

**Migratory Bird Habitat  
Priorities;  
Prairie Provinces**



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**Canadian Wildlife Service  
Western and Northern Region**

MIGRATORY BIRD HABITAT  
PRIORITIES - PRAIRIE PROVINCES



Prepared by the  
Habitat Management Section,  
Western and Northern Region,  
Canadian Wildlife Service

June, 1979



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1. INTRODUCTION

Since 1966, the Western and Northern Region has carried out a habitat protection program which featured the acquisition of specific waterfowl areas and a wetland easement program intended to protect small wetlands on private farm lands. In 1975 the wetland easement program was terminated and in recent years land acquisition activities have been more or less inactive. At the present time, both Nationally and in the Region, the habitat programs are under review and new directions for the program are being formulated.

This document is intended to provide the planning base upon which new habitat initiatives can be built. Its main objectives are to define important migratory bird habitat areas on the broadest possible basis by considering all migratory bird values and to set priorities exclusively on an areas values to migratory birds. Many other factors such as the threat of habitat destruction must be taken into consideration when setting long term goals for the protection and/or management of priority habitat areas but this will be dealt with as part of the long-term regional habitat plan and not in this report.

The information contained in this document represents only a start at developing a comprehensive listing and prioritizing of migratory bird habitats in this region. Our current information base is lacking in many ways and only through the support of many people contributing to this information base can this document be improved.

This document is expected to play a major role in many migratory bird programs. It will be used to select areas for long-term habitat protection strategies within Canadian Wildlife Service. It will also play an important role in developing regional population management strategies for waterfowl and other migratory birds, and provide useful background information for determining environmental impacts on resource development on the prairies. Finally, these habitat priority listings will facilitate the creation of cooperative habitat projects with other government agencies, private groups and individuals.

## 2. METHODS

Migratory bird management programs in the Region are carried out on a provincial basis; therefore the following habitat priorities have been developed under this criteria, each province being treated as a separate section in the document. To make these priorities within a province meaningful, there was a further breakdown into the major vegetative zones (Figure 1) as described in the region's Migratory Birds Planning Document, 1976. For the purposes of this document the transition zone has been included in the aspen parkland zone.

Data and information were extracted from published and unpublished reports by provincial wildlife agencies, Ducks Unlimited (Canada), Canadian Wildlife Service, the International Biological Program, and the United States Fish and Wildlife Service. Other information was obtained from discussions with specialists in closely

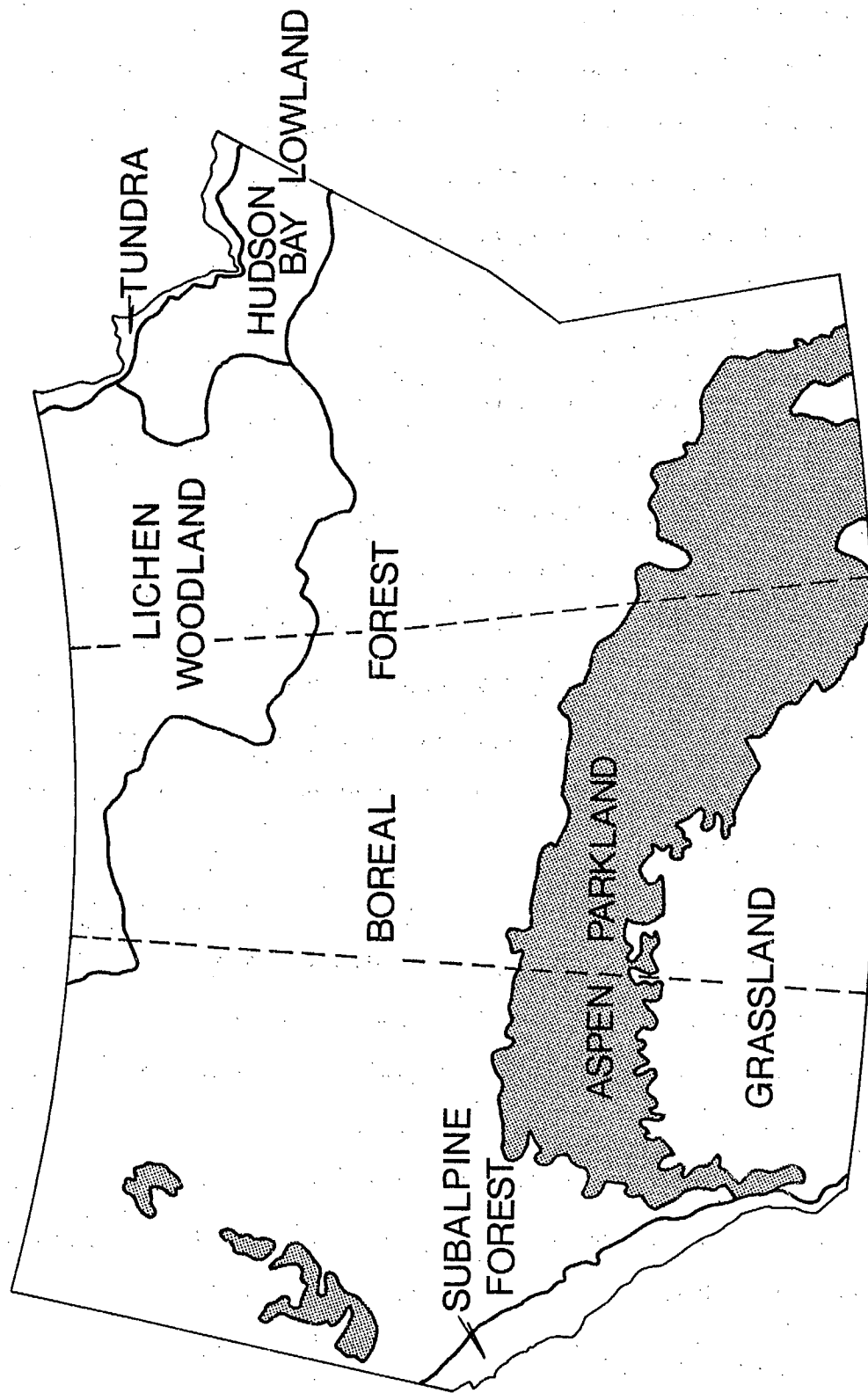


Fig. 1. Major vegetation zones - Prairie provinces.

related fields. Important habitat areas were then delineated, quantified and ranked to reflect their relative importance to migratory birds within each vegetation zone.

For purposes of this document, migratory birds were divided into the following categories:

- 1) Ducks
- 2) Geese
- 3) Non-game migratory birds
- 4) Colonial nesting migratory birds
- 5) Rare and endangered migratory birds

Each category was treated separately as to the habitat requirements for production, moulting and staging.

Land and water units, as well as specific wetlands, are important breeding habitat for many migratory birds, especially waterfowl. Therefore, when rating production habitat, both land-water complexes and specific wetlands have been considered.

The non-game migratory bird priority area ratings focused on upland native habitat as illustrated in the relevant provincial tables (A-7, S-7, M-7). Other major wetlands which are important to non-game species especially shorebirds, have not been included in a special table but where significant values are known, this information has been considered in the habitat priority analysis tables under non-game production and staging.

Although pelicans and cormorants are not protected under the Migratory Birds Convention Act, they are considered important migratory birds and are, therefore, included in this document.

The priority ratings system used in this document includes high, medium and low levels. Only priorities within the same vegetative zone are relative.

Although every attempt was made to set priorities objectively, the availability of information, plus personal knowledge of specific areas, influenced the priority rating system. Many key areas are suspected to be more significant than this exercise indicated, but higher ratings could be assigned without specific information to justify them.

Habitat priority areas for each migratory bird category are listed in tables and assigned a number. Each table is followed by a map illustrating the approximate location of each priority area as indicated by its assigned number. Each information source used to determine a priority rating is symbolized by a number in the table with the full reference list at the end of the section for each province.

A provincial priority analysis table and map have been produced to highlight the most significant priority areas within each vegetative zone. The total value of a particular area represents a summation of the priority ratings for all migratory bird categories, that is, ducks, geese, non-game, colonial nesters, and rare and endangered species within that area. Migratory bird categories that have the same priority ratings are considered equal, for example, a high priority rating for duck production is of equal value to a high priority rating for non-game species production.

3. MIGRATORY BIRD  
HABITAT PRIORITIES

Alberta

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### 3.1 Introduction

The province of Alberta provides a large diversity of habitat types necessary to hundreds of species of migratory birds. This diversity is illustrated by the variety of vegetative zones found in Alberta (Figure 2). Consequently, this region is renowned both nationally and internationally as a major production, staging and moulting area for millions of migratory birds.

Waterfowl, particularly ducks and geese, are a major component of the migratory bird resource in Alberta. Birds produced in Alberta wetlands make significant contributions to populations in four of the five waterfowl flyways in North America. The grassland and parkland are the preferred habitat zones for ducks; whereas, the grassland, southern rivers and northern rivers contribute most to goose habitat. The boreal forest is a principle moulting area for southern birds and a staging area for arctic migrants. The subalpine forest zone is really a mosaic of habitat types which, due to variable physical conditions of aspect, slope and altitude, has produced associations of flora and fauna peculiar to this zone. Plant communities may vary from pure coniferous forests to mixed deciduous-coniferous or pure deciduous forests, to areas of grasslands and tundra, each hosting a variety of migratory birds. Very little is known about the relative importance of the lichen-woodland vegetative zone in the north-east corner of the province. Non-game migratory bird habitat is found throughout the province in all habitat zones.

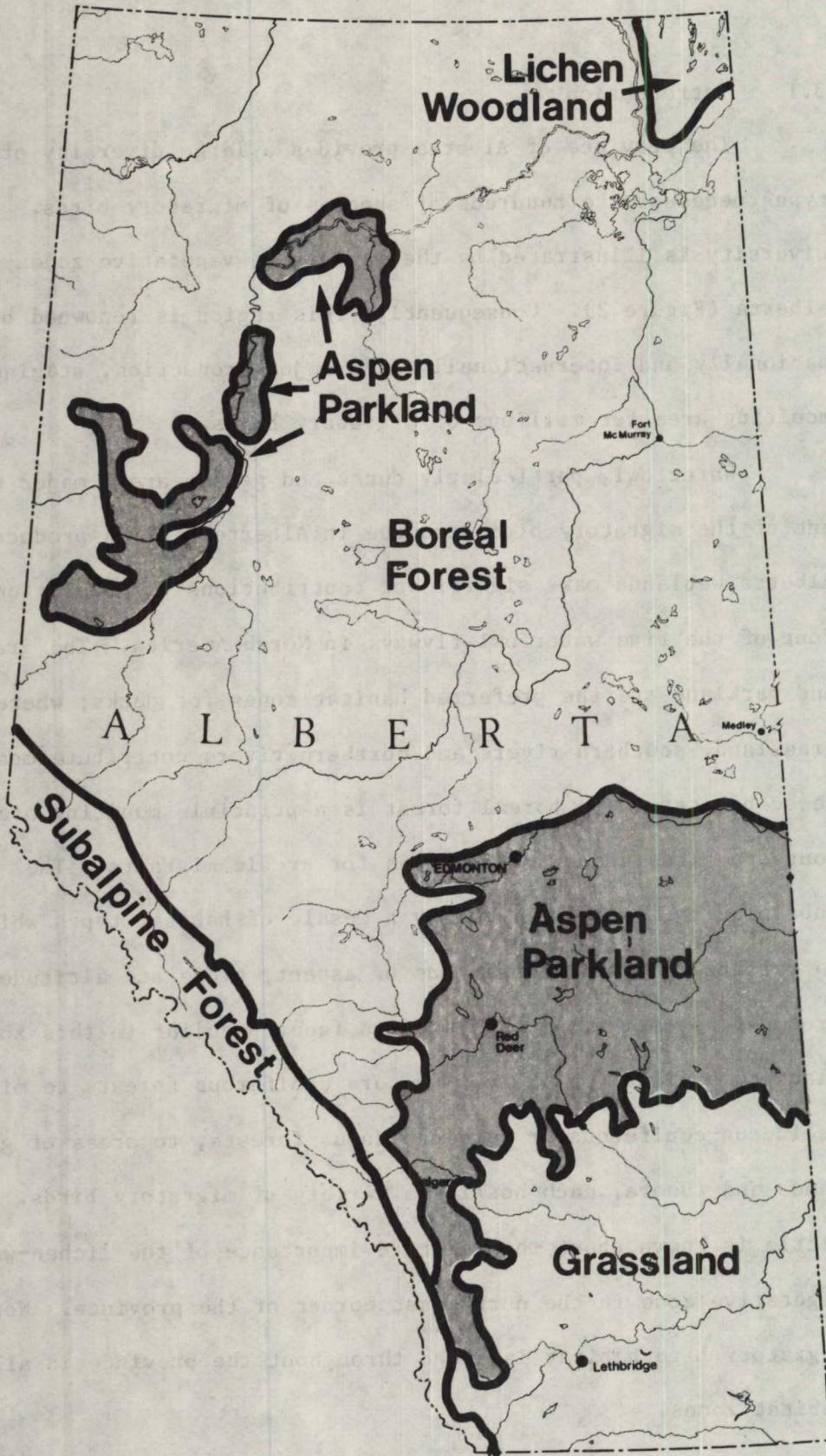


Fig.A. Major vegetation zones - Alberta.

Intensified agriculture and drainage are constantly depleting migratory bird production habitat in the prairies and parkland. Current trends in habitat loss in these zones are almost irreversible. In the grasslands, where water is limited, artificial water bodies are more often developed than natural ones drained, but in the parklands drainage will continue to be a problem. The loss of upland nesting cover, which is so critical to production of most dabbling ducks is occurring in both zones at alarming rates. Production habitat in the boreal forest could be threatened by such factors as increased recreational use of areas, hydroelectric development and increased industrialization of northern Alberta.

In general, staging habitat is subjected to the same threats as is production habitat. Drainage is the main concern, therefore, the highest losses of staging habitat occurs in the parkland zone.

### 3.2 Habitat Priorities for Ducks

In Alberta, the highest priority duck production habitat is situated in the aspen parkland vegetation zone (Figure A-1). Here, a combination of geologic, edaphic and climatic factors has resulted in the development of a complex of small ponds and interspersed with upland habitat, which is most conducive to waterfowl production. Breeding pair densities of 16 to 30+ pairs per square mile are not uncommon. Second to the parkland, in terms of duck production potential in Alberta, is the grassland (6 to 15+ breeding pairs per square mile). Environmental factors, especially frequency of

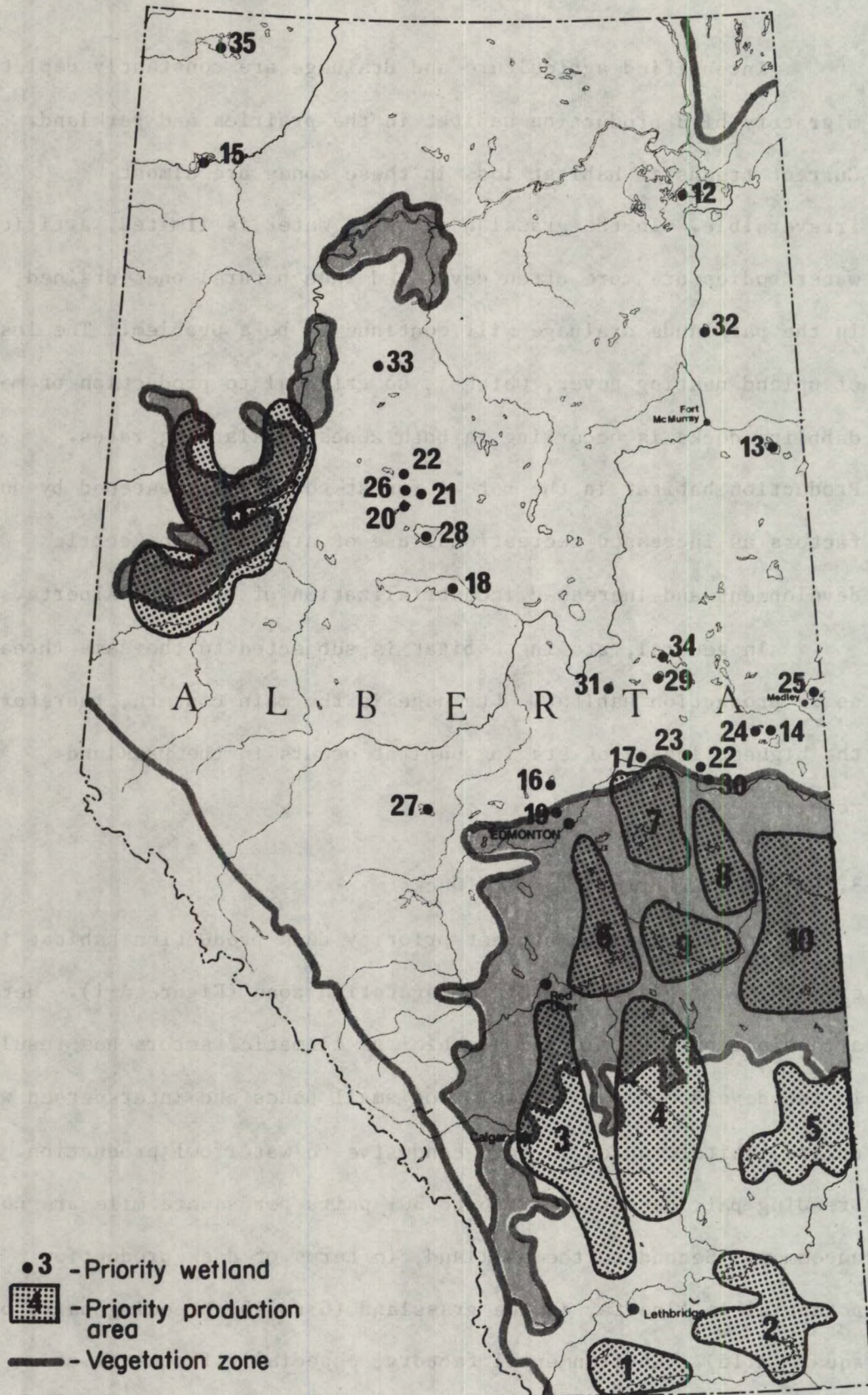


Fig.A-1. Priority duck production habitat in Alberta.

Table A-1. Priority duck production habitat in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information (see Reference enumeration)
1	Milk River Ridge	High	Grassland	344,000	3, 5, 21
2	Stirling-Etzikon-Cypress Hills	Medium	Grassland	312,000	1, 3, 4, 5, 21
3	Innisfail-Strathmore-Keho Lake	Medium	Grassland	580,000	1, 3, 4, 5, 21
4	Drumheller-Bassano-Brooks	Medium	Grassland	1,480,000	1, 3, 4, 5, 21
5	Compeer-Acadia Valley-Berry Creek	Medium	Grassland	530,000	1, 3, 4, 5, 21
6	Kneehills-Buffalo Lake	High	Aspen Parkland	720,000	1, 3, 4, 5
7	Beaverhill-Mundare	High	Aspen Parkland	285,200	1, 3, 4, 5
8	Viking Moraine	High	Aspen Parkland	224,000	1, 3, 4, 5
9	Forestburg-Battle River	High	Aspen Parkland	371,200	1, 3, 4, 5
10	Lloydminster-Ribstone	High	Aspen Parkland	276,400	1, 3, 4, 5
11	Peace River Parkland	High	Aspen Parkland	1,322,400	1, 3, 4, 5
12	Peace-Athabasca Delta	High	Boreal Forest	377,600	3, 4, 5, 10, 11, 14
13	Gordon Lake	High	Boreal Forest	11,380	3, 4, 7, 19, 25
14	Jessie Lake	High	Boreal Forest	324	3, 4, 7, 15, 16, 17
15	Hay-Zama Lakes	High	Boreal Forest	11,216	3, 4, 15, 16, 17
16	Manawan Lake	High	Boreal Forest	742	1, 3, 4, 5
17	Smoky Lake	High	Boreal Forest	1,715	1, 3, 4, 5
18	Lesser Slave Lake	High	Boreal Forest	3,312	3, 4, 7, 15, 16, 17
19	Big Lake	Medium	Boreal Forest	1,715	1, 3, 4, 5
20	Lubicon Lake	Medium	Boreal Forest	3,584	3, 4, 15, 16, 17
21	Loon Lake	Medium	Boreal Forest	1,460	3, 4, 7, 15, 16, 17
22	Cache Lake	Medium	Boreal Forest	312	3, 4, 7, 15, 16, 17
23	Carroll Lakes	Medium	Boreal Forest	11,400	3, 4, 7, 15, 16, 17
24	Forsyth Lake	Medium	Boreal Forest	380	3, 4, 7, 15, 16, 17
25	Cold Lake (S. Bays)	Medium	Boreal Forest	2,160	3, 4, 15, 16, 17
26	Little Buffalo Lake	Medium	Boreal Forest	464	3, 4, 15, 16, 17
27	Chip Lake	Medium	Boreal Forest	7,347	3, 4, 17
28	Utikuma Lake	Medium	Boreal Forest	28,416	3, 4, 17
29	Missawabi Lake	Medium	Boreal Forest	2,560	3, 4, 5
30	Therien lakes	Medium	Boreal Forest	2,246	18, 22
31	Flat Lake	Medium	Boreal Forest	3,072	3, 4, 5
32	McClelland Lake	Medium	Boreal Forest	2,745	3, 4, 25
33	Bison Lake	Low	Boreal Forest	3,226	3, 6, 8, 15
34	Lac la Riche	Low	Boreal Forest	24,166	3, 4, 5
35	Bistcho Lake	Low	Boreal Forest	40,448	8, 15
	Grassland total			3,246,000	
	Aspen Parkland total			3,199,200	
	Boreal Forest total			540,815	
	Grand total			6,985,815	

precipitation, may limit duck production in certain years, but, because of its vastness, this area still contributes a significant number of birds to the continental population, and with adequate precipitation, waterfowl production from the grassland may exceed that of the parkland. In the boreal forest vegetation zone, the Peace-Athabasca delta area is considered one of the major production areas for ducks. Also, certain lakes in this region are recognized as being relatively productive, especially for diving ducks and during drought years, the boreal forest zone provides alternate production habitat for parkland prairie breeding birds. Owing to a general lack of knowledge concerning duck populations in this zone, it was difficult to set priorities on areas other than major lakes.

Staging habitat for ducks is situated rather uniformly throughout the central part of both the grassland and the aspen parkland zones of the province (Figure A-2). These areas usually serve as staging sites for birds produced locally and for those from the northern areas. In addition, certain sites scattered throughout the boreal forest zone are important for staging birds, especially those birds moving down from the arctic.

Information available on the important duck moulting areas in the province is limited. The majority of known moulting areas are located in the boreal forest vegetation zone (Figure A-3). Several other lakes in the parklands are also suspected to be important moulting areas, but more information must be collected before these lakes can be identified as priority areas.

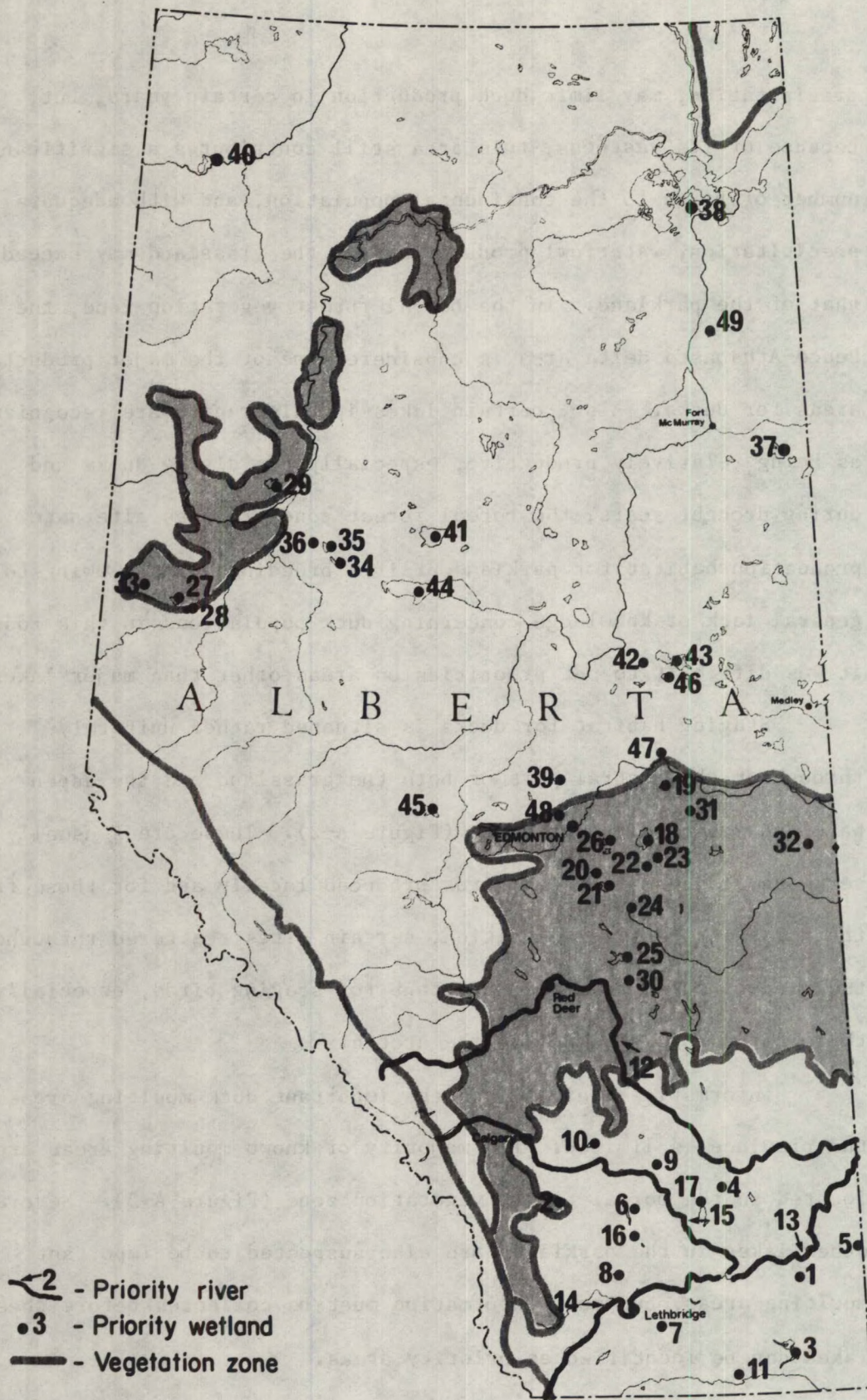


Fig.A-2. Priority duck staging habitat in Alberta.

