1968 Fall Waterfowl Habitat Survey in Strata 26 and 27

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At the first meeting of the Western Canada Waterfowl Technical Committee, in June 1968, it was suggested that a survey of waterfowl habitat conditions in late fall, just prior to freeze-up, might provide useful data on which to base early planning for the next year's waterfowl hunting season. Participants at the meeting agreed that the feasibility and usefulness of a fall survey of water areas should be investigated.

Accordingly, on October 30 and 31, 1968, a trial survey of water areas was undertaken in Strata 26 and 27 in Alberta (see map). Procedures were essentially the same as those used in the June Waterfowl Habitat Survey (Standard Procedures for Waterfowl Population and Habitat Surveys - The Prairies, U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, 1968), and the same survey route used in June was flown. The aircraft, a chartered Cessna 185, was flown at normal cruising speed and about 800 feet above the ground along the survey route following evenly spaced east-west township lines, and an observer on each side of the aircraft counted water bodies along a ½ mile wide strip on each side of the aircraft. Temporary water bodies, expected to last only

two - three weeks without additional precipitation, were excluded from the counts. The survey route was divided into 18 mile segments. Dugouts and stockdams were recorded directly on tape recorders while natural ponds were counted on tally counters and the counts then transferred to the tape recorders at the end of each segment. On the first day of the survey, the two observers sat in the back seat of the aircraft while the third member of the survey party, sitting next to the pilot, navigated and pointed out water bodies directly under the aircraft. On the second day the pilot navigated and the right-hand observer sat next to him. In Stratum 26, 612 square miles were sampled and in Stratum 27 the survey area was 648 square miles. This constituted about a 2½ per cent sample of total land area in each stratum.

While many basins remain dry, the survey did show a marked improvement in habitat over the dismal June conditions with a 162 per cent increase in water areas in Stratum 26 and a 76 per cent increase in Stratum 27 (Table 1). Conditions were most improved in the southern half of Stratum 26 and the eastern half of Stratum 27. Extremely poor habitat conditions still prevail in the northwest quarter of Stratum 26 and the southwest quarter of Stratum 27 where it appeared that over 95 per cent of basins still lack water. In Stratum 27, fewer dugouts were counted in October than in June (Table 2). In this stratum many dugouts are constructed in the center of natural basins. In June, water was frequently confined only to the dugout portion of these basins and the water bodies were counted as dugouts; in October, in many cases the entire

basins contained water and the water bodies were counted as natural ponds, thus apparently causing the decrease in numbers of dugouts counted.

Sampling error was found higher in the October survey than in the June survey. In Stratum 26 sampling error was calculated at 21.2 per cent in June and at 31.4 per cent in October. In Stratum 27, the June sampling error was 21.5 per cent and the October sampling error 23.4 per cent. Sampling error should probably be expected to increase under wetter conditions as a result of greater variability between segments in numbers of ponds counted. Under dry conditions counts from segments containing many basins could be similar to counts from segments containing few basins as a result of most basins being dry. However, with wet conditions segments containing many basins would yield high counts while those with few basins would still yield low counts thus resulting in greater variability among segments. Individual counts of the two observers in the October survey were quite similar. One observer counted 3,027 water bodies and the other 2,989 - a difference of only 38.

The survey involved 15¼ hours flying time costing $745.00 for aircraft rental.

This trial survey indicated a fall waterfowl habitat survey is feasible and would provide a reliable picture of habitat conditions going into the winter. The only possible difficulty in conducting the survey might be an exceptionally early freeze-up with snow which would make the survey impossible. The most important consideration in deciding if the survey is to be made operational across the major waterfowl

breeding range appears to be the possible practical uses to which data collected at this time of year can be put. The data would be of no value in attempting to manipulate the current year's harvest to carry-over a breeding population of a size commensurate with expected available habitat the following spring since hunting regulations would have already been set and the hunting season would already be in progress at the time of the survey.

The survey also seems of dubious value as a guide in decision making for the next year's hunting regulations. The amount of snowfall during the winter and the type of thaw the following spring are probably the most important factors controlling habitat conditions and could drastically alter conditions at the onset of breeding in spring from those noted in the fall survey. Also, the size of the returning breeding population, not known until spring, would probably have to be considered before any meaningful discussions of regulations could be undertaken. Since regulations do not have to be finally decided upon until July in Canada and August in the U.S., then may be no real need to consider possible hunting regulations until after up-to-date information is available in spring.

On the other hand, a fall survey might provide useful information on the relationships between fall habitat conditions and phenomena such as late season production, the chronology of fall migration, the hunting kill, and spring habitat conditions. Although a large scale survey may not be desirable, a limited survey in selected strata should

perhaps be continued for several years to determine the value of resulting data.

