Committee on the Status of Endangered Wildlife in Canada

Comité sur le statut des espèces menacées de disparition au Canada

Ottawa, Ont. K1A 0H3
(819) 997-4991

STATUS REPORT ON THE COMMON POORWILL PHALAENOPTILUS NUTTALLII: CAPRIMULGIDAE IN CANADA

BY

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AND

R. MARK BRIGHAM

STATUS ASSIGNED IN 1993
INSUFFICIENT SCIENTIFIC INFORMATION ON WHICH TO BASE A DESIGNATION

REASON: NOT ENOUGH INFORMATION ON POPULATION SIZE OR TREND TO KNOW WHAT THE STATUS IS. ADDITIONAL INFORMATION MAY BE FORTHCOMING IN A FEW YEARS.

OCCURRENCE: ALBERTA, BRITISH COLUMBIA, SASKATCHEWAN

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A. ABSTRACT

The Common Poorwill (*Phalaenoptilus nuttallii*: Caprimulgidae) is a nocturnally active insectivorous bird distributed throughout western North America. In Canada, the breeding range of this species appears to be restricted to the southern arid interior of British Columbia and the Cypress Hills of southwestern Saskatchewan and possibly southeastern Alberta. This represents the northern limits of the species breeding range. No information exists on the population trend for either population. Predation may be a limiting factor. Based on limited data, we feel that no designation is presently required for the status of the Common Poorwill. However, we recommend that survey work be undertaken to allow for a better understanding of the geographic limits, exact habitat requirements, and population trends of this species in Canada.

B. DISTRIBUTION

B.1 Canada

In Canada (Figure 1), Common Poorwills (henceforth poorwills) breed in the southern arid interior of British Columbia (Okanagan Valley; Kamloops; Ashcroft, Fraser Valley; about 30 km south of Lillooet; Hope; recorded north to Riske Creek where a specimen was found dead on 8 September 1968); probably southeastern Alberta (Cypress Hills); although this has never been confirmed (Semenchuk, 1992); and southwestern Saskatchewan (Cypress Hills and likely the Great Sand Hills and along the Frenchman River Valley: Godfrey 1986; Kalcounis et al. 1992; Smith In press).

Poorwills are casual in east-central Alberta (Lindberg, 22 October 1971: Godfrey 1986) and accidental in northern Ontario (specimen: North Point, 4 June 1982: Godfrey 1986).

There is no evidence that poorwills winter in Canada. Departure from British Columbia and Saskatchewan is normally in September (Cannings et al. 1987; Kalcounis et al. 1992 RMB unpublished data).

B.2. The Americas

Poorwills breed throughout western North America (Figure 2). The species breeds from southern interior British Columbia, Montana, southeastern Alberta, southwestern South Dakota and Nebraska south through eastern Washington, central and eastern Oregon and California to the southern Baja Peninsula, Jalisco, Durango, San Luis Potosi and Coahuila, and east to eastern Kansas, northwestern Oklahoma and central Texas (AOU 1983). New breeding records have been reported in the past several years for southwestern North Dakota (Royer and Thompson 1988; Royer 1989) and southwestern Saskatchewan (Sutherland

1984; Kalcounis et al. 1992), extending the known breeding range in the northeast.

Little information exists on where this species winters but it is believed that individuals retire to lower altitudes of foothills in the southern parts of the breeding range in California and Arizona (probably also further east) and south to the limits of its breeding range in Mexico (Culbertson 1946; Jaeger 1948; Jaeger 1949; AOU 1983). Poorwills are the only bird species believed to hibernate (Jaeger 1948; 1949).

C. PROTECTION

Poorwills are a non-game species and are protected under the Migratory Birds Convention Act and Regulations. It does not appear that this species is exploited in any way.

Poorwills are currently categorized as a red listed species by the British Columbia Ministry of the Environment. A red listed classification qualifies this population for attention and funds in order to evaluate the degree of risk to long term viability. However, the red listed classification may simply reflect our lack of understanding about their biology due to their nocturnal activity period and cryptic plumage and behaviour.