Table A-2. Priority duck staging habitat in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Murray Lake	High	Grassland	1,690	3, 4, 5
2	Frank Lake	High	Grassland	1,200	3, 4, 5,
3	Pakowki Lake	High	Grassland	13,184	3, 4, 5
4	Louisiana Lakes	High	Grassland	1,490	3, 4, 5
5	Many Island Lake	Medium	Grassland	8,960	1, 3, 4, 5
6	McGregor Reservoir	Medium	Grassland	5,043	3, 4, 5
7	Stirling Lake	Medium	Grassland	102	1, 3, 4, 5
8	Keho Lake	Medium	Grassland	1,843	3, 4, 5,
9	Bassano Reservoir	Medium	Grassland	640	3, 4, 5
10	Stobart Lake	Medium	Grassland	496	3, 4, 5
11	Crow Indian Lake	Medium	Grassland	1,000	3, 4, 5
12	Red Deer River	Medium	Grassland	38,800	3, 4, 5
13	South Saskatchewan River	Medium	Grassland	92,000	3, 4, 5
14	Oldman River	Medium	Grassland	19,000	3, 4, 5
15	Bow River	Medium	Grassland	39,080	3, 4, 5
16	Travers Reservoir	Low	Grassland	2,227	3, 4, 5
17	Lake Newell	Low	Grassland	5,990	3, 4, 5
18	Beaverhill Lake	High	Aspen Parkland	13,670	3, 4, 5, 12
19	Whitford Lake	High	Aspen Parkland	1,820	1, 2, 3, 4, 5
20	Big Hay Lake	High	Aspen Parkland	1,075	1, 3, 4, 5
21	Bittern Lake	High	Aspen Parkland	2,714	1, 3, 4, 5
22	Demay Lake	High	Aspen Parkland	717	3, 4, 5
23	Dusty Lake	High	Aspen Parkland	384	3, 4, 5
24	Driedmeat Lake	High	Aspen Parkland	1,075	3, 4, 5
25	Buffalo Lake	High	Aspen Parkland	10,354	1, 3, 4, 5
26	Cooking Lake	High	Aspen Parkland	3,456	3, 4, 5, 12
27	Bear Lake	High	Aspen Parkland	3,098	3, 4, 5, 15, 16, 17
28	Saskatoon Lake	High	Aspen Parkland	589	3, 4, 5, 15, 16, 17
29	Cardinal Lake	High	Aspen Parkland	4,378	3, 4, 5, 15, 16, 17
30	Erskine Lake	High	Aspen Parkland	1,500	1, 3, 4, 5
31	Bens-Watt lakes	Medium	Aspen Parkland	256	3, 4, 5
32	Kenilworth Lake	Medium	Aspen Parkland	658	3, 4, 5
33	Lac La Glace	Medium	Aspen Parkland	896	3, 4, 5, 15, 16, 17
34	Winagami Lake	Medium	Aspen Parkland	4,248	3, 4, 5, 15, 16, 17
35	Kindwan Lake	Medium	Aspen Parkland	3,854	3, 4, 5, 15, 16, 17
36	Lac Maglorie	Medium	Aspen Parkland	818	3, 4, 5, 15, 16, 17
37	Gordon Lake	High	Boreal Forest	11,392	3, 4, 5, 19
38	Peace-Athabasca Delta	High	Boreal Forest	377,600	3, 4, 5, 10, 14
39	Manawan Lake	High	Boreal Forest	742	1, 3, 4, 5
40	Hay-Zama lakes	High	Boreal Forest	11,216	3, 4, 5, 11
41	Utikuma Lake	Medium	Boreal Forest	28,416	3, 4, 5, 15, 16, 17
42	Flat Lake	Medium	Boreal Forest	3,072	3, 4, 5
43	Lac La Riche	Medium	Boreal Forest	24,166	3, 4, 5
44	Lesser Slave Lake	Medium	Boreal Forest	45,312	3, 4, 5
45	Chip Lake	Medium	Boreal Forest	7,347	3, 4, 5
46	Missawwi Lake	Medium	Boreal Forest	2,560	3, 4, 5
47	Smoky Lake	Medium	Boreal Forest	540	3, 4, 5
48	Big Lake	Medium	Boreal Forest	1,715	1, 3, 4, 5
49	McClelland Lake	Low	Boreal Forest	2,745	3, 4, 25
	Grassland total			232,745	
	Aspen Parkland total			55,560	
	Boreal Forest total			516,823	
	Grand total			805,128	





Fig.A-3. Priority duck moulting habitat in Alberta.

Table A-3. Priority duck moulting habitat in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Murray Lake	Medium	Grassland	1,690	16, 17
2	Beaverhill Lake	High	Aspen Parkland	14,800	3, 5, 12
3	Kenilworth Lake	Medium	Aspen Parkland	666	5, 16, 17
4	Bittern Lake	Medium	Aspen Parkland	2,714	5, 16, 17
5	Buffalo Lake	Medium	Aspen Parkland	10,354	5, 16, 17
6	Peace-Athabasca Delta	High	Boreal Forest	377,600	10, 14
7	Gordon Lake	High	Boreal Forest	11,392	19
8	Jessie Lake	High	Boreal Forest	296	16
9	Utikuma Lake	Medium	Boreal Forest	28,416	15, 16, 17
10	Hay-Zama lakes	Medium	Boreal Forest	11,216	11
11	Loon Lake	Medium	Boreal Forest	1,472	15, 16, 17
12	Lubicon Lake	Medium	Boreal Forest	3,506	15, 16, 17
13	Muskwa Lake	Medium	Boreal Forest	4,813	15, 16, 17
14	McClelland Lake	Low	Boreal Forest	2,745	3, 4, 25
	Grassland total			1,690	
	Aspen Parkland total			28,534	
	Boreal Forest total			441,456	
	Grand total			471,680	

### 3.3 Habitat Priorities for Geese

The major goose production habitat in Alberta, and the area utilized by the Great Basin Canada goose and the Great Plains giant Canada goose, occurs in the grassland zone and is designated as the Brooks-Lethbridge-Medicine Hat region (Figure A-4). The Stettler-Coronation-Drumheller region, in the southern part of the parkland vegetation zone, and the Peace River-parklands are the next most important goose production areas in the province. It is believed this latter area is also utilized by the Great Plains giant Canada goose population for breeding. Three other areas which contribute to goose production in the province are the Milk River Ridge, Cooking Lake moraine and the Stebing-Forsyth-Manatokan lakes area. The southern rivers and certain northern rivers also contribute to goose production in Alberta, although, the degree of production occurring on the northern rivers is unknown. Part of the Hi-line goose flock is known to utilize the extreme southeastern corner of Alberta, moreover it is suspected that the shortgrass prairie Canada goose population may breed, to a limited degree, in the extreme northern part of the province. The southern Alberta population of Canada geese is estimated to be 7,000 to 8,000 birds; the northern population is unknown. Canada geese produced in Alberta utilize both the Pacific and Central flyways.

The major goose staging habitat is located in the aspen-parkland and grassland zones (Figure A-5), the southern sections of these zones being utilized the longest by staging Canada geese in any one season.

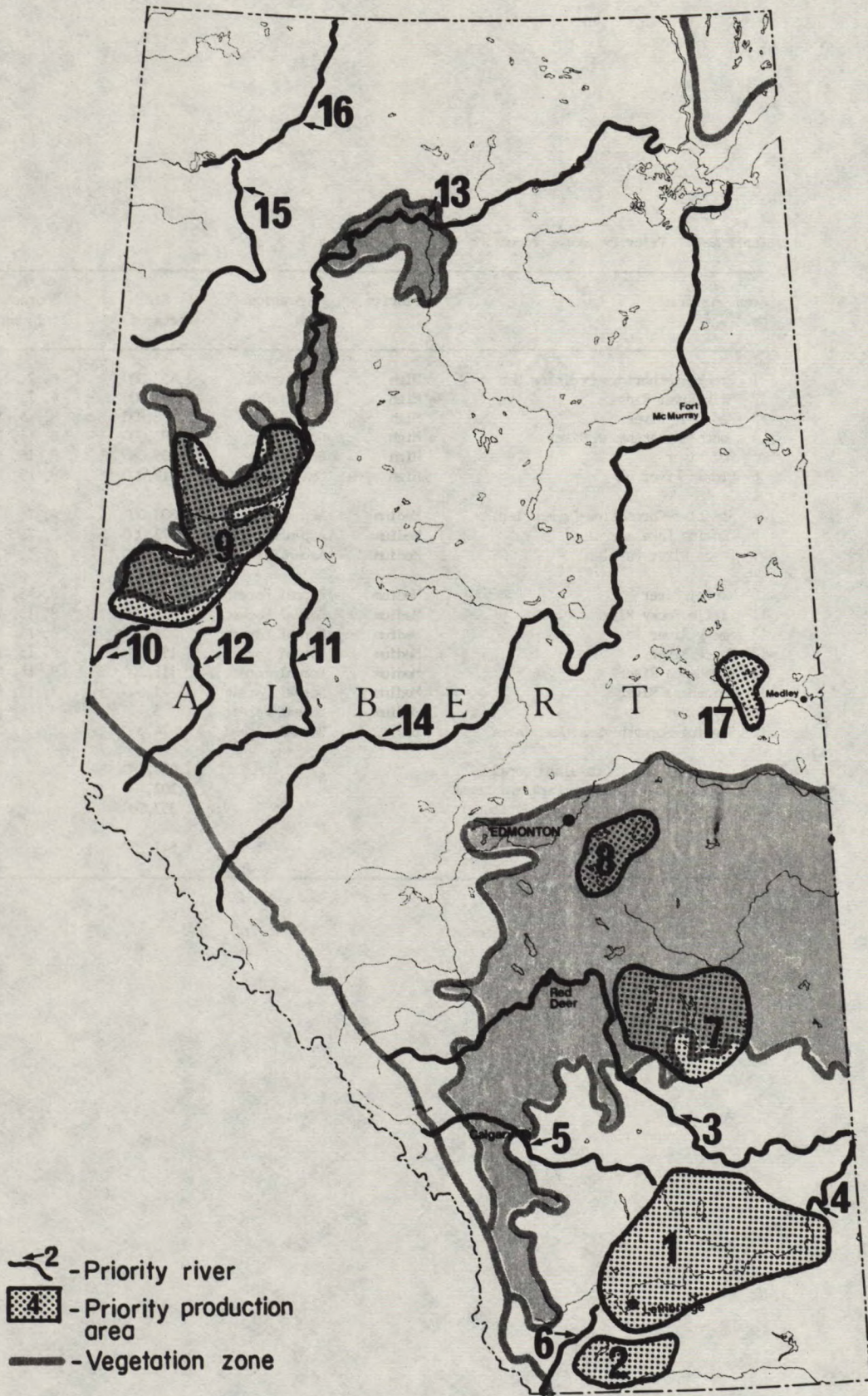


Fig.A-4 . Priority goose production habitat in Alberta.

Table A-4. Priority goose production habitat in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Brooks-Lethbridge-Medicine Hat	High	Grasslands	1,452,000	6, 7, 8
2	Milk River Ridge	High	Grasslands	344,000	6, 7, 8
3	Red Deer River	High	Grasslands	38,800	8, 15, 16, 17
4	South Saskatchewan River	High	Grasslands	92,000	8, 15, 16, 17
5	Bow River	High	Grasslands	39,080	8, 15, 16, 17
6	Oldman River	High	Grasslands	19,000	8, 15, 16, 17
7	Stettler-Coronation-Drumheller	Medium	Aspen Parkland	808,000	6, 7, 8
8	Cooking Lake moraine	Medium	Aspen Parkland	72,000	6, 7, 8, 12
9	Peace River Parkland	Medium	Aspen Parkland	1,322,500	6, 7, 8, 18
10	Wapiti River	Medium	Boreal Forest	4,800	8, 15, 16
11	Little Smoky River	Medium	Boreal Forest	3,400	8, 15, 16
12	Smoky River	Medium	Boreal Forest	1,500	8, 15, 16
13	Peace River	Medium	Boreal Forest	154,000	8, 15, 16
14	Athabasca River	Medium	Boreal Forest	111,200	8, 15, 16
15	Chinchaga River	Medium	Boreal Forest	1,640	8, 15, 16
16	Hay River	Medium	Boreal Forest	3,440	8, 15, 16
17	Stebing-Forsyth-Manatokan lakes	Low	Boreal Forest	74,000	16
	Grassland total			1,984,880	
	Aspen Parkland total			2,202,400	
	Boreal Forest total			353,980	
	Grand total			4,541,260	

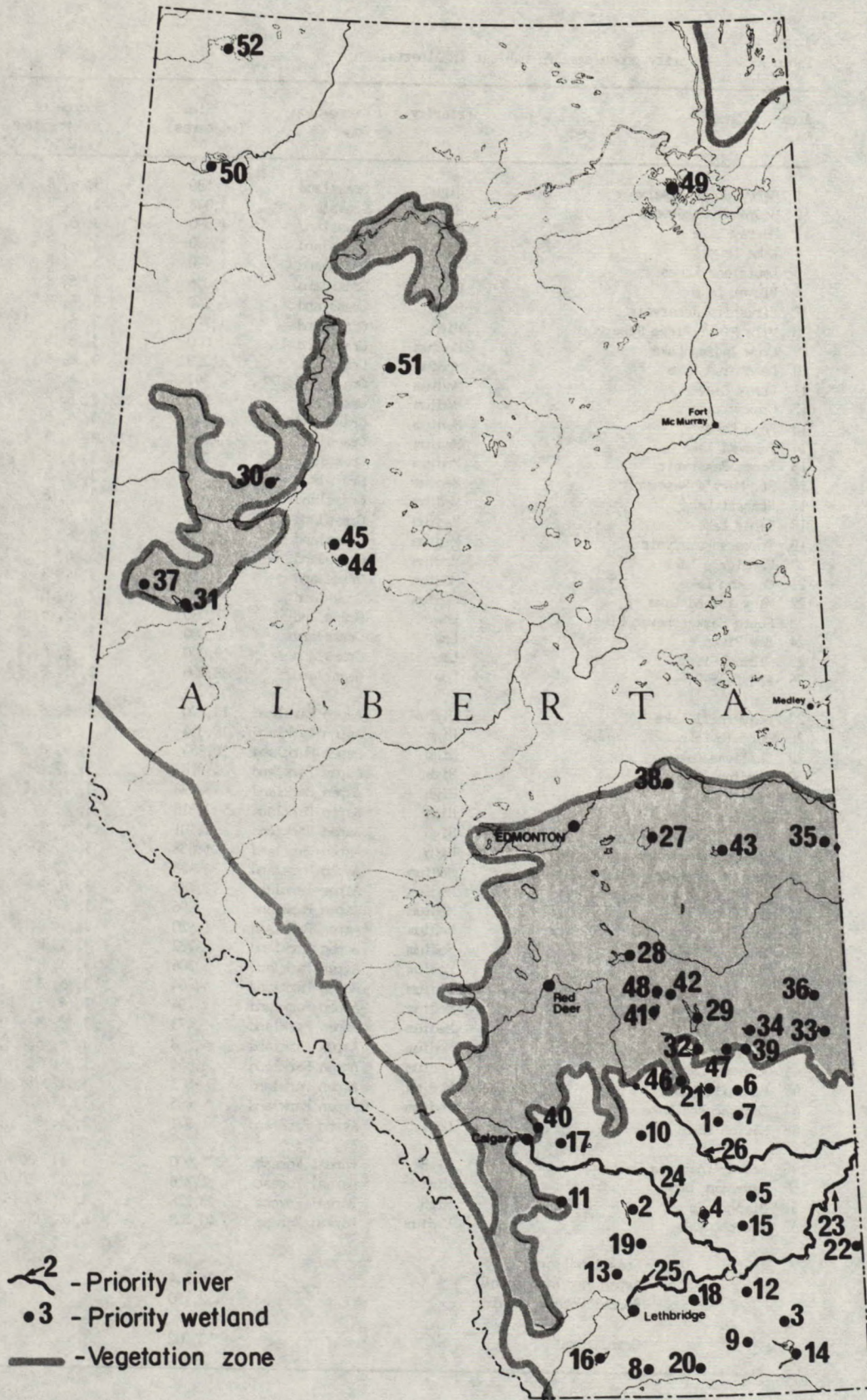


Fig.A-5. Priority goose staging habitat in Alberta.

Table A-5. Priority goose staging habitat in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Berry Creek Reservoir	High	Grassland	589	3, 6, 8
2	McGregor Reservoir	High	Grassland	5,043	3, 6, 8
3	Murray Lake	High	Grassland	1,690	3, 6, 8
4	Lake Newell	High	Grassland	5,990	3, 6, 8
5	Louisiana Lakes	High	Grassland	1,490	3, 6, 8
6	Plover Lake	High	Grassland	256	3, 6, 8
7	Birkshire Reservoir	High	Grassland	240	3, 6, 8
8	Milk River Ridge Reservoir	High	Grassland	1,797	3, 6, 8, 15, 16
9	Crow Indian Lake	Medium	Grassland	1,000	3, 6, 8
10	Deadhorse Lake	Medium	Grassland	1,229	3, 6, 8
11	Frank Lake	Medium	Grassland	1,997	3, 6, 8
12	Grassy Lake	Medium	Grassland	230	3, 6, 8
13	Keho Lake	Medium	Grassland	1,843	3, 6, 8
14	Pakowki Lake	Medium	Grassland	13,076	3, 6, 8
15	Scots Reservoir	Medium	Grassland	205	3, 6, 8
16	St. Mary's Reservoir	Medium	Grassland	4,608	3, 6, 8
17	Stobart Lake	Medium	Grassland	496	3, 6, 8
18	Taber Lake	Medium	Grassland	461	3, 6, 8
19	Travers Reservoir	Medium	Grassland	2,227	3, 6, 8
20	Verdigris Lake	Medium	Grassland	691	3, 6, 8
21	Coleman Lake	Medium	Grassland	1,070	3, 6, 8
22	Many Island Lake	Medium	Grassland	8,960	3, 6, 8
23	South Saskatchewan River	Low	Grassland	92,000	3, 5, 6, 8
24	Row River	Low	Grassland	39,080	3, 5, 6, 8
25	Oldman River	Low	Grassland	19,000	3, 5, 6, 8
26	Red Deer River	Low	Grassland	38,800	3, 5, 6, 8
27	Beaverhill Lake	High	Aspen Parkland	13,670	3, 6, 8, 12
28	Buffalo Lake	High	Aspen Parkland	10,354	3, 6, 8
29	Sullivan Lake	High	Aspen Parkland	10,854	3, 6, 8
30	Cardinal Lake	High	Aspen Parkland	4,378	3, 17, 18
31	Bear Lake	High	Aspen Parkland	3,098	3, 17, 18
32	Dowling Lake	High	Aspen Parkland	2,918	3, 6, 8
33	Grassy Island Lake	High	Aspen Parkland	1,101	3, 6, 8
34	Kirkpatrick Lake	High	Aspen Parkland	1,638	3, 6, 8
35	Kenilworth Lake	Medium	Aspen Parkland	438	3, 6, 8
36	Sounding Lake	Medium	Aspen Parkland	3,789	3, 6, 8
37	Lac La Glace	Medium	Aspen Parkland	896	3, 17, 13
38	Whitford Lake	Medium	Aspen Parkland	1,920	2, 3
39	Antelope Lake	Medium	Aspen Parkland	282	3, 6, 8
40	Eagle Lake	Medium	Aspen Parkland	1,306	3, 6, 8
41	Gough Lake	Medium	Aspen Parkland	4,864	3, 6, 8
42	Shooting Lake	Medium	Aspen Parkland	794	3, 6, 8
43	Birch Lake	Medium	Aspen Parkland	2,473	3, 6, 8
44	Winagami Lake	Medium	Aspen Parkland	4,248	3, 6, 8, 18
45	Kimiwan Lake	Medium	Aspen Parkland	3,854	3, 6, 8, 18
46	Handhills Lake	Medium	Aspen Parkland	803	3, 17, 18
47	Contracosta Lake	Medium	Aspen Parkland	695	3, 17, 18
48	Marion Lake	Low	Aspen Parkland	1,971	3, 6, 8
49	Peace-Athabasca Delta	High	Boreal Forest	377,600	3, 11, 20
50	Hay-Zama lakes	High	Boreal Forest	11,216	3, 11, 20
51	Bison Lake	High	Boreal Forest	3,226	3, 6, 8, 15
52	Bistcho Lake	Medium	Boreal Forest	40,448	6, 8, 15
	Grassland total			244,068	
	Aspen Parkland total			76,344	
	Boreal Forest total			432,490	
	Grand total			752,902	

Arctic migrants such as Lesser Canada geese, Snow geese, Ross' geese and White-fronted geese also made partial use of these areas for fall staging. In the boreal forest vegetation zone, the Peace-Athabasca Delta and Hay-Zama lakes are, likewise, important staging areas for arctic migrants.

Information on moulting habitat for Canada geese in Alberta is very limited. The Knight Ranch reservoir and Ross Lake are important moulting areas, moreover Dowling Lake and Lake Newell are known to have some resident moulting geese. It is suspected that a northern moult migration, in which Alberta birds move into the Northwest Territories occurs, but where the majority of Alberta Canada geese moult is still unknown.

Because the major production area for Canada geese is situated on specific wetlands in southern Alberta and drainage is minimal, the southern goose habitat is generally not considered threatened in Alberta. This is emphasized by the continual growth of Canada goose flocks in southern Alberta where wetlands are available for breeding.

#### 3.4 Habitat Priorities for Non-game Migratory Birds

In Alberta, all habitat types found in each vegetation zone are utilized by at least one species of migratory bird; however, the exact value and location of all habitat types are impossible to determine. In general, the needs of most non-game species of migratory birds will be accommodated if a diversity of upland and wetland habitat is maintained. Native plant communities and related



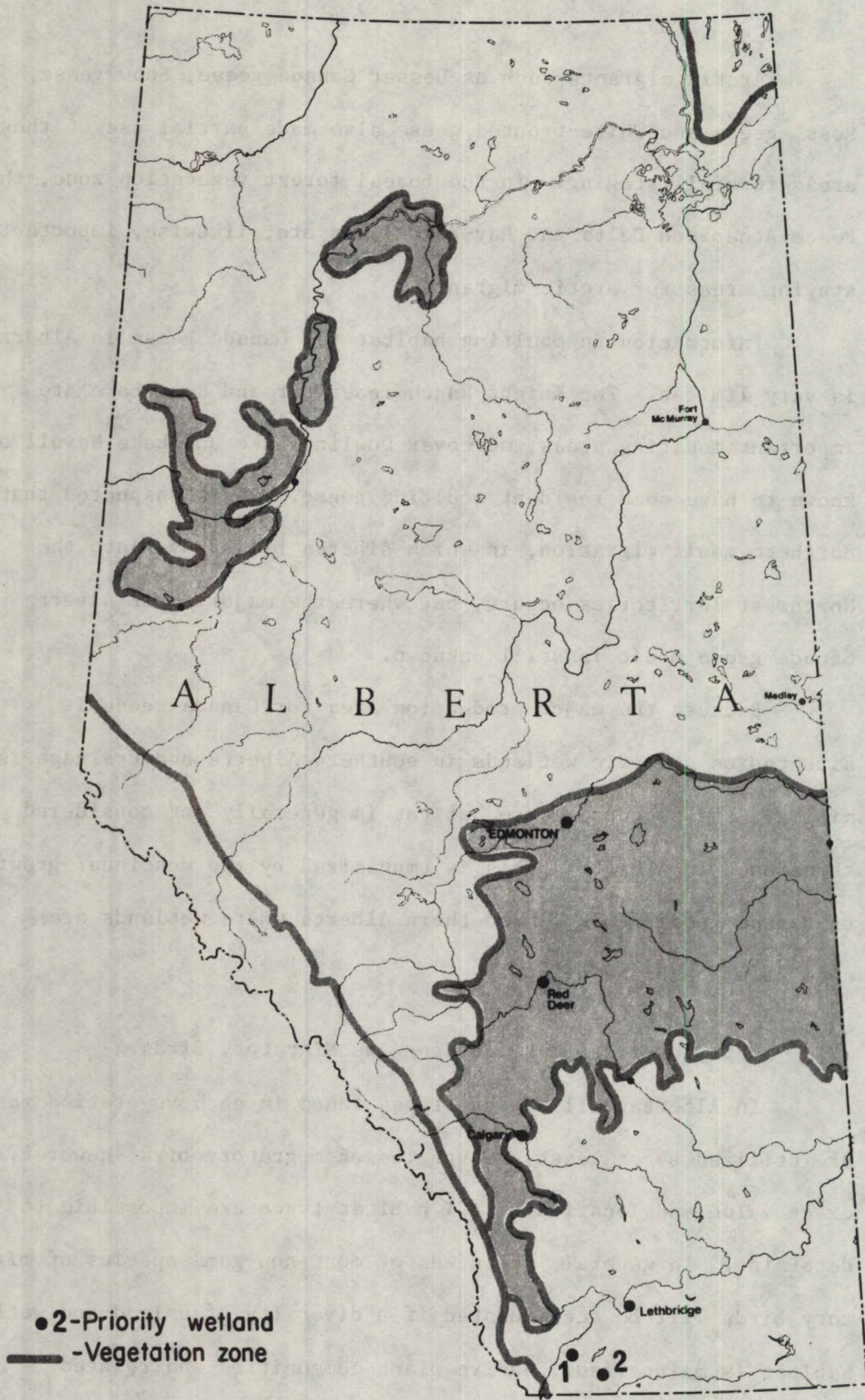


Fig.A-6. Priority goose moulting habitat in Alberta.

Table A-6. Priority goose moulting habitat in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Knight Ranch Reservoir	High	Grassland	188	16, 17
2	Ross Lake	High	Grassland	235	16, 17
Other major goose production lakes have resident moulting birds.					
			Total	423	

migratory bird populations should be given special consideration, particularly in the grassland and parkland zones. This unique habitat, now in short supply owing to a constant depletion of agriculture and other land uses, is considered as high priority habitat for non-game species.

With the decline in quantity and quality of upland native habitats, river valleys such as the Oldman, Bow, South Saskatchewan, Red Deer, Battle and North Saskatchewan are considered as high priority areas for non-game migratory birds in the grassland and aspen parkland zones (Figure A-7).

Habitat within the boreal forest, which is the largest vegetation zone in the province, is generally not considered to be a limiting factor to non-game migratory birds, although this status may change as knowledge of the species, their habitats and populations become better understood.

The montane zone of Alberta is composed of coniferous forest, deciduous forest, grassland and tundra communities, depending upon aspect, slope and altitude. With such a wide diversity of habitat types this area supports a wide variety of non-game migratory birds. Natural resource development along the east slope may pose a future threat to some of these habitat types and the migratory birds inhabiting these areas.

Major breeding areas for colonial nesting species are shown in Figure A-8. Colonial nesters are susceptible to human disturbance, therefore, their nesting areas are considered as high priority

non-game migratory bird production habitat requiring special protection.

### 3.5 Habitat Priorities for Rare and Endangered Migratory Birds

In Alberta, endangered migratory bird species include only the Whooping crane and the Trumpeter swan is considered rare.

For production and staging, the Whooping crane utilizes an area along the Northwest Territories-Alberta border encompassed by Wood Buffalo National Park (Figure A-9). Present breeding areas are found in the Northwest Territories, but utilization of Alberta breeding habitat could occur as the population expands. Because wintering habitat in the United States will eventually limit the crane population and all the present and potential summer habitat required by this limited population is located in a National Park, there is little threat to Whooping crane breeding habitat in Alberta. The major migration routes occur in Saskatchewan.

Trumpeter swans totalling about 50 breeding pair, utilize the larger wetlands (Table A-9) situated in the southern part of the Peace River parkland (Figure A-9), each pair usually occupying an entire wetland. Some of the areas used for breeding purposes are subject to disturbance by agricultural and industrial activities. All wetlands used by Trumpeters are considered high priority habitat.

Bison, Sinclair, Ray, Clairmont, La Glace and Saskatoon lakes are also considered important summering areas for non-breeders and for fall staging of the Trumpeter swan population.

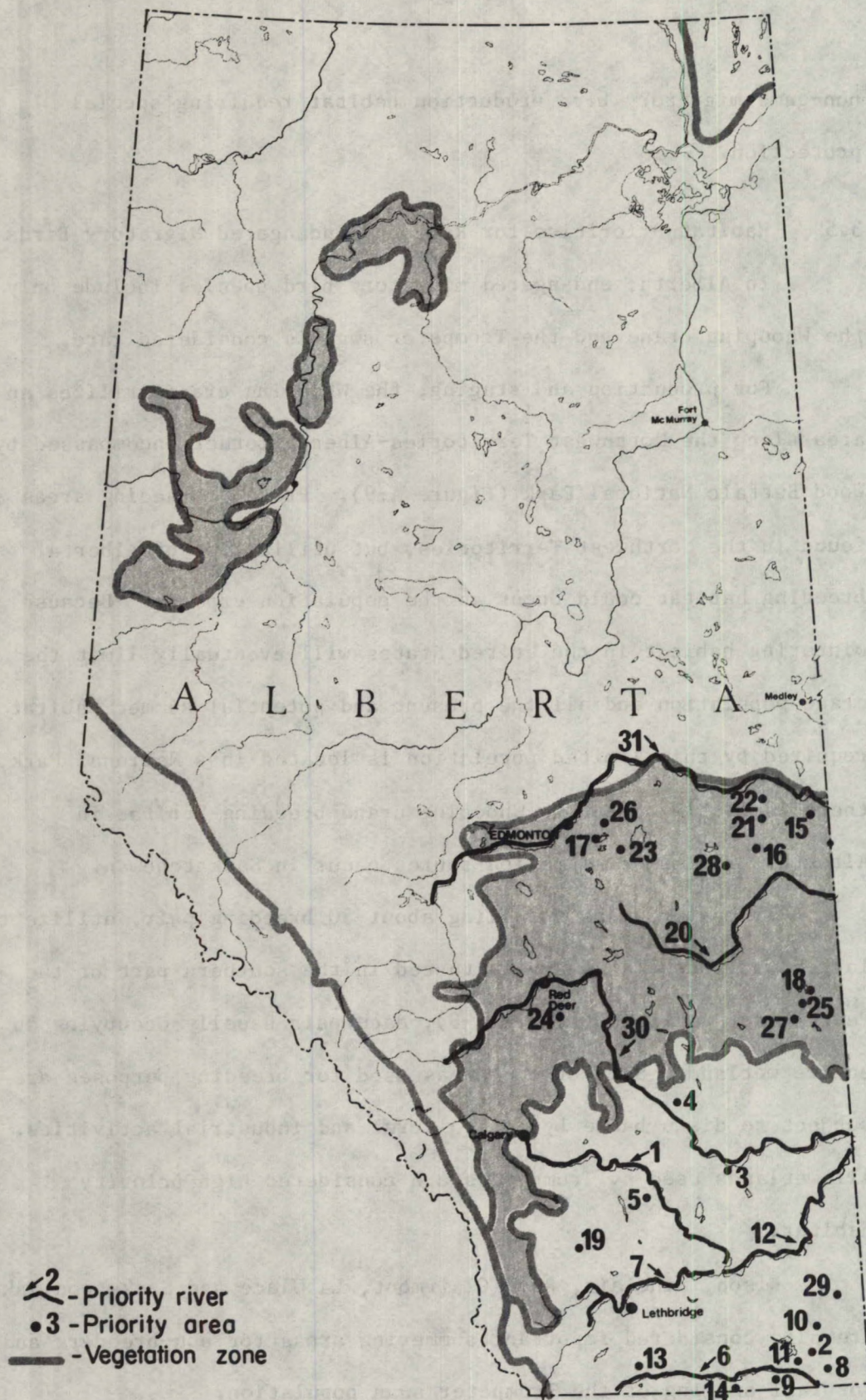


Fig. A-7 . Priority upland habitat for non-game migratory birds in Alberta.

