Peregrine Falcon *anatum/tundrius*

Photo: © Gordon Court

Scientific name
Falco peregrinus anatum/tundrius

Taxon
Birds

COSEWIC status
Not at Risk

Canadian range
Yukon, Northern Territories, Nunavut, British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Newfoundland and Labrador

Reason for designation

Following dramatic declines in the mid-20th century, this species has rebounded significantly over the past few decades, with continued moderate to strong increases in many parts of Canada since the last status report in 2007. The initial recovery was a result of reintroductions across much of southern Canada following the ban of organochlorine pesticides (e.g., DDT). Increasingly, the ongoing population growth is a function of healthy productivity and, in the case of urban-nesting pairs, exploitation of previously unoccupied habitat. While pollutants continue to be used on the wintering grounds of some individuals, and can be found in tissue samples, they appear to be at levels that are not affecting reproductive success at the population level. The extent to which populations have recovered relative to historical levels is generally unknown, but the consistent strong growth of the overall population suggests that there are currently no significant threats to the species.

Wildlife species description and significance

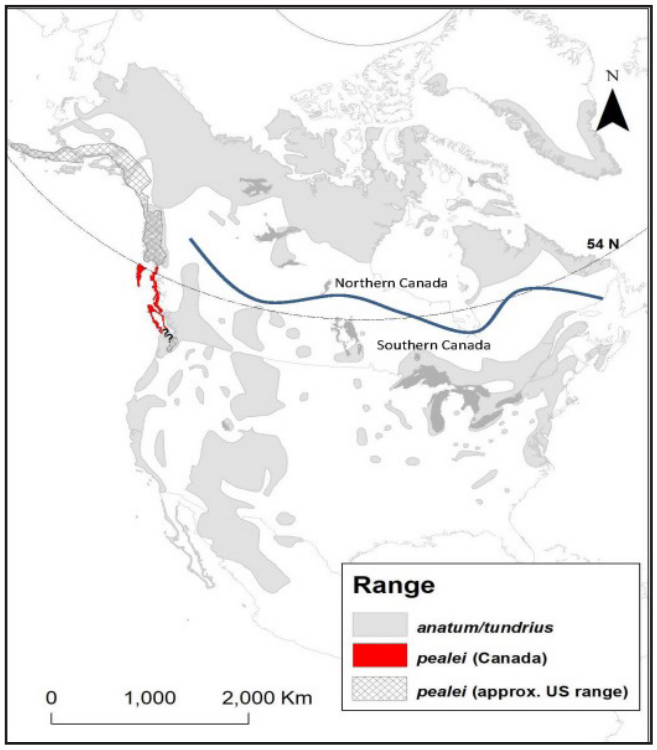
The Peregrine Falcon is a crow-sized raptor with long, pointed wings. Sexes are best distinguished by size, with females being on average 15-20% longer and 40-50% heavier than males. Adults have bluish-grey or darker upperparts, and pale underparts with variable amounts of dark spotting and barring. Immatures have upperparts that vary from pale to slate or chocolate brown, and underparts that are buffy with blackish streaks. A dark malar stripe extends from the eye across the cheek, and is generally wider on adults.

Nineteen subspecies of Peregrine Falcon are recognized globally, three of which occur in North America. The *pealei* subspecies is darker overall and is the largest, on average, in North America. The anatum and tundrius subspecies cannot be distinguished genetically, and are considered as a single entity for the purpose of this status report. Within the *anatum/tundrius* complex, northern birds are typically paler and smaller, while more southern birds tend to have orange to brownish tinges to their underparts.

The Peregrine Falcon became an important symbol of environmental degradation due to its dramatic declines in abundance in the middle of the 20th century, and its recovery has been heralded as a conservation success story. It is one of the more desired falconry species globally.

Distribution

The Peregrine Falcon is one of the world's most widely distributed bird species, occurring on every continent except Antarctica. The *pealei* subspecies is restricted to the western coast of North America, and in Canada it is limited to the marine coasts of British Columbia from northwestern Vancouver Island to the Alaska panhandle, with the majority occurring on Haida Gwaii (formerly known as the Queen Charlotte Islands). The *anatum/tundrius* Peregrine Falcon is widely distributed across Canada, breeding in every jurisdiction except Prince Edward Island, but its distribution in southern Canada is discontinuous. It occurs in southern parts of British Columbia and the Prairie Provinces, and across eastern Canada from the Great Lakes Basin to the Bay of Fundy, but does not breed on the island of Newfoundland. Arctic-nesting Peregrine Falcons breed from the Beaufort Sea coast of the Yukon east to Labrador and north to Baffin Island.



Canadian and North American breeding distribution of the Peregrine Falcon.

Source: COSEWIC. 2017. COSEWIC assessment and status report on the Peregrine Falcon *Falco peregrinus* (*pealei* subspecies – *Falco peregrinus pealei* and *anatum/tundrius* – *Falco peregrinus anatum/tundrius*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xviii + 108 pp.

Habitat

The Peregrine Falcon breeds in a wide variety of habitats, including tundra, coastal islands, desert canyons, and major metropolitan centres. Higher densities are often found in Arctic and coastal habitats. Although its diet is flexible, it breeds only where there is access to sufficient food supplies. The most commonly used habitats contain cliffs or buildings for nesting and open landscapes for foraging, with large rivers or lakes typically present nearby. Breeding sites may have a linear distribution, following rivers or coastlines. Nest sites of *pealei* Peregrine Falcons are usually on island cliffs. The *anatum/tundrius* Peregrine Falcons in northern Canada nest primarily on cliffs along large river systems. Urban habitats have become increasingly used by Peregrine Falcons in southern Canada in recent decades, with buildings, bridges and other structures being used as nest sites. The proportion of individuals nesting on cliffs versus urban habitats varies substantially across Canada. Alternate nest sites, which are not used every year, are often located within a nesting territory.

