	*Mustela nivalis*
Long-tailed Weasel	*Mustela frenata*
Lynx	*Lynx canadensis*
Mink	*Mustela vison*
Moose	*Alces alces*
Mule Deer	*Odocoileus hemionus*
Muskrat	*Ondatra zibethica*
Norway Rat	*Rattus norvegicus*
Plains Pocket Gopher	*Geomys bursarius*
Porcupine	*Erethizon dorsatum*
Prairie Vole	*Microtus ochrogaster*
Pronghorn	*Antilocapra americana*
Raccoon	*Procyon lotor*
Red Fox	*Vulpes vulpes*
Red Squirrel	*Tamiasciurus hudsonicus*
River Otter	*Lutra canadensis*
Short-tailed Weasel	*Mustela erminea*
Snowshoe Hare	*Lepus americanus*
Striped Skunk	*Mephitis mephitis*
Wapiti	*Cervus canadensis*
Western Jumping Mouse	*Zapus princeps*
White-tailed Deer	*Odocoileus virginianus*
Wolverine	*Gulo luscus*

From: Wrigley, R.E. 1973. Mammals of Manitoba. Unpublished list. Manitoba Museum of Man and Nature, Winnipeg.

Birds

Black-crowned Night Heron	*Nycticorax nycticorax*
Canada Goose	*Branta canadensis*
Cormorant	*Phalacrocorax auritus*
Ducks	Subfamilies Anatinae, Aythyinae, Oxyurinae and Merginae
Franklin's Gull	*Larus pipixcan*
Geese	Subfamily Anserinae
Greater Prairie Chicken	*Tympanuchus cupido*
Grouse	Family Tetraonidae
Gulls and Terns	Family Laridae
House Sparrow	*Passer domesticus*
Hungarian Partridge	*Perdix perdix*
Osprey	*Pandion haliaetus*
Passenger Pigeon	*Ectopistes migratorius*
Pelican	*Pelecanus erythrorhynchos*
Raven	*Corvus corax*
Robin	*Turdus migratorius*
Sandhill Crane	*Grus canadensis*
Starling	*Sturnus vulgaris*
Swans	Subfamily Cygninae
Trumpeter Swan	*Olor buccinator*
Waterfowl	Family Anatidae
Western Grebe	*Aechmophorus occidentalis*
Whooping Crane	*Grus americana*
Wild Turkey	*Meleagris gallopayo*
Woodcock	*Philohela minor*
Wood Duck	*Aix sponsa*
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*

From: Godfrey, W.E. 1966. The birds of Canada. National Museums of Canada, Bulletin No. 203, Biological Series No. 73. Ottawa.

Reptiles and Amphibians

From: Conant, R. 1958. A field guide to reptiles and amphibians. Houghton Mifflin Company, Boston.

Garter Snake	*Thamnophis sirtalis*
Leopard Frog	*Rana pipiens*