Table A-7. Priority upland habitat for non-game migratory birds in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Bow River	High	Grassland	39,080	13, 18
2	C.D.A. Research Station Manyberries	High	Grassland	1,774	23
3	Dinosaur Provincial Park	High	Grassland	8,832	23
4	Little Fish Lake IBP site	High	Grassland	279	23
5	Lomond Community Pasture	High	Grassland	69	23
6	Milk River	High	Grassland	2,788	13, 18
7	Oldman River	High	Grassland	19,000	13, 18
8	Onefour IBP site	High	Grassland	128	23
9	Pinhorn Grazing Reserve	High	Grassland	247	23
10	Red Rock Coulee IBP site	High	Grassland	321	23
11	Sage Grouse-Pronghorn Range IBP site	High	Grassland	257	23
12	South Saskatchewan River	High	Grassland	92,000	1, 13, 18
13	Twin River Grazing Reserve	High	Grassland	129	23
14	Writing-on-Stone Provincial Park	High	Grassland	448	23
15	Gooseberry Lake IBP site	High	Aspen Parkland	69	23
16	Hindville IBP site	High	Aspen Parkland	128	23
17	Ministik Lake IBP site	High	Aspen Parkland	3,043	23
18	Sounding Lake IBP site	High	Aspen Parkland	64	23
19	Stavelly Research Station	High	Aspen Parkland	129	23
20	Rattle River	Medium	Aspen Parkland	3,136	13, 18
21	Borradaile IBP site	Medium	Aspen Parkland	128	23
22	Jarrow IBP site	Medium	Aspen Parkland	193	23
23	Lindbrook natural area IBP site	Medium	Aspen Parkland	55	23
24	Lousana IBP site	Medium	Aspen Parkland	64	23
25	Monitor IBP site	Medium	Aspen Parkland	771	23
26	North Cooking Lake natural area	Medium	Aspen Parkland	128	23
27	Salty Lake IBP site	Medium	Aspen Parkland	256	23
28	Viking IBP site	Medium	Aspen Parkland	64	23
29	Cypress Hills Provincial Park	High	Grassland-Boreal Forest	19,760	23
30	Red Deer River	High	Aspen Parkland Grassland	38,800	1, 13, 18
31	North Saskatchewan River	Medium	Boreal Forest Aspen Parkland	22,048	13, 18
	Grassland total			185,112	
	Aspen Parkland total			47,028	
	Boreal Forest total			22,048	
	Grand total			254,188	

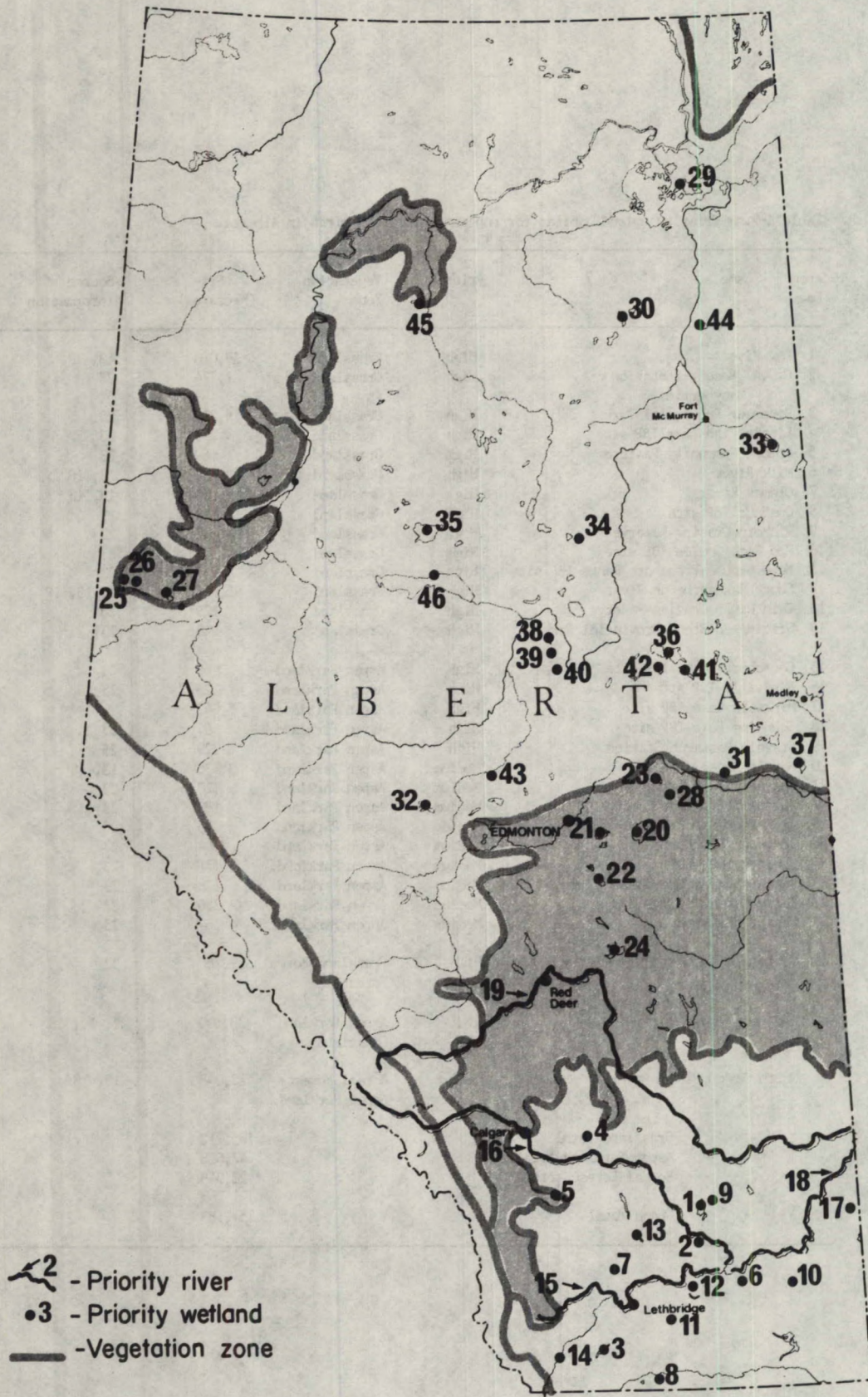


Fig.A-8. Priority production and staging habitat for colonial nesting migratory birds in Alberta.

Table A-8. Priority production and staging habitat for colonial nesting migratory birds in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Colonial nesting species	Source of information
1	Lake Newell	High	Grassland	5,990	P,C,Rbg,Cg,Ct,Eg	18,22,24,27
2	Hays Reservoir	High	Grassland	20	C	27
3	St. Mary's Reservoir	High	Grassland	4,608	C,Rbg,Cg,Ct,Eg	18,22,24,27
4	Eagle Lake	Medium	Grassland	1,306	Rbg,Cg,Ct,Eg	18, 22, 24
5	Frank Lake	Medium	Grassland	1,997	Rbg,Cg,Ct,Eg	18, 22, 24
6	Grassy Lake	Medium	Grassland	230	Ct,Eg	18, 22, 24
7	Kebo Lake	Medium	Grassland	1,843	Rbg,Ct,Eg,Eg	18, 22, 24
8	Lake Shanks	Medium	Grassland	333	Gs,Cg,Ct,Eg	18, 22, 24
9	Louisiana Lakes	Medium	Grassland	1,490	C,Gbh,Cs,Ct,Eg	18, 22, 24
10	Murray Lake	Medium	Grassland	1,690	C,Gbh,Rbg,Cg,Ct,Eg	18, 22, 24
11	Stirling Lake	Medium	Grassland	102	Gs,Rbg,Cg,Fg,C	
12	Taber Lake	Medium	Grassland	461	Gs,Ct,Eg	18, 22, 24
13	Travers Reservoir	Medium	Grassland	2,227	Ct,Eg	18, 22, 24
14	Waterton Reservoir	Medium	Grassland	1,076	Ct,Eg	18, 22, 24
15	Oldman River	Medium	Grassland	19,000	Gbh,Ct,Eg	18, 22, 24
16	Bow River	Medium	Grassland	39,080	Gbh,Ct,Eg	18, 22, 24
17	Schuler Lake	Medium	Grassland	514	Gs	18, 22, 24
18	South Sask. River	Medium	Grassland	92,000	Gbh,Ct,Eg	18, 22, 24
19	Red Deer River	Medium	Grassland-Aspen Parkland	38,800	Gbh,Ct,Eg	18, 22, 24
20	Beaverhill Lake	High	Aspen Parkland	13,670	P,C,Gbh,Bcnh,Rbg,Cg,Cs,Fg,Ft,Ct,Eg,Wg	18,22,24,27
21	Cooking Lake	Medium	Aspen Parkland	3,456	Ct	18, 22, 24
22	Bittern Lake	Medium	Aspen Parkland	2,714	Fg,Eg	18, 22, 24
23	Whitford Lake	Medium	Aspen Parkland	1,920	Bcnh,Fg,Ft,Ct	18, 22, 24
24	Buffalo Lake	Medium	Aspen Parkland	10,354	Gbh,Rbg,Ct,Ft,Ct,Eg	18, 22, 24
25	Updike Lake	Medium	Aspen Parkland	285	Eg	18, 22, 24
26	Sinclair Lake	Medium	Aspen Parkland	308	Eg	18, 22, 24
27	Saskatoon Lake	Medium	Aspen Parkland	589	Eg,Ct	3, 4, 5, 15, 16, 17
28	Bens-Watt Lakes	Low	Aspen Parkland	256	Eg,Ct	3, 4, 5
29	Peace-Athabasca Delta	High	Boreal Forest	377,600	Rbg,Fg,Ct,Eg,Kt,Wg	18,22,24,27
30	Namur Lake and vicinity	High	Boreal Forest	4,378	P,Cg,Ct,Wg	18, 22, 24
31	Therien lakes	High	Boreal Forest	2,246	C,Gbh,Rbg,Cg,Ct,Wg	18, 22, 24
32	Chip Lake	High	Boreal Forest	7,347	Gbh,Rbg,Cg,Wg	18, 22, 24
33	Gordon Lake	Medium	Boreal Forest	11,392	Ct,Wg	18,22,24,26
34	Pelican Lake	Medium	Boreal Forest	2,688	Gbh,Ct,Wg	18, 22, 24
35	Utikuma Lake	Medium	Boreal Forest	28,416	C,Cg,Ct,Wg	18, 22, 24
36	Lac La Biche	Medium	Boreal Forest	24,166	Cg,Eg,Wg	18, 22, 24
37	Frog Lake	Medium	Boreal Forest	5,734	C,Gbh,Cg,Wg	18, 22, 24
38	Lawrence Lake	Medium	Boreal Forest	1,357	Ct,Wg	18, 22, 24
39	Island Lake	Medium	Boreal Forest	358	Gbh,Ct,Wg	18, 22, 24
40	Baptiste Lake	Medium	Boreal Forest	896	Ct,Wg	18, 22, 24
41	Beaver Lake	Medium	Boreal Forest	3,379	Gbh,Ct,Wg	18, 22, 24
42	Missawawi Lake	Medium	Boreal Forest	2,560	Ct,Wg	18, 22, 24
43	Majeau Lake	Medium	Boreal Forest	1,607	Gbh	18, 22, 24
44	McClelland Lake	Medium	Boreal Forest	2,745	Rng	18, 24, 26
45	Wadlin Lake	Medium	Boreal Forest	1,943	P	18, 24, 26
46	Lesser Slave Lake	Medium	Boreal Forest	45,312	Wg,Rng,P	18, 22, 26
	Grassland total			212,767		
	Aspen Parkland			33,552		
	Boreal Forest total			524,124		
	Grand total			770,443		

## Colonial Nesting Species Legend

Bcnh = Black-crowned Night Heron  
 C = Cormorant  
 Cg = California Gull  
 Ct = Common Tern  
 Eg = Eared Grebe  
 Fg = Franklin's Gull  
 Ft = Forrester's Tern

Gbh = Great Blue Heron  
 Gs = Gull species  
 Kr = Caspian Tern  
 P = Pelican  
 Rbg = Ring-billed Gull  
 Rng = Red-necked Grebe  
 Wg = Western Grebe



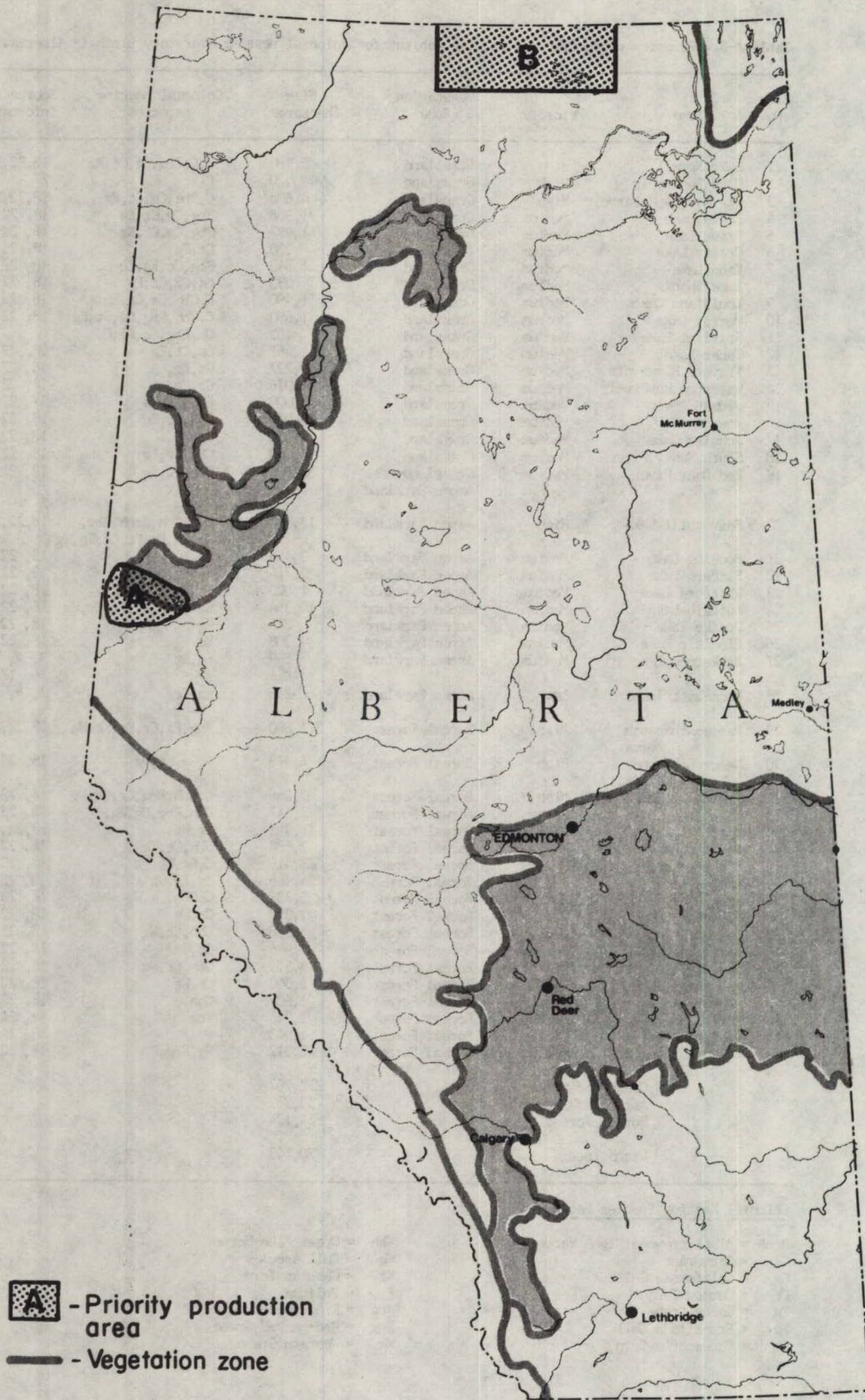


Fig. A-9 . Priority production and staging habitat for rare and endangered migratory birds in Alberta.

Table A-9. Priority production and staging habitat for rare and endangered migratory birds in Alberta.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
A - Trumpeter Swans - (Peace River Region)					
1	Albright Lake	High	Aspen Parkland	3,636	17, 18
2	Anderson Lake	High	Aspen Parkland	110	17, 18
3	Roone Lake	High	Aspen Parkland	76	17, 18
4	Bowman Lake	High	Aspen Parkland	36	17, 18
5	Buffalo Lake (3-74-7-W6)	High	Aspen Parkland	100	17, 18
6	Clairmont Lake	High	Aspen Parkland	640	17, 18
7	Crystal Lake	High	Aspen Parkland	40	17, 18
8	Dickson Lake	High	Aspen Parkland	36	17, 18
9	Ferguson Lake	High	Aspen Parkland	282	17, 18
10	Flying Shot Lake	High	Aspen Parkland	280	17, 18
11	Hermit Lake	High	Aspen Parkland	230	17, 18
12	Hughes Lake	High	Aspen Parkland	128	17, 18
13	Intermittent Lake	High	Aspen Parkland	39	17, 18
14	Jones Lake	High	Aspen Parkland	154	17, 18
15	Kamisak Lake	High	Aspen Parkland	94	17, 18
16	Lac La Glace	High	Aspen Parkland	896	17, 18
17	Little Lake	High	Aspen Parkland	86	17, 18
18	Powell Lake	High	Aspen Parkland	148	17, 18
19	Preston Lake	High	Aspen Parkland	280	17, 18
20	Saskatoon Lake	High	Aspen Parkland	588	17, 18
21	Sinclair Lake	High	Aspen Parkland	308	17, 18
22	Updike Lake	High	Aspen Parkland	282	17, 18
23	Valhalla Lake	High	Aspen Parkland	154	17, 18
24	Valhalla Lake South	High	Aspen Parkland	40	17, 18
25	Wilkin Lake	High	Aspen Parkland	512	17, 18
26	Wolfe Lake	High	Aspen Parkland	86	17, 18
27	Wood Lake	High	Aspen Parkland	80	17, 18
28	Lowé Lake	Medium	Aspen Parkland	54	17, 18
29	Ray Lake	Medium	Aspen Parkland	128	17, 18
30	Twin Lake	Medium	Aspen Parkland	118	17, 18
31	Wembly Lake	Medium	Aspen Parkland	50	17, 18
32	Yoke Lake	Medium	Aspen Parkland	84	17, 18
B - Whooping Cranes (Wood Buffalo Park) (North 1/2)		High	Boreal Forest	1,748,800	17, 29
Aspen Parkland total				9,775	
Boreal Forest total				1,748,000	
Grand total				1,757,775	

### 3.6 Analysis of Priority Ratings

Table A-10 has been prepared to determine the combined ratings for each priority area. This information indicates the relative importance of all priority areas within the same vegetation zone. The top five areas for each zone are illustrated in Figure A-10. When more than one priority area achieved the same point total all areas were included. This resulted in more than five areas being shown on the map for some vegetative zones.

In the grassland zone Murray Lake and other high priority areas were generally most important for goose production and colonial nesting migratory birds.

In the aspen parkland high priority areas tended to be most important for duck production and staging plus non-game migratory bird use. Beaverhill Lake, the most important site in the aspen parkland, is an exceptional area and receives intensive use by ducks, geese and non-game migratory birds.

In general the most important migratory bird areas in the boreal forest received more specialized use. The Peace-Athabasca Delta is an exception and is heavily utilized by ducks, geese and a wide range and number of non-game migratory birds.

All priority areas shown in Figure A-10 are considered very valuable to the migratory bird resource and special attention will be given to these areas when proposing new habitat initiatives in Alberta.

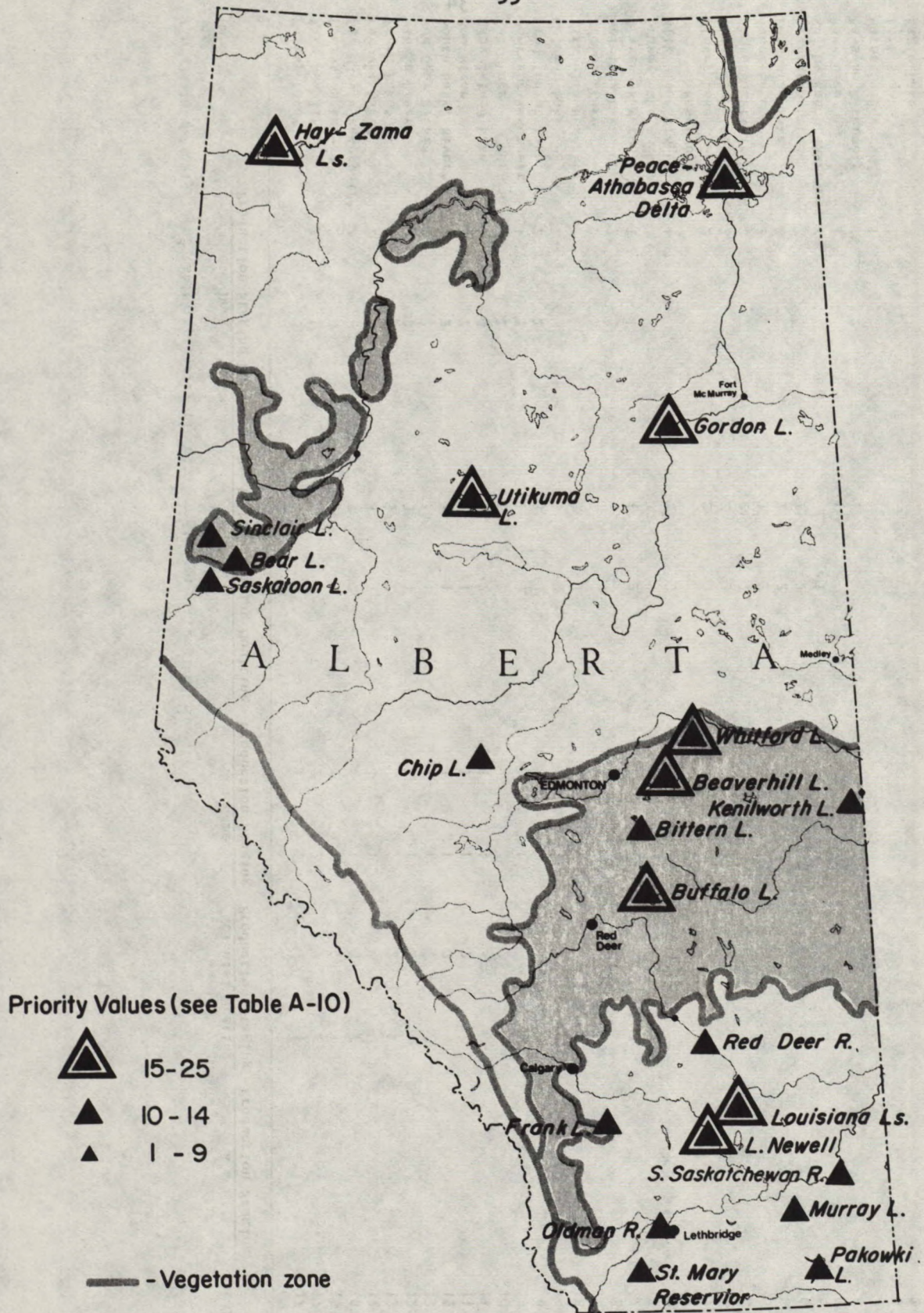


Fig. A-10. Key habitat priority areas-Alberta.

Table A-10a. Analysis of habitat priority ratings for Alberta - Grassland zone.

Name	Duck			Goose		Non-Game		Colonial Nesting		R & E**	Totals
	Production	Staging	Moulting	Production	Staging	Production	Staging	Production	Staging	Production Staging	
Murray Lake*	2	3	2	2	3	1	1	2	1		17
Lake Newell*	2	1		3	3	2	2	2	2		17
Louisiana Lakes*	2	3		2	3	1	1	2	1		15
St. Mary's Reservoir*	2			3	2	1	1	3	1		13
Pakowki Lake*	2	3		3	2	1	1				12
Frank Lake*	1	3		3	2			2	1		12
Oldman River*	2	2		3	1	1	1	2			12
Red Deer River*	2	2		3	1	1	1	2			12
South Sask. River*	2	2		3	1	1	1	2			12
Bow River	2	2		2	1	1	1	2			11
Many Island Lake	2	3		2	2	1	1				11
Keho Lake	2	2		1	2			2	1		10
McGregor Reservoir	1	2		1	3		1		1		9
Crow Indian Lake	2	2		3	2						9
Coleman Lake	2			3	2	1	1				9
Birkshire Reservoir	2			3	3						8
Stobart Lake	2	2		2	2						8
Stirling Lake	2	2		1		1	2				8
Travers Reservoir	1	1		1	2		1		1		7
Grassy Lake	2			3	2						7
Milk River Ridge Reservoir	1			3	3						7
Plover Lake	2			2	3						7
Berry Creek Reservoir	2			2	3						7
Scots Reservoir	2			2	2						6
Taber Lake	2			2	2						6
Deadhorse Lake	2			2	2						6
Verdigris Lake	2			2	2						6
Knight Ranch Reservoir	2				1					3	6
Ross Lake	1			1						3	5
Bassano Reservoir	1	2		1							4
Waterton Reservoir	1							2	1		4
Lake Shanks	1							2			3
Eagle Lake	2										2
Schuler Lake	1			1							2

\* Areas included in top five ratings and shown in Fig. A-10

\*\* Rare and Endangered Migratory Birds.

Table A-10b. Analysis of habitat priority ratings for Alberta - Aspen Parkland zone.