Submitted by: M. Sorensen

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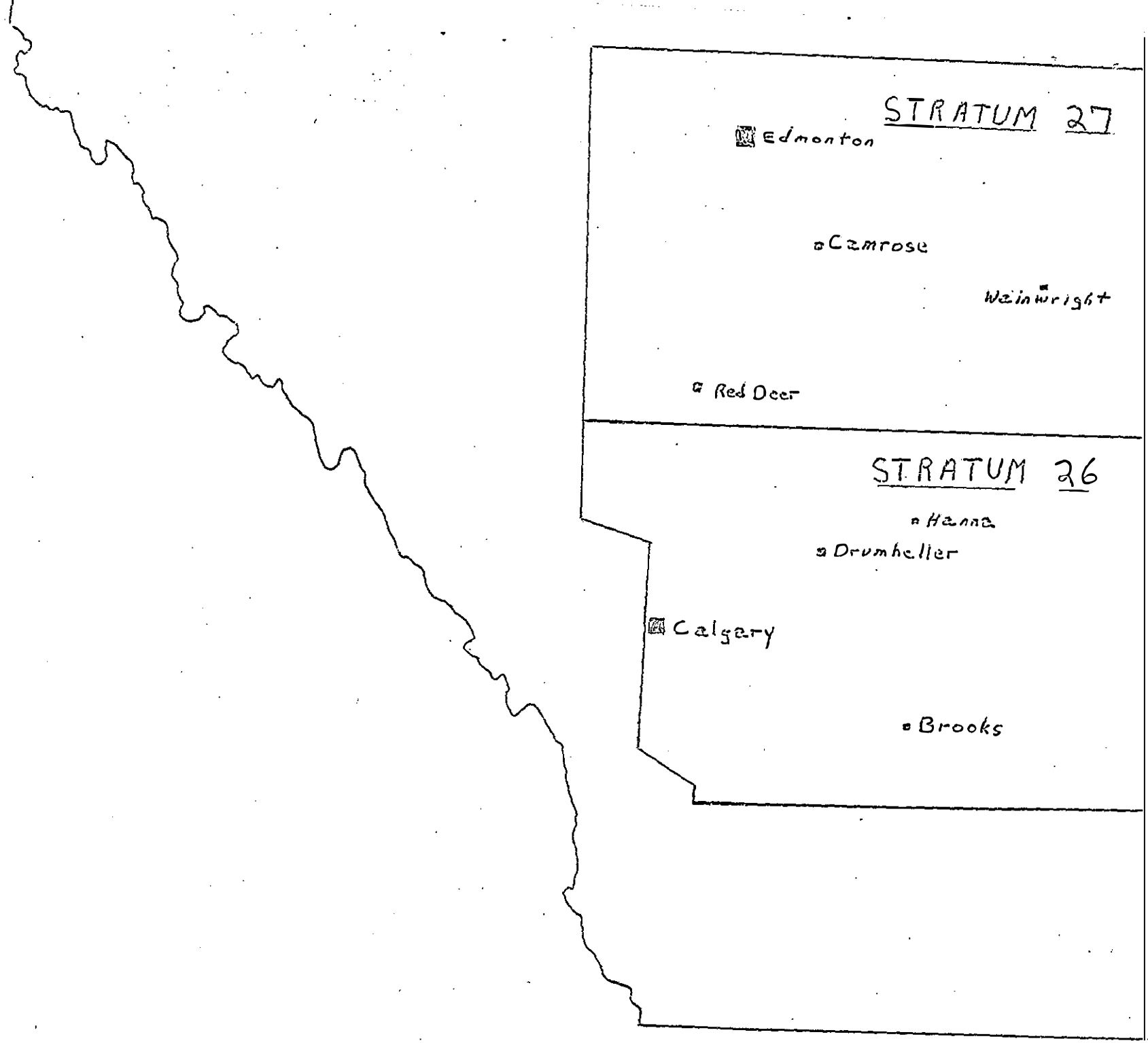
Table 1 Comparative Pond Indexes for June and October 1968 in Strata 26 and 27 (survey data expanded to account for total area in strata)

Stratum	June Pond Index	October Pond Index	Per Cent Change
26	34,589	90,736	+ 162%
27	86,075	151,378	+ 76%
Total	120,664	242,114	+ 101%

Table 2 Comparisons of Numbers of Water Areas Observed during Waterfowl Habitat Surveys in June and October 1968, in Strata 26 and 27 (unexpanded survey data)

Stratum		Segments	Stockdams	Dugouts	Natural Ponds	Total Water Areas
26	June	34	59	217	584	860
	October	34	75	217	1,964	2,256
27	June	36	34	258	1,846	2,138
	October	36	54	205	3,501	3,760
Total	June	70	93	475	2,430	2,998
	October	70	129	422	5,465	6,016


STRATUM 27
Edmonton
Camrose
Wainwright
Red Deer
STRATUM 26
Hanna
Drumheller
Calgary
Brooks