

Peregrine Falcon

Falco peregrinus

REGULATORY STATUS

USFWS: Delisted, Migratory Bird
USFS R2: Sensitive
USFS R4: Sensitive
Wyoming BLM: Sensitive
State of Wyoming: Protected Bird

CONSERVATION RANKS

USFWS: Bird of Conservation Concern
WGFD: NSS3 (Bb), Tier II
WYNDD: G4, S2B/S2S3N
Wyoming Contribution: LOW
IUCN: Least Concern
PIF Continental Concern Score: 9

STATUS AND RANK COMMENTS

Arctic Peregrine Falcon (*Falco peregrinus tundrius*) was removed from the Federal Endangered Species list in 1994. American Peregrine Falcon (*F. p. anatum*) was removed from the Federal Endangered Species list in 1999. Both of these subspecies were first listed as Endangered in 1970^{1, 2}. Note that the “Sensitive” status assigned by both Region 2 and Region 4 of the U.S. Forest Service formally applies to *F. p. anatum*, the form most likely encountered in Wyoming (see Taxonomy, below). Peregrine Falcon has been assigned a range of non-breeding state conservation ranks by the Wyoming Natural Diversity Database due to uncertainties in the winter population of the species. Specifically, it is uncertain how much of the state may be considered viable winter habitat, and the population trend of the winter population is unknown.

NATURAL HISTORY

Taxonomy:

Nineteen subspecies of Peregrine Falcon are recognized world-wide. Three subspecies are found in North America. *Falco peregrinus anatum*, commonly called American Peregrine Falcon, is the most widespread subspecies in North America and is found across most of the continent, including Wyoming. The other two subspecies in North America are *F. p. pealei*, found in the Pacific Northwest, and *F. p. tundrius*, found in the arctic³. *F. p. tundrius* is sometimes found in Wyoming during migration⁴.

Description:

Identification of Peregrine Falcon is possible in the field. Females are larger than males, 45–58 cm tall, and 36–49 cm tall, respectively³. All North American adults have a yellow eye ring and cere; a large black mustache; and dark head, back, and wings. The underside is white with barring. In flight, the species shows large pointed wings and a narrow tail. Juvenile birds are brown overall, contrasting with the blue-black plumage of adults. In Wyoming, similar species

include Merlin (*F. columbarius*) and Prairie Falcon (*F. mexicanus*). Compared to the Peregrine Falcon, the Merlin is much smaller at 28–31 cm tall, lacks the mustache stripe, and is finely streaked below. The Prairie Falcon is brown overall, does not have as strong of a mustache, and has a white eyebrow stripe. In flight, the Prairie Falcon shows dark armpits. Peregrine Falcon lacks this field mark ⁵.

Distribution & Range:

Peregrine Falcon is found globally, absent only from Antarctica. The species was formerly found extensively across North America, but declines during the early part of the 20th century have resulted in reduced abundance and local extirpations. Currently, the species is found across western and eastern North America, with scattered breeding in the middle of the continent. Wyoming, especially the northwestern portion of the state, is part of the broad western distribution of the species, which extends from Mexico north into Canada ^{3,6}. Peregrine Falcon has been documented in 27 of Wyoming’s 28 latitude/longitude degree blocks, with confirmed breeding occurring in 13 of those 27 degree blocks ⁶. Most Peregrine Falcons migrate out of North America for the winter to Central and South America, though some overwinter in portions of North America, including Wyoming ^{3,4}.

Habitat:

Peregrine Falcon is a habitat generalist across its range, using a wide variety of natural habitats and urban areas for nesting and foraging. In Wyoming, the species typically requires cliffs for nest sites, and open areas for foraging. Elsewhere in the species range, nests are constructed on buildings and other man-made structures, and sometimes on the ground in habitats like arctic tundra ³. Most breeding Peregrine Falcons in Wyoming are found in Grand Teton and Yellowstone National Parks ^{4,6,7}. In the non-breeding season, the species uses any open habitat ³.

Phenology:

While some individual Peregrine Falcons may stay in Wyoming during the winter, most of the breeding population arrives in late March and early April ⁴. In Wyoming, courtship occurs from early April to early May, and fledging is completed by late July ⁸. In Colorado, egg laying begins in late April, and fledging occurs from June into July ⁹. The dates of egg laying, hatching, and fledging of young vary widely across the species’ range. Incubation lasts 33–35 days and young fledge from the nest at 42–44 days of age ^{3,9}. After fledging, young are provisioned by parents for 4–8 weeks. The shorter period of provisioning occurs with birds that migrate, the longer periods for those that do not migrate ³. Fall migration in Wyoming occurs from early September to early October ⁴.