Name	Duck		Goose		Non-Game		Colonial Nesting		R & E		Totals
	Production	Staging Moulting	Production	Staging Moulting	Production	Staging	Production	Staging	Production	Staging	
Beaverhill Lake*	3	3	3	1	3	3	3	3			25
Ruffalo Lake*	3	3	2	1	3	3	2	2			22
Whitford Lake*	3	3			2	2	2	2			16
Saskatoon Lake*	3	3			1	1	1	2		3	14
Bear Lake*	3	3		1	3	2				2	14
Bittern Lake*	3	3	2			1	1	2	2		14
Sinclair Lake*	3			3				2	2	3	14
Lac La Glace	3	2			2					3	12
Kenilworth Lake	3	2	2	1	2	1	1				12
Cooking Lake	3	3		1				2	2		11
Bens-Watt lakes	3	2				2	2	1	1		11
Updike Lake	3					2	2	3	1		11
Cardinal Lake	3	3		1	3						10
Sounding Lake	2			2	2	2					10
Dowling Lake	2			3	3	1	1				10
Sullivan Lake	2			1	3	2	2				10
Grassy Island Lake	2			2	3	1	1				9
Kirkpatrick Lake	2			3	3						8
Kimiwan Lake	3	2		1	2						8
Winagami Lake	3	2		1	2						8
Erskine Lake	3	3				1	1				8
Eagle Lake	2			1	2	1	1				7
Antelope Lake	2			2	2						6
Big Hay Lake	3	3									6
Driedmeat Lake	3	3									6
Cough Lake	3			1	2						6
Lac Magloire	3	2		1							6
Handhills Lake	2			2	2						6
Contracosta Lake	2			2	2						6
Marion Lake	3			1	1						5
Dusty lake	2	3									5
Demay Lake	2	3									5
Shooting Lake	2			1	2						5
Birch Lake	2				2						4

\* Areas included in top five ratings and shown in Fig. A-10

Table A-10c. Analysis of habitat priority ratings for Alberta - Boreal Forest zone

Name	Duck			Goose			Non-Game		Colonial Nesting		R & F		Totals
	Production	Staging	Moultng	Production	Staging	Moultng	Production	Staging	Production	Staging	Production	Staging	
Peace-Athabasca Delta*	3												24
Gordon Lake*	3												16
Utikuma Lake*	2												15
Hay-Zama lakes*	3												15
Chip Lake*	2												13
Lesser Slave Lake	3												11
Lac la Biche	1												10
Jessie lake	3												8
Missawawi Lake	2												8
Therien lakes	2												8
Manawan Lake	3												6
McClelland Lake	2												6
Namur Lake													6
Big Lake	3												5
Bison Lake	1												5
Smoky Lake	3												5
Bistcho Lake	1												5
Flat Lake	2												4
Loon Lake	2												4
Lubicon Lake	2												4
Baptiste Lake													4
Beaver Lake													4
Frog Lake													4
Island Lake													4
Lawrence Lake													4
Cold Lake (S. bays)	2												4
Pelican Lake													4
Forsyth Lake	2												3
Muskwa Lake													2
Cache Lake	2												2
Carroll lakes	2												2
Little Buffalo Lake	2												2
Majeau Lake													2
Linton Lake	2												2

\* Areas included in top five ratings & shown in Fig. A-10.

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4. MIGRATORY BIRD  
HABITAT PRIORITIES

Saskatchewan

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#### 4.1 Introduction

The Province of Saskatchewan contains a wide diversity of migratory bird habitat ranging from the highly productive grassland ecosystem to the simpler and less productive habitat of the northern boreal forest (Figure S). Several special areas such as the Cypress Hills, the Great Sand Hills and Moose Mountain also contribute to the total habitat richness of the province.

The most important habitat for migratory bird production in the Canadian prairies is the prairie pothole region. More than 50% of the region's 500,000 square kilometres of pothole habitat is located in the southern portion of Saskatchewan. Waterfowl populations from four major waterfowl flyways in North America are dependent on this area as are numerous other migratory bird and wildlife species.

The greatest threat to migratory bird habitat in Saskatchewan is the change in land use occurring in the aspen parkland and grassland zones. Most losses are the result of agricultural expansion and intensification, and both upland and wetland habitat have been affected. Major rivers and river valley ecosystems are likewise under constant threat.

No significant losses have, as yet, occurred to production, moulting and staging habitats in the boreal forest, however, some threat is posed by future industrial developments to localized portions of this zone.



Fig. S. Major vegetation zones - Saskatchewan.

#### 4.2 Habitat Priorities for Ducks

The aspen parkland in Saskatchewan contains some of the best duck production habitat in North America (Table S-1). The uniform interspersion of wetlands and uplands is the primary factor responsible for this phenomenon.

The grassland zone also contains more important production habitat, however, production in this zone is limited to years when adequate water is available for breeding and brood rearing.

Information on the location of important production habitat in the boreal forest vegetation zone is limited, although specific areas such as the Cumberland Delta are well known. In drought years, this zone serves as a buffer zone to accommodate ducks normally nesting in the grassland and aspen parkland. Figure S-1 illustrates the major duck production areas in Saskatchewan.

Generally, it is agreed that most larger wetlands in the aspen parkland and grassland vegetation zones are utilized by staging ducks which have been reared in these zones. These also provide important habitat for migrating ducks produced in northern Alberta and the Canadian Arctic. Accordingly, this study identified 58 staging areas, which exist in these zones.

Twelve staging areas in the boreal forest zone are identified including the Cumberland Delta, Beauval Marsh, and Meadow Lake.

The major duck staging areas in Saskatchewan are identified in Table S-2 and illustrated in Figure S-2.

Limited information indicates that, within the boreal zone, the Cumberland Delta and Beauval Marsh are very important for moulting ducks. Generally, ducks moult on the larger lakes and marshes

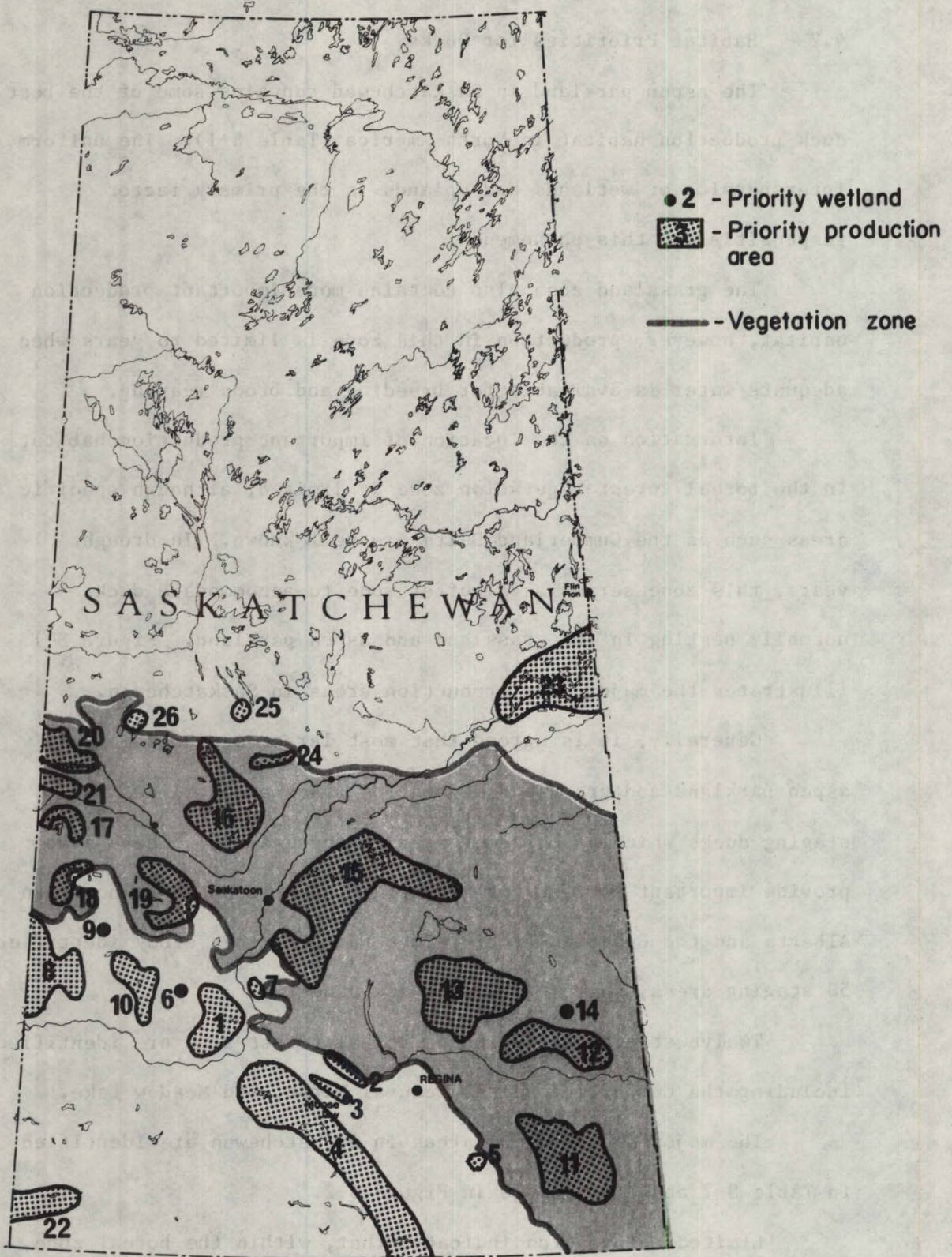


Fig. S-1 . Priority duck production habitat in Saskatchewan.

Table S-1. Priority duck production habitat in Saskatchewan.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Coteau Hills	High	Grassland	318,384	1, 8, 20
2	Upper Ou'Appelle River basin	High	Grassland	4,000	1, 2
3	Thunder Creek complex	High	Grassland	4,800	1, 2
4	Missouri Coteau	High	Grassland	1,671,443	1, 8, 20
5	Buttermilk-Tatagwa complex	High	Grassland	16,000	1, 2
6	Barber Lake - Forgan complex	Medium	Grassland	4,800	1, 2
7	Hawarden Hills	Medium	Grassland	36,056	1, 8, 20
8	Neutral Hills	Medium	Grassland	245,496	1, 8, 20
9	White Heron-Beaufield complex	Medium	Grassland	4,800	1, 2
10	Bad Hills	Medium	Grassland	154,716	1, 8, 20
11	Moose Mountain uplands	High	Aspen Parkland	520,000	1, 8, 20
12	Pheasant Hills	High	Aspen Parkland	211,014	1, 8, 20
13	Touchwood-Beaver hills	High	Aspen Parkland	677,296	1, 8, 20
14	Yorkton lakes	High	Aspen Parkland	4,456	14
15	Allan-Minichinas-Tiger hills	High	Aspen Parkland	880,000	1, 8, 20
16	Thickwood Hills (a)	High	Aspen Parkland	519,776	1, 8, 20
17	Thickwood Hills (b)	High	Aspen Parkland	118,600	1, 8, 20
18	Senlac Hills	Medium	Aspen Parkland- Grassland	155,303	1, 8, 20
19	Bear Hills	Medium	Aspen Parkland- Grassland	476,598	1, 8, 20
20	Missouri Coteau	Medium	Aspen Parkland	98,592	1, 8, 20
21	Missouri Coteau	Medium	Aspen Parkland	80,512	1, 8, 20
22	Cypress Hills	Medium	Aspen Parkland	74,000	1, 8, 20
23	Cumberland Delta	High	Boreal Forest	311,200	1, 8, 20
24	Black Duck-Ladder lakes complex	High	Boreal Forest	16,000	2
25	Berube-Sucker lakes complex	High	Boreal Forest	20,000	2
26	Thickwood Hills (c)	Medium	Boreal Forest	20,000	1, 8, 20
	Grassland total			2,460,495	
	Aspen Parkland-Grassland total			3,816,147	
	Boreal Forest total			367,200	
	Grand total			6,643,842	

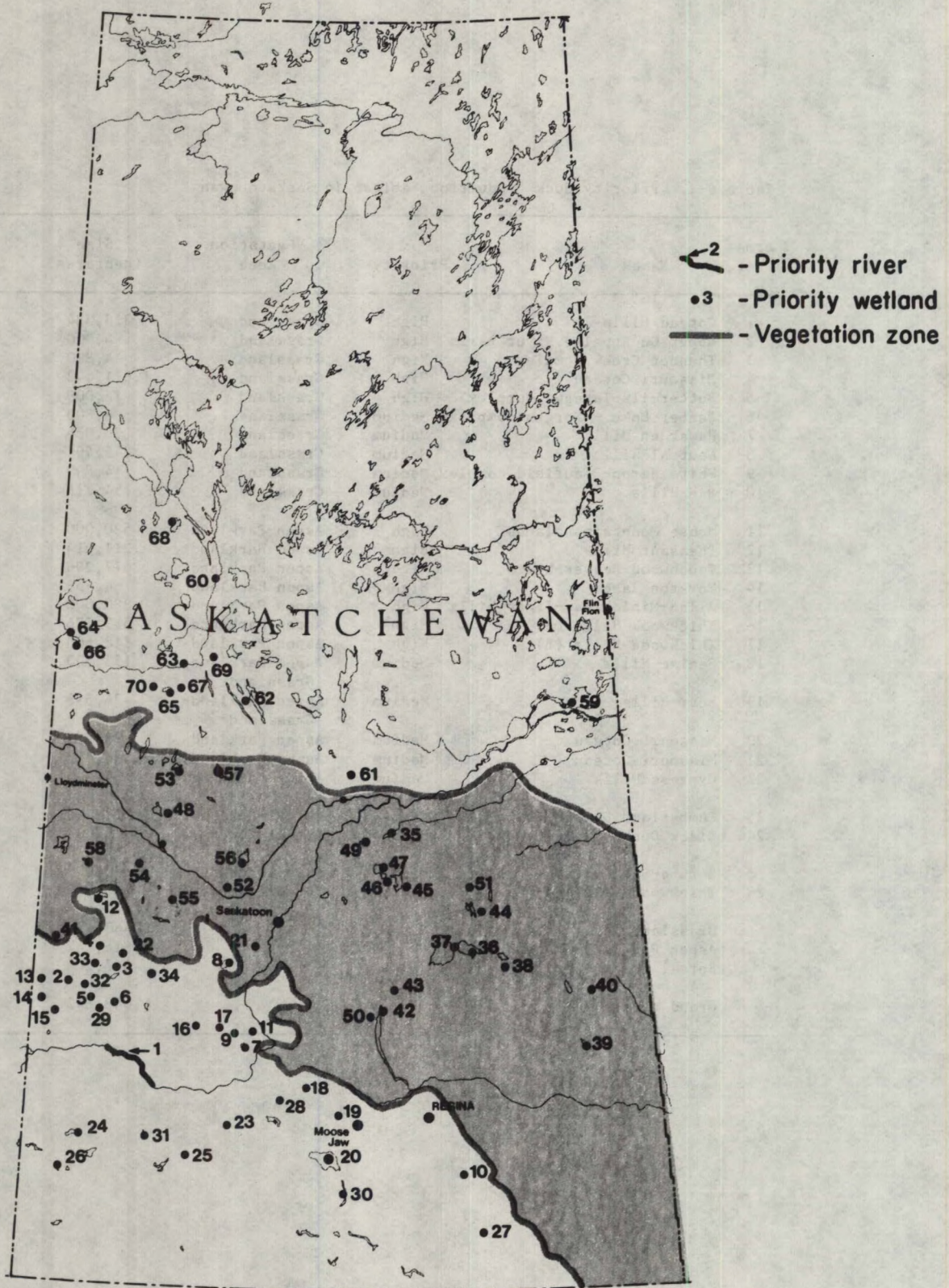


Fig. S-2 . Priority duck staging habitat in Saskatchewan.



Table S-2. Priority duck staging habitat in Saskatchewan.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	South Saskatchewan River	High	Grassland	6,000	9
2	Dewar Lake	High	Grassland	520	9
3	Beaufield marsh	High	Grassland	600	9
4	Street Lake	High	Grassland	256	9
5	Inglenook Lake	High	Grassland	720	9
6	Snipe Lake	High	Grassland	400	9
7	Luck Lake	High	Grassland	1,792	1, 9
8	Goose Lake	High	Grassland	3,600	1, 9
9	Anerley lakes	High	Grassland	286	9
10	Tatagwa Lake	High	Grassland	1,000	1, 2
11	Stockwell Lake	High	Grassland	560	9
12	Muddy Lake	Medium	Grassland	1,800	1, 9
13	Loverna slough	Medium	Grassland	140	9
14	Marengo slough	Medium	Grassland	160	9
15	Red Top slough	Medium	Grassland	760	9
16	Barber Lake	Medium	Grassland	840	9
17	Milden Lake	Medium	Grassland	640	9
18	Eyebrow Lake	Medium	Grassland	720	2
19	Pelican Lake	Medium	Grassland	2,040	2
20	Old Wives Lake	Medium	Grassland	32,000	9
21	Rice Lake	Medium	Grassland	1,400	9
22	White Heron Lake	Medium	Grassland	600	9
23	Reed Lake	Medium	Grassland	3,680	2
24	Big Stick Lake	Medium	Grassland	2,464	2
25	Highfield Reservoir	Medium	Grassland	374	2
26	Junction Reservoir	Medium	Grassland	409	2
27	Maxim Lake	Medium	Grassland	240	2
28	Payson Lake	Medium	Grassland	482	2
29	Cutbank Lake	Medium	Grassland	624	9
30	Lake of the Rivers	Medium	Grassland	1,984	2
31	Antelope Lake	Medium	Grassland	2,400	9
32	Teo Lake	Medium	Grassland	571	9
33	Buffalo Coulee	Medium	Grassland	259	9
34	Opuntia Lake	Medium	Grassland	2,255	9
35	Waterhen Marsh	High	Aspen Parkland	1,480	1, 9
36	Little Quill Lake	High	Aspen Parkland	19,426	1, 9
37	Middle Quill Lake	High	Aspen Parkland	388	9
38	Foam Lake	High	Aspen Parkland	1,400	9, 15
39	Yorkton lakes	High	Aspen Parkland	4,456	1, 14
40	Fulton Lake	High	Aspen Parkland	240	2
41	Cactus Lake	High	Aspen Parkland	400	9
42	Last Mountain Lake	High	Aspen Parkland	10,000	1, 9
43	Kutawagan Lake	High	Aspen Parkland	988	2, 9
44	Ponass Lake	High	Aspen Parkland	4,800	1, 9
45	Lenore Lake	Medium	Aspen Parkland	5,990	1, 9
46	Middle Lake	Medium	Aspen Parkland	1,140	1, 9
47	Basin Lake	Medium	Aspen Parkland	5,520	1, 9
48	Scentgrass Lake	Medium	Aspen Parkland	560	2
49	Pelican Lake	Medium	Aspen Parkland	256	2
50	Stalwart Marsh	Medium	Aspen Parkland	360	2
51	Kitako	Medium	Aspen Parkland	433	2
52	Radisson Lake	Medium	Aspen Parkland	457	2
53	Midnight Lake	Medium	Aspen Parkland	2,366	1, 2
54	Thackeray Lake	Medium	Aspen Parkland	268	2
55	Kimoff Lake	Medium	Aspen Parkland	392	10
56	Redberry Lake	Medium	Aspen Parkland	6,040	2
57	Witchekan	Medium	Aspen Parkland	5,384	2
58	West Seagram Lake	Medium	Aspen Parkland	818	9
59	Cumberland Delta	High	Boreal Forest	311,200	1, 2
60	Beauval marsh	High	Boreal Forest	10,240	2
61	Cheal-Russell lakes	High	Boreal Forest	887	2
62	Black Duck-Egg lakes	High	Boreal Forest	1,000	2
63	Pagan (Little Jackfish) Lake	High	Boreal Forest	600	2
64	Sisona Lake	High	Boreal Forest	280	2
65	Meadow Lake	High	Boreal Forest	3,000	2
66	Pritchard Lake	High	Boreal Forest	480	2
67	Little Rush-Chitek lakes	Medium	Boreal Forest	580	2
68	Kazan Lake	Medium	Boreal Forest	7,200	2
69	Ross Lake	Medium	Boreal Forest	400	2
70	Oliver slough	Medium	Boreal Forest	518	2
	Grassland Total			74,136	
	Aspen Parkland total			74,380	
	Boreal Forest total			336,385	
	Grand total			484,901	

of the grassland and aspen parkland vegetation zones and, in some instances, these moulting areas are synonymous with the staging areas (Table S-3). Locations of the major moulting areas in Saskatchewan are given in Figure S-3.

#### 4.3 Habitat Priorities for Geese

Saskatchewan provides production habitat for three populations of Canada geese which utilize the Central Flyway (Table S-4). These include the Hi-line population which breeds in the grasslands of southwestern Saskatchewan and along the Saskatchewan River, the western prairie population (WPP) which breeds in specific parts of the aspen parkland of eastern Saskatchewan and local flocks of Great Basin giant Canada geese which breed in the grassland and aspen parkland zones (Figure S-4). Production habitat in the aspen parkland and grassland vegetation zones is adequate to maintain present population levels; in fact, the WPP has increased from 3,000 in 1959 to 77,000 in 1976.

The aspen parkland and grassland vegetation zones both contain important goose staging areas (Table S-5). The western portions of these zones, particularly the South Saskatchewan River from the Gardiner Dam to the Alberta border, are extensively utilized by Ross' geese, white-fronted geese, lesser snow geese and lesser Canada geese when returning from the Arctic and Subarctic nesting grounds. In the central portion of the province goose staging is concentrated on key lakes and wetland complexes (Table S-5). As long as the integrity of these lakes and wetland complexes is maintained (for example Quill lakes, Kutawagan lakes and Last

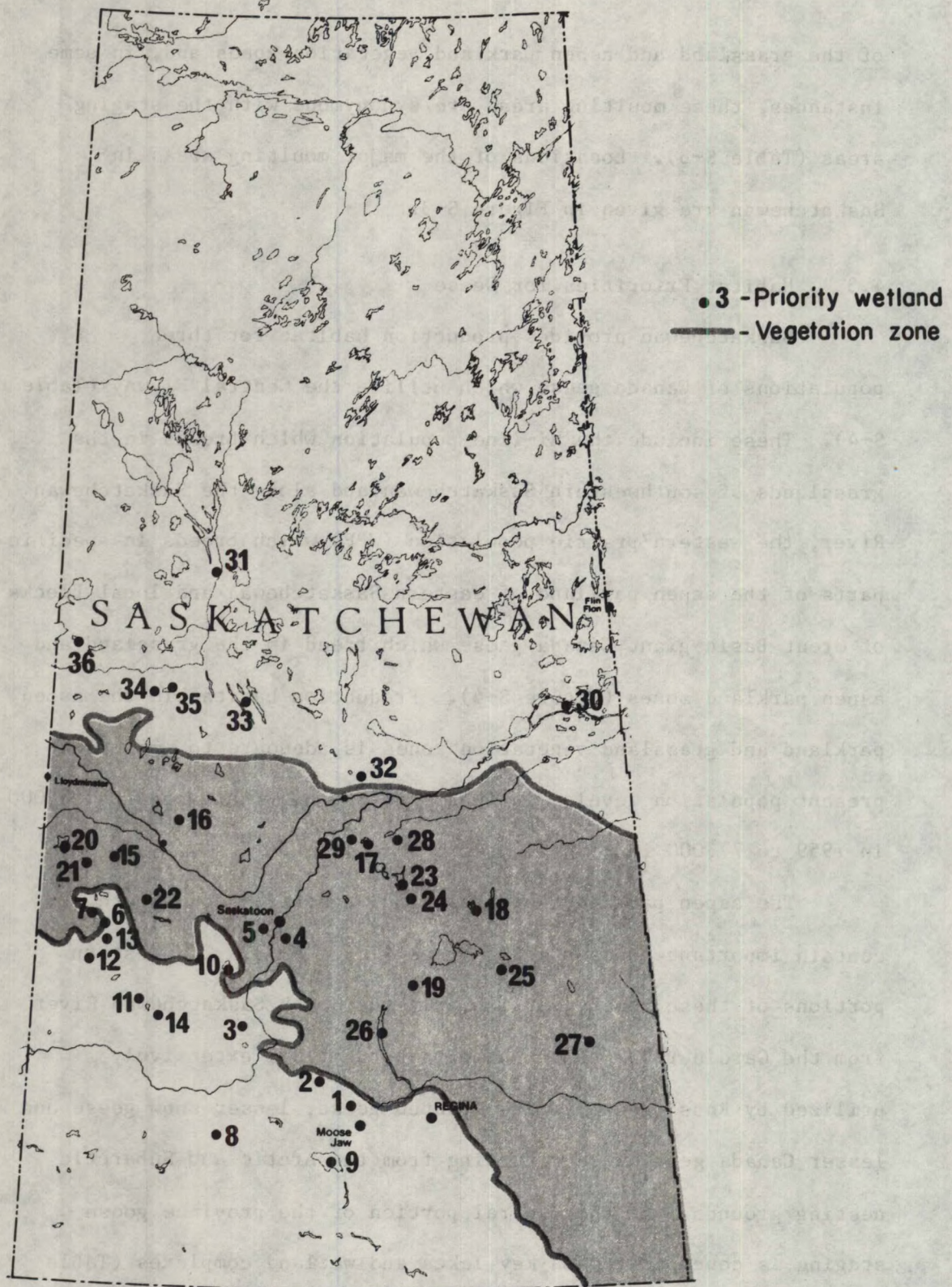


Fig. S-3 . Priority duck moulting habitat in Saskatchewan .

Table S-3. Priority duck moulting habitat in Saskatchewan

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Pelican Lake	High	Grassland	2,040	10
2	Eyebrow Lake	High	Grassland	720	10
3	Anerley lakes	High	Grassland	286	10
4	Indi Lake	High	Grassland	252	10
5	Rice Lake	High	Grassland	1,400	10
6	White Heron Lake	High	Grassland	600	10
7	Shallow Lake	High	Grassland	440	10
8	Reed Lake	Medium	Grassland	3,680	10
9	Old Wives Lake	Medium	Grassland	32,000	10
10	Goose Lake	Medium	Grassland	3,600	10
11	Snipe Lake	Medium	Grassland	400	10
12	Dewar Lake	Medium	Grassland	520	10
13	Beaufield marsh	Medium	Grassland	600	10
14	Bad Lake	Low	Grassland	920	10
15	Thackeray Lake	High	Aspen Parkland	268	2
16	Scentgrass Lake	High	Aspen Parkland	560	2
17	Little Jumping Lake	High	Aspen Parkland	120	10
18	Ponass Lake	High	Aspen Parkland	4,800	10
19	Kutawagan Lake	High	Aspen Parkland	988	10
20	Manito Lake	Medium	Aspen Parkland	7,708	10
21	West Seagram Lake	Medium	Aspen Parkland	818	10
22	Kimoff Lake	Medium	Aspen Parkland	392	10
23	Lenore Lake	Medium	Aspen Parkland	5,990	10
24	Ranch Lake	Medium	Aspen Parkland	720	10
25	Foam Lake	Medium	Aspen Parkland	1,400	15
26	Stalwart Marsh	Medium	Aspen Parkland	360	10
27	Yorkton lakes	Medium	Aspen Parkland	4,456	14
28	Waterhen Marsh	Medium	Aspen Parkland	1,480	2
29	Pelican Lake	Medium	Aspen Parkland	256	2
30	Cumberland Delta	High	Boreal Forest	311,200	2
31	Beauval marsh	High	Boreal Forest	10,240	2
32	Cheal-Russell lakes	Medium	Boreal Forest	887	2
33	Black Duck-Egg lakes	Medium	Boreal Forest	1,000	2
34	Oliver slough	Medium	Boreal Forest	518	2
35	Meadow Lake	Medium	Boreal Forest	3,080	2
36	Pritchard Lake	Medium	Boreal Forest	480	2
	Grassland total			47,458	
	Aspen Parkland total			30,316	
	Boreal Forest total			327,405	
	Grand total			405,179	

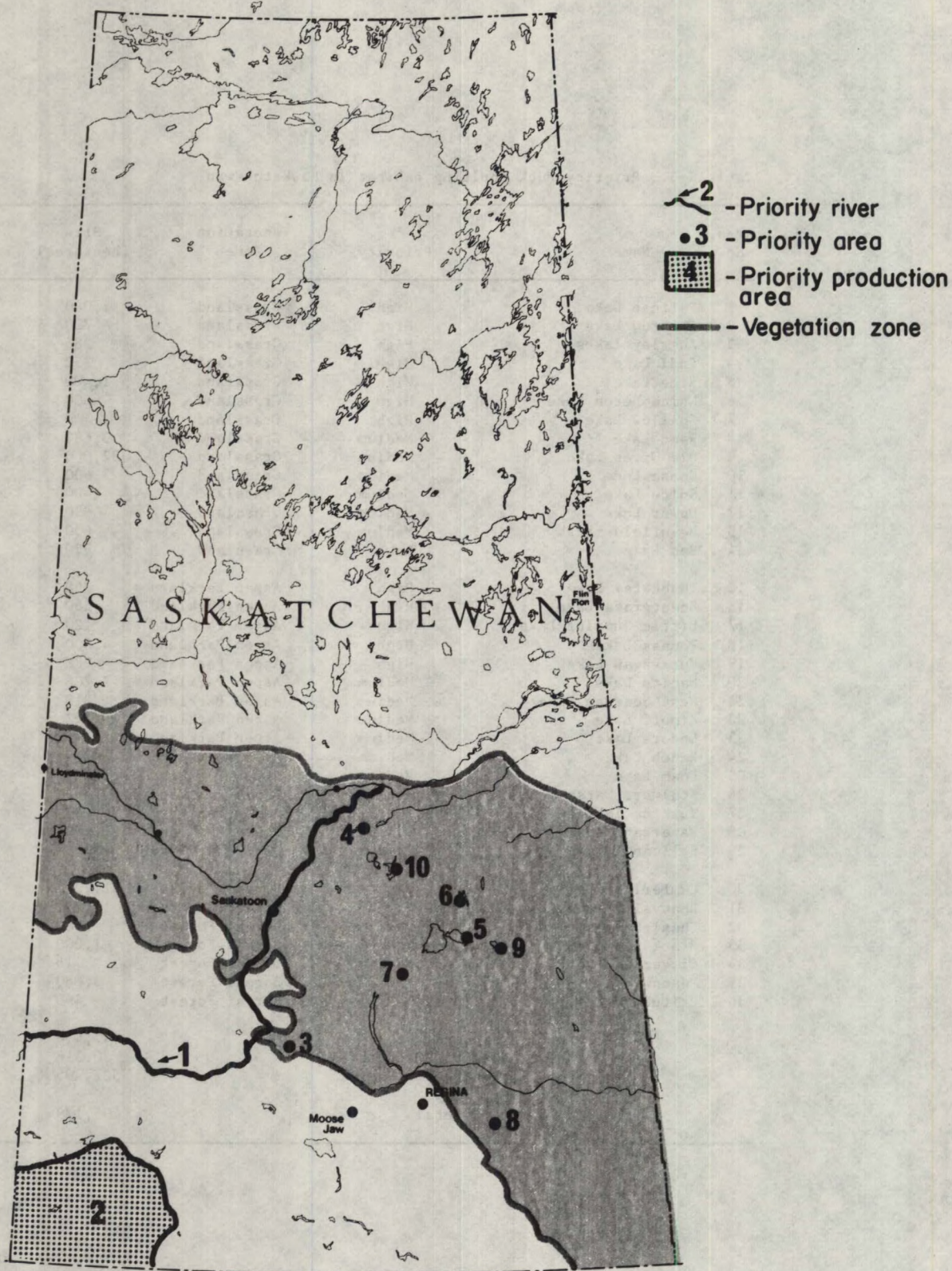


Fig. S-4 . Priority goose production habitat in Saskatchewan.

