

WESTERN GREBES ON SOUTHERN DORE LAKE, SASKATCHEWAN

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Introduction

The western grebe (*Aechmophorus occidentalis*) is the largest grebe species found in North America. This fish-eating waterbird has black and white plumage, a long, slender neck, and a swan-like profile (Fig. 1). Western grebes breed in colonies on inland bodies of water throughout western Canada and south to Minnesota, Utah, and California, and their wintering grounds stretch down the Pacific Coast, from Alaska to Mexico. Western grebes arrive in the early spring to breed in inland lakes and wetlands where they use emergent vegetation to build floating nests.¹ It has previously been noted that western grebe breeding may be limited to water bodies that

are unsuitable for human activities, as these birds are very sensitive to human disturbance, particularly early in the nesting season. Colonies have been abandoned because of excessive human disturbance.¹⁻³ Recently, the conservation status of the western grebe has come under review because of apparent declines in their over-wintering grounds, and little is known about their population status in Saskatchewan.

Here we describe a large and thriving colony of western grebes breeding near a town site, lodge, and popular recreational fishing area on Dore Lake, Saskatchewan. We attempted to determine the numbers of western grebes present in particular



Figure 1. Western grebe from the South Bay colony, Dore Lake, SK, carrying a chick on its back.
Photo by Jennifer and Jason Doucette

sections of Dore Lake, and to characterize some aspects of their habitat use. A basic understanding of the habitat use of western grebes on lakes with human activity may be important for appropriate conservation efforts. This is of particular importance, as the Northern Prairie and Parkland Waterbird Conservation Plan has listed this species as one of special concern.⁴

Methods

Study Site. Our study was conducted on Dore Lake, north of Big River and east of Meadow Lake, in central Saskatchewan (Fig. 2). Dore Lake is a boreal forest lake located at 54° 37' N, 107° 23' W with a surface area of 642 km². It has a variety of habitats ranging from wetlands to large shallow bays and deep pelagic zones, and is surrounded primarily by a boreal forest wilderness area. We located a previously unreported western grebe colony on Dore Lake at 54° 39' N, 107° 22' W on the eastern shore at the southern end of South Bay. The colony is surrounded by dense stands of emergent vegetation (rushes and cattails) that act as both the

anchors for the grebes' floating nests and as protection for the colony.

In order to determine how grebes from this colony were using different areas of the lake, we divided our observed area into two parts: (1) the shallow South Bay area (depth less than 4 m) and the main lake area (maximum depth 19.5 m). We based this decision on the fact that grebes are shallow divers, and therefore they were expected to spend more time in the shallow waters of South Bay near the colony, rather than in the deeper pelagic zone of the main lake. We designated a cutoff line between South Bay and the main portion of Dore Lake at 54° 41.5' N and 107° 20' N.

Western Grebe Counts. We counted the number of grebes observed in the main lake vs. the shallow South Bay area on 13 days during 1 July to 5 August 2007. Grebe counts were made by one observer in a motorized boat traveling the same route on each date from the Dore Lake Lodge in South Bay, to a field study site in Basil Bay (Fig. 2). We counted the number

