

**Species Listing PROPOSAL Form:**

Listing Endangered, Threatened, and Special Concern Species in Massachusetts

Scientific name: Falco peregrinusCurrent Listed Status (if any): EndangeredCommon name: Peregrine FalconProposed Action: Add the species, with the status of: \_\_\_\_\_

Change the scientific name to: \_\_\_\_\_

 Remove the species

Change the common name to: \_\_\_\_\_

 Change the species' status to: Threatened

(Please justify proposed name change.)

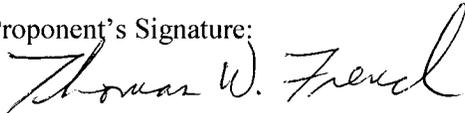
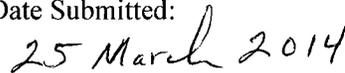
Proponent's Name and Address:

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Proponent's Signature:

Date Submitted:


Please submit to: Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581

**Justification**

Justify the proposed change in legal status of the species by addressing each of the criteria below, as listed in the Massachusetts Endangered Species Act (MGL c. 131A) and its implementing regulations (321 CMR 10.00), and provide literature citations or other documentation wherever possible. Expand onto additional pages as needed but make sure you address all of the questions below. The burden of proof is on the proponent for a listing, delisting, or status change.

**(1) Taxonomic status.** Is the species a valid taxonomic entity? Please cite scientific literature.

The Peregrine Falcon is a well accepted species, originally described in 1771, and currently represented by 17 to 19 subspecies worldwide. Three subspecies naturally occur in North America, including and *Falco peregrinus anatum* (Bonaparte 1838) originally nesting in interior sub-arctic Canada and Alaska, and the mountains of eastern and western United States and northern Mexico, *F. p. tundrius* (White 1969, White et al. 2002) nesting in the Arctic tundra of North America and Greenland, and *F. p. pealei* (Ridgway 1873) restricted to the Pacific Northwest from Puget Sound and coastal Alaska, through the Aleutian Islands. The subspecies, *F. p. tundrius* which originally nested in Massachusetts, was extirpated from the eastern U.S. by 1966 (Hickey and Anderson 1968, 1969). Restoration efforts, beginning in 1972, released captive-born birds primarily representing *F. p. anatum* from western Canada and Alaska, and *F. p. tundrius* from nearby locations. In addition, birds representing *F. p. pealei*, and *F. p. peregrines* from Europe were also released in the eastern U.S. In Massachusetts falcons that were pure *F. p. anatum*, as well as *F. p. anatum* X *F. p. tundrius* and *F. p. tundrius* X *F. p. pealei* crosses, were released. The use of multiple subspecies was justified because of the limited remaining gene pool of *F. p. anatum* and the belief that the inclusion of other subspecies would optimize the genetic

diversity of the founding population so that some individuals would be well adapted to the geographic areas where the original population had been extirpated (Cade et al. 1988, Cade and Burnam 2003).

(2) **Recentness of records.** How recently has the species been conclusively documented within Massachusetts?

After a post-DDT absence of 36 years (1951 to 1987), Peregrine Falcons now breed annually in Massachusetts, with most individuals remaining in the state year-round.

(3) **Native species status.** Is the species indigenous to Massachusetts?

The Peregrine Falcon was native to Massachusetts from pre-European settlement times, but was extirpated as a breeding species after the 1951 nesting season. The repatriated population first began nesting in 1987 and has since been steadily increasing.

(4) **Habitat in Massachusetts.** Is a population of the species supported by habitat within the state of Massachusetts?

Historically, Peregrine Falcons were restricted to nesting sites on exposed cliffs in central and western Massachusetts. In Massachusetts, 14 different cliff nest sites were documented by Hagar (1969). However, with modern construction and increased development, Peregrine Falcons in Massachusetts now nest on a wide range of structures, including buildings, bridges, cell towers, and quarries.