Table S-4. Priority goose production habitat in Saskatchewan

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	South Saskatchewan River	High	Grassland-Aspen Parkland	14,000	11
2	Southwest Saskatchewan	High	Grassland	1,960,000	2, 11
3	Eyebrow Lake	Medium	Grassland	720	2, 11
4	Waterhen Marsh	High	Aspen Parkland	1,497	2, 11
5	Little Quill Lake complex	High	Aspen Parkland	24,000	2, 11
6	Ponass Lake-Charron-Kitako complex	High	Aspen Parkland	154,000	2, 11
7	Kutawagan complex	High	Aspen Parkland	2,000	2, 11
8	Montmarte complex	High	Aspen Parkland	8,000	2, 11
9	Foam Lake-Fishing Lakes	High	Aspen Parkland	154,000	2, 11
10	Ranch Lake	Medium	Aspen Parkland	720	2, 11
	Grassland total			1,974,720	
	Aspen Parkland total			344,217	
	Grand total			2,318,937	

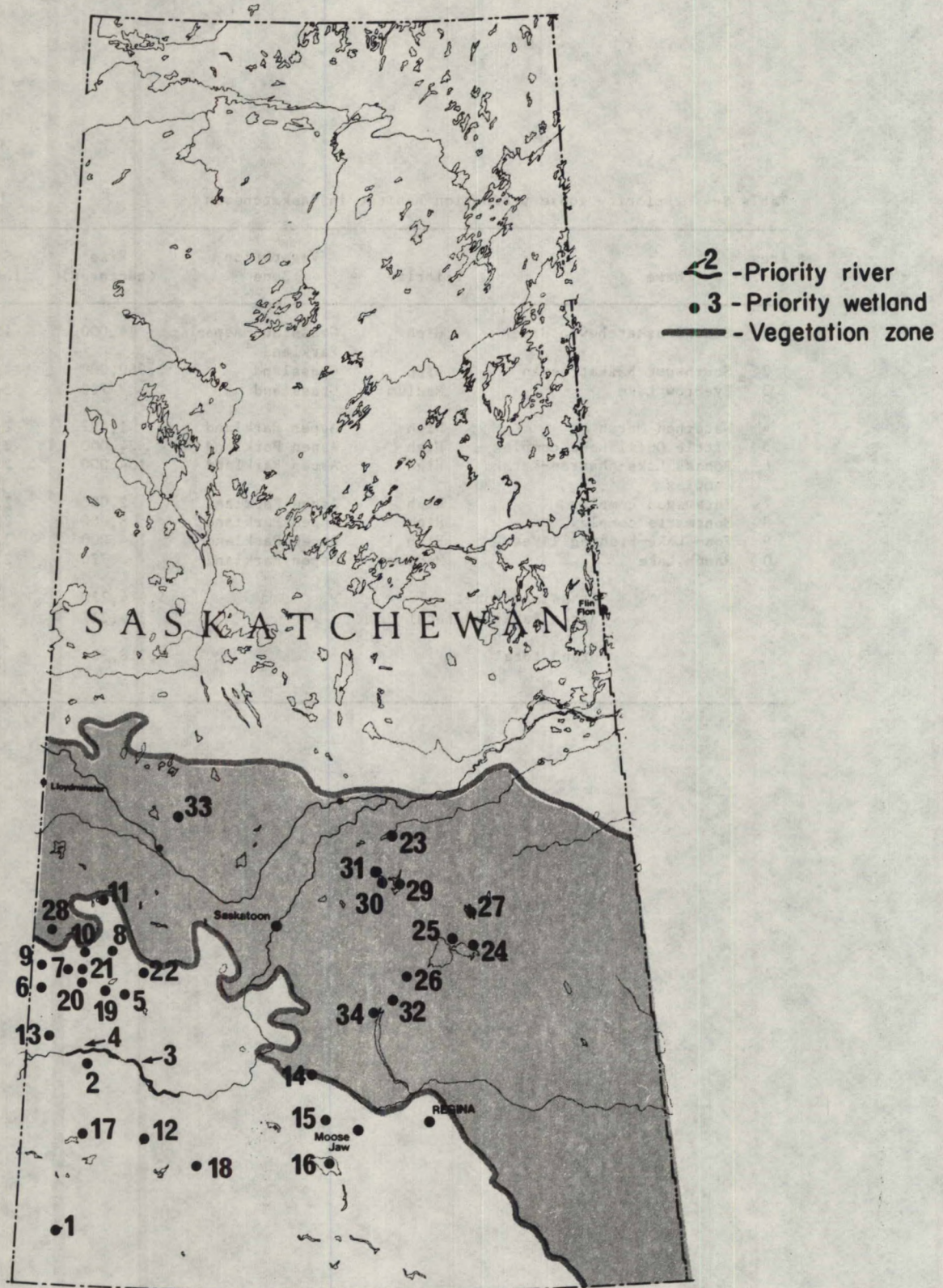


Fig. S-5 . Priority goose staging habitat in Saskatchewan.

Table S-5. Priority goose staging habitat in Saskatchewan

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Cypress Lake	High	Grassland	2,400	9
2	Blizzard-Scory Lake	High	Grassland	2,800	9
3	South Saskatchewan River	High	Grassland	6,000	9
4	South Saskatchewan River	High	Grassland	920	9
5	Snipe Lake	High	Grassland	400	9
6	Marengo slough	High	Grassland	160	9
7	Dewar Lake	High	Grassland	520	9
8	Beaufield marsh	High	Grassland	600	9
9	Loverna slough	High	Grassland	140	9
10	Street Lake	Medium	Grassland	256	9
11	Muddy Lake	Medium	Grassland	1,800	9
12	Antelope Lake	Medium	Grassland	2,400	9
13	Red Top slough	Medium	Grassland	760	9
14	Eyeblow Lake	Medium	Grassland	720	9
15	Pelican Lake	Medium	Grassland	2,040	9
16	Old Wives Lake	Medium	Grassland	32,000	9
17	Big Stick Lake	Medium	Grassland	2,464	9
18	Highfield Reservoir	Medium	Grassland	374	2
19	Cutbank Lake	Medium	Grassland	624	9
20	Teo Lake	Medium	Grassland	671	9
21	Buffalo Coulee	Medium	Grassland	259	9
22	Opuntia Lake	Medium	Grassland	2,255	9
23	Waterhen Marsh	High	Aspen Parkland	1,497	9
24	Little Quill Lake	High	Aspen Parkland	19,426	9
25	Middle Quill Lake	High	Aspen Parkland	388	9
26	Katawagan Lake	High	Aspen Parkland	988	9
27	Ponass	High	Aspen Parkland	4,800	9
28	Cactus Lake	High	Aspen Parkland	400	9
29	Lenore Lake	Medium	Aspen Parkland	5,990	9
30	Middle Lake	Medium	Aspen Parkland	1,140	9
31	Basin Lake	Medium	Aspen Parkland	5,520	9
32	Last Mountain Lake	Medium	Aspen Parkland	10,000	9
33	Scentgrass Lake	Medium	Aspen Parkland	560	2
34	Stalwart Marsh	Medium	Aspen Parkland	360	9
	Grassland total			60,563	
	Aspen Parkland total			51,069	
	Grand total			111,632	



Mountain Lake), there appears to be sufficient staging habitat for geese. Figure S-5 illustrates staging areas of importance to geese.

Although little information exists concerning moulting areas occupied by geese in the boreal forest or grassland vegetation zones of Saskatchewan, moulting areas have been identified in the central portion of the aspen parkland zone and associated with local production areas (Table S-6). As long as adequate production habitat is maintained, this moulting habitat should be sufficient for the limited number of geese requiring these areas. Figure S-6 illustrates areas utilized by moulting geese.

#### 4.4 Habitat Priorities for Non-game Migratory Birds

Within each vegetation zone the diversity of non-game migratory bird species is very high and their individual habitat requirements are often very different, hence only the major habitat types are discussed for each vegetation zone.

Generally, those species of migratory birds relying on native grassland communities in the grassland zone have experienced a reduction in population levels. This is primarily the result of habitat losses through agricultural expansion. For this reason, remaining native grassland regions are considered as high priority areas for non-game migratory birds (Table S-7).

River valleys in the grassland and aspen parkland vegetation zones are designated as high priority areas for non-game migratory birds because some portions provide the main production habitat for many of these species. Moreover, the Frenchman, South Saskatchewan

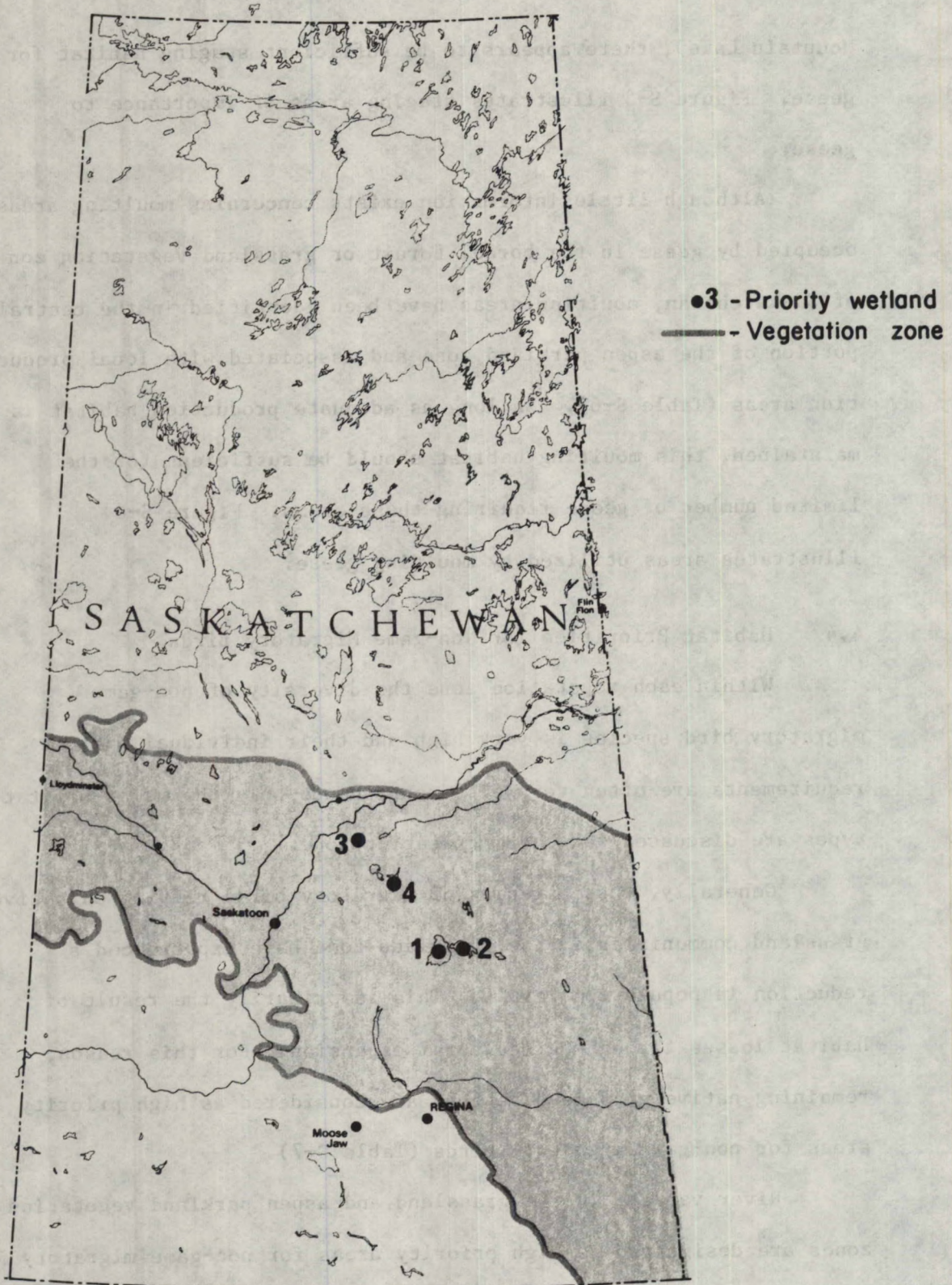


Fig.S-6. Priority goose moulting habitat in Saskatchewan.

Table S-6. Priority goose moulting habitat in Saskatchewan.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Middle Oull Lake	High	Aspen Parkland	388	10
2	Little Oull Lake	High	Aspen Parkland	19,426	10
3	Waterhen Marsh	High	Aspen Parkland	1,497	10
4	Lenore Lake	Medium	Aspen Parkland	5,990	10
		Total		27,301	

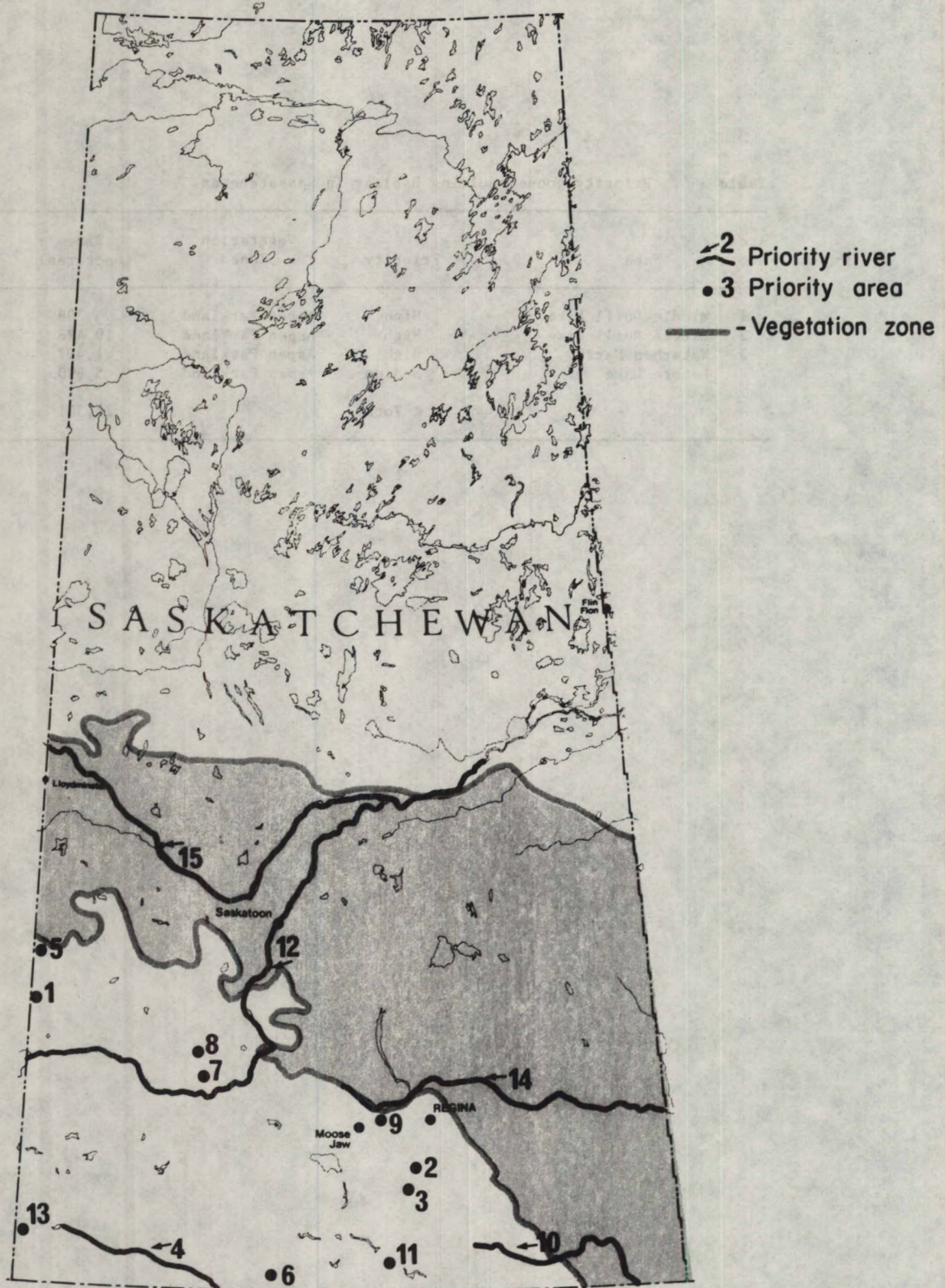


Fig. S-7. Priority upland habitat for non-game migratory birds in Saskatchewan.

Table S-7. Priority upland habitat for non-game migratory birds in Saskatchewan.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Alsask-Mantario Hills	High	Grassland	16,123	21
2	Avonlea Badlands IBP site	High	Grassland	346	21
3	Dirt Hills	High	Grassland	1,554	21
4	Frenchman River	High	Grassland	68,475	3, 18
5	Hearts' Hill	High	Grassland	6,281	21
6	Killdeer Badlands	High	Grassland	9,320	21
7	Matador IBP site	High	Grassland	777	21
8	Matador Moraine	High	Grassland	3,110	21
9	Qu'Appelle Prairie IBP site	High	Grassland	917	21
10	Souris River	High	Grassland	85,780	3
11	Lake of Rivers-Big Muddy Valley	High	Grassland	70,000	3
12	South Saskatchewan River	High	Grassland- Aspen Parkland	337,069	3, 18
13	Cypress Hills	High	Aspen Parkland	74,000	3
14	Qu'Appelle River	High	Aspen Parkland	159,488	3
15	North Saskatchewan River	High	Aspen Parkland- Boreal Forest	227,284	3, 4
			Grassland total	599,752	
			Aspen Parkland total	460,772	
			Grand total	1,060,524	

and Battle river valleys are used as migration corridors. Priority areas for non-game migratory birds in Saskatchewan are shown in Figure S-7.

The boreal forest is the largest vegetation zone in Saskatchewan. At present, there do not appear to be any major limiting factors to non-game migratory birds in this zone, however, as our knowledge of habitat requirements and population status of migratory birds increases, the priority lists of this zone will become more refined.

A variety of wetlands and wetland complexes are utilized by non-game migratory birds in the aspen parkland and grassland vegetation zones of Saskatchewan. Because of land-use changes, it is increasingly evident that many of these wetland types must be protected to maintain the present populations of non-game migratory birds.

#### Colonial Nesting Birds

Colonial nesting migratory birds are found in all vegetation zones in Saskatchewan; drainage is a constant threat to some species, particularly within the grassland and aspen parkland. At Last Mountain, Foam and Redberry lakes, human disturbance resulting from increased recreation pressure is reducing the annual reproductive success of these birds. The lack of protection rather than the scarcity of habitat is considered to be the major limiting factor to most colonial nesting species at present.

In the boreal forest zone, the habitat used by colonial nesting species is relatively secure but disturbance by the public using these areas for recreation is an increasing problem.

Changes in habitat quality, specifically water quality and the aquatic food of colonial nesting birds, may be a greater threat to colonial birds in Saskatchewan than disturbance of some nesting areas. Our knowledge of these changes and the resulting effects on migratory bird populations is inadequate.

The major areas identified for colonial birds are listed in Table S-8 and illustrated in Figure S-8.

#### 4.5 Habitat Priorities for Rare and Endangered Migratory Birds

Two rare and endangered species of migratory birds occur in Saskatchewan: the Whooping crane is a migrant in spring and fall and the Trumpeter swan breeds here. Most of the wild Whooping crane population migrates through the province en route to and from the breeding grounds in Wood Buffalo National Park. During migration these birds traditionally follow a general flyway but their use of specific stop-over areas varies constantly: nevertheless three areas are used fairly regularly (Table S-9). Two breeding localities of the Trumpeter swan are identified in the province (Table S-9).

#### 4.6 Analysis of Priority Ratings

To demonstrate the combined values for each priority area Table S-10 was developed. This information indicates the relative importance of all priority areas within the same vegetation zone. The top five areas for each zone are illustrated in Figure S-10. When more than one priority area achieves the same point total all areas were included. This resulted in more than 5 areas being shown on Figure S-10 for some vegetation zones.

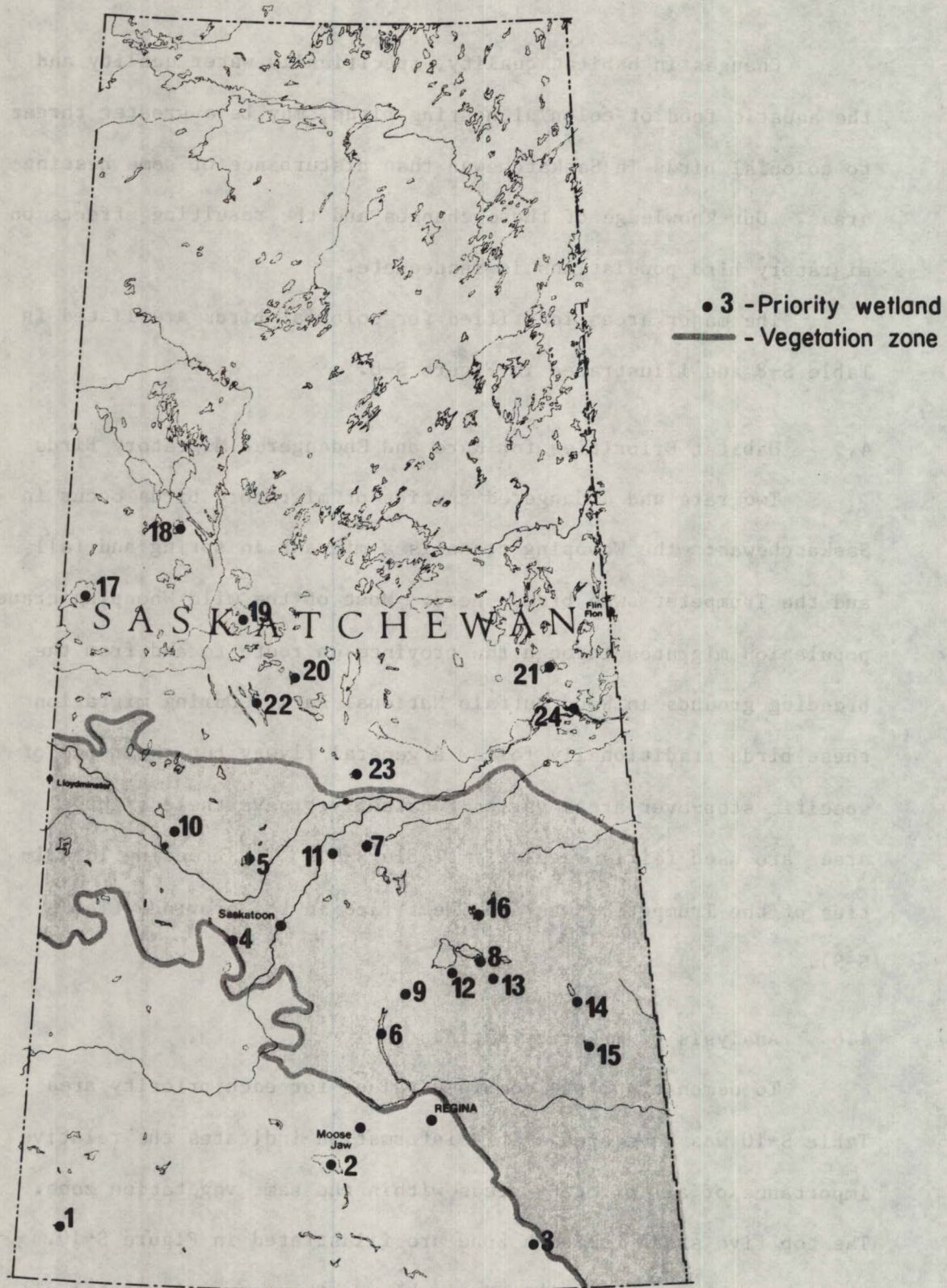


Fig. S-8. Priority production and staging habitat for colonial nesting migratory birds in Saskatchewan.



Table S-8. Priority production and staging habitat for colonial nesting migratory birds in Saskatchewan

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Colonial nesting species	Source of information
1	Cypress Lake	High	Grassland	2,400	C, GS, P	19
2	Old Wives Lake	High	Grassland	32,000	C, GS, P	17
3	Tatagwa Lake	High	Grassland	1,000	Gs, Ts, Bcnh	2
4	Rice Lake	Medium	Grassland	1,400	Gs, Ts, Gbs, Bcnh, Gth	3
5	Redberry Lake	High	Aspen Parkland	6,040	C, P	5, 6
6	Last Mountain Lake	High	Aspen Parkland	10,000	C, Gs, Ts, Gbs	5, 6, 12
7	Waterhen Marsh	Medium	Aspen Parkland	1,480	Gbs, Gs, Ts	2, 12
8	Little Quill Lake	Medium	Aspen Parkland	19,426	C, P, Gs	7
9	Kutawagan complex	Medium	Aspen Parkland	2,000		
10	Scentgrass Lake	Medium	Aspen Parkland	560	Gs, Ts	2
11	Pelican Lake	Medium	Aspen Parkland	256	Gs, Ts	12
12	Middle Quill Lake	Medium	Aspen Parkland	388	Gs, P	7
13	Foam Lake	Medium	Aspen Parkland	1,400	Bcnh, Gs, Ts	7, 15
14	Horseshoe Lake	Medium	Aspen Parkland	512	Gth	18
15	Yorkton lakes	Medium	Aspen Parkland	4,456	Gs, Gbs, Ts	
16	Ponass Lake	Medium	Aspen Parkland	4,800	Gs, Gbs, Ts	2
17	Primrose Lake	High	Boreal Forest	40,000	Gth, P	6, 18
18	Kazan Lake	High	Boreal Forest	7,200	P	18
19	Dore Lake	High	Boreal Forest	63,800	C, Gs, P	5
20	Lavallee Lake	High	Boreal Forest	2,720	P, Gth	16, 18
21	Suggi Lake	High	Boreal Forest	14,000	P, Gth	13
22	Delaronde Lake	Medium	Boreal Forest	13,000	Gth	18
23	Cheal-Russell lakes	Medium	Boreal Forest	887	Bcnh, Gbs, Ts	2
24	Umberland Delta	Medium	Boreal Forest	311,200	Gbs, Ts	2
			Grassland total	36,800		
			Aspen Parkland total	51,318		
			Boreal Forest total	452,807		
			Grand total	540,925		

Colonial Nesting Species Legend

Bcnh = Black-crowned Night Heron  
 C = Cormorant  
 Gth = Great Blue Heron  
 Gs = Gull spp.  
 Gbs = Grebe spp.  
 P = Pelican  
 Ts = Tern spp.

