



## Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife  
1 Rabbit Hill Road, Westborough, MA 01581  
tel: (508) 389-6360, fax: (508) 389-7891  
www.nhesp.org

## Eastern Whip-poor-will

*Caprimulgus vociferus*

State Status: **Species of Special Concern**

Federal Status: none

**Description:** Eastern Whip-poor-wills are nocturnal birds of dry, open woodlands and clearings. They are seldom seen, though they are quick to announce their presence with their distinctive call on calm, moonlit nights from spring into mid-summer. The call is unmistakable: a rapidly whistled three-note phrase, “Whip-poor-will,” with an emphasis on the first and third notes. At close range, a brief introductory “cluck” can be heard in the call. Calling is most intense during crepuscular hours and during moonlit nights.

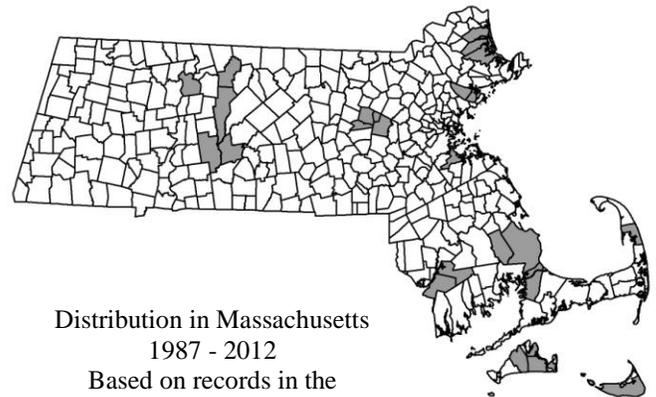
Whip-poor-wills measure 22-26cm in length, and weigh between 43 and 64g. Their body shape is distinct, with a relatively small body always held horizontally when perched, and a large, flat head with large, dark eyes and a very small bill. The bill is bordered by long bristles for capturing food items in flight, and opens to create a very large gape. The legs and feet are very small and seldom seen, always tucked against the body while perching or in flight. In flight, Whip-poor-wills are slow and silent, appearing moth-like, often hovering and flying erratically in pursuit of flying insects.

The sexes are nearly identical in plumage: cryptically colored to match the streaked browns and grays of the forest floor. These color patterns blend perfectly into the sun-dappled oak leaf litter where they nest, or the thick branches that they perch on during the day. This camouflage is so effective that most birds are not detected until they are flushed by an approaching observer, that is, within just a few feet of the bird. In flight, a broad band of white on the outer tip of the tail can be seen on the male, and both sexes have a bright white patch on the throat, accented by a black border on the male and a buffy border on the female.

**Similar Species in Massachusetts:** There are two other members of the Nightjar family that occur in Massachusetts: Chuck-will’s-widow (*Caprimulgus carolinensis*) and Common Nighthawk (*Chordeiles minor*). Both of these birds have a superficially similar appearance and can occur in similar habitat to Whip-poor-will. Chuck-will’s-widow is best separated by call (see below), but also by its noticeably larger size, heavier body structure, and overall buffier, less-contrasting plumage. Chuck-will’s-widows are seldom encountered in Massachusetts (although their range is



Photo: John Winze



Distribution in Massachusetts  
1987 - 2012  
Based on records in the  
Natural Heritage Database

spreading northward), occurring only every few years, mostly in coastal situations.

Common Nighthawks may be mistaken for Whip-poor-wills when perched, but can be separated by their longer wings (folded wings are as long as the tail in a perched nighthawk), solid black primaries interrupted by a white wingbar, and an overall more grayish plumage. The Common Nighthawk in flight is unmistakable: a high-flying, angular bird with a notched tail and distinct white wingbars. The call of the Common Nighthawk – a nasal “peent” – is entirely unlike any call of the Eastern Whip-poor-will. Common Nighthawks are extremely rare breeders in Massachusetts and common autumn migrants.

Chuck-will’s-widow is the only other bird whose call could be mistaken for Eastern Whip-poor-will in Massachusetts. However, the species are easily separated when remembering that both birds are named after the phonetics of their calls: the Eastern Whip-poor-will saying its name with a rising last note, and Chuck-will’s-widow saying its name with a noticeably quiet first note and falling double last notes. The Whip-poor-will call is also faster and higher pitched than the Chuck-will’s-widow.

