

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

Scientific name: *Asio otus*

Current Listed Status (if any): Special Concern

Common name: Long-eared Owl

Proposed Action: Add the species, with the status of: _____ Remove the species Change the species' status to: _____

Change the scientific name to: _____

Change the common name to: _____

(Please justify proposed name change.)

Proponent's Name and Address:Chris Buelow
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Association, Institution or Business represented by proponent: MA NHESP

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.

Yes¹.

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

There have been two documented breeding season observations of long-eared owl in Massachusetts since 2007^{2,3}. However, actual breeding of long-eared owl has not been confirmed through the observation of a nest or of locally fledged young (definitively determined) in Massachusetts since 1985² (Nantucket State Forest). Long-eared owl is no longer considered extant as a breeding species in Massachusetts based upon MESA criteria (last breeding observation greater than 25 years old). Further, there has never been documentation of a regularly occurring breeding site in Massachusetts, and there has never been a documented period where long-eared owl has breed in the state over the course of several consecutive years. This suggests that long-eared owl has never existed in Massachusetts in a viable breeding population.

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

Yes⁵.

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

Yes. Nests in trees, generally in open forests, or within dense vegetation adjacent to grasslands and shrublands⁶.

Chris Buelow
04 June 2014

(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)

No.

(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?

It is unclear if long-eared owl still occurs in Massachusetts as a breeding species. There has not been a confirmed nesting observation of long-eared owl in the state since 1985, and since that time, there have only been two reports of observations suggestive of potential breeding. Most recently was of a long-eared owl heard calling on one night in Winchendon during the breeding season of 2009, but no actual breeding evidence was observed². The other potential observation was of two birds seen near Nantucket State forest in May 2007 described as “presumed to be young”, but the age of the birds was never positively determined and the birds were never relocated^{2, 3}.

It is certainly possible that there could be undetected breeding of long-eared owls in Massachusetts, but numbers of undetected pairs would be expected to be very low (especially considering that MA recently concluded Breeding Bird Atlas II). If the occasional undetected nest were to occur, historic occurrences of breeding long-eared owls have proven to be very sporadic in the state^{2, 3, 4} and would be unlikely to be considered as a viable population.

(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?

Long-eared owls are widespread as breeding birds in North America, occurring from se. Yukon, ne. British Columbia, and n. Alberta across central Canada to Maritime Provinces and south to n. Baja California, s. Arizona, s. New Mexico, east to Pennsylvania, New York, n. New England, and down the Appalachian Mountains to Virginia. Beyond North America long-eared owls are widely distributed across Eurasia from United Kingdom, Spain, and Portugal east to Manchuria, Korea, Taiwan, and Japan. Non-migratory populations occur in Morocco, Algeria, Tunisia, Zaire, Uganda, Kenya, Ethiopia, Azores, and Canary Islands⁶.

The sub-species *Asio otus wilsonianus* is widespread across eastern North America⁶.

Massachusetts is on the southern and eastern edges of the core North American range.

(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?

There is little information on the population status of breeding long-eared owl in Massachusetts prior to Breeding Bird Atlas I (1974-1979), which, in itself, may suggest that long-eared owl was never common in the state as a breeder. In 1927 Forbush described long-eared owl in New England as “rather common in the less settled regions of the three northern states, often more common as a migrant spring and fall; less common resident in Massachusetts and Connecticut and rare resident in Rhode Island but not uncommon in the three southern states in migration”⁷.

Breeding Bird Atlas I data suggests that long-eared owl numbers as a breeding species were quite low during the 1970s. There were only seven observations of long-eared owl during the Atlas window, and of these, only three observations were of confirmed breeding birds. Two additional observations were deemed as “probable breeders”, and the remaining two were listed as simply “observed”.

NHESP data lists only two breeding occurrences documented between Atlas I and Atlas II, with a breeding occurrence in Georgetown/Rowley State Forest in 1981 and a breeding occurrence in Nantucket State Forest in 1985.

Breeding Bird Atlas II suggests that long-eared owls may no longer occur in the state as a breeder, with just two instances of birds reported, both being listed as simply “observed”.

It seems clear that long-eared owl has experienced a decline in Massachusetts as a breeder, but the ornithological history of the state suggests that the breeding presence of long-eared owl may have never been anywhere approaching common, and likely not anything other than sporadic and occasional.

(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.

There seems to be no threats in Massachusetts specific to breeding long-eared owls that could be cited as a reason for their rarity. More likely, long-eared owls in Massachusetts are at the edge of their range and were never common in the state.

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

Long-eared owls do not appear to be particularly specific in their habitat requirements. Long-ear owls exhibit great dispersal ability.

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

N/A

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

N/A

(c) Management of protected habitat and/or occurrences

N/A

Literature cited, additional documentation, and comments.

1. American Ornithologists' Union. 1983. Check-list of North American Birds. 7th edition. American Ornithologists' Union, Washington, D.C.
2. NHESP data (2014-February-18)
3. Breeding Bird Atlas I and II – Massachusetts Audubon Society
4. Bird of Massachusetts - Veit, Richard R.; Petersen, Wayne R. (1993). *Birds of Massachusetts*. Massachusetts Audubon Society.
5. BirdLife International (2014) Species factsheet: *Asio otus*. Downloaded from <http://www.birdlife.org> on 21/02/2014. Recommended citation for factsheets for more than one species: BirdLife International (2014) IUCN Red List for birds. Downloaded from <http://www.birdlife.org> on 21/02/2014.
6. Marks, J. S., D. L. Evans and D. W. Holt. 1994. Long-eared Owl (*Asio otus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/133> doi:10.2173/bna.133
7. Forbush – *Birds of Massachusetts and Other New England States Volume II*. MA Dept. of Agriculture 1925.