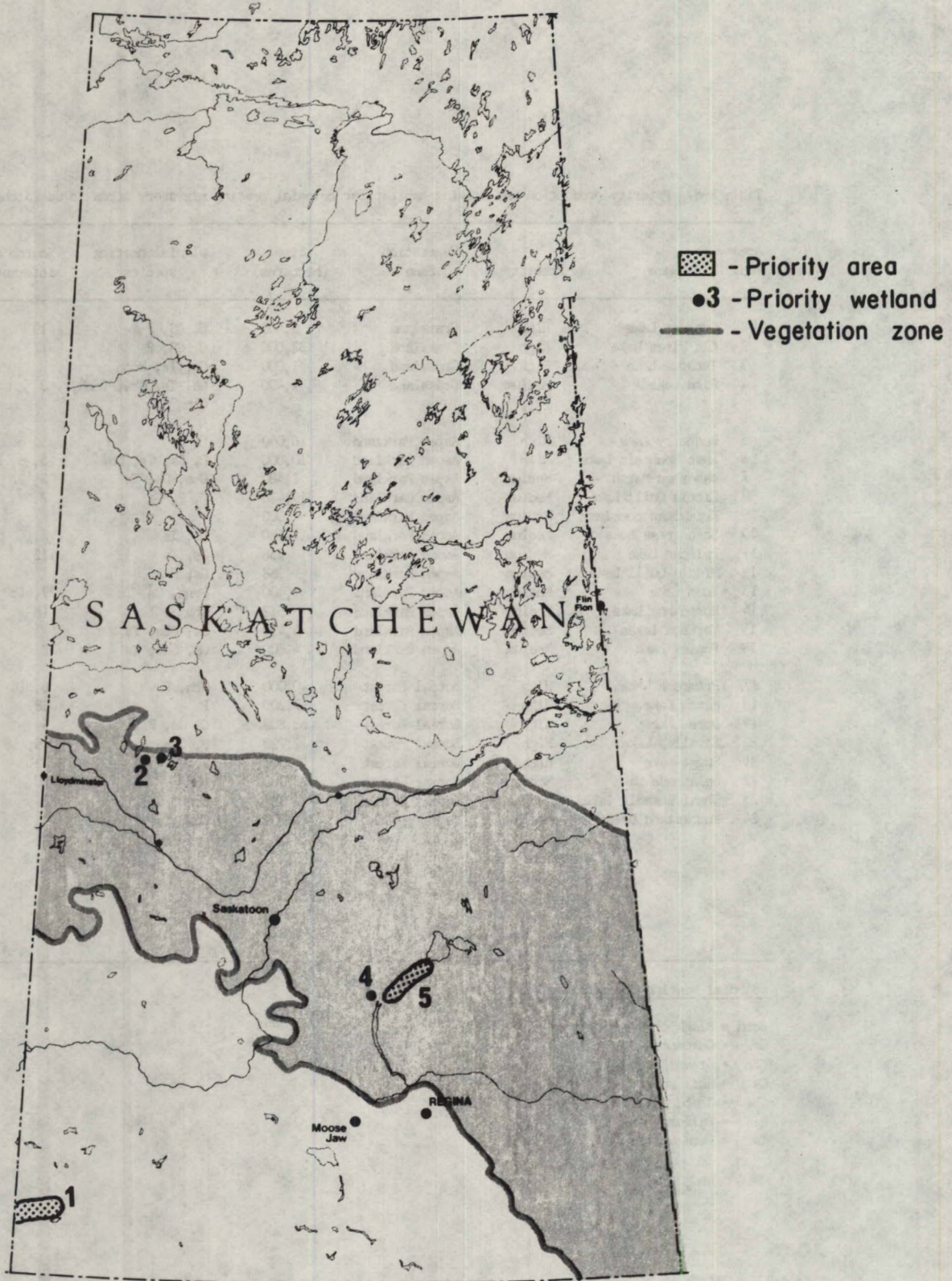


Fig. S-9. Priority production and staging habitat for rare and endangered migratory birds in Saskatchewan.

Table S-9. Priority production and staging habitat for rare and endangered migratory birds in Saskatchewan.

Area No.	NAME	Priority	Vegetation Zone	Size (hectares)	Source of information
A. Trumpeter Swan					
1	Cypress Hills	High	Aspen Parkland	74,000	22
2	Stoney Lake	High	Aspen Parkland	777	22
B. Whooping Crane					
3	Midnight Lake	High	Aspen Parkland	2,366	23
4	Last Mountain Lake	High	Aspen Parkland	10,000	23
5	Saline complex	High	Aspen Parkland	16,000	23
		Total		103,143	

In the grassland zone Eyebrow Lake and other high priority areas were generally most important for duck production, goose staging and some production of colonial nesting migratory birds.

In the aspen parkland high priority areas tended to be most important for duck production and staging, goose production and staging, and non-game migratory bird use. Ponass Lake, Waterhen Marsh and Kutawagan lakes are of exceptional value as migratory bird habitat and received the highest ratings in the parkland zone and within the entire province.

Most priority areas in the boreal forest zone which are important for non-game migratory bird production are of lower value to waterfowl, and the converse is true. The Cumberland Delta is an exception and is rated high priority for duck production, staging, moulting and also contributes to goose production.

All priority areas shown in Figure S-10 are considered very valuable to the migratory bird resource and special attention will be given to these areas when proposing new habitat protection initiatives in Saskatchewan.

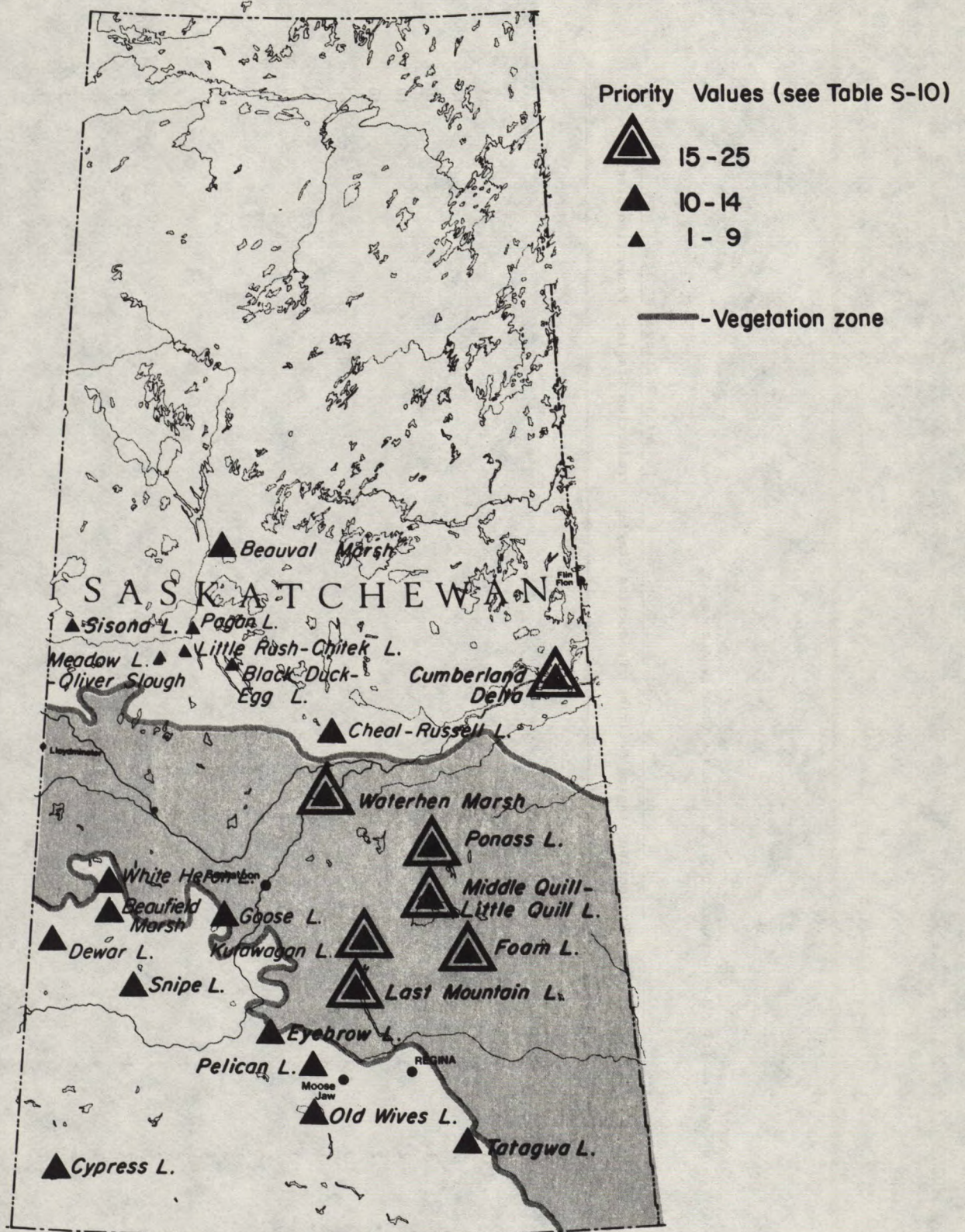


Fig.S-10. Key habitat priority areas - Saskatchewan.

Table S-10a. Analysis of habitat priority ratings for Saskatchewan - Grassland zone.

Name	Duck			Goose			Non-Game	Colonial Nesting		R & E**	Totals
	Production	Staging	Moulting	Production	Staging	Moulting	Production Staging	Production	Staging	Production Staging	
Eyebrow Lake*	3	2	3	2	2		1	1			14
Pelican Lake*	3	2	3	1	2		1	1			13
Cypress Lake*	1	1		3	3			3			11
Dewar Lake*	2	3	2		3						10
Old Wives Lake*	1	2	2		2			3			10
Snipe Lake*	2	3	2		3						10
Beaufield marsh*	2	3	2		3						10
Tatagwa Lake*	3	3	1					3			10
Goose Lake*	1	3	2		2		2				10
White Heron Lake*	3	2	3		2						10
Anerley lakes	2	3	3								8
Stalwart marsh	2	2	2		1						7
Street Lake	1	3	1		2						7
Indi Lake	3	1	3								7
Red Top slough	2	2			2						6
Blizzard-Scory Lake	2	1			3						6
Inglenook Lake	2	3			1						6
Antelope Lake	1	2			2		1				6
Luck Lake	1	3	1		1						6
Reed Lake	2	2	1		1						6
Loverna slough	1	2			3						6
Marengo slough	1	2			3						6

Table S-10a (continued). Analysis of habitat priority ratings for Saskatchewan - Grassland zone.

Name	Duck		Goose		Non-Game	Colonial Nesting	R & E**	Totals
	Production	Staging	Moult	ing	Production	Staging	Production	
Big Stick Lake	1	2	1					6
Highfield Reservoir	1	2		1				6
Junction Reservoir	1	2		2				6
Maxim Lake	2	2	1					5
Payson Lake	1	2	1					5
Muddy Lake	1	2					2	5
Shallow Lake			3					5
Stockwell Lake	1	3	1					5
Milden Lake	2	2	1					5
Cutbank Lake	1	2					2	5
Lake of the Rivers	1	2				1		5
Teo Lake	1	2					2	5
Buffalo Coulee	1	2					2	5
Opuntia Lake	1	2					2	5

\* Areas included in top five ratings and shown in Fig. S-10.

\*\* Rare and Endangered Migratory Birds.

Table S-10b. Analysis of habitat priority ratings for Saskatchewan - Aspen Parkland zone.

Name	Duck			Goose			Non-Game		Colonial Nesting		R & E		Totals
	Production	Staging	Moulting	Production	Staging	Moulting	Production	Staging	Production	Staging	Production	Staging	
Ponass Lake*	3	3	3	2	3	1	1	1	2				19
Waterhen Marsh*	3	3	2	3	3	3			2				19
Kutawagan Lake*	2	3	3	2	3		1	1	2		2		19
Foam Lake*	2	3	2	3	1	1		1	2	1			16
Little Quill Lake*	1	3		2	3	3		1	2				15
Middle Quill Lake*	1	3		2	3	2		2	2				15
Last Mountain Lake*	1	3		1	2			2	3				15
Lenore Lake	1	2	2	2	2	2		1					12
Yorkton lakes	2	3	2	1	1				2				11
Scentgrass Lake	2	2	3			2			2				11
Pelican Lake	3	2	2						3				10
Ranch Lake	2	2	2	2	1								9
Thackeray Lake	3	2	3										8
Kimoff Lake	3	2	2						1				8
Stalwart marsh	2	2	2			2							8
Cactus Lake	1	3				3							7
Middle Lake	1	2		2	2								7
Midnight Lake	2	2									3		7
Basin	1	2		1	2			1					7
Redberry Lake	1	2							3				6
Horseshoe Lake	3	1							2				6
Fulton Lake	2	3							1				5
Little Jumping Lake	1	1	3										5
Manito Lake	1	1	2	1									5
Witchehan Lake	2	2				1							5
West Seagram Lake	1	2	2										5
Stoney Lake	1	1									3		5
Radisson Lake	1	2				1		1					5
Kitako Lake	1	2	1			1							5

\* Areas included in top five ratings and shown in Fig. S-10.



Table S-10c. Analysis of habitat priority ratings for Saskatchewan - Boreal Forest zone.

Name	Duck		Goose		Non-Game		Colonial Nesting		R & E		Totals
	Production	Staging	Moultng	Production	Staging	Moultng	Production	Staging	Production	Staging	
Cumberland Delta*	3	3	3	1	1		1	1	2		15
Beauval marsh*	3	3	3				1	1	1		12
Cheal-Russell lakes*	3	3	2	1	1				1		11
Black Duck-Egg lakes*	3	3	2								8
Pagan (Little Jackfish) Lake*	3	3	1								7
Little Rush-Chitek lakes*	3	2	1			1					7
Oliver slough*	3	2	2								7
Sisona Lake*	2	3	2								7
Meadow Lake*	2	3	1		1						7
Pritchard Lake	1	3	2								6
Kazan Lake	1	2	1					2			6
Ross Lake	2	2	1								5
Dore Lake	1							3			4
Lavallee Lake	1							3			4
Primose Lake	1							3			4
Suggi Lake	1							3			3
Delaronde Lake	1							2			3

\* Areas included in top five ratings shown in Fig. S-10.

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5. MIGRATORY BIRD  
HABITAT PRIORITIES

Manitoba

Prepared by the  
Habitat Management Section,  
Western and Northern Region,  
Canadian Wildlife Service

June, 1979

### 5.1 Introduction

Manitoba contains a wide diversity of migratory bird habitat, the most notable being the prairie pothole region of the aspen parkland and grassland vegetation zones situated in the southwestern portion of the province. Although this region is small, it is very important to many species of migratory birds, especially waterfowl.

The majority of Manitoba lies within northern coniferous forest, however, this area is comprised of three distinct vegetation zones: The boreal forest zone, lichen woodland and Hudson Bay lowlands. Despite the vastness of these zones, the migratory bird productivity and utilization is relatively low. In addition to the above vegetation zones Manitoba contains a vegetation zone not found in the other prairie provinces. The tundra zone unique to Manitoba is extensively utilized by migratory birds. Figure M outlines the major vegetation zones for Manitoba.

The presence of large water bodies, such as Lake Winnipeg, Lake Manitoba, and the Hudson Bay, creates some special habitat situations; for example, the islands, bays and shores of these lakes are of particular value to many non-game birds during migration. Also associated with these larger lakes are complex river and wetland systems which are utilized by many water birds.

Generally speaking, the production habitat base for migratory birds in the grassland and aspen parkland is being eroded by the intensification of agriculture. This has resulted in a gradual decline of migratory bird species that are dependent upon prairie pothole habitat.

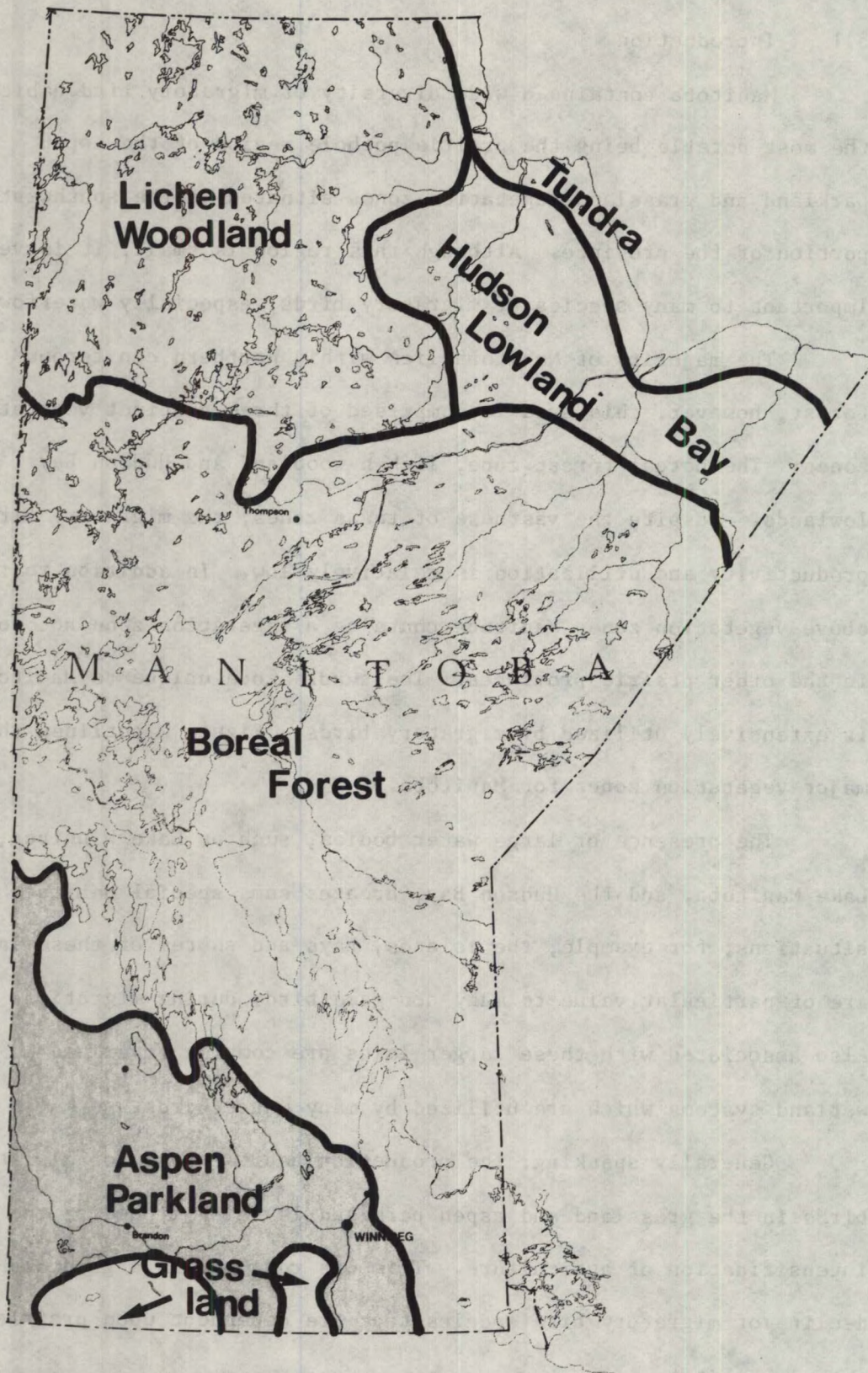


Fig.M. Major vegetation zones - Manitoba.

Staging habitat in the grassland and aspen parkland is not in imminent danger of being lost; however, the integrity of these areas is threatened by agricultural interests.

Production, moulting and staging habitats in the boreal forest could potentially be threatened by industrialization and hydro and pipeline development in northern Manitoba.

#### 5.2 Habitat Priorities for Ducks

In Manitoba, the primary production habitat for ducks is located in the grassland and aspen parkland of southwestern Manitoba and encompasses an area of approximately 800 thousand hectares. Of all ducks breeding in Manitoba, 60% breed in this region; consequently, the loss of this high quality production habitat is considered to be the limiting factor in maintaining present population levels. Seven high priority areas of production habitat in the grassland and aspen parkland zone are identified in Table M-1.

The boreal forest vegetation zone, during years of normal precipitation, provides production habitat for approximately 30% of all ducks breeding in Manitoba; in drought years, this zone provides alternate production habitat for up to 50% of the ducks breeding in Manitoba. Because of the vastness of this zone and the lack of information, it is very difficult to prioritize specific areas.

The tundra zone provides approximately 5 million acres of production habitat for ducks from the Mississippi and Atlantic flyways. Although not as productive as southwestern Manitoba, this zone contributes significantly to fall duck populations in eastern Canada.

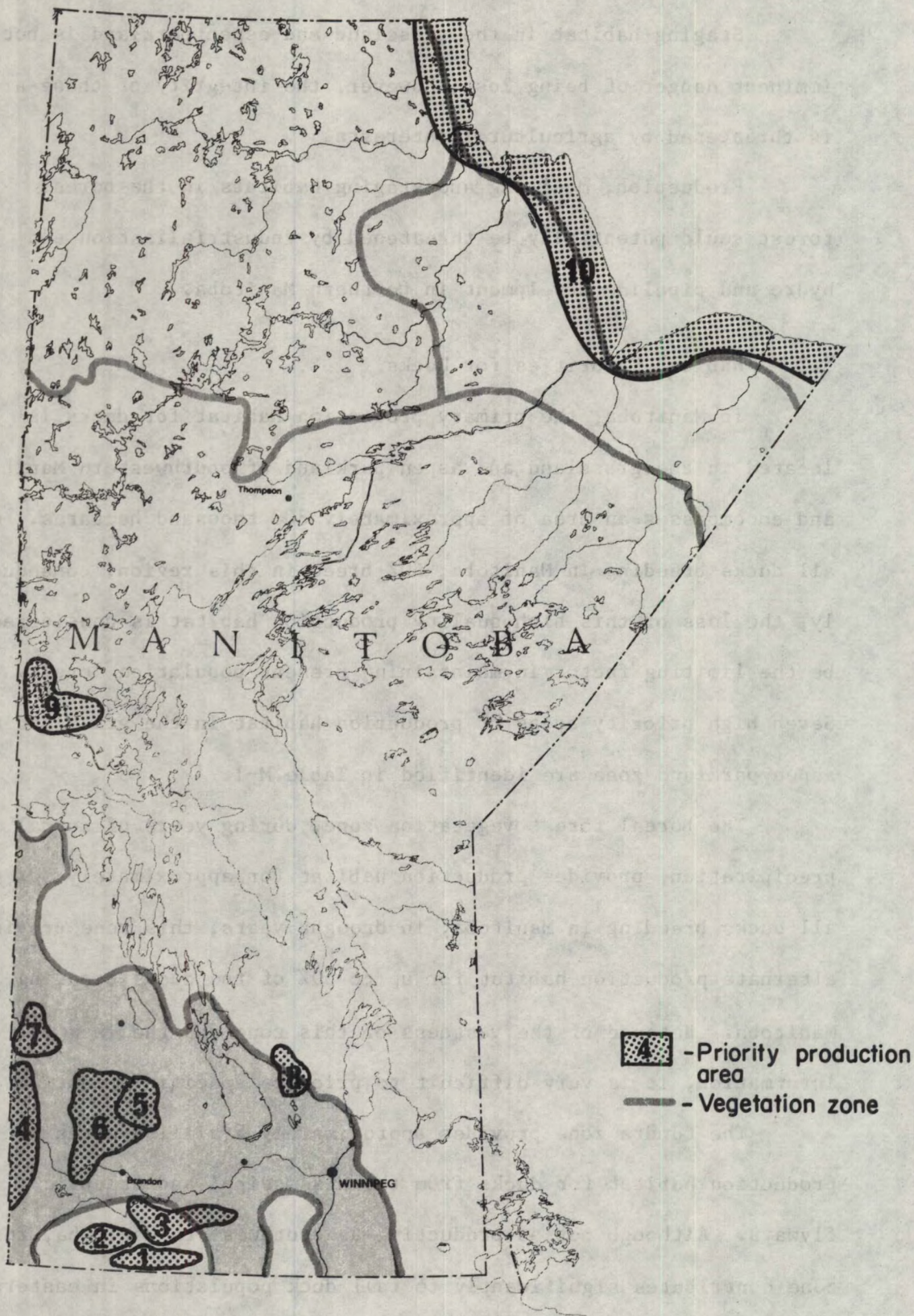


Fig.M-1. Priority duck production habitat in Manitoba.



Table M-1. Priority duck production habitat in Manitoba.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Killarney	High	Grassland	96,000	7, 14, 13
2	Boissevain	High	Grassland	92,000	7, 14, 13
3	Baldur	High	Aspen Parkland	84,320	7, 14, 13
4	Reston	High	Aspen Parkland	16,000	7, 14, 13
5	Minnedosa	High	Aspen Parkland	16,000	7, 14, 13
6	Hamiota	High	Aspen Parkland	211,968	7, 14, 13
7	Roblin	High	Aspen Parkland	31,200	7, 14, 13
8	Interlake	Medium	Aspen Parkland	2,000	7, 14
9	The Pas	High	Boreal Forest	40,000	5, 7
10	Hudson's Bay Coast	High	Tundra	2,000,000	7, 14
	Grassland total			188,000	
	Aspen Parkland total			361,488	
	Boreal Forest total			40,000	
	Tundra total			2,000,000	
	Grand total			2,589,488	

Figure M-1 illustrates the priority duck production areas of Manitoba.

Staging habitat is uniformly distributed throughout the grassland, aspen parkland and southern boreal forest zones, and is utilized by ducks produced within the southern vegetation zones and northern portions of Manitoba. Figure M-2 indicates major staging areas in Manitoba.

Although specific information is unavailable with regard to moulting areas utilized by ducks, the majority of these areas coincide with staging habitat. Most of the moulting areas are found in the aspen parkland, the boreal forest assuming less significance.

Figure M-3 illustrates the major moulting areas of Manitoba.

### 5.3 Habitat Priorities for Geese

Manitoba provides production habitat for three distinct populations of Canada geese and a small flock of Snow geese which utilize the Central and Mississippi flyways. These populations include the Rochester flock of giant Canada geese whose primary production area is the Interlake area situated in the aspen parkland vegetation zone; the Eastern Prairie Population (EPP), which nests on the tundra and Hudson Bay lowland zones; the Western Prairie Population (WPP), which breeds in the northwest quarter of the boreal forest and lichen woodland zone. Small flocks of Snow geese utilize the tundra zone for production habitat.

The quality and quantity of production habitat appear to be adequate to sustain present goose population levels; however, any

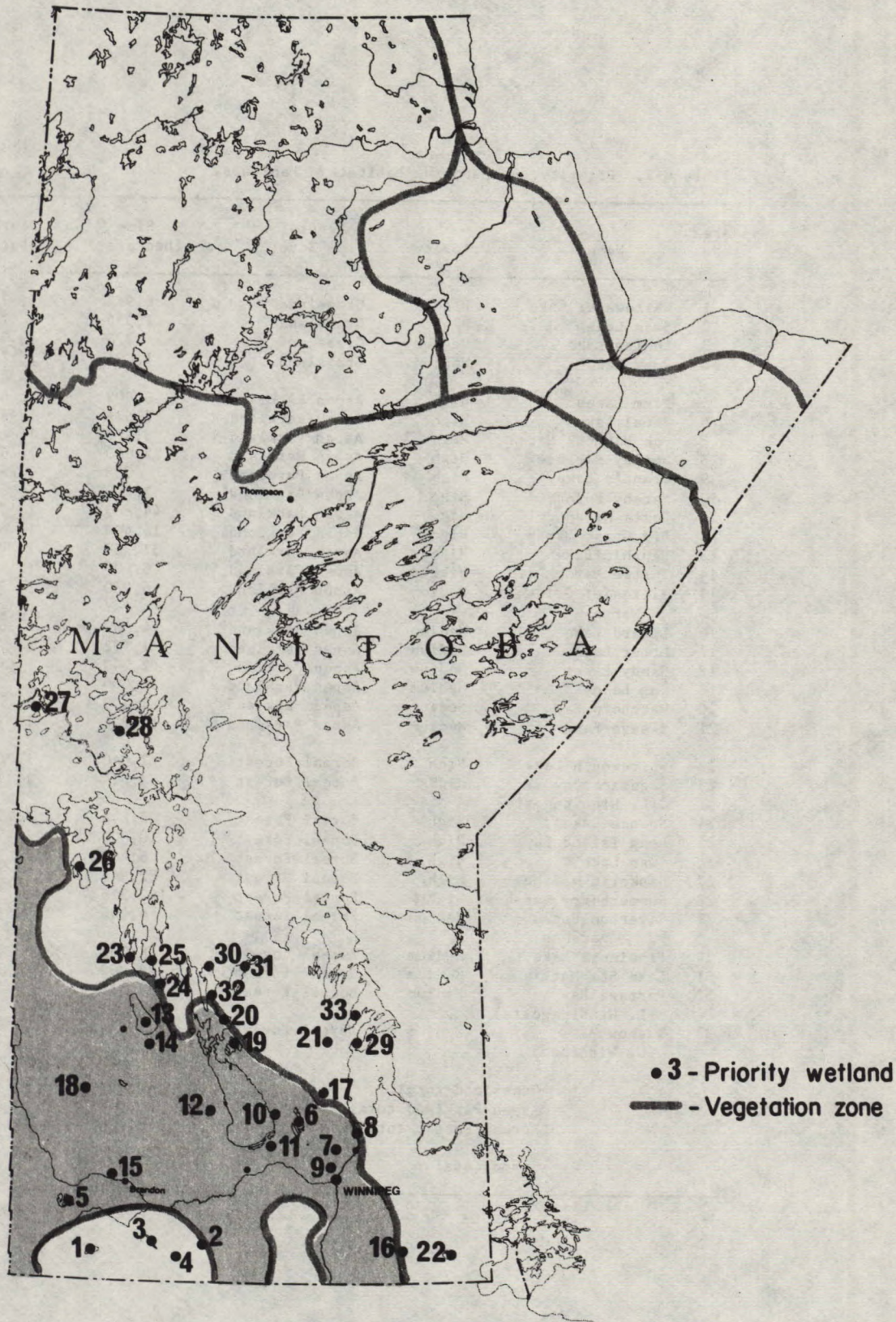


Fig.M-2. Priority duck staging habitat in Manitoba.

