

**Species Listing PROPOSAL Form:**  
**Listing Endangered, Threatened, and Special Concern Species in Massachusetts**

Scientific name: Falco peregrinus

Current Listed Status (if any): Threatened

Common name: Peregrine Falcon

**Proposed 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: Species of  
Special Concern

(Please justify proposed name change.)

**Proponent's Name and Address:**

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Association, Institution or Business represented by proponent: NHESP, Division of Fisheries and Wildlife

Proponent's Signature: Thomas W. French

Date Submitted: March 7, 2018

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 *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. anatum* 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 nearly all adult resident 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 rock 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?

During the 2017 nesting season, 42 total pairs likely nested, but 9 pairs were not monitored closely enough to know their outcome. At least 33 pairs laid eggs (8 pair failed), 25 successful pairs fledged at least 56 chicks, and 40 chicks were banded from 15 nests. As a rule of thumb, there are probably about half as many subadult prebreeding birds in the state as there are resident adults. Therefore, there are probably about 126 free flying Peregrine Falcons in the state. This number fluctuates with the seasons based on how much juvenile mortality has occurred in the most recent cohort of young. There are very likely some nesting pairs that have not yet been discovered, but that number probably does not exceed five pairs. This would increase the approximate total number of Peregrine Falcons in the state to 141. At this time, the number is almost certainly less than 150, which is a very small number of individuals compared to most other breeding species of raptors. 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.

In addition to the resident adult birds and the subadult floaters, there are a growing number of migrant, or passage, Peregrine Falcons that transit over or by Massachusetts, especially along the coast, as they migrate from their high latitude nesting areas south to their wintering grounds. Some go as far as southern South America. These are the birds from which a small number would be targeted for trapping by permitted falconers if this activity is eventually allowed.

(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).

#### **(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, Bent 1937). 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 (Bagg and Eliot 1937). 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.

One of the reasons that MassWildlife has been encouraged to downlist the Peregrine Falcon to a Species of Special Concern is to make the species eligible for take by falconers. Under the Massachusetts Endangered Species Act (MESA, MGL:131A), and its implementing regulations (321 CMR 10.00), and the Massachusetts Falconry Regulations (321 CMR 3.04), general and master falconers may already buy, sell, barter and possess Peregrine Falcons that are the product of captive breeding or are lawfully captured in the wild in another state or country. However, under the restrictions of MESA, species of raptors that are listed as Endangered or Threatened may not be taken from the wild for falconry in Massachusetts. The Director (of MassWildlife) has the discretion to permit the taking of Special Concern species for falconry [see 321 CMR 10.04(3)(d) below].

Based on population increases in the northern Peregrine Falcon population, the allowable take of juvenile plumaged birds was increased in 2017. Franke (2016) estimated that by the year 2000 there were 80,000

Peregrine Falcons at the end of a nesting season (adults and young). Currently, in the eastern states, east of the 100<sup>th</sup> meridian, the U.S. Fish and Wildlife Service allows for the wild-trapping of up to 144 juvenile plumaged (hatch-year) Peregrine Falcons (48 per Flyway) during a fairly small window of time at the peak of the migration period. This is deliberately designed to provide a high probability that any falcon trapped will be a “passage bird” migrating south from somewhere in northern Canada or Greenland, and not a locally born bird. The current federal quota system in the eastern U.S. allows falconers to trap up to six juvenile Peregrine Falcons per year in each participating state. In 2017, the trapping season extended from September 20 – October 20, and 48 passage birds could be taken within the entire U.S. portion of the Atlantic Flyway (Maine to Florida). In western states, west of the 100<sup>th</sup> meridian, the taking of eyesees (chicks in nests) is also allowed. If Massachusetts had been a participating state in 2017, its quota for juvenile plumaged birds that could have been trapped would have been 5-6 birds. Virginia was a participating state with a greater number of general and master falconers than Massachusetts, and its quota was also five passage Peregrine. Eligible falconers were selected from a random drawing process and the first five to report a captured bird were allowed to keep that bird for falconry. Any additional Peregrines captured after the first five were reported had to be immediately released. No captured banded birds could be kept. Two breast feathers of the trapped Peregrine have to be submitted so that the geographic area of origin can be determined by an analysis of stable isotopes. If Massachusetts authorizes take of Peregrine Falcons for falconry, the allowable take in the state is expected to be 4-5 birds.