(5) **Federal Endangered Species Act status.** Is the species listed under the federal Endangered Species Act? If so, what is its federal status (Endangered or Threatened)?

The American Peregrine Falcon was federally listed as Endangered on June 2, 1970 (35 FR 8495) under the Endangered Species Conservation Act of 1969 and was retained on the list with the passage of the Endangered Species Act of 1973. It was delisted for reasons of recovery on August 25, 1999 (63 FR 45446-45463) (USFWS 1999).

**(6) Rarity and geographic distribution.**

(a) Does the species have a small number of occurrences (populations) and/or small size of populations in the state? Are there potentially undocumented occurrences in the state, and if so, is it possible to estimate the potential number of undocumented occurrences?

(b) What is the extent of the species' entire geographic range, and where within this range are Massachusetts populations (center or edge of range, or peripherally isolated)? Is the species a state or regional endemic?

The Peregrine Falcon is found worldwide on all large ice-free land masses except New Zealand. In eastern North America, this species historically nested from the Arctic, south to the southern Appalachians in North Carolina.

**(7) Trends.**

(c) Is the species decreasing (or increasing) in state distribution, number of occurrences, and/or population size? What is the reproductive status of populations? Is reproductive capacity naturally low? Has any long-term trend in these factors been documented?

Before the impacts of DDT, there were approximately 275 nesting pairs of Peregrine Falcons in the U.S., east of the Mississippi River (Hickey 1942). In Massachusetts Hagar (1969) documented a maximum of 14 cliff-nesting pairs and heard rumors of three other possible nesting cliffs, for a possible maximum of 17 nest sites, although these were probably never all occupied at the same time. Some of the sites were of marginal quality and were known not to be used regularly (Hagar 1969). The first observation in the U.S. of a nest with thin-shelled eggs broken by the parents was reported by the Massachusetts State Ornithologist, Joseph A. Hagar, at Lighthouse Hill on the west side of the Prescott Peninsula at the newly built Quabbin Reservoir in 1947 (Hagar 1969). The last chick fledged from a Massachusetts nest site was at Monument Mountain, Great Barrington in 1957.

By 1964, there were no remaining Peregrine Falcons nesting in the U.S., east of the Mississippi River and DDT was implicated as the cause (Berger, et al. 1969, Hickey and Anderson 1968, 1969). During the 1960s and early 1970s, Peregrine Falcon populations were eliminated from the East and Midwest, with a few hundred pairs remaining in the West and in Mexico. Populations in Canada and Alaska were reduced by about 70% (USFWS 2003). One of the first major actions taken by the newly established U.S. Environmental Protection Agency (EPA) in 1972 was to cancel the registration and use of the pesticide DDT. The Peregrine Fund was established by Tom Cade at Cornell University in 1970 and the production of captive-born chicks for release began in 1974 (Barclay and Cade 1983, Cade et al. 1988). More than 4,000 captive-born chicks produced by the Peregrine Fund for release, and another 2,000 raised by other facilities, for a total of over 6,000 birds (Cade and Burnham 2003, USFWS 2003).

Thirty-six captive-born chicks produced by The Peregrine Fund were released by hacking in Massachusetts between 1975 and 1988, including 16 at a historic cliff nest site on Mt. Tom, 3 on an old forest tower in Lincoln, 12 in downtown Boston, and 5 on the campus of the University of Massachusetts, Amherst.

The first wild nesting in Massachusetts after restoration began was in 1987 on the McCormack Post Office and Court House building in downtown Boston (French 2003, 2004). This pair moved to a nest box provided on the Custom House Tower the following year. By 1997, the North American population of American Peregrine Falcons had reached the overall recovery goals set by the USFWS, and by 2002 the U.S. population had reached about 2,000 nesting pairs (White et al. 2002). The number of nesting pairs had significantly exceeded the recovery goal in four of the five recovery units (Alaska, Canada, Pacific Coast, and Rocky Mountain Southwest). The fifth recovery unit, the East, was divided into 5 zones. Although the overall goal of 175-200 nesting pairs could not be documented, the goals for the individual recovery zones had been exceeded in 3 zones and may also have been met in the other two. In addition, there were 31 known nesting pairs in the Midwest which was not included in any of the initial five recovery units (USFWS 1998).

