

A SUMMARY OF SHORT-EARED OWL BREEDING STATUS
IN MASSACHUSETTS

by Denver Holt, Massachusetts Natural Heritage Program

The Short-eared Owl (*Asio flammeus*) is officially listed as "endangered" in Massachusetts because of its small and declining population and restricted distribution. It has also been listed on the National Audubon Society's "Blue List" since 1976 because of population declines in all or major parts of its range in the United States. This note compares the 1985 Massachusetts breeding population with the Northeast regional population and briefly discusses why our state population is endangered and what its future needs will be.

Abundance and distribution of breeding Short-eared Owls were determined through field surveys by the author and cooperators (Holt and Melvin 1986). In addition, I have compiled current estimates of abundance and distribution of breeding Short-eared Owls in the Northeast (thirteen states from Maine south to Virginia and West Virginia).

In Massachusetts breeding Short-eared Owls are now restricted to three counties - Barnstable, Dukes, and Nantucket. Within these counties the owls are limited to a few areas because of specific habitat needs: large expanses of coastal heathland, grassland, or beach grass communities.

Intensive surveys in 1985 confirmed only one breeding occurrence on the Massachusetts mainland. The remainder of the breeding population occurred on the islands of Nantucket, Tuckernuck, North and South Monomoy, Muskeget, and Martha's Vineyard. The maps presented here compare past summer distributional records of Short-eared Owls in Massachusetts (Forbush 1927) with present distribution (Holt and Melvin 1986). Obvious changes have occurred, but it is difficult to determine whether these were gradual or abrupt. Note that the Forbush map refers to sightings in

Table 1. Numbers and locations of breeding pairs of Short-eared Owls in Massachusetts, 1985

LOCATION	NUMBER OF PAIRS
Nantucket	8 - 11 ^a
Monomoy N. W. R.	5 - 6 ^a
Tuckernuck Island	4
Muskeget Island	1 - 2 ^a
Martha's Vineyard	1
Pochet Marsh, Orleans	1
	1
TOTAL	20 - 25 ^a

^aSmaller number represents known nesting pairs; larger number includes estimate of pairs whose breeding status is uncertain.



Figure 1. Summer distribution of Short-eared Owls based on Forbush, 1927.

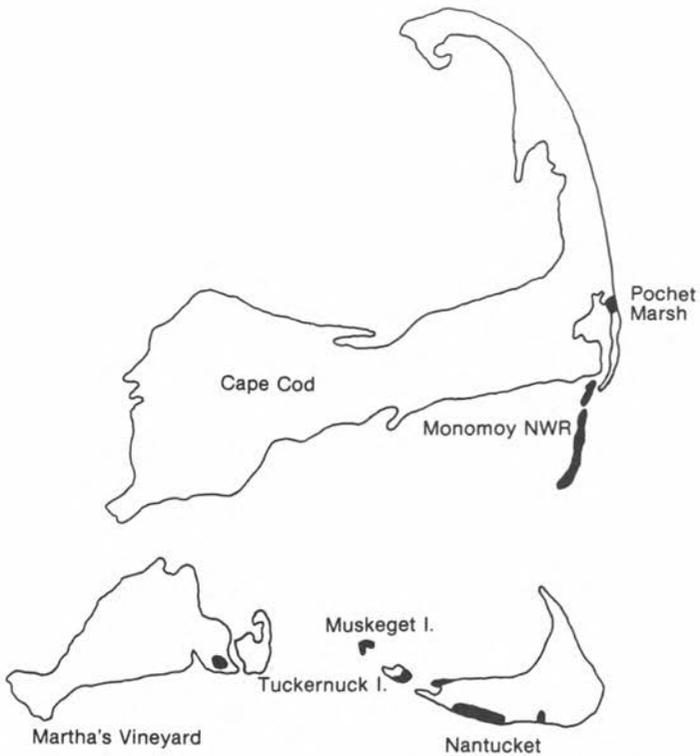


Figure 2. Locations (shaded) where breeding Short-eared Owls occurred in Massachusetts, March-August 1985.

summer, not necessarily breeding reports, and dates back to the era when most of Massachusetts' forests were cleared and the landscape was much more suitable for this species than it is today.

The estimated breeding population of Short-eared Owls in Massachusetts in 1985 was 20-25 pairs (Holt and Melvin 1986). This currently is the highest estimated breeding population in the Northeast and by far the highest in New England. The Northeast breeding population estimate in 1985 was 45-55 pairs. There is no indication that Short-eared Owls are increasing in any north-eastern state; however, small populations may be stable at present.

Habitat loss and fragmentation are the most important factors limiting Short-eared Owls in Massachusetts. The maps clearly illustrate that these owls are now restricted to the eastern fringes of the state. The reduced size and distribution of the Massachusetts population increases its vulnerability to habitat loss, as well as natural limiting factors such as fluctuating food resources, predation, disease, and catastrophic events, e.g., fires or hurricanes.

In the future, vegetational succession may further limit the population as remaining habitats convert from grasslands to shrub and forest habitats in Massachusetts. Preserving small tracts of suitable habitat will not necessarily ensure the survival of the species in Massachusetts. Ultimately, large tracts of land will have to be managed to maintain viable populations of Short-eared Owls in this state. Ongoing research seeks to determine the amount and type of habitat needed to support breeding Short-eared Owls in Massachusetts (Holt and Melvin 1986).

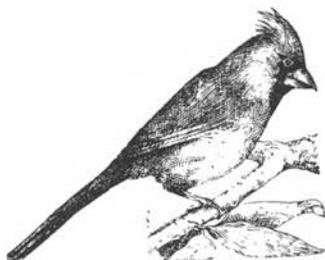
It is possible that potential nesting areas have been overlooked or breeding pairs missed. More information is needed for the Cape Cod Natural Seashore and interior portions of the state. Persons with information on occurrences of Short-eared Owls in Massachusetts should contact Dr. Scott Melvin, Natural Heritage Program, Massachusetts Division of Fisheries and Wildlife, 100 Cambridge Street, Boston, MA 02202, or Randy Tate, Biology Department, University of Massachusetts, Boston, MA 02125 to facilitate ongoing research.

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References.

- Forbush, E. H. 1927. *Birds of Massachusetts and Other New England States*. Part II. Massachusetts Department of Agriculture.
- Holt, D. W. and S. M. Melvin. 1986. "Population Dynamics, Habitat Use, and Management Needs of the Short-eared Owl in Massachusetts. Summary of 1985 Research." Unpublished report. Massachusetts Division of Fisheries and Wildlife, Natural Heritage Program.

DENVER HOLT has been associated with two major bird records in Massachusetts: the first North American appearance of the Brown-chested Martin on June 12, 1983, and the first U. S. breeding record for the Common Black-headed Gull, both events reported in the summer 1986 issue of *American Birds* [40(2): 192 and 204]. Denver is continuing his studies at the University of Montana and reports that he has begun a project on the Boreal Owl and hopes to spend time in Alaska studying northern raptors. He will soon have a paper published on the Pygmy Owl and also plans to continue his research on the Short-eared Owl.



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