Table M-2. Priority duck staging habitat in Manitoba.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Whitewater Lake	High	Grassland	6,912	1, 7, 14
2	Swan Lake	High	Grassland	1,536	1, 7, 14
3	Louise Lake	Medium	Grassland	278	1, 7, 14
4	Rock Lake	Medium	Grassland	1,364	1, 7, 14
5	Plum Lakes	High	Aspen Parkland	6,908	1, 6, 7, 14
6	Shoal Lakes	High	Aspen Parkland	2,626	1, 6, 7, 14
7	Oak Hammock Marsh	High	Aspen Parkland	8,200	1, 6, 7, 14
8	Netley marshes	High	Aspen Parkland	22,000	1, 6, 7, 14
9	Grant's Lake	High	Aspen Parkland	358	1, 6, 7, 14
10	Marshy Point	High	Aspen Parkland	2,400	1, 6, 7, 14
11	Delta Marsh	High	Aspen Parkland	44,800	1, 7, 14
12	Big Grass Marsh	High	Aspen Parkland	16,400	1, 6, 7, 14
13	Dauphin Lake	High	Aspen Parkland	51,200	1, 7, 14
14	Turtle Marsh	High	Aspen Parkland	6,900	1, 7, 14
15	Alexander Griswold Marsh	Medium	Aspen Parkland	6,000	1, 7, 14
16	Lizard Lake	Medium	Aspen Parkland	4,000	1, 6, 7, 14
17	Otter Lake	Medium	Aspen Parkland	1,792	1, 7, 14
18	Sandy Lake	Medium	Aspen Parkland	2,240	1, 7, 14
19	Dog Lake	Medium	Aspen Parkland	32,000	1, 7, 14
20	Watchorn Bay	Medium	Aspen Parkland	2,400	1, 7, 14
21	Sleeve Lake	Medium	Aspen Parkland	14,784	1, 7, 14
22	Whitemouth Lake	High	Boreal Forest	7,040	1, 6, 7, 14
23	Sagemace Bay (L. Winnipegosis)	High	Boreal Forest	2,024	1, 7, 14
24	Spence Lake	High	Boreal Forest	3,240	1, 7, 14
25	Long Island Bay	High	Boreal Forest	10,000	1, 7, 14
26	Swan Lake	High	Boreal Forest	6,400	1, 7, 14
27	Saskeram marshes	High	Boreal Forest	82,944	1, 5, 14
28	Summerberry marshes	High	Boreal Forest	147,376	1, 5, 14
29	Riverton-Hecla marshes	Medium	Boreal Forest	4,096	1, 6, 7, 14
30	Pineimuta Lake	Medium	Boreal Forest	8,352	1, 7, 14
31	Lake St. Martin	Medium	Boreal Forest	28,000	1, 7, 14
32	Portage Bay (L. Winnipegosis)	Medium	Boreal Forest	69,512	1, 7, 14
33	Washow Bay (L. Winnipeg)	Medium	Boreal Forest	3,840	1, 7, 14
	Grassland total			10,090	
	Aspen Parkland total			225,008	
	Boreal Forest total			372,824	
	Grand total			607,922	

change in the status of this habitat could result in drastic reductions in population. Figure M-4 illustrates production areas utilized by geese in Manitoba.

Goose staging habitat in Manitoba is located in four vegetation zones. The tundra zone is extensively utilized by Canada and snow geese produced in Manitoba, the Arctic and Subarctic regions of Canada. The boreal forest and aspen parkland zones provide staging habitat on Lakes Winnipeg, Manitoba and Winnipegosis and large wetland complexes scattered throughout the southern portions of the province. In the grassland, Whitewater Lake is a major staging area for white-fronted geese. At present the quantity of habitat appear to be sufficient for staging geese. Figure M-5 illustrates priority areas for staging geese.

Very little information exists concerning moulting areas utilized by geese. Generally, a proportion of the breeding geese moult in areas adjacent to production areas; consequently, if production habitat is maintained, moulting habitat will exist for this limited number of geese. Figure M-6 illustrates the locations of these areas.

#### 5.4 Habitat Priorities for Non-game Migratory Birds

Because of species diversity, differences in habitat utilization and the paucity of information, only major points with respect to non-game migratory bird habitat are stressed within each vegetation zone in Manitoba.

With the decline of upland habitat in the southern portions of the grassland and aspen parkland zones, river valleys such as

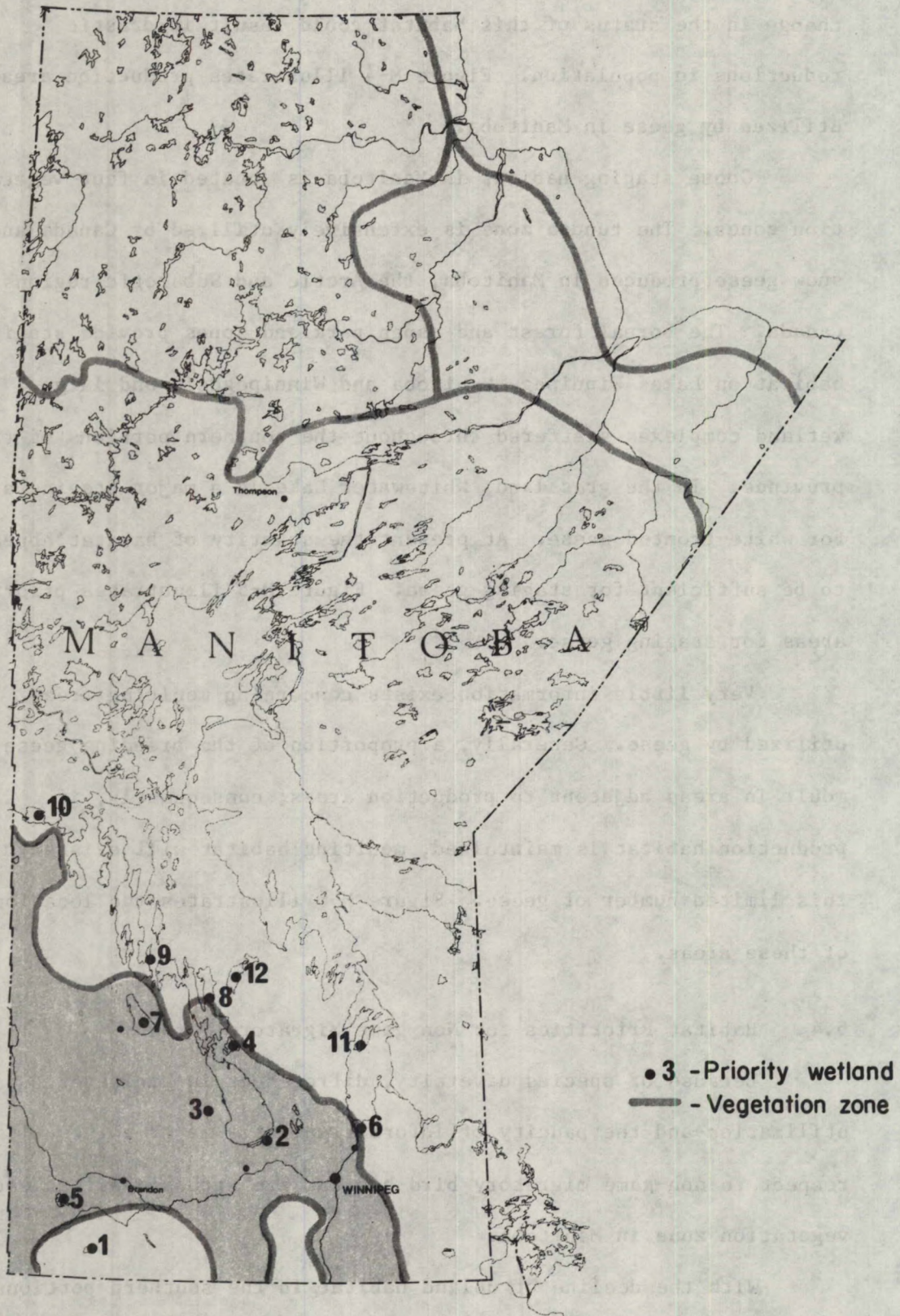


Fig.M-3. Priority duck moulting habitat in Manitoba.

Table M-3. Priority duck moulting habitat in Manitoba.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Whitewater Lake	Medium	Grassland	6,912	1, 14
2	Delta Marsh	High	Aspen Parkland	44,800	1, 6, 14
3	Big Grass Marsh	High	Aspen Parkland	16,400	1, 14
4	Dog Lake	High	Aspen Parkland	32,000	1, 6, 14
5	Plum Lakes	Medium	Aspen Parkland	6,908	1, 14
6	Netley marshes	Medium	Aspen Parkland	27,000	1, 6, 14
7	Dauphin Lake	Medium	Aspen Parkland	51,200	1, 14
8	Portage Bay (L. Winnipegosis)	High	Boreal Forest	64,512	1, 14
9	Long Island Bay	High	Boreal Forest	10,000	1, 14
10	Red Deer Lake	High	Boreal Forest	4,760	1, 14
11	Riverton-Hecla marshes	Medium	Boreal Forest	4,096	1, 6, 14
12	Lake St. Martin	Medium	Boreal Forest	28,000	1, 14
	Grassland total			6,912	
	Aspen Parkland total			178,308	
	Boreal Forest total			111,368	
	Grand total			296,588	

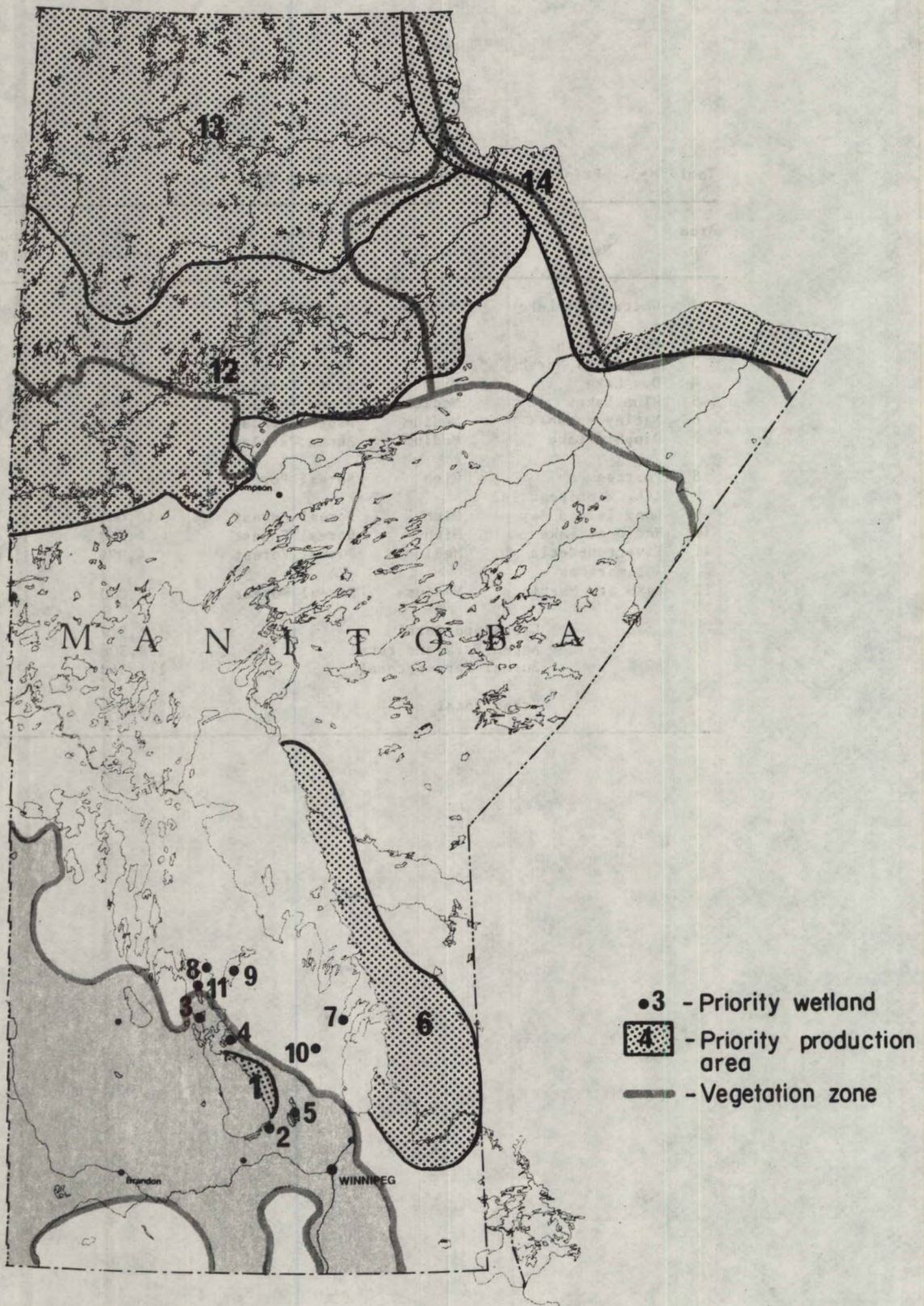


Fig.M-4. Priority goose production habitat in Manitoba.



Table M-4. Priority goose production habitat in Manitoba.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	East Side Lake Manitoba	High	Aspen Parkland	347,200	3, 4, 7, 14
2	Marshy Point	High	Aspen Parkland	2,400	4, 7, 14
3	Reykjavik Point	High	Aspen Parkland	51,200	4, 7, 14
4	Dog Lake	Medium	Aspen Parkland	32,000	4, 7, 14
5	Shoal lakes	Medium	Aspen Parkland	26,262	4, 7, 14
6	East Side Lake Winnipeg	High	Boreal Forest	800,000	3, 7, 14
7	Riverton-Hecla marshes	Medium	Boreal Forest	4,096	4, 7, 14
8	Pineimuta Lake	Medium	Boreal Forest	8,352	4, 7, 14
9	Lake St. Martin	Medium	Boreal Forest	74,000	4, 7, 14
10	Sleeve Lake	Medium	Boreal Forest	14,784	4, 7, 14
11	Peonan Point	Medium	Boreal Forest	18,000	4, 7, 14
12	Churchill River drainage	High	Lichen Woodland & Boreal Forest	1,200,000	10, 12, 14
13	Northern Boreal & Hudson's Bay lowlands	High	Lichen Woodland & Boreal Forest	1,200,000	10, 12, 14
14	Hudson's Bay Coast	High	Tundra	2,000,000	10, 12, 14
	Aspen Parkland total			459,062	
	Boreal Forest total			919,232	
	Lichen Woodland total			2,400,000	
	Tundra			2,000,000	
	Grand total			5,778,294	

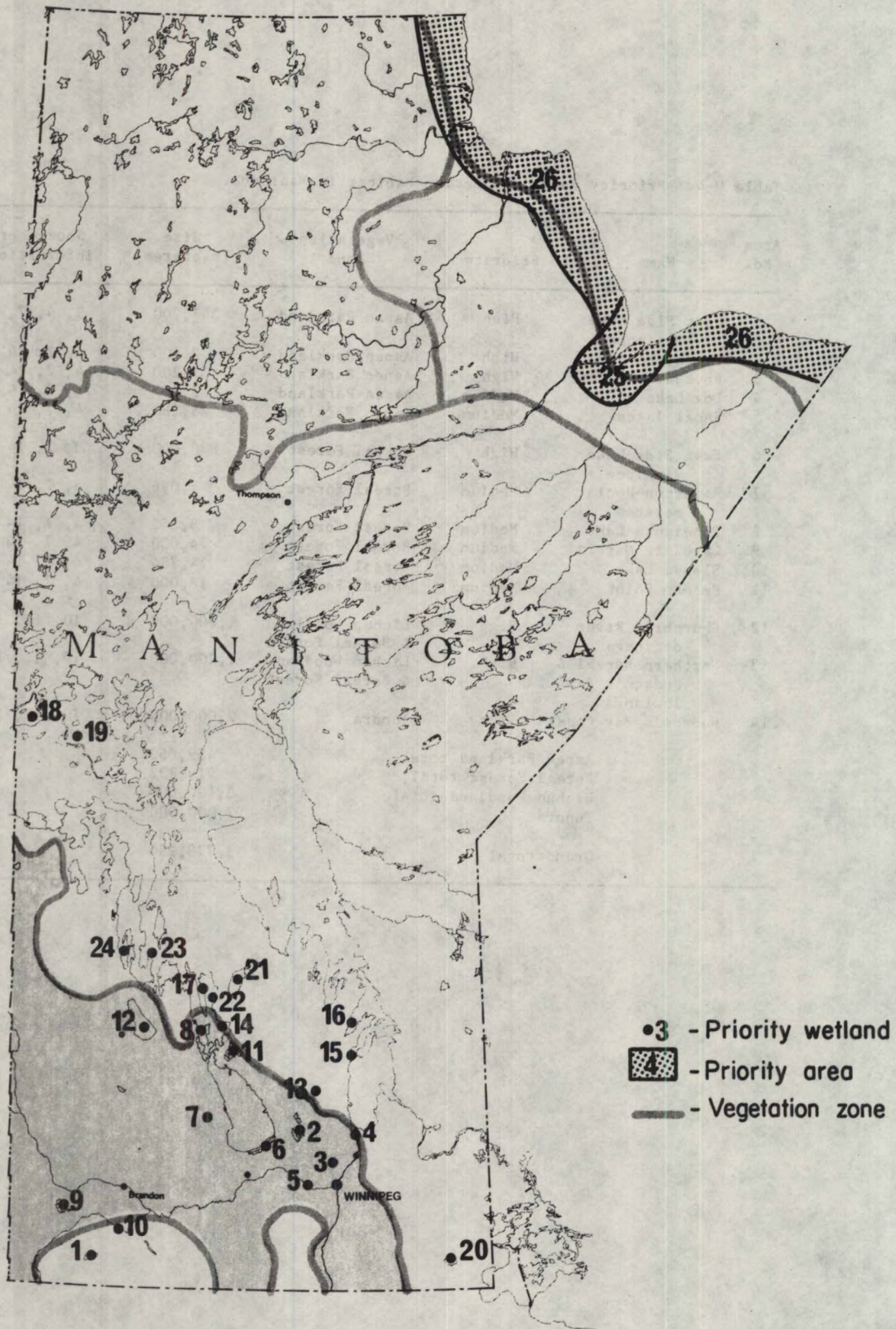


Fig.M-5. Priority goose staging habitat in Manitoba.

Table M-5. Priority goose staging habitat in Manitoba

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Whitewater Lake	High	Grassland	6,912	1, 4, 7
2	Shoal lakes	High	Aspen Parkland	26,267	1, 4, 7
3	Oak Hammock	High	Aspen Parkland	3,200	1, 4, 6, 7
4	Netley marshes	High	Aspen Parkland	22,000	1, 4, 6, 14
5	Grant's Lake	High	Aspen Parkland	358	1,4,6,9,14
6	Delta Marsh	High	Aspen Parkland	44,800	1, 4, 7, 14
7	Big Grass Marsh	High	Aspen Parkland	16,400	1, 4, 7, 14
8	Reykjavik Point	High	Aspen Parkland	51,200	4, 7, 14
9	Plum lakes	Medium	Aspen Parkland	10,800	1, 4, 7
10	Louise Lake	Medium	Aspen Parkland	300	1, 4, 7
11	Dog Lake	Medium	Aspen Parkland	32,000	1, 4, 7, 14
12	Dauphin Lake	Medium	Aspen Parkland	51,200	1, 7
13	Sleeve Lake	Medium	Aspen Parkland	14,784	1, 4, 7
14	Watchorn Bay	Low	Aspen Parkland	2,400	1, 7
15	Riverton-Hecla marshes	High	Boreal Forest	4,096	1, 4, 6, 14
16	Washow Bay (L. Winnipeg)	High	Boreal Forest	3,840	1, 4, 7, 14
17	Peonan Point	Medium	Boreal Forest	18,000	4, 7, 14
18	Saskeram marshes	Medium	Boreal Forest	82,940	1, 5, 7
19	Summerberry marshes	Medium	Boreal Forest	147,376	1, 4, 7
20	Whitemouth Lake	Medium	Boreal Forest	7,040	1, 3, 6, 7
21	Lake St. Martin	Low	Boreal Forest	74,000	1, 4, 7
22	Portage Bay (L. Winnipegosis)	Low	Boreal Forest	64,510	1, 7
23	Long Island Bay	Low	Boreal Forest	10,000	1, 7
24	Sagemace Bay	Low	Boreal Forest	2,024	1, 7
25	Nelson River estuary	High	Tundra	12,000	1,10,12,14,7
26	Hudson's Bay coast	High	Tundra	2,000,000	1,10,12,14,7
	Grassland total			6,912	
	Aspen Parkland total			224,509	
	Boreal Forest total			395,826	
	Tundra total			2,012,000	
	Grand total			2,639,247	

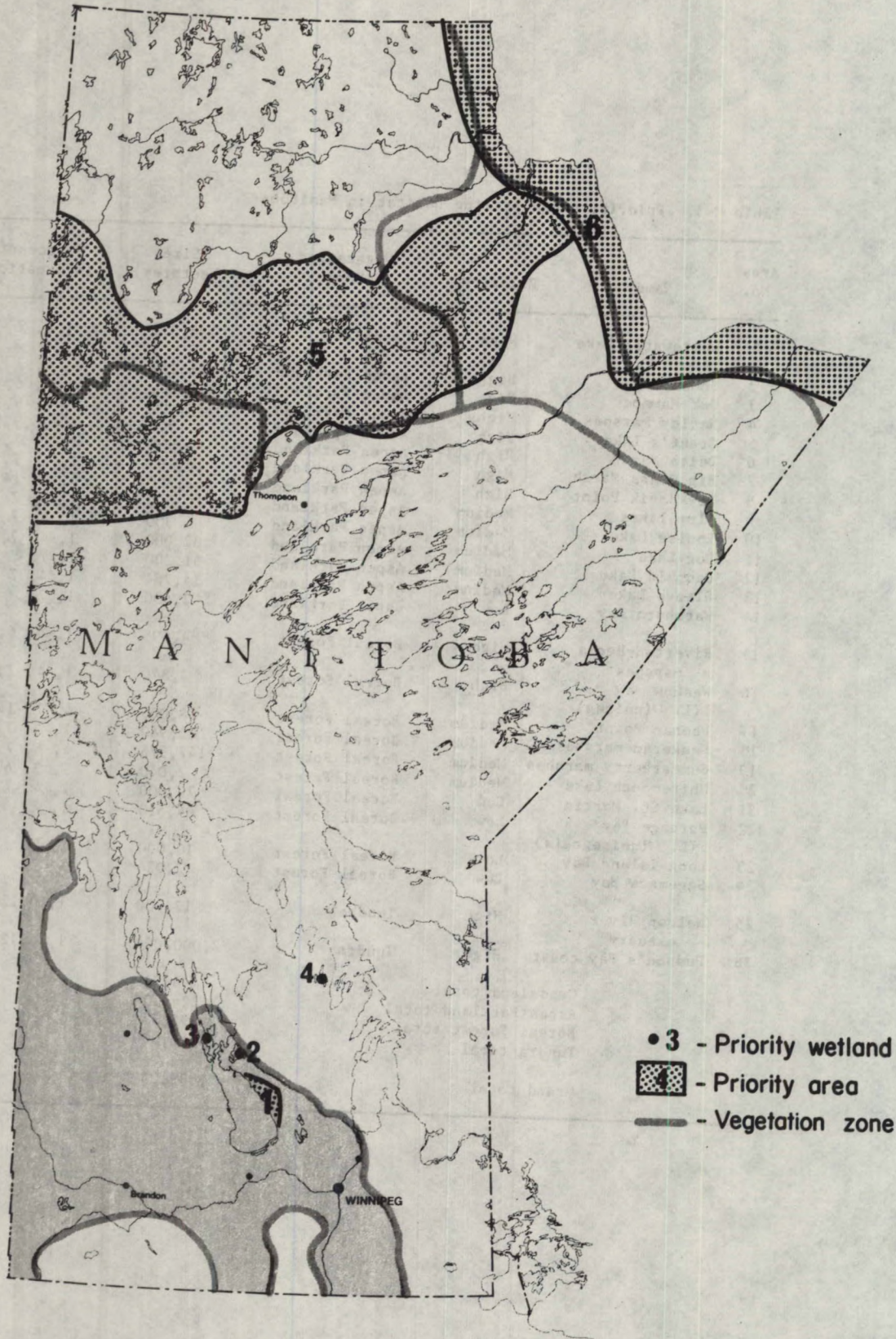


Fig.M-6. Priority goose moulting habitat in Manitoba.