### **321 CMR 10.00: Massachusetts Endangered Species Act Regulations (in part)**

For the entire regulation, see:

<https://www.mass.gov/regulations/321-CMR-10>

#### **321 CMR 10.04: Taking and Possession of Species on State and Federal Lists**

##### **321 CMR 10.04(3): Permits for Taking and Possession of Species**

(d) Falconry. The Director may permit the possession, barter or sale of species of raptors listed on the state list or federal list which have come from captive propagation in compliance with 321 CMR 3.04 and 50 CFR 21, for the purposes of falconry. The Director may permit the taking of Special Concern species for falconry so long as such taking is in accordance with 321 CMR 3.04 and any additional conditions established by the Director designed to insure that such taking does not jeopardize the security of breeding populations of the species within Massachusetts or outside the state.

### **321 CMR 3.04: Hunting, Falconry (in part)**

For the entire regulation, see:

<https://www.mass.gov/regulations/321-CMR-3>

#### **(5) Capture Limitations. Raptors may be captured by:**

(a) Licensed falconers during the period August 21st through January 11th, by use of traps, bird nets, do ghazza nets, verbail traps, bow nets or snares which are humane in their operation and use. The falconer's name shall be clearly marked on all capture devices. The use of steel jawed traps, gins, pole traps or jump traps shall be illegal. Only raptors in juvenile plumage or less than a year of age may be removed from the wild, with the exception of American kestrels and great horned owls.

(b) Nestling birds may be taken during the last full week of March and from May 10th through June 14th, and from July 1st through July 14th and is restricted to permittees other than apprentices. No more than one nestling may be taken from a nest, and the nest must contain two or more birds. The taking of nestlings is prohibited to apprentice falconers. No more than one nestling may be taken a year. The permittee shall notify the Director of the Division of Fisheries and Wildlife and the Division of Law Enforcement at least 24 hours

prior to the taking to provide the opportunity for accompaniment by a designated agent of the Office of Law Enforcement or the Division of Fisheries and Wildlife during the taking. ...

e) The taking of eggs is prohibited.

(6) Species and Possession Limits.

(a) The holder of an Apprentice Falconer permit shall be limited to one American kestrel or red tailed hawk which must be taken from the wild.

1. General Falconer permittees may not possess more than three raptors.

2. Master Falconer permittees may not possess more than five raptors.

(b) General and Master Falconer permit holders shall not take, transport or possess any golden eagle, bald eagle, osprey, northern harrier, or any species or subspecies listed pursuant to either the Massachusetts Endangered Species Act ("MESA") or Federal Endangered Species Act ("ESA") unless such activities are authorized by and conducted in accordance with a permit issued pursuant to MESA and ESA respectively. Gyrfalcon may not be taken from the wild in Massachusetts, but may be possessed so long as they come from a captive source or lawfully taken in another state. ...

(e) An Apprentice, General, Master, or Raptor Propagator permittee may not trap more than one raptor in any one year under 321 CMR 3.04(5)(a) and a General, Master, or Raptor Propagator permittee may not take more than one nestling per permit in any one year under 321 CMR 3.04(5)(b). The only exception to the above is when the Director determines that a raptor, other than a rare, threatened or endangered species, is causing damage to domestic or wild animals. All raptors except threatened or endangered species, taken under depredation or special use permits, may be used for falconry by General or Master Falconers; however, the possession limits for each permit class shall apply to all raptors regardless of species or source.

Also see:

Code of Federal Regulations (CFR Title 50, Chapter I, Subchapter B, Part 21 – Migratory Bird Permits

§21.29 Falconry standards and falconry permitting

[https://www.ecfr.gov/cgi-bin/text-](https://www.ecfr.gov/cgi-bin/text-idx?SID=9789478e57153e6b3419beed6d77de46&mc=true&node=pt50.9.21&rgn=div5#se50.9.21)

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[129](https://www.ecfr.gov/cgi-bin/text-idx?SID=9789478e57153e6b3419beed6d77de46&mc=true&node=pt50.9.21&rgn=div5#se50.9.21)

(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 mad-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. The historic maximum known number of nesting pairs was 14, which occupied essentially all of the cliffs that are found in the state. The lack of additional suitable nesting habitat was the clear limiting factor for the species. Now that the recovering population is readily nested on manmade structures it is unknown how large the population may grow until it is affected by another limiting factor. The current rate of population growth is still exponential, with no indication of leveling off yet.

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

A habitat conservation strategy will be developed prior to a delisting proposal.

- (c) Management of protected habitat and/or occurrences

Specific management objectives will be developed 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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