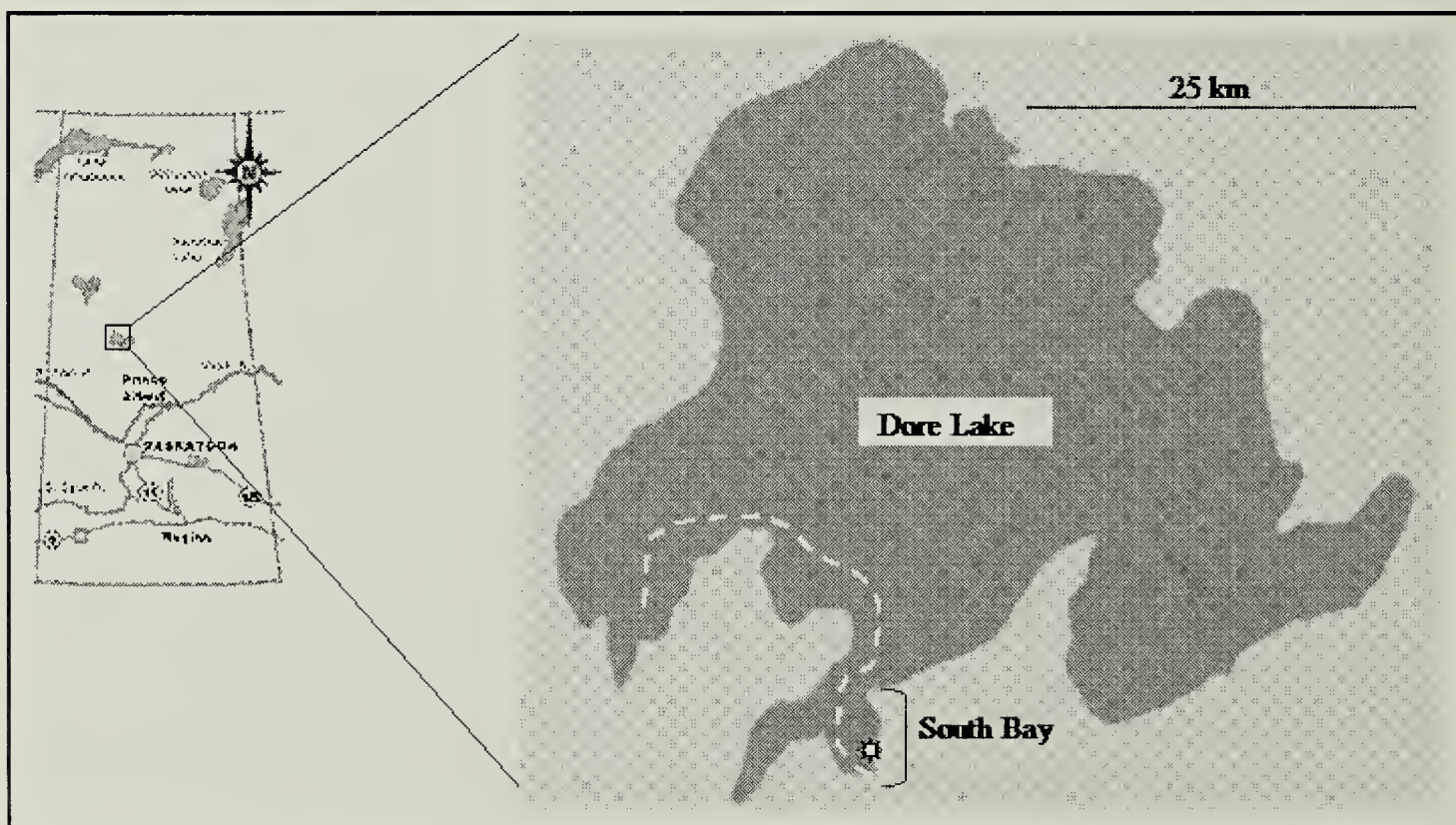


Figure 2. Dore Lake, Saskatchewan. The approximate location of the western grebe colony is indicated with a star; the route we traveled while conducting grebe counts is shown as a dashed white line.

of grebes visible on each side of the route while a second observer recorded counts and the GPS coordinates of grebes for designation as being in South Bay or the main lake. Counts were conducted during daylight hours when winds were less than 30 km/h and visibility was good. Only swimming adult grebes were counted; i.e., we did not count grebe chicks, nor did we attempt to approach the breeding colony to count adult grebes on nests or in the vegetation surrounding the colony. This was done to minimize disturbance to nesting birds. Binoculars (Bushnell 10×50) were used to count grebes near the breeding colony and in the main lake area.

Results & Discussion

Our grebe counts on each day ranged from 50 to 800 adult birds with an average of 346 ± 221.5 (mean \pm standard deviation). From these counts, we could infer that there was a minimum of 400 breeding pairs, assuming that all adults were visible and were breeders, and a maximum of 800 breeding pairs,

assuming that our counts were of only one member of each breeding pair. However, we expect there to be even more breeding birds than this estimated range indicates because we did not count birds actually in the colony or in other locations on the lake outside of our boating route. This colony of ≥ 400 breeding pairs is similar in size to the colony of over 500 breeding pairs of western grebes at Lac LaBiche, Alberta, which has been named an Important Bird Area of global significance.⁵

We found a much higher number of grebes in South Bay than in the main lake portion of Dore Lake (Fig. 3). Out of the 4500 grebes detected during our 13 counting days, approximately 95% were in South Bay, with progressively fewer birds detected as we traveled west. This suggests that western grebes preferred to spend their time in shallower waters close to the breeding colony, coinciding well with what is known about their foraging habits.¹ It would also save energy for breeding birds to spend the majority of their time in the area surrounding the