D. POPULATION SIZE AND TREND

Godfrey (1950) and Rand (1948) both indicate that poorwills were virtually unknown from the Cypress Hills and southern Alberta forty years ago. It is thus encouraging that, during 1991 in the Cypress Hills of Saskatchewan, a conservative estimate of 30 males was made

by listening for calling birds along 71 km of transects (Kalcounis et al. 1992). Further, portions of the habitat sampled may not have been representative and the actual density may have been underestimated.

Munro and Cowan (1947) indicate that historically, poorwills did occur, albeit uncommonly in the south central part of British Columbia. Recently, Campbell et al. (1990) suggest that the species range may be expanding in British Columbia. In 1992, unquantified observations in the southern Okanagan suggest the highest density of birds in any year since 1989 (RMB unpub. data). Therefore for both Canadian populations, although there are no definitive data, there is the suggestion that the population has expanded even if numbers are still relatively low. Further survey work is needed to support this suggestion. It is very important to emphasize however, that this species appears to be often overlooked in general surveys of the avifauna of an area and it has been our experience that when significant effort is made to locate poorwills, they are generally present (both in British Columbia and Saskatchewan). Therefore, we are cautiously optimistic that the actual population size and range of this species in Canada is larger than currently thought.

To our knowledge, there has been no rigorous survey of population size for populations in British Columbia, the United States, or Mexico.

E. HABITAT

E.1 Habitat Requirements

In British Columbia, poorwills are usually found in foothills

(e.g., the Okanagan Valley). Nests are located in open areas on the ground, often in manzantia (Arctostaphylos patula) and ceanothus (Ceanothus spp.) dominated clearings adjacent to stands of Ponderosa pine (Pinus ponderosa) and white fir (Abies concolor: Cannings et al. 1987; Brigham and Barclay 1992). Most nesting activity occurs at altitudes between 500 and 1000 m (Cannings et al. 1987; Campbell et al. 1991).

In Saskatchewan, poorwills usually occupy high, rolling prairies (e.g., Cypress Hills). Nests are often found on side hills with dead or short grass intermixed with stands of white spruce (Picea glauca) and trembling aspen (Populus tremuloides: Kalcounis et al. 1992).

These birds seem to prefer sparsely vegetated side hills or rocky canyons, primarily in semi-arid habitats. There is no information available on what habitat characteristics are essential for breeding.

Eggs are usually laid on the bare ground; occasionally on a hard gravel surface, flat rock, or a bed of pine needles (Bent 1940; Evans 1967; Swisher 1978; Swenson and Hendricks 1983). Often eggs are least partially shaded by some bush, a log, or a rock (Bent 1940; RMB unpublished data). Usually there is no semblance of nest building, though a slight hollow may be scraped in the bare earth.

Standing water does not appear to be an essential habitat requirement. Drinking has been observed infrequently in free ranging poorwills (Fears 1975; Brigham 1991). However, individuals kept in captivity for extended periods do not seem to require water to maintain good health (Brauner 1953; Goulden 1972) and radio tagged birds do not travel to standing water (Brigham 1991). It is likely

that poorwills can survive extended periods without drinking.

E.2. Distribution

Within their Canadian range poorwills appear to be rare or uncommon. However, they are usually found wherever there is suitable habitat. It appears that males may occupy territories separated by approximately 500 m (Kalcounis et al. 1992).

E.3. Trend in Quality and Quantity of Crucial Habitat

No information.

E.4. Rate of Habitat Change

No information. It is possible that logging of Ponderosa pine stands may make more suitable habitat available for poorwills. The same may apply to both grazing and fire since these processes limit the accumulation of herbaceous plants.

E.5. Protection of Habitat

No protection of habitat currently exists.

E.6. Degree of Specialization

No information exists on the degree of specialization in habitat use for poorwills. However, it appears that European Nightjars (Caprimulgus europaeus), another caprimulgid, are able to exploit and prosper in recently cleared conifer stands (Ravenscroft 1989).

F. GENERAL BIOLOGY

F.1. Reproduction

Poorwills in British Columbia appear to be monogamous and share incubating and brooding responsibilities (RMB unpublished data). It is thought that pairs are formed within a month of arrival. The eggs of the first brood are usually laid in late May or early June and in late July or early August for the second brood. Six of seven pairs in British Columbia and one in Saskatchewan laid two clutches, which always consist of two eggs (Brigham and Barclay 1992; Kalcounis et al. 1992). It is not known at what age individuals become reproductively active.