Diet:

Peregrine Falcon primarily feeds upon birds. Other food items include bats, squirrels, small mammals, amphibians, fish, and insects ³.

CONSERVATION CONCERNS

Abundance:

Continental: WIDESPREAD

Wyoming: RARE

Using North American Breeding Bird Survey (BBS) data, the Partners in Flight Science Committee estimated the global population of Peregrine Falcon to be 140,000 birds ¹⁰. Although a population estimate was not provided, about 0.6% of the global population is estimated to

breed in Wyoming¹¹. However, this abundance estimate should be viewed with caution, given the very low detection rate of this species in the state during BBS efforts. The statewide rank of RARE is based on the rather small area of the state known to be occupied in any given season, and the small coverage of suitable habitat within that area. However, within suitable habitat in the occupied area, Peregrine Falcon appears to be uncommon, occurring in relatively low densities and requiring intensive survey efforts to detect the species⁶. A subset of nesting territories are monitored each year. In 2013, there were at least 118 nesting territories in Wyoming¹². Most breeding Peregrine Falcons in Wyoming are in the northern and northwestern part of the state in the Bighorn, Teton, and Wind River Mountain Ranges⁶. Since 2005, a mean of 28 territories are checked annually, the mean number of occupied territories is 25, the mean number of successful territories is 17 (68%), the mean number of young fledged is 39, and the mean number of young per occupied territory is 1.5¹³.

Population Trends:

Historic: LARGE DECLINE

Recent: INCREASE

In Wyoming and across the globe, Peregrine Falcon numbers plummeted precipitously from the 1940s to the 1970s due to DDT and other pesticides, with extirpations occurring in many portions of the species range³. Laws banning the use of DDT and other pesticides, combined with reintroduction efforts across North America, have led to an increase in numbers. The species now occupies nearly all of its historical range in Wyoming, and monitoring results indicate that the population of nesting Peregrine Falcons is stable in Wyoming¹³. Long-term averages from survey results since 2005 suggest that Peregrine Falcon production is well above recovery goals and indicate that the species nesting population is stable in Wyoming¹³.

Intrinsic Vulnerability:

HIGH VULNERABILITY

In Wyoming, Peregrine Falcon requires cliffs for nesting^{3,4}. Peregrine Falcons have a relatively low reproductive rate. A nesting pair of Peregrine Falcons will only produce one brood per year, and normally will not attempt to renest if the original clutch fails³.

Extrinsic Stressors:

SLIGHTLY STRESSED

Peregrine Falcons in remote areas may abandon nest sites in the presence of human activity³. Pesticide and other chemical poisoning continue to negatively affect the species in many portions its range. This has not been studied in Wyoming¹⁴⁻¹⁶. Drought and other climactic conditions, such as El Niño events, in western North America may be contributing to recent observations of reduced productivity¹⁷⁻¹⁹. Normal occupancy rates but low fledging can result from inclement weather that is extreme and persistent during and shortly after Peregrine Falcon hatch in May¹³.

KEY ACTIVITIES IN WYOMING

Peregrine Falcon is listed as a Species of Greatest Conservation Need in Wyoming by the Wyoming Game and Fish Department (WGFD). Wyoming participates in the National Monitoring Plan for American Peregrine Falcon. Under this program, state and federal agencies monitor populations every three years. These surveys will continue until 2015. The WGFD conducts annual surveys in the state at 30 randomly chosen territories. For both of these programs, occupancy and productivity (fledglings/territory) are determined. During the 2012 triennial survey, 15 out of 93 known territories in the state were checked. Of these 15 territories,

14 were occupied, 50% were successful, and productivity was 1.1 young/occupied territory²⁰. A total of 15 territories were checked during the 2015 triennial survey; 14 were occupied, 43% were successful, and productivity was 0.9 young/occupied territory¹³. Additional monitoring efforts between years and in 2012 indicated higher productivity, which suggests that a sample size of only 15 territories under-represents actual productivity²⁰. The 2015 survey by WGFD revealed 35 occupied territories out of 38 surveyed, 16 (47%) of the successful territories produced 35 young, and productivity was 1.0 young fledged per occupied territory¹³. Although productivity was slightly lower than previous years, it is still within range of the mean of 1.5 young fledged per occupied territory¹³. Fall migration of raptors has been monitored annually since 2002 at Commissary Ridge in southwestern Wyoming by Hawk Watch International. In 2011, only 6 individuals were seen. This was 50% lower than the 10 year average and was one of the lowest totals in the history of the watch²¹. Observations of Peregrine Falcon are reported to the WGFD and vetted through the Wyoming Bird Records Committee (WBRC). This is a species for which the WBRC requests documentation on first latitude/longitude degree block sightings and all nesting observations.