By 2013, there were 30 known nesting pairs that fledged at least 45 chicks in Massachusetts. There are likely as many “floaters” that have not yet become attached to a territory or a mate in Massachusetts, as there are territorial pairs. The total number of local Peregrine Falcons in Massachusetts is therefore likely around 90 individuals. Although this is a large number of Peregrine Falcons compared to historic numbers, the total number of individual birds is still small within the context of insuring their long-term protection.

**(8) Threats and vulnerability.**

(d) What factors are driving a decreasing trend, or threatening reproductive status in the state? Please identify and describe any of the following threats, if present: habitat loss or degradation; predators, parasites, or competitors; species-targeted taking of individual organisms or disruption of breeding activity.

Early threats to the Peregrine Falcon in MA included legal shooting of adults as part of the general persecution of raptors, the taking of eggs for private egg collections, and the taking of chicks for falconry. The clutch of eggs collected on Mt. Tom by C.W. Bennett of Holyoke on April 19, 1864 are reported to be the first Peregrine Falcon eggs collected in the United States (Allen 1869). Between 1875 and 1923, about 30 sets of eggs were collected from the Mt. Tom eyrie alone as noted by William Carrier and A.C. Bagg. It is reported that 30 people a day came to Mt. Tom looking for Peregrine Falcon eggs during the 1883 nesting season. All three of these activities were prohibited by MA law in 1934. Peregrine Falcons and other raptors did not receive federal protection under the Migratory Bird Treaty Act until the 1972 amendment to the original 1936 treaty with Mexico.

The primary cause of the dramatic decline of the Peregrine Falcon worldwide in the 1960s resulted from the use of DDT from the 1950s until the registration of DDT was canceled by the U.S. by the Environmental Protection Agency (EPA) in 1972.

Other threats in MA have included, predation of young and adults by Great Horned Owls (*Bubo virginianus*) and nest predation by Raccoons (*Procyon lotor*), low levels of illegal shooting, and disturbance at nest sites by recreational climbers. However, none of these threats are harmful at the population scale.

(e) Does the species have highly specialized habitat, resource needs, or other ecological requirements? Is dispersal ability poor?

Historically, the distribution of Peregrine Falcons was limited by access to natural cliffs for nesting (Hagar 1969). However, they have adapted well to nesting on a variety of man-made structures, including tall buildings, bridges, and quarries (Faccio et al. 2013, Gahbaur et al. In Press). With this willingness to nest on man-made structures, nesting site availability is a far less important limiting factor. There are still many unoccupied potential nest sites and territories in MA.

**Conservation goals.**

What specific conservation goals should be met in order to change the conservation status or to remove the species from the state list? Please address goals for any or all of the following:

(a) State distribution, number of occurrences (populations), population levels, and/or reproductive rates

MassWildlife has not established a target population size or state conservation goals. A thorough analysis of habitat availability and, thus, carrying capacity, is needed before state population objectives can be established. These state population objectives will be determined prior to a delisting proposal.

(b) Amount of protected habitat and/or number of protected occurrences

A state management plan for the Peregrine Falcon should be developed to address habitat conservation prior to a delisting proposal.

(c) Management of protected habitat and/or occurrences

A state management plan for the Peregrine Falcon should be developed to address specific management objectives prior to a delisting proposal. At present, Peregrine Falcons have re-occupied five of the 14 traditional cliff nest sites. Two of these are owned and managed by the Department of Conservation and Recreation, one by the Trustees of Reservations, and two are in private ownership. Efforts should be made to protect these and the other nine natural nest sites. All of the other Peregrine Falcon nesting sites in Massachusetts are on man-made structures.

**Literature cited, additional documentation, and comments.**

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