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Received 21 December 1990

Accepted 19 August 1992

Breeding Gadwalls, *Anas strepera*, near Yellowknife, Northwest Territories

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Fournier, Michael A., David L. Trauger, James E. Hines, and David G. Kay. 1992. Breeding Gadwalls, *Anas strepera*, near Yellowknife, Northwest Territories. *Canadian Field-Naturalist* 106(2): 254-256.

Evidence of Gadwalls breeding near Yellowknife, Northwest Territories was observed in 1966, 1989, and 1990. These observations appear to be the most northerly breeding records for this species in North America. Recent observations of Gadwalls in the Yellowknife area may be explained by one or more of the following; an increased number of observers, drought displacement, population increase and range expansion. Numerous sightings of Gadwalls have been reported for the western Northwest Territories, suggesting that the breeding range in North America may extend north to latitudes similar to those reported for the Palearctic.

Key Words: Gadwall, *Anas strepera*, breeding waterfowl, Northwest Territories, boreal forest.

In western North America, the Gadwall, *Anas strepera*, breeds primarily from southern British Columbia, northern Alberta, central Saskatchewan, and central-western Manitoba south to approximately 40°N latitude (Bellrose 1976). Primary breeding habitat is mixed grasslands; parklands are of secondary importance and only small numbers of Gadwalls nest in the boreal forest (Bellrose 1976). The centre of the breeding distribution, therefore, occurs well south of Yellowknife, Northwest Territories (62°27'N, 114°22'W) where breeding Gadwalls were observed in 1966, 1989, and 1990.

Palmer (1976) stated that the Gadwall's breeding range has expanded northward in recent decades. Northerly extralimital breeding records for the Gadwall in North America include several areas in Alaska — the Copper River Delta (60°55'N, 144°85'W), Juneau (58°20'N, 134°20'W) and the Alaskan Peninsula [approximately 57°32'N, 157°25'W] (Kessel and Gibson 1978). Small local

breeding populations occur at Hay-Zama Lakes in northwestern Alberta [58°45'N, 119°00'W] (Salt and Salt 1976), about 490 km southwest of Yellowknife, and the delta of the Athabasca River [58°40'N, 111°10'W] (Nero 1963), about 468 km southeast of Yellowknife. A "hypothetical" breeding record exists for Nahanni National Park Reserve, near Virginia Falls, N.W.T. [61°38'N, 125°44'W] (Carbyn and Patriquin 1976).

The Gadwall has been reported in a number of northerly locations in Europe and Asia. It breeds at Lake Myvatn and vicinity, Iceland [65°36'N, 17°00'W] (Cramp 1977) as well as the island of Hailuoto in the Gulf of Bothnia, Finland [65°01'N, 24°45'E] (Pirkola 1983). In the Soviet Union it may breed north of 60°N latitude along the Irtysh River (Dement'ev and Gladkov 1952). In the United Kingdom the Gadwall has been reported breeding as far north as Sanday Island in the Orkneys [59°15'N, 2°30'W] (Sharrock 1977).

TABLE 1. Other observations of Gadwalls in the Northwest Territories*.

Date		Number Observed	Location	Source
2 August	1966	several pairs	Yellowknife Hwy.	H. Kantrud pers. comm.
26 May	1972	1 pair	Fort Simpson 61°52'N, 121°21'W	Salter 1974
16 May	1974	4	Fort Providence 62°21'N, 117°39'W	Salter et al. 1974
16 May	1974	1 pair	Wrigley 63°14'N, 123°28'W	Salter et al. 1974
18 May	1974	1 pair	Fort Providence	Salter et al. 1974
13-24 May	1974	24	Fort Simpson	Salter et al. 1974
19 June-3 July	1985	30 mostly males	Mackenzie River Delta 68°53'N, 136°58'W	Hawkings 1986
29 May	1988	4 pairs, 1 male	Stagg River 73 km NW of Yellowknife	M. Fournier unpubl. data
June	1988	1 pair	Inuvik 68°21'N, 133°43'W	G.B. Cameron pers. comm.
1 June	1989	1 pair	Yellowknife Hwy. 60 km NW	J. Hines unpubl. data
June	1989	1 pair	Tuktoyaktuk 69°27'N, 133°02'W	G.B. Cameron pers. comm.
15 August	1989	1 female	Yellowknife Hwy. 60 km NW	J. Hines unpubl. data
28 May	1990	1 pair	Yellowknife Hwy. 55 km NW	M. Fournier unpubl. data
7 June	1990	1 male	Yellowknife Hwy. 56 km NW	M. Fournier unpubl. data
15 June	1990	1 pair	Yellowknife Hwy. 53 km NW	M. Fournier unpubl. data
5 July	1990	1 female	Yellowknife Hwy. 56 km NW	J. Hines unpubl. data
15 May	1991	1 male	Yellowknife – Niven Lake	J. Sirois pers. comm.