ECOLOGICAL INFORMATION NEEDS

Due to the historical protection of Peregrine Falcon under the Endangered Species Act, the biology of the species is very well understood. However, there are uncertainties pertaining to the population in Wyoming in winter. Specifically, it is unknown how many Peregrine Falcons overwinter in the state, how much of the state is winter range, and how the wintering population has changed through time. Continued exposure to and effects of pesticides and other chemical compounds in Wyoming's Peregrine Falcons is unknown.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Andrea C. Orabona. Peregrine Falcon is classified as a Species of Greatest Conservation Need in Wyoming²². From 1980–1995, WGFD coordinated a Peregrine Falcon reintroduction program with the U.S. Fish and Wildlife Service (USFWS), National Park Service, the U.S. Forest Service, Bureau of Land Management, and state wildlife agencies in Idaho and Montana. Our goal was to establish and maintain a self-sustaining Peregrine Falcon breeding nucleus in the wild comprised of a minimum of 30 breeding pairs. During that timeframe, we released 384 Peregrine Falcons, with ≥ 325 (85%) surviving to dispersal (1 month post-release)¹³. Objectives were met in 1994–1995, and the reintroduction effort was completed. In addition to the triennial monitoring effort conducted in coordination with the USFWS, the WGFD also conducts annual monitoring of 30 randomly selected Peregrine Falcon nesting sites throughout Wyoming, which allows us to assess occupancy and productivity. Annual results are similar to long-term averages, suggesting that Peregrine Falcon populations remain well above recovery goals and are stable in Wyoming¹³.

CONTRIBUTORS

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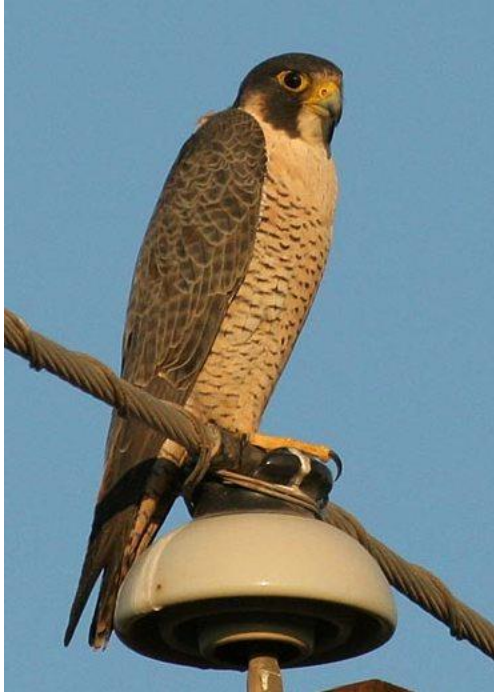


Figure 1: Adult Peregrine Falcon in southern California. (Photo courtesy of Glen Tepke, www.pbase.com/gtepke/profile)

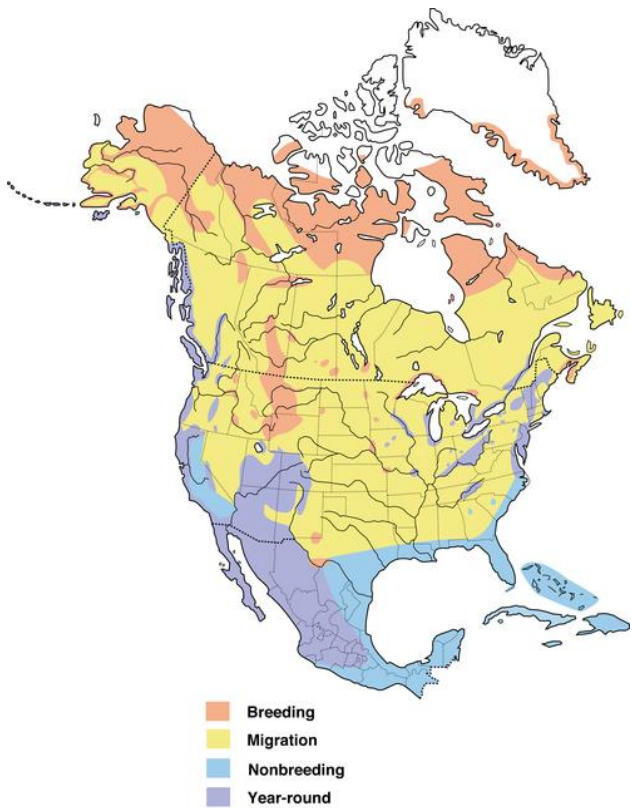


Figure 2: North American breeding range of *Falco peregrinus*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)

