Species at Risk Survey Report

Peregrine Falcon Provincial Inventory 2022

Photo: Gordon Court

Background

The peregrine falcon (*Falco peregrinus anatum)* formerly nested along the banks of most major rivers in Alberta and on the cliffs bordering lakes in Wood Buffalo National Park and the Canadian Shield north of Lake Athabasca. Like most peregrine populations in North America, Alberta peregrines suffered reproductive failure and population declines in the 1950s and 1960s associated with the widespread and indiscriminate use of organochlorine pesticides, most notably Dichlorodiphenyltrichloroethane (DDT; Court et al. 1996). Following widespread concern over the decline of peregrine falcon populations in North America and elsewhere, efforts were made to systematically inventory peregrine falcon populations in Canada every five years. Upon the completion of the first of these surveys in 1970 (Cade and Fyfe 1970), only a single productive peregrine falcon pair was found in Alberta. Soon after, they were extirpated in Canada south of the boreal forest and east of the Rocky Mountains (Fyfe et al. 1976).

The Canadian Wildlife Service initiated a captive breeding stock at Wainwright, Alberta in the early 1970s. A subsequent re-introduction program, by fostering to wild pairs or by hack releases, continued in Alberta until the late 1990s. To gauge population recovery, five-year inventories of peregrine populations have continued in Alberta (Alberta Environment and Protected Areas 2021). In the absence of habitat change, peregrines in recovering populations tend to occupy the nest sites that were the last to be abandoned during the population crash, so surveys were designed to check, at a minimum, the status of all historically used nesting locations within circumscribed areas of the province, now referred to as the northern and central Alberta study areas.

In early July 2022, we conducted a survey of all historically occupied nesting cliffs used by peregrine falcons. Historically occupied nesting cliffs are defined as cliffs that were occupied by a pair of peregrines prior to the year of the survey. The last survey occurred in 2015 (central study area) and 2016 (northern study area); at that time, a total of 39 and 28 territories were occupied in the northern and central study areas, respectively (Court and Holroyd 2016, unpublished report).

Survey Method

We used an AS 350B2 helicopter to conduct the survey, flying out of Fort Chipewyan each day from 01-03 July 2022. We surveyed historically occupied nest sites, and opportunistically surveyed suitable nesting habitat, for peregrine falcons in the northern Alberta survey area (Wood Buffalo National Park and the Canadian Shield north of Lake Athabasca; Figure 1). During these surveys, each nesting

Figure 1: Range of peregrine falcon nest territories in the northern Alberta survey area checked for occupancy in 2022.

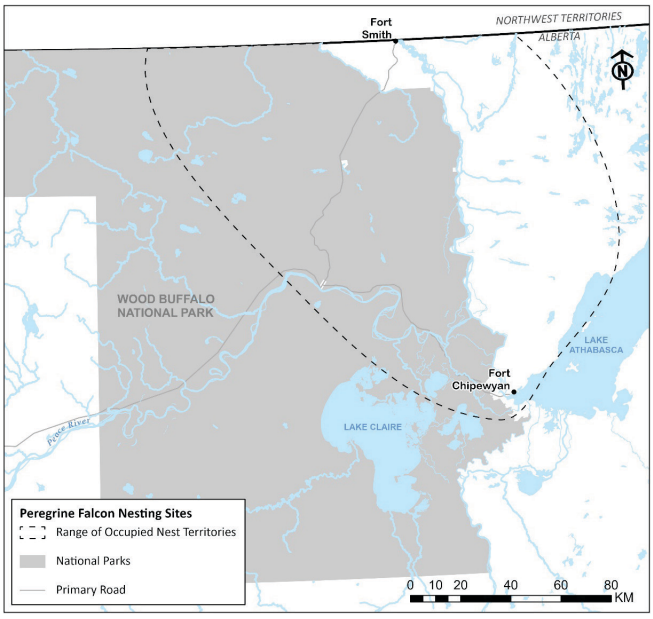

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Photo: Gordon Court

cliff was approached by helicopter at low speed. The aircraft was positioned parallel to the cliff at a safe distance from any nesting birds. Observers recorded the presence of flying or perched falcons and/or eggs and young on nest cliffs, as well as sign of nesting such as clusters of prey feathers and fresh whitewash on historically occupied nest sites.

The Central Alberta study area (primarily along the North Saskatchewan and Red Deer rivers) was surveyed using a combination of rotary surveys (on 12 July 2022, as described above), boat surveys, and foot surveys (where feasible). A combination of Alberta Environment and Protected Areas staff and contractors completed boat and foot surveys.

