

gull was not involved, or at least did not share incubation duties. Therefore, this may be the first recorded instance of a pair of Ring-billed Gulls, and possibly any gull species, having 2 clutches of eggs simultaneously.—WILLIAM E. SOUTHERN, *Dept. of Biological Sciences, Northern Illinois Univ., DeKalb 60115. Accepted 22 Feb. 1977.*

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Clutch size and nest placement of the Pied-billed Grebe in Manitoba.—The Pied-billed Grebe (*Podilymbus podiceps*) breeds widely throughout North, Central, and South America (Palmer, Handbook of North American Birds, Vol. 1, Yale Univ. Press, New Haven, Conn., 1962). Despite this, relatively few studies of its breeding biology have been conducted. I obtained information at 2–4 day intervals between 19 May and 25 July 1973 on nest placement and clutch size of the Pied-billed Grebe in a prairie pothole area south of Minnedosa, Manitoba. This area has been described in detail by Ferguson (M.Sc. thesis, Univ. Manitoba, Winnipeg, 1977) and more generally by Ehrlich et al. (Man. Soil Surv. Rept. No. 6, 1957), Bird (Canada Dept. Agric., Contr. No. 27, 1961), and Keil et al. (Can. Wildl. Serv. Rept. Ser. No. 18, 1972).

Semi-drought conditions existed in the study area in 1973. The ephemeral and seasonal potholes (following Stewart and Kantrud, Resource Publ. 12, Bur. of Sport Fish. and Wildl., 1971) were dry or nearly so. The water levels in most semi-permanent and some permanent potholes were low, in some instances exposing entire stands of emergent vegetation.

In all cases ($N = 53$) only 1 pair of Pied-billed Grebes nested per pothole; this was also the case with most Horned Grebes (*Podiceps auritus*) nesting in the Minnedosa area (Ferguson 1977) and the Horned and Pied-billed grebes in North Dakota (Faaborg, *Wilson Bull.* 88:390–399, 1976).

Of 42 nests found with eggs in 1973, 29 failed; most of the failures were washed out before the clutches were completed. The average size of 22 completed first clutches was 6.8 eggs (1 of 5 eggs, 3 of 6, 17 of 7, 1 of 8). The mean size of 6 suspected replacement clutches was 7.2 eggs (5 of 7 eggs, 1 of 8). Glover (*Wilson Bull.* 65:32–39, 1953) also found no difference in size between first and first replacement clutches (see also Miller, *Cassinia* 32:22–34, 1943) and lumped them in his calculations. Palmer (1962) indicated that Pied-billed Grebe clutch sizes do not decrease as the season progresses. Ferguson (1977), however, noted such a decline in Horned Grebe clutch size in the Minnedosa area. The clutches used to calculate clutch size in my study were all initiated within a 2-week period from late May to early June.

I obtained additional information on Pied-billed Grebe clutch sizes in Manitoba, Saskatchewan, and Alberta from the Prairie Nest Records Scheme (PNRS) and for British Columbia from the British Columbia Nest Records Scheme (BCNRS). Nests where the clutch size was the same after 2 visits, 2–3 days apart, were used. The mean size of 6 such clutches from the PNRS was 6.7 eggs (extremes, 3 and 10). In 19 other nests visited only once by the observer, there were 5 with 6 eggs, 6 with 7, 5 with 8 and 3 with 9 ($\bar{x} = 7.3$).

There is no apparent increase in clutch size from south-to-north in temperate North America (Table 1). The small clutches found in Idaho are not explained. The small sample of clutch sizes from Central America (Costa Rica, Honduras) suggests an overall latitudinal increase in clutch size. However, much more work needs to be done there on Pied-billed Grebes. In the Atilan Grebe (*P. gigas*) of Guatemala, LaBastille (Wildl. Monogr. No. 37, 1974) reported a mean clutch size of 2.9 eggs, with extremes of 2 and 5.

TABLE 1
CLUTCH SIZE OF THE PIED-BILLED GREBE

Locality	No. Nests	Mean Clutch Size (Range)	Source
Costa Rica	2	(3-4) ^a	F. G. Stiles (<i>in litt.</i>)
Honduras	1	5	Monroe (Ornithol. Monogr. No. 7, 1968)
Louisiana	67 ^b	7.0 (5-9)	Chabreck (Auk 80:447-452, 1963)
Pennsylvania	?	6 or 7 (5-9)	Miller (<i>op. cit.</i> , 1943)
Iowa	97 ^c	6.2 (2-10)	Glover (<i>op. cit.</i> , 1953)
	41 ^d	4.3	
Iowa	13	6.1 (4-8)	Provost (Am. Midl. Nat. 38:483-503, 1947)
Idaho	14	4.3	Wolf (J. Wildl. Manage. 19:13-23, 1955)
North Dakota	74	6.7 (4-11)	Stewart (Breeding Birds of North Dakota, Lund Press, Minneapolis, 1975)
Manitoba	22	6.8 (5-8)	This study
British Columbia	6	7.0 (5-9)	BCNRS
Alberta, Sask., Man.	6	6.7 (3-10)	PNRS

^a It was not known whether the clutch of 3 was complete (F. G. Stiles, *in litt.*).

^b In salt marshes.

^c Successful clutches.

^d Unsuccessful clutches.

Water depth measured at 31 Pied-billed Grebe nests averaged 35.5 cm. No nests were located in water less than 12.7 cm deep; 4 nests were in water 14-24 cm deep. A nest discovered on 28 June 1973, which contained 6 eggs (3 of them pipped), was in 14 cm of water, 0.3 m from shore. To leave the nest, the adult skittered on the water to open, deeper water 2.1 m away. The mean distance of 25 nests from shore was 5.3 ± 2.4 m and from open water, 1.3 ± 0.9 m. The dominant species of emergent cover at 53 nests was bulrush (*Scirpus* spp.; 37 nests, 69.8%), cattail (*Typha latifolia*; 15 nests, 28.3%), and whitetop (*Scholochloa festucacea*; 1 nest, 1.9%).

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