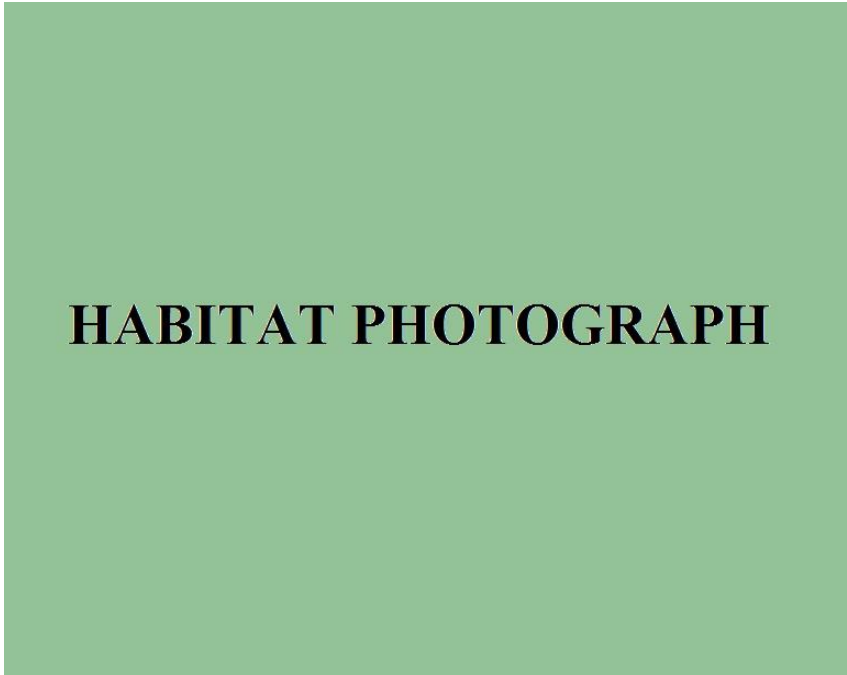
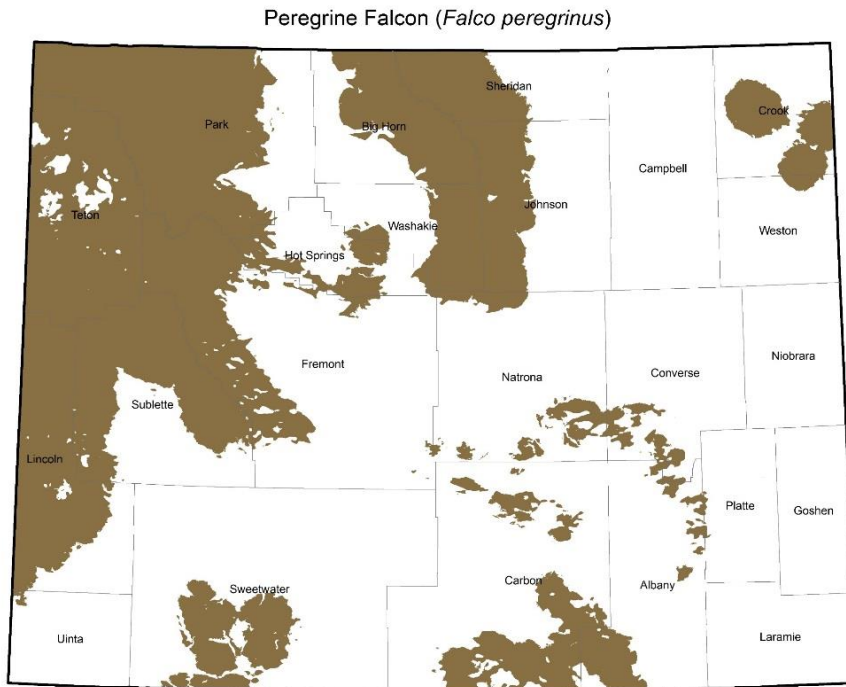


Figure 3: Photo not available.



SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: Sept. 2016.
Wyoming Game and Fish Department and Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming.
Note that brown indicates the predicted distribution of the species;
heavy black lines indicate outermost boundaries of possible occurrence.

Figure 4: Range and predicted distribution of *Falco peregrinus* in Wyoming.