Table M-6. Priority goose moulting habitat in Manitoba

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Marshy Point	High	Aspen Parkland	6,000	4
2	Dog Lake	High	Aspen Parkland	32,000	4
3	Reykjavik Point	High	Aspen Parkland	14,000	4
4	Lakes St. Martin, St. Michael & St. George	High	Boreal Forest	10,240	4
5	Churchill River drainage	High	Lichen Woodland & Boreal Forest	1,200,000	4
6	Hudson's Bay coast	High	Tundra	2,000,000	4
	Aspen Parkland total			52,000	
	Boreal Forest total			10,240	
	Lichen Woodland total			1,200,000	
	Tundra total			2,000,000	
	Grand total			3,262,240	

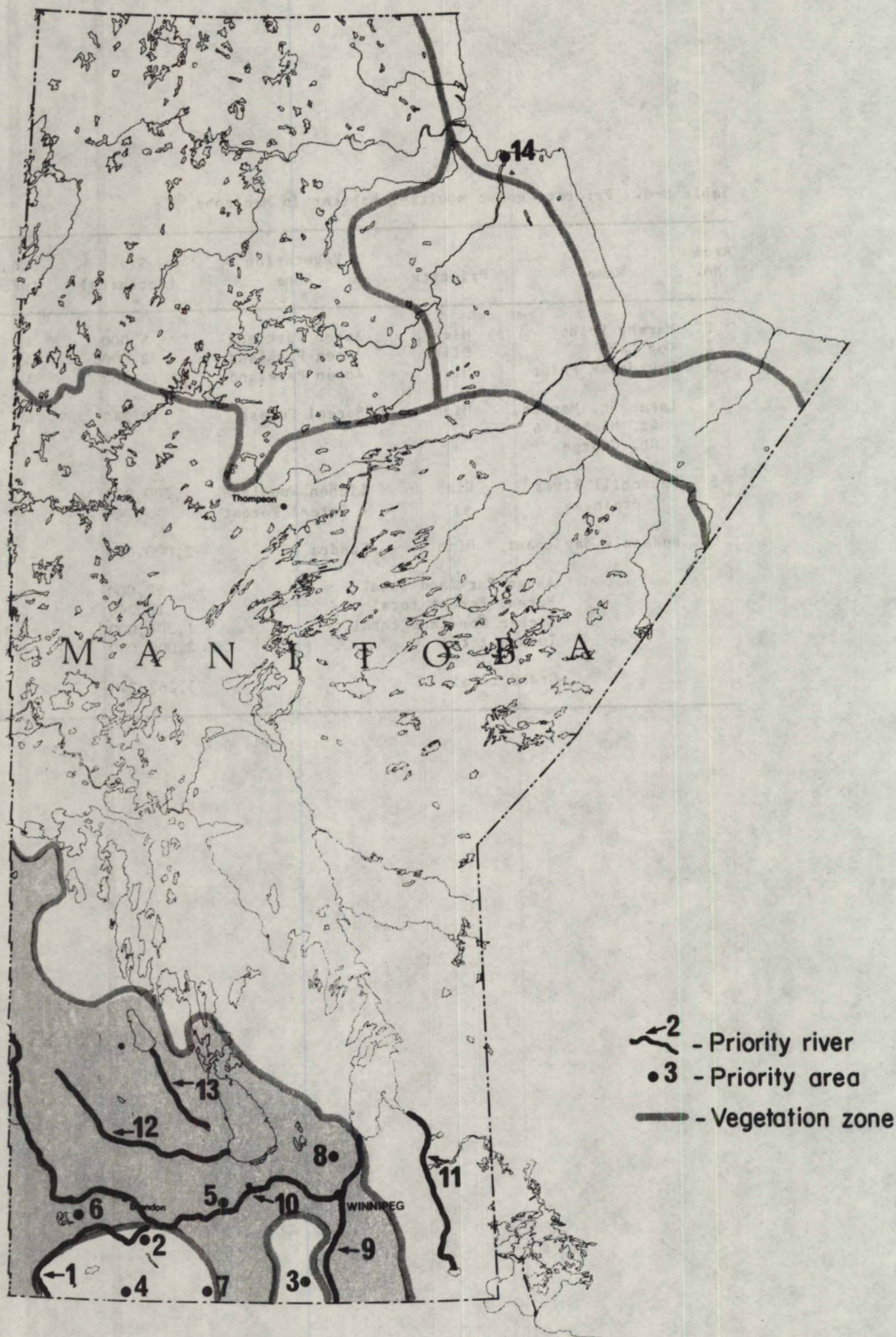


Fig. M-7. Priority upland habitat for non-game migratory birds in Manitoba.

Table M-7. Priority upland habitat for non-game migratory birds in Manitoba.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
1	Souris River	High	Grassland	26,600	2, 9, 11
2	CFB Shilo I.B.P. site	High	Grassland	200	24, 25
3	Grenthal Prairie I.B.P. site	High	Grassland	1	24, 25
4	Turtle Mountains	High	Grassland	25,600	25
5	Chickadee land I.B.P. site	High	Aspen Parkland	200	24, 25
6	Plum lakes	High	Aspen Parkland	1,000	24, 25
7	Ninette Prairie I.B.P. site	High	Aspen Parkland	240	24, 25
8	Stony Mountain I.B.P. site	High	Aspen Parkland	32	24, 25
9	Red River	High	Aspen Parkland	230,040	2, 9, 11
10	Assiniboine River	High	Aspen Parkland	38,400	2, 9, 11
11	Whitemud River	Medium	Aspen Parkland	25,600	2, 9, 11
12	Grassy River	Medium	Aspen Parkland	12,800	2, 9, 11
13	Whitemouth River	Medium	Boreal Forest	19,200	2, 9, 11
14	Churchill Twin Lakes Hill IBP site	High	Tundra	4,000	2, 9, 11
	Grassland total			52,401	
	Aspen Parkland total			308,312	
	Boreal Forest total			19,200	
	Tundra total			4,000	
	Grand total:			383,913	

Red, Assiniboine, and Souris are considered a high priority for non-game migratory birds because they accommodate a diversity of species and are heavily utilized throughout the year.

Climax communities of native grasslands are rare in Manitoba and are under constant threat from other land uses; hence, species of migratory birds such as the Baird's and Clay-colored sparrow and the Lark bunting, which are dependant on this type of habitat, have shown significant population declines. This type of habitat is rated as high priority.

The tundra zone provides some of the most unique and important breeding habitat for many migratory birds in Manitoba and, therefore, is considered a high priority habitat zone.

Throughout Manitoba there is a wide variety of wetland habitat, all being utilized by non-game migratory birds. Specific wetlands have not been identified in this document for non-game migratory birds. The needs of most species will be satisfied if the diversity of aquatic habitats described in the waterfowl section of this document is maintained in reasonable quantity.

The northern portions of the boreal forest and aspen parkland comprise the major component of the vegetation zones in the province of Manitoba. Although little information exists on the abundance of non-game migratory birds utilizing this region, this status may change as habitat requirements for species in this area are better understood.



### Colonial Nesting Migratory Birds

Colonial nesting migratory birds are distributed throughout the aspen parkland, boreal forest and tundra vegetation zones of Manitoba. In the aspen parkland, colonial nesting species are found in the large wetland complexes such as Dog Lake and Delta Marsh. In the boreal forest, they usually nest on islands of large lakes such as Kawinaw and Katimik lakes. Colonial nesting species of migratory birds are particularly susceptible to human disturbance; therefore, as the recreational demands by the public increase, areas utilized by these species may be considered to be a high priority for protection purposes. Figure M-8 illustrates priority production habitat for colonial nesting birds.

#### 5.5 Habitat Priorities for Rare and Endangered Migratory Birds

The Whooping crane, Greater sandhill crane and the Hudsonian godwit, which inhabit Manitoba for a portion of their life cycle, are classified as rare and endangered migratory birds.

##### Whooping Crane

Presently, there are no Whooping cranes breeding in Manitoba. Although, there have been several sightings of them during migration, their use of specific areas is so variable that no priority areas have been identified.

There is a possibility that, in the future, Whooping cranes will be transplanted into Manitoba using Sandhill cranes as foster parents, and making it necessary to provide priority areas for the protection of these birds.

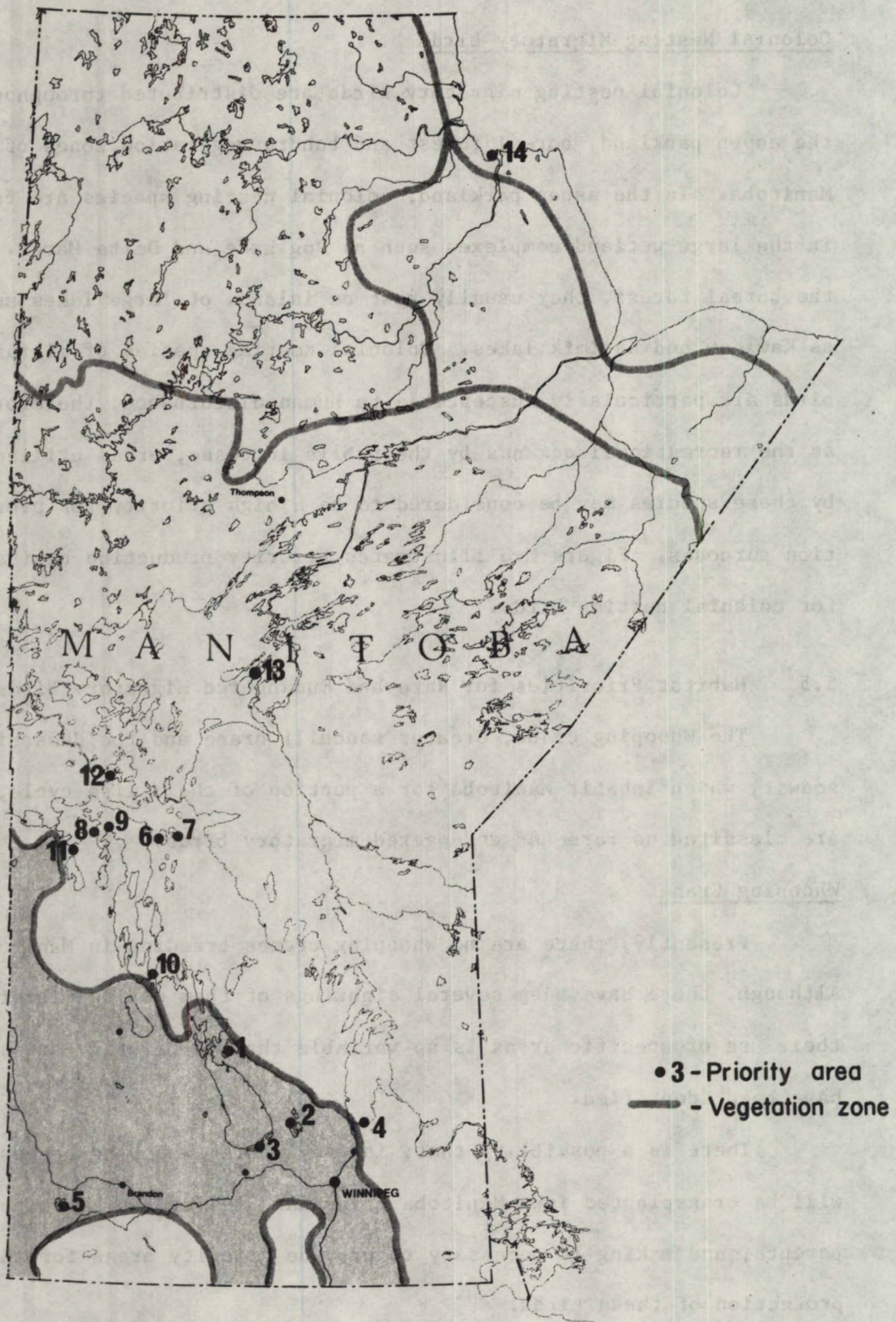


Fig. M-8. Priority production and staging habitat for colonial nesting migratory birds in Manitoba.

Table M-8. Priority production and staging habitat for colonial nesting migratory birds in Manitoba.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Colonial nesting species	Source of information
1	Dog Lake	High	Aspen Parkland	53	C, P, Gs, Ts	11, 2, 25
2	Shoal Lakes	Medium	Aspen Parkland	61	C, Gs, Ts, P	
3	Delta Marsh	Medium	Aspen Parkland	70	Ts, Gs, Wg, C	11, 2, 25
4	Netley marshes	Low	Aspen Parkland	121	Wg	11, 2, 25
5	Plum Lakes	Low	Aspen Parkland	10	Wg	11, 2, 15
6	Kawinaw Lake	High	Boreal Forest	7,790	P, C	15, 16, 17
7	Katimik Lake	High	Boreal Forest	4,958	P, C	15, 16, 17
8	Spruce Island	High	Boreal Forest	673	P, C, Rbg, Ct, Kt	5, 25
9	Channel Island	High	Boreal Forest	668	Wg, C, Rbg, Gs, Ts, Gbh, St	5, 25
10	Twin Islands	Medium	Boreal Forest	809	Rbg, Hg, Gbh, Wg, C	2, 15
11	Dawson Bay	Medium	Boreal Forest	809	Wg, Rbg, Hg, Gbh	15, 16, 17, 18
12	Saskatchewan River Delta	Low	Boreal Forest	16	Gbh, Gs, Ts, Bcrh	5
13	Kiskitto Lake	Low	Boreal Forest	2,137	Rbh, Hg, Ts	13
14	Churchill tundra	High	Tundra	303	Gs, Ct, Hg, Ts	
			Aspen Parkland	315		
			Boreal Forest total	17,860		
			Tundra total	303		
			Grand total	18,478		

## Colonial Nesting Specied Legend

Bcnh = Black-crowned Night Heron  
 C = Cormorant  
 Ct = Common Tern  
 Gbh = Great Blue Heron  
 Gs = Gull spp.

Hg = Herring Gull  
 Kt = Caspian Tern  
 P = Pelican  
 Rbg = Ring-billed Gull  
 Ts = Tern spp.  
 Wg = Western Grebe

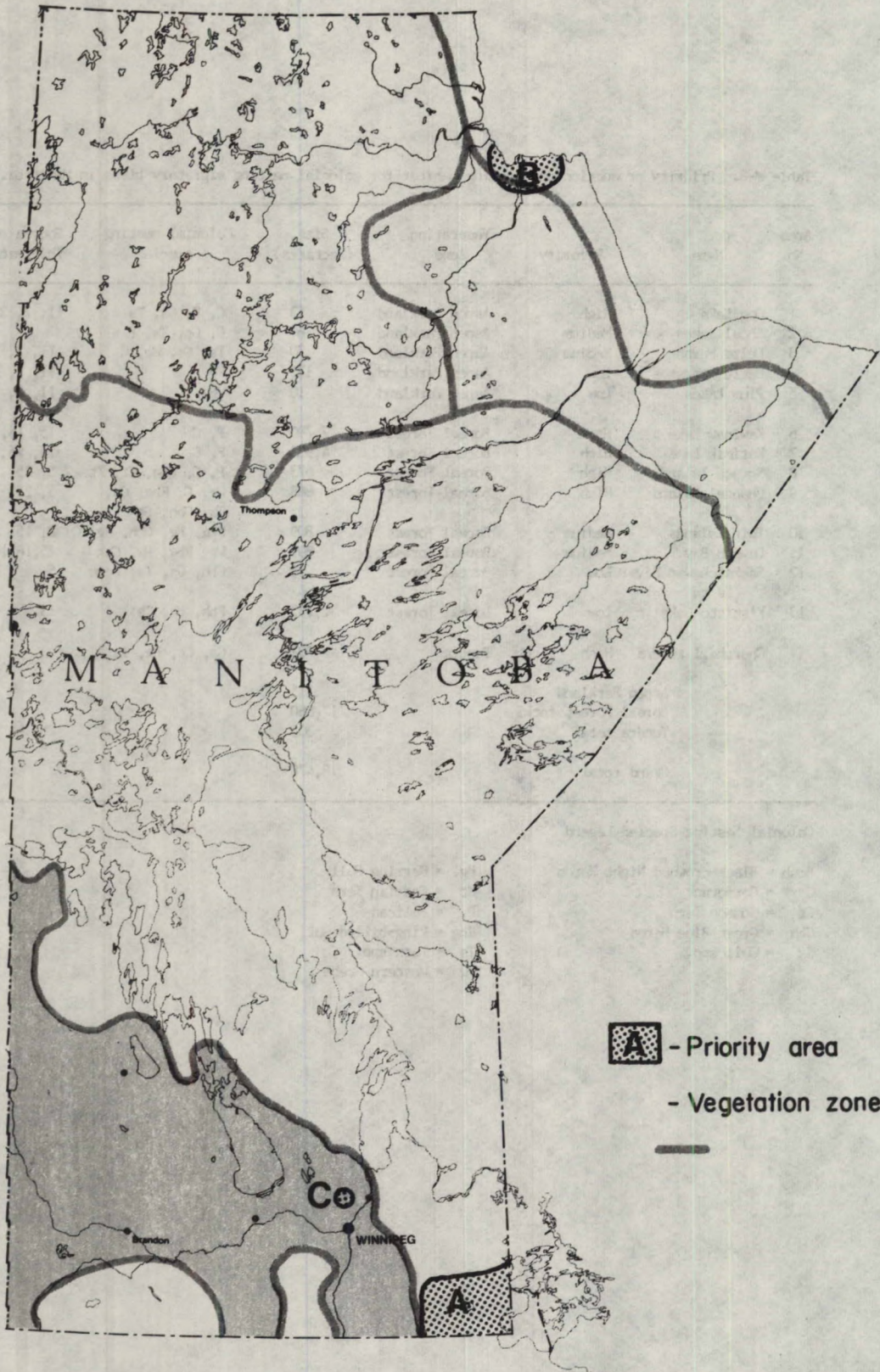


Fig. M-9. Priority production and staging habitat for rare and endangered migratory birds in Manitoba.

Table M-9. Priority production and staging habitat for rare and endangered migratory birds in Manitoba.

Area No.	Name	Priority	Vegetation Zone	Size (hectares)	Source of information
A	Sprague bog-forest complex	High	Boreal Forest	20,000	20, 21, 22
B	Churchill tundra	High	Tundra	4,000	23
C	Oak Hammock Marsh	High	Aspen Parkland	3,200	2, 11

### Greater Sandhill Cranes

The Greater sandhill crane is classified as a rare, but not endangered species. Recent information indicates that Greater sandhill cranes nest in the boreal forest zone of southeastern Manitoba; consequently, specific areas utilized by this species should be identified and designated high priority for preservation purposes. No information exists on the population status of this species in Manitoba.

### Hudsonian Godwit

The Hudsonian godwits migrate through Manitoba and during the spring migration, have been observed fairly regularly at Oak Hammock Marsh.

This species nests on the tundra in the vicinity of Churchill Manitoba. Although habitat does not appear to be limiting, it should be classified as a high priority area because of the sensitivity of these birds to human disturbance.

## 5.6 Analysis of Priority Ratings

To demonstrate the combined ratings for each priority area Table M-10 was developed. This information indicates the relative importance of all wetland priority areas within the same vegetation zone. The top five areas for each zone are illustrated in Figure M-10. When more than one priority area achieved the same point total all areas were included. This resulted in more than 5 areas being shown on the map for the same vegetation zones.

In the grassland zone of Manitoba priority areas are important for staging of ducks and to a limited degree geese.

In the aspen parkland Delta marsh and Dog Lake received the highest total rating. High priority areas in the Manitoba parklands were considered most important for staging of migratory birds and to a lesser extent production and some moulting.

In the boreal forest Manitoba priority areas were considered most important for duck staging and moulting and goose production and staging. The Riverton-Hecla Marsh received the highest total rating in this zone.

All priority areas shown in Figure M-10 are considered very valuable to the migratory bird resource and special attention will be given to these areas when proposing new habitat initiatives in Manitoba.

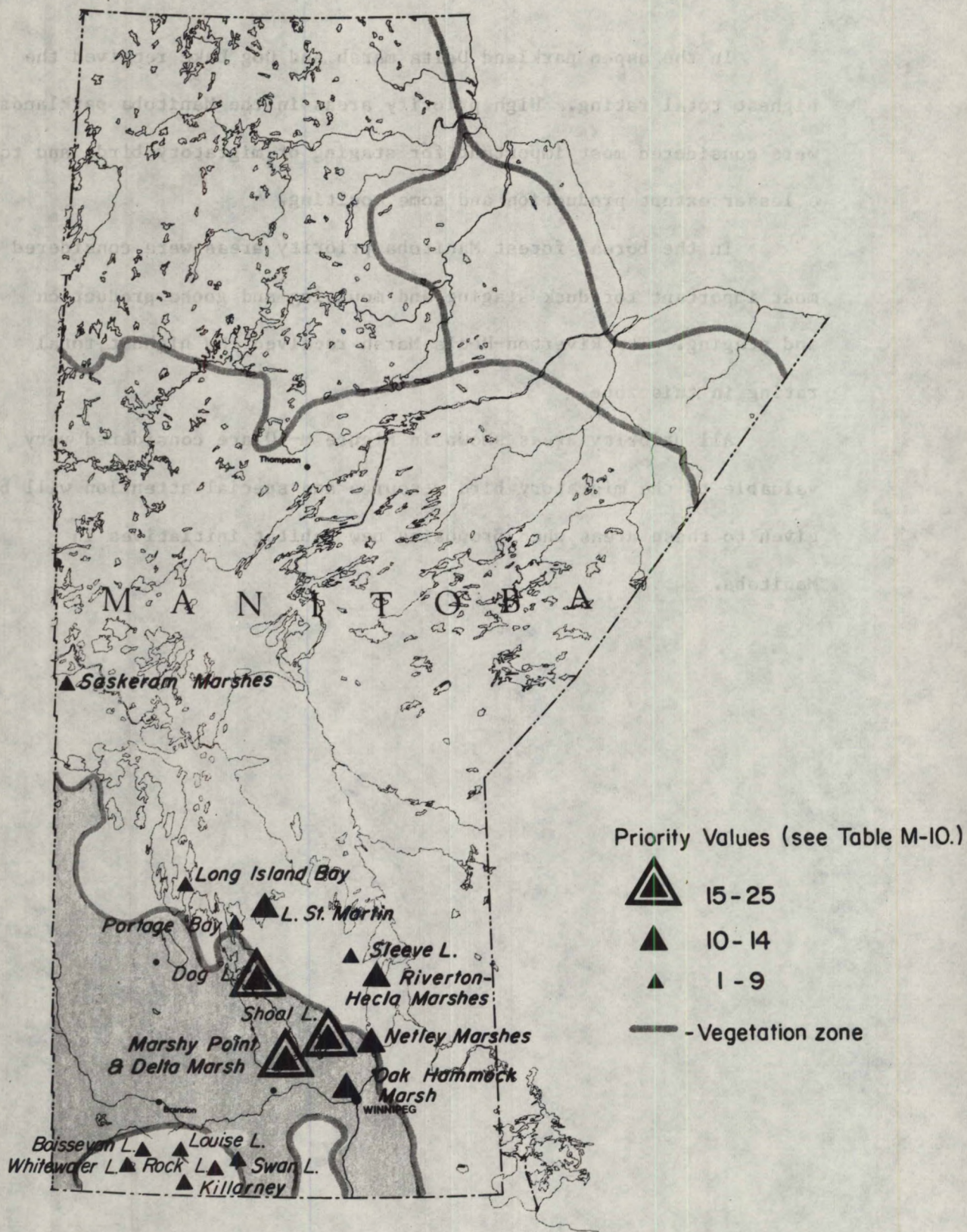


Fig.M-10. Key habitat priority area - Manitoba.



Table M-10a. Analysis of habitat priority ratings for Manitoba - Grassland zone.

NAME	DUCK		GOOSE		COLONIAL NESTING	R&E** and NON-GAME	TOTALS
	Production	Staging Moulting	Production	Staging Moulting	Production Staging	Production Staging	
Whitewater Lake *	3	2		3			8
Louise Lake *	2			2			4
Swan Lake *	3						3
Rock Lake *	2						2
Killarney *	2						2
Boissevain *	2						2

\* Areas included in top five ratings and shown in Fig. M-10.

\*\* Rare and Endangered Migratory Birds.

Table M-10h. Analysis of habitat priority ratings for Manitoba - Aspen Parkland zone.

NAME	DUCK			GOOSE			COLONIAL NESTING		R&E and NON-GAME		TOTALS
	Production	Staging	Moulting	Production	Staging	Moulting	Production	Staging	Production	Staging	
Delta Marsh *	2	3	3		3		2	2	3	3	21
Dog Lake *	1	2	3	2	2		3	3	3	1	20
Marshy Point *	2	3	2	3	3	3			1	1	18
Shoal Lakes *	1	3		2	3		2	2	2	1	16
Oak Hammock *	2	3			3				3	3	14
Netley Marshes *	2	3	2		3		1	1	1	1	14
Big Grass Marsh	2	3	3		3				1	1	13
Plum Lakes	2	2	2		2		1	1	1	1	10
Dauphin Lake	1	3	2		2				1	1	10
Lake Manitoba (east side)	1			3					3	3	10
Reykjavik Point	2			3		3					8
Grant's Lake	1	3			3						7
Turtle Marsh	2	3							1	1	7
Alexander Griswold Marsh	2	2							1	1	6
Watchorn Bay	1	2			1						4
Lizard Lake	1	2									3
Otter Lake	1	2									3
Sandy Lake	1	2									3

\* Areas included in top five ratings and shown in Fig. M-10.

Table M-10c. Analysis of habitat priority ratings for Manitoba - Boreal Forest Zone.

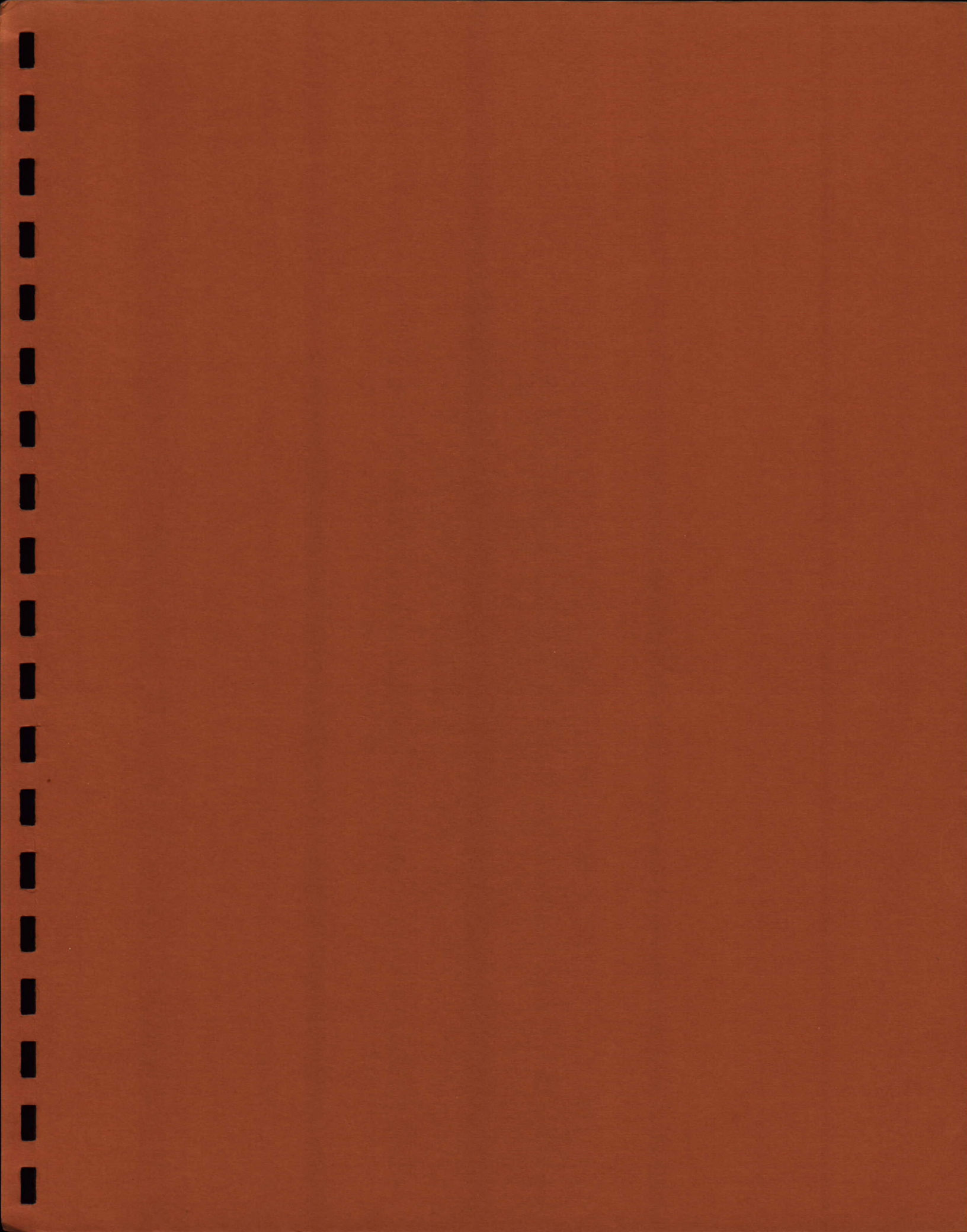
NAME	DUCK			GOOSE			COLONIAL NESTING	R&E and NON-GAME	TOTALS
	Production	Staging	Moultng	Production	Staging	Moultng	Production Staging	Production Staging	
Riverton-Hecla Marsh *	2	2	2	1	3			1 1	12
Lake St. Martin *	1	1	2	2	1	3			10
Long Island Bay *	1	3	3		1				8
Saskeram Marshes *	2	3			2				7
Portage Bay (L. Winnipegosis) *	1	2	3		1				7
Sleeve Lake *	1	2		2	2				7
Washow Bay (L. Winnipeg)	1	2			3				6
Summerberry Marshes	1	3			2				6
Whitemouth Lake	1	3			2				6
Pineimuta Lake	2	2		2					6
Sagemace Bay (L. Winnipegosis)	1	3			1				5
Peonan Point	1			2	2				5
Spence Bay	1	3							4
Swan Lake	1	3							4
Red Deer Lake	1		3						4
Lake Winnipeg (east side)	1			3					4
St. Michael Lake	1					3			4
St. George Lake	1					3			4
Kawinaw Lake	1						3		4
Katimik Lake	1						3		4
Spruce Island	1						3		4
Channel Island	1						3		4
Twin Islands	1						2		3
Dawson Bay	1						2		3
Saskatchewan River Delta	2						1		3
Kiskitto Lake							1		1

\* Areas included in top five ratings and shown in Fig. M-10.

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