*Small numbers of Gadwalls were also observed (from aircraft) occasionally during the early 1970s and regularly between 1977 and 1987 on United States Fish and Wildlife Service surveys south and west of Great Slave Lake. Estimates based on similar surveys indicate that as many as 1300 Gadwalls may have been present in the Mackenzie Delta in 1977, 1979 and 1983 (Hawkings 1987).

Breeding records near Yellowknife, Northwest Territories

On 2 August 1966, DLT sighted a female Gadwall with a 3–4 week old duckling (Class IIa, Gollop and Marshall 1954) on a shallow pond 48 km northwest of Yellowknife. On the basis of this observation, the Gadwall was designated as a “rare” breeder in the Yellowknife area (Bromley and Trauger *no date*). This note is the first published account of that breeding record.

On 7 July 1989, while searching for duck nests on a rocky island in the North Arm of Great Slave Lake (62°31'N, 115°11'W), MAF, JEH, and DKG flushed a female Gadwall from a nest containing nine eggs. Later that day, another female Gadwall was observed on an island about 4 km distant (62°32'N, 115°16'W). Although the second Gadwall behaved like a nesting female, flushing at a distance of less than 5 m, no Gadwall nest was found during a thorough search of the sparsely vegetated island. We did, however, find four Gadwall eggs in the nest of a Red-breasted Merganser (*Mergus serrator*) (which also contained nine merganser eggs).

On 21 June 1990, a Gadwall nest containing seven eggs was discovered (MAF and DGK) on an island in the North Arm of Great Slave Lake (62°32'N, 115°16'W). This island is located approximately 4.8 km from the Gadwall nest-site observed in 1989 and approximately 50 metres (on a different island) from the merganser nest parasitized by a Gadwall (also observed in 1989).

Other observations of Gadwalls in the Northwest Territories

Although we believe that the above observations represent the most northerly breeding records for Gadwalls in North America, it is possible that the species breeds elsewhere in the western Northwest Territories. We have reviewed accounts (published and unpublished) of Gadwall observations in the region and summarized them in Table 1. These observations of Gadwalls throughout the Mackenzie River Valley during the breeding season and our observations of breeding near Yellowknife suggest that Gadwalls breed at northern latitudes in North America similar to those reported for the Palearctic.

Discussion

There are three plausible explanations for the recent breeding records and observations of Gadwalls near Yellowknife. Firstly, they may simply reflect an increase in the number of observers. There have been few avifaunal studies undertaken on the North Arm of Great Slave Lake where breeding Gadwalls were observed in 1989 and 1990. However, Gadwalls were not observed during waterfowl studies along the Yellowknife Highway between 1985 and 1987 (inclusive) but have been recorded in this area in each subsequent year.

The second possible explanation is that dry conditions in prairie breeding areas may have resulted in some Gadwalls moving north into the boreal forest near Yellowknife, where more stable water conditions prevail. At least one measure of the condition

of prairie breeding habitats, the number of ponds observed in May, indicated a substantial reduction in habitat quality in the years 1988-1990 (Anonymous 1988, 1989, 1990).

The third possible explanation is that our observations are indicative of an increase in population size and subsequent range expansion. Henny and Holgersen (1974) documented the increase in numbers and expansion of the breeding range of the Gadwall in eastern North America. Dickson (1989) reported a 40 percent increase in the continental population of Gadwalls over the period 1955-1989. A population increase of 498 percent was observed in boreal regions over this same period with an increase of 158 percent between 1985 and 1989.

In all likelihood a combination of these factors may best explain our observations.

Acknowledgments

The authors would like to thank K. McCormick, R. Ferguson, M. C. Perry, C. Robbins, and two anonymous referees for reviewing the manuscript, M. Gosselin of the Canadian National Museum of Natural Science (now Canadian Museum of Nature) for providing information concerning breeding records, and A. Soneine for providing Finnish translation.

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Received 17 January 1991

Accepted 4 March 1992



Fournier, Michael A. et al. 1992. "Breeding Gadwalls, *Anas strepera*, near Yellowknife, Northwest Territories." *The Canadian field-naturalist* 106(2), 254–256. <https://doi.org/10.5962/p.356939>.

View This Item Online: <https://www.biodiversitylibrary.org/item/106990>

DOI: <https://doi.org/10.5962/p.356939>

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