Little is known about the life span of poorwills. The only information is from the recovery of two banded individuals, one at least two years of age and the other at least three. Only about 350 birds have ever been banded.

There is no information available on the age structure, sex ratio, reproductive rate, or growth potential for any population.

F.2. Species Movement

It is not known if individuals in the northern part the species range migrate south individually or as a group. There are no reports of individuals concentrating at any time prior to or during migration.

F.3. Behaviour/Adaptability

Poorwills are nocturnal aerial insectivores that forage by sallying after prey from a perch or the ground. They forage in open

areas or at forest edges and appear to select large moths and beetles (Csada et al. In press).

Poorwills are close sitters when on the nest. They often do not flush until an intruder is less than 1 m away (Aldrich 1935; Bent 1940). This behaviour may make the parents (if detected) more susceptible to predation.

F.4. Sensitivity

Poorwills often nest in pastures. The effects of disturbance by grazing animals on nesting birds is unknown. If the parents are repeatedly flushed, nest desertion may occur.

F.5. Captive Breeding/Transplants

There have been no attempts to breed captive birds since they do not keep well in captivity (Ligon 1970; Goulden 1972). No attempts have been made to transplant individuals between populations.

G. LIMITING FACTORS

In the British Columbia population there appears to be a high predation rate on eggs, young, and adults (Brigham and Barclay 1992). Of the seven pairs (13 nesting attempts) observed in British Columbia only two young were successfully fledged, 20 disappeared (assumed to be preyed upon), and the fate of the other four chicks is unknown as observations ended before they fledged (RMB unpublished data). Of two clutches observed in the Saskatchewan population, one was lost to predation (Kalcounis et al. 1992). Little information exists on the effects of climate as a limiting factor.

No information exists on the effects of habitat loss, environmental contamination, or interspecific competition as limiting factors.

H. SPECIAL SIGNIFICANCE OF THE SPECIES

Excluding the red listed classification of the British Columbia poorwill population no special status has been assigned to the species in North America.

Other caprimulgids (e.g., European Nightjars and Common Nighthawks (Chordeiles minor)) have recently declined in numbers (Ravenscroft 1989; J.A. Wedgwood pers. comm.). The decline in European Nightjar numbers in the UK has led to the organization of the 1992 National Nightjar census (B. Cresswell pers. comm.). Since poorwills do not appear to be as densely distributed throughout their range they may be more vulnerable to the factor(s) causing these declines in the numbers of other closely related species.

Under natural conditions, poorwills are the only caprimulgid known to use torpor, the reduction of metabolism and consequently temperature (Brigham 1992). From a comparative standpoint it is important to understand the factors governing the use of torpor since this physiological condition is a polyphyletic trait for birds and mammals (Wang and Wolowyk 1988). Understanding these factors will yield insight about the mechanisms which underly the convergent evolution of torpor.

Given the cryptic nature of this species, very few people are aware of its presence in the area where the two Canadian populations reside. This species is, therefore, not likely subject to adverse

public attitudes. Once informed about the species insectivorous foraging habits, people are likely to perceive poorwills as serving a beneficial role.

There are no other threatened or endangered species found in the same habitat. This reflects the fact that the exact habitat requirements of poorwills are unknown.

I. EVALUATION AND PROPOSED STATUS

In our opinion, no designation is required for the status of the poorwill. This opinion, however, is based on extremely limited data. The fact that Canadian populations represent the northern limit of the species breeding range, no information exists on the population trend for either population, and predation may be an important factor should make any status designation tentative.

J. RECOMMENDATIONS

To clarify the status designation of the poorwill, we recommend that rigorous survey work be undertaken to allow for a better understanding of the geographical limits and population trends of the two populations.

K. REFERENCES

K.1. Individuals who have published scientific data for poorwills or are currently studying the species.

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APPENDIX 1. AUTHORS' RECOMMENDATIONS/MANAGEMENT OPTIONS

The following points should be addressed with further research (for more detail please refer to the text).

1. Rigorous survey work to determine the geographical limits, exact habitat requirements, and population trends of the two Canadian populations.