Peregrine Falcons often migrate along coasts, which provide prime hunting habitat because they coincide with the migration routes of preferred prey species, but some migrate through the interior. Peregrine Falcon wintering habitat varies widely, but typically contains aquatic and wetland habitats, and can also include urban areas. Northern-nesting *anatum/tundrius* birds generally migrate the farthest, to Central and South America, while more southern-nesting birds may not migrate as far and some even overwinter on their nesting territories. Many *pealei* Peregrine Falcons winter on or close to their nesting territories.

Biology

Peregrine Falcons maintain a nesting territory, although in areas with abundant prey, nest sites can be close together. Adults typically return to previously used nest sites, and those with high productivity are often occupied throughout successive generations. Breeding typically begins at 2-3 years of age, typically one year younger for females than males. The nest is a simple scrape on a nest ledge, usually a cliff or building, and occasionally in a stick nest of another bird. Peregrine Falcons typically lay 3-4 eggs, and incubation averages 32-35 days. The young usually begin to take flight around 40 days after hatching, with males typically fledging earlier than females. Both adults incubate, with the female usually doing more of the incubation. Nest productivity varies considerably, both annually and regionally, and is heavily influenced by individual condition, severe weather events, and prey availability. Productivity among *pealei* Peregrine Falcons averages 1.9 young fledged per territorial pair. For *anatum/tundrius* Peregrine Falcons in southern Canada it has ranged between 1.5-1.9 young/territorial pair since 1995, while in northern Canada it has consistently remained at or below 1.5. Peregrine Falcons typically prey upon small to medium-sized birds that are hunted in the air, although they can pursue a wide range of prey, including rodents in the Arctic.

Photo: © Gordon Court

Population Sizes and Trends

The Canadian *pealei* Peregrine Falcon nesting population is presently considered to be stable to slightly increasing, with the recent total of 119 occupied nests documented in 2015 being a record high, although the trend may in part reflect increasing survey effort over time. Overall, the population is estimated at 250-1000 mature individuals.

There are 300 known pairs of *anatum/tundrius* Peregrine Falcons in southern Canada, an area with good survey coverage, and the total population for the region is estimated at approximately 1000 mature individuals. In northern Canada, a minimum of 479 known nesting sites[1] have been identified within regularly surveyed study areas, and the population for these surveyed areas is estimated at 1,500 mature individuals. However, the vast majority of the Arctic region is not surveyed and the total population is undoubtedly much larger. The total post-breeding population of northern North America (Canada, Alaska, and Greenland) in 2000, based upon mark-recapture studies of hatching-year birds, was estimated to represent more than 60,000 mature individuals. Based upon this estimate and subsequent rates of population growth, the Peregrine Falcon population in northern Canada is conservatively estimated to be at least 35,000 mature individuals.

[1] Based upon the number of observed nesting sites in the 2010 survey, supplemented by higher counts for regions also surveyed in 2015 and the highest recent count for regions not surveyed in 2010.

Although the historical population size was not well documented, given the remoteness of most nest sites, there was an evident dramatic decline in Peregrine Falcon numbers in the middle of the 20th century because of widespread contamination by DDT (dichlorodiphenyltrichloroethane), which resulted in impaired reproduction through thinning of eggshells. The *pealei* Peregrine Falcon population has been gradually increasing over the past several decades at an estimated rate of almost +2% per year. The most recent estimates of population growth over a 20-year period for southern Canada *anatum/tundrius* subpopulations range from +50% in Saskatchewan to +3233% in Ontario. Although generally increasing, northern-nesting *anatum/tundrius* Peregrine Falcon subpopulations have shown more variability across jurisdictions and years. From 1990-2010, the number of occupied territories in five regularly surveyed areas of northern Canada increased by an average of 1.3% per year, with a range over 20 years from -5% in Labrador to 100% in Nunavut.

Threats and Limiting Factors

The Peregrine Falcon remains potentially vulnerable to threats including toxic chemicals, heavy metal contamination, and severe weather effects associated with climate change. However, climate change may also have some positive effects, such as an extended nesting season for High Arctic subpopulations. Regulated harvest levels for falconry purposes appear to be sufficiently low to avoid population impacts. Overall, no substantial threats are currently apparent for *anatum/tundrius*, as reflected by the steady increase in numbers across most of Canada. Given its reliance on seabirds, the *pealei* subspecies remains vulnerable to oil spills and other pollution that may affect these prey, as well as other natural system modifications that could result in seabird declines.

Protection, Status and Ranks

Peregrine Falcon *anatum/tundrius* was assessed by COSEWIC as Special Concern in April 2007 and reassessed as Not at Risk in November 2017. The *pealei* subspecies was assessed as Special Concern in April 2007 and November 2017. The *anatum/tundrius* and the *pealei* subspecies of the Peregrine Falcon are both listed as Special Concern under Schedule 1 of the federal *Species at Risk Act*.

Peregrine Falcon is currently listed under Appendix 1 of the Convention on International Trade in Endangered Species of Flora and Fauna. In addition to the national management plan, a number of provinces and national parks have management plans or recovery strategies for the Peregrine Falcon.

Source: COSEWIC. 2017. COSEWIC assessment and status report on the Peregrine Falcon *Falco peregrinus* (*pealei* subspecies – *Falco peregrinus pealei* and *anatum/tundrius* – *Falco peregrinus anatum/tundrius*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xviii + 108 pp.