Results and Discussion

Northern Alberta Study Area

After 16.5 hours of helicopter survey, we had assessed all 101 sites that had been occupied by peregrine falcons in the historical record; 28 of these sites were occupied (Figure 1). This is down 28% from the 39 occupied territories observed in 2016 (Court and Holroyd 2016, unpublished report).

Observed productivity at nests varied from 0 to 3 young; however, the lack of ground checks during our survey precluded an accurate sample to establish mean productivity of the survey population.

Central Alberta

Forty-one nest territories were occupied within central Alberta, including six documented for the first time along the Red Deer and North Saskatchewan rivers (Figure 2). This is up from 28 occupied sites during the previous survey.

Given the fidelity of peregrine falcons to nesting territories, the fact that only 28 of the 101 historical sites were occupied is low. While previously used scrapes were still evident at historical locations, they were not at others. Other than the occasional remains of a Franklin's gull (*Leucophaeus*

Figure 2: Range of peregrine falcon nest territories in the central Alberta survey area checked for occupancy in 2022.

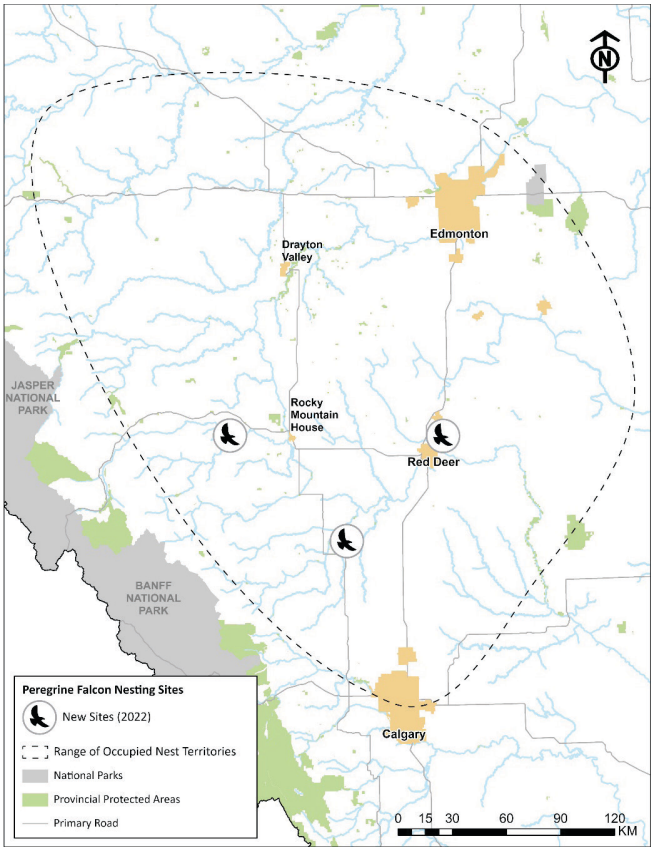
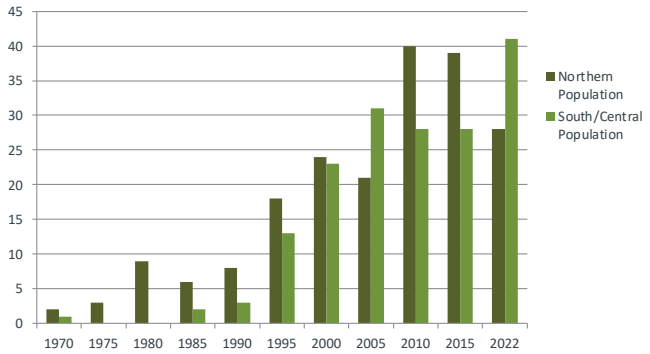


Photo: Gordon Court

pipixcan) near apparently unoccupied scrapes, little evidence of breeding was observed at unoccupied sites. However, a strain of Highly Pathogenic Avian Influenza (HPAI; H5N1) swept through Alberta in the spring and summer of 2022. There were at least seven known cases in Alberta peregrine falcons (Environment and Protected Areas 2022), and this disease certainly may have impacted adult survival and nest success at some locations. Researchers monitoring peregrine falcon populations along the Yukon River in Alaska also reported a 34% decline in observed occupancy within their study area between 2019 and 2023 (Skip Ambrose, USFWS retired, pers comm.) The lower number of occupied sites in the Northern Alberta Survey (above) could also reflect losses in the spring of 2022 through migrants exposed to HPAI.

Figure 3: Occupied peregrine falcon nest territories within the northern and central Alberta study areas, 1970-2022.



While results from recent surveys of both the historically occupied nest sites and suitable cliff habitat in northern and central Alberta show that the population continues to recover or is stabilizing, potential longer-term impacts of HPAI will need to be monitored in the coming years. The next provincial survey is scheduled for 2027.

Literature

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