2. Determine the impacts of logging, grazing, and fire on habitat quality.

3. Use radio telemetry to determine if the use of torpor during the breeding season is the ultimate constraint limiting the species' breeding distribution.

4. Band individuals to determine life span and site fidelity.

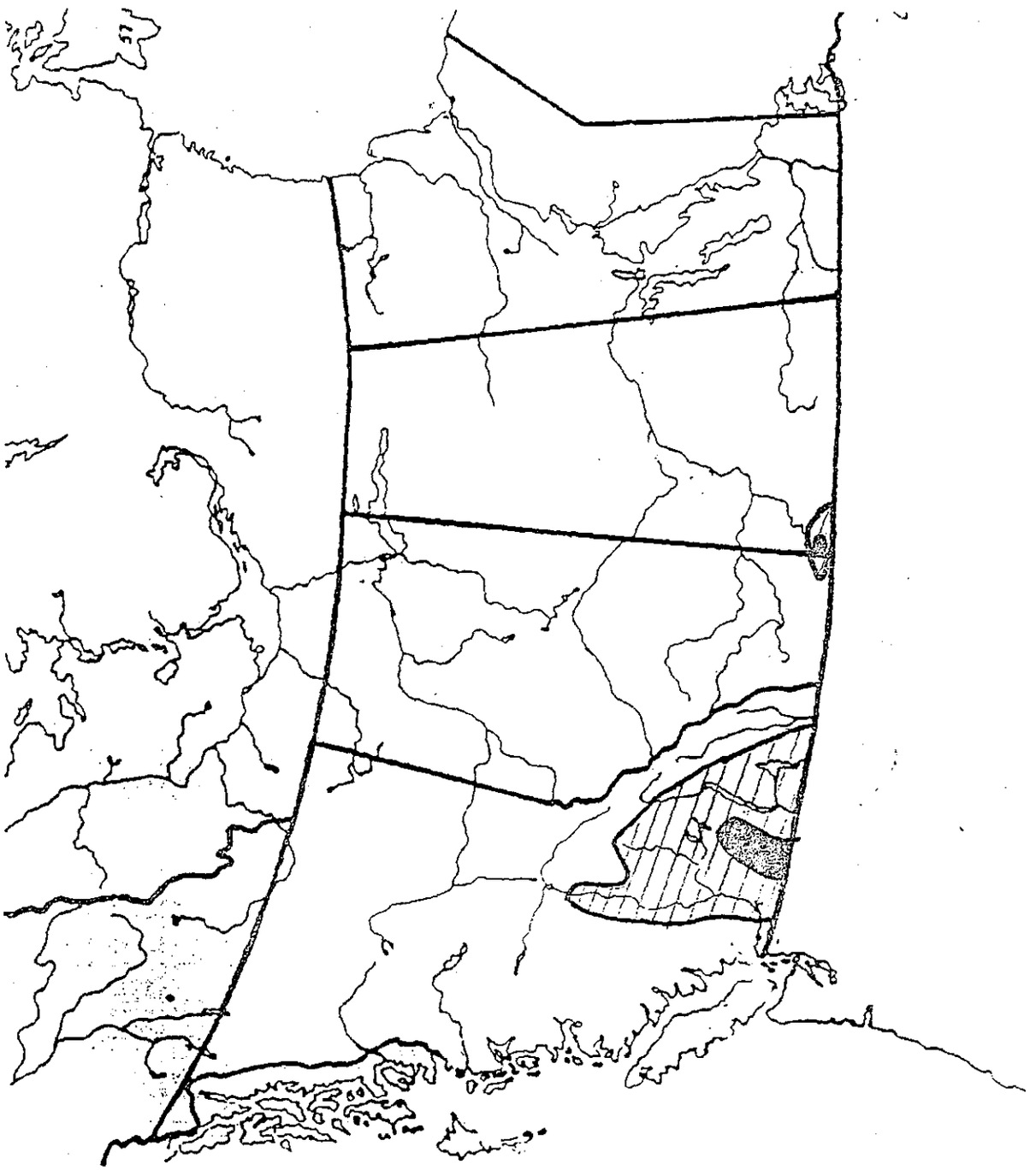
5. Determine reproductive output per pair per breeding season (e.g., number of young successfully fledged per breeding season).