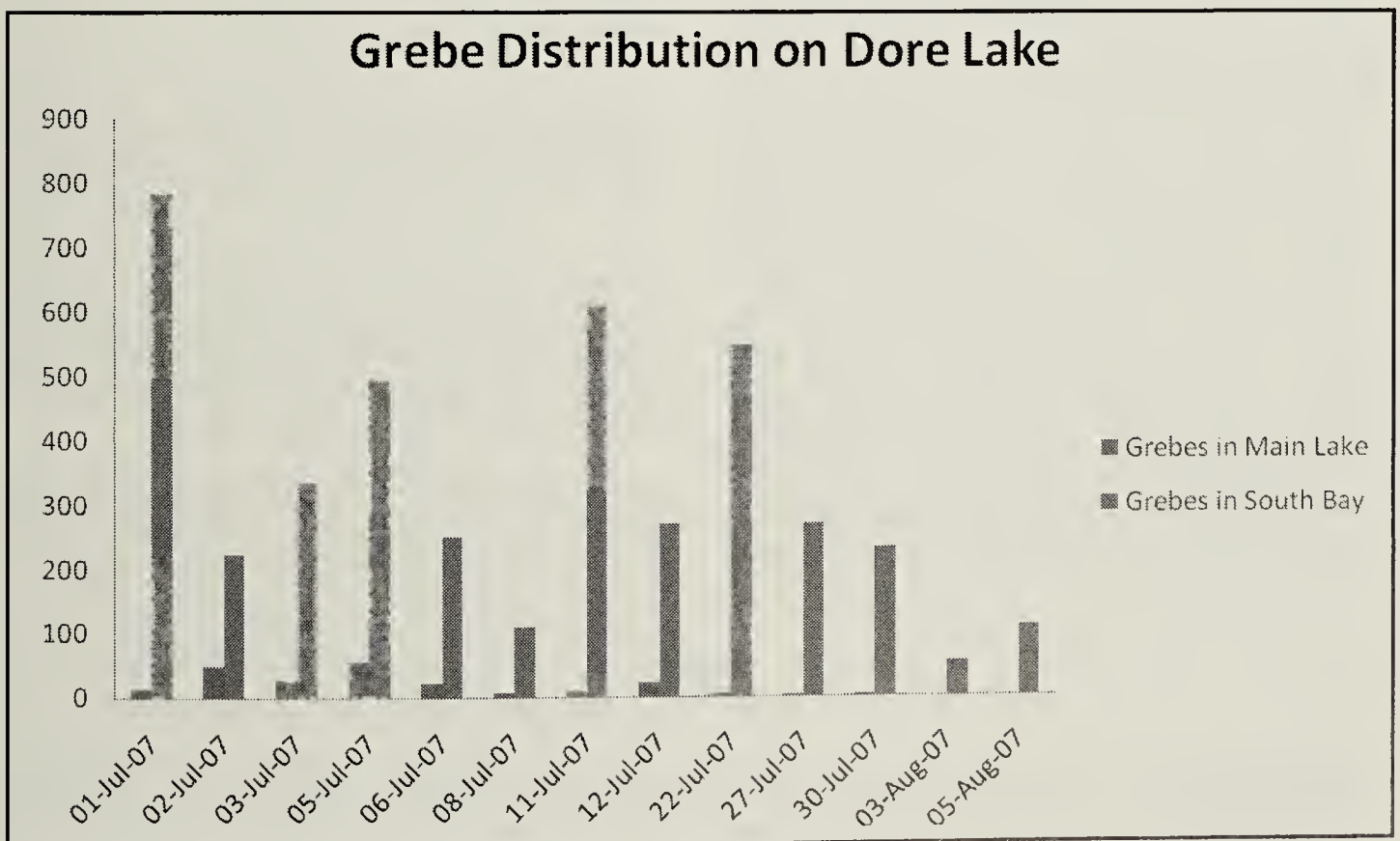


Figure 3. Number of western grebes counted in two different areas on Dore Lake on 13 days between 1 July and 5 August 2007. Counts were taken from a boat traveling along the same route each time.

colony site, especially when incubating eggs or brooding young chicks. This concentration of grebes in a small area has the potential to increase competition for prey. Thus, some individuals may opt to travel farther from the colony to forage in order to offset this competition. Future studies should compare the foraging success of western grebes found in the higher density areas in South Bay to those that forage in the main lake. In addition, we frequently observed grebes in pelagic zones on the main lake up to 10 km from the breeding colony. Future studies should attempt to determine whether these birds are associated with the South Bay colony, and what their diet consists of in deeper water.

During our study, we were also able to observe the reaction of western grebes to the approach and presence of our boat. Unlike other waterbirds, western grebes do not fly away as a boat approaches. Instead, they appeared to watch the boat approach, and then dive once we got too close. These birds would often re-surface a short distance away from the boat and appeared agitated by our presence. This diving behaviour also occurred when chicks were present, suggesting that separation of adults and young in boat traffic is a potential issue for these birds. This colony of western grebes is close to the hamlet of Dore Lake and the Dore Lake Lodge, where there is light, but fairly constant boat traffic. This location does not seem ideal given that grebes are considered disturbance-sensitive,¹ and there are vast areas of undeveloped

and seldom traveled shoreline on this wilderness lake that they could have selected for a colony site. We suggest that the factors that influence western grebe colony site selection should be studied in detail, including the importance of human activities.

Acknowledgements

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ERRATUM: *Blue Jay* 69(2), June 2011, page 54: In the article entitled "Lesser scaup and raccoons: Are there links in southwestern Manitoba?" by Gord Hammell, the first sentence of the Abstract should read "Raccoons (*Procyon lotor*) invaded the southern prairie provinces of Canada during the mid-**1900s**...", not "1990s" as was erroneously printed. We regret the error.