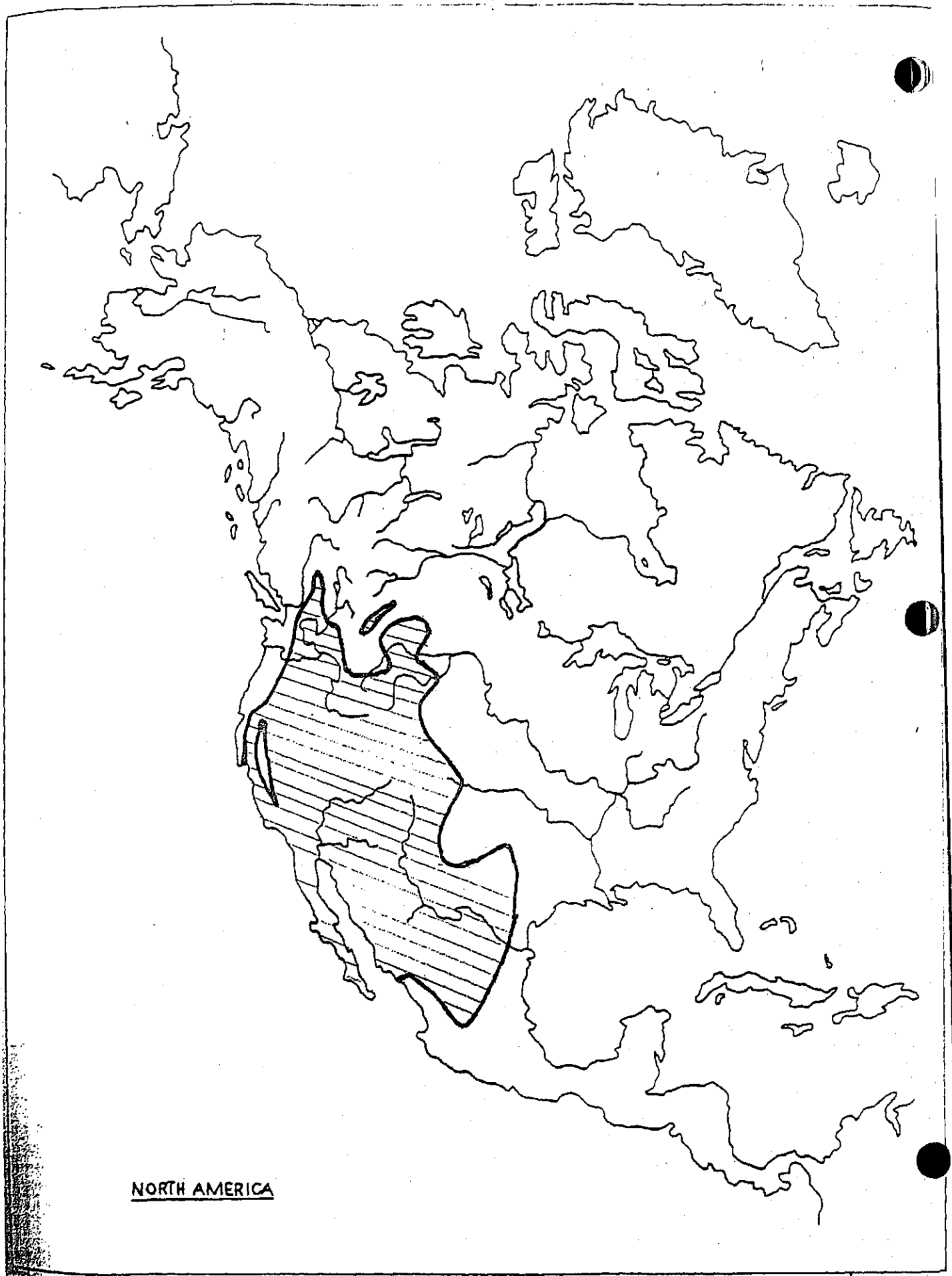
FIGURE CAPTIONS

Figure 1. Range of poorwills in Canada. Solid areas represent known breeding ranges and hatched areas represent ranges of known occurrence.

Figure 2. Range of poorwills in the Americas.

Figure 1





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