Mimic thrushes (Gray Catbird, Northern Mockingbird, and Brown Thrasher) have been known to render spot-on versions of the Whip-poor-will call. In the case of Northern Mockingbird and Brown Thrasher, the mimicked call will often be heard within a sequence of chatter and other mimicked sounds. The mimicked call from the catbird may be a stand-alone call, but it will almost always be rendered during daylight hours.

**Range:** The Whip-poor-will’s breeding range covers several distinct regions in North and Central America. Across this greater range, and separated by distinct morphological and behavioral differences, the Whip-poor-will has been divided into two groups: the Eastern Group (*vociferus* group) and the Western Group (*arizonae* group). The Eastern Group, representing a single subspecies (*C. v. vociferus*), ranges from east-central Saskatchewan to southern Ontario and Quebec, central New Brunswick and central Nova Scotia, and from eastern Oklahoma to Georgia. Populations are discontinuous within the range of this Eastern Group. The Western Group’s breeding range is much more limited, extending from the southwestern United States discontinuously through the mountains of Mexico and into southern Guatemala and southwestern Honduras.

**Habitat in Massachusetts:** Habitat needs for Whip-poor-will are complex and our understanding of their specific requirements is still evolving. In general, Whip-poor-wills seek dry, open woodlands with little understory adjacent to meadows and shrublands. The open woodlands are used for nesting and the adjacent meadows and shrublands are used for foraging.

Whip-poor-will distribution in Massachusetts appears to be closely correlated with fire-adapted landscapes such as Pine Barrens and Oak Glade communities. Until the 20<sup>th</sup> century, fire was a regular event in many areas of Massachusetts, either intentionally set by Native Americans and early farmers, or wildfires from lightning strikes. Regular fire on a landscape typically results in the patchwork of open woodlands, sparse meadows, and shrublands needed by Whip-poor-wills. Today, all of the remaining strongholds for Whip-poor-will in Massachusetts occur in Pine Barrens that are actively managed with prescribed fire. Conversely, many historic records of Whip-poor-will in Massachusetts occur on landscapes that once supported fire-adapted natural communities and therefore likely saw regular fire, but fire has since been removed from these systems and the habitats have succeeded to denser, more generalized vegetation such as white pine stands.

The primary situations currently supporting Whip-poor-wills in Massachusetts are:

- **Pine Barrens:** fire-adapted habitats represented by warm-season grasses, scrub oak, and an open canopy of emergent pitch pine. Barrens support the vast majority of the state’s Whip-poor-wills, and are represented by sites such as Myles Standish State Forest in Plymouth and Montague Plains Wildlife Management Area in Montague.
- **Oak Glades:** fire-adapted open woodlands that usually occur on ridges and dry slopes. Oak Glades support small pockets of Whip-poor-wills across the state and are represented by sites such as the Blue Hills Reservation in Canton, Mt. Tom in Holyoke, and the rocky balds of Cape Ann.
- **Power Line Corridors:** corridors through open forests sometimes support robust Whip-poor-will populations, especially in dry situations where regular maintenance results in a vegetative structure resembling an often-burned landscape. The rocky, fire-prone corridors through Salem and Peabody are a good example.
- **Abandoned Gravel Operations:** gravel extraction takes place in areas of glacial outwash, the foundation of most Pine Barrens. The act of exposing the base substrate and then letting it regenerate on its own often leads to the establishment of good barrens-type habitat capable of supporting Whip-poor-wills.

- **Logging Operations:** depending on landscape context, logging can create the diverse, open landscape that is sought by Whip-poor-wills, especially if the harvest is done in a way that resembles the effects of wildfire.

**Life Cycle/Behavior:** Whip-poor-wills have been recorded arriving in Massachusetts from their wintering grounds as early as mid-April, with pairs formed soon after and two eggs laid directly on the forest floor by mid-May. Whip-poor-will pairs are thought to be monogamous, at least through a single breeding season, and both members of the pair share the three weeks of incubation duties, followed by three weeks of brooding and feeding flightless chicks at the nest site. Chicks are able to feed themselves once they leave the nest, but parents have been observed feeding fledglings, and it is thought that family units associate with each other until their autumn migration, which in Massachusetts can be as late as the end of September. Very little is known about Whip-poor-will migration, or about the Whip-poor-will's life history on their wintering grounds (along the Gulf of Mexico south to Central America).

The primary diet of Whip-poor-wills is large moths and night-flying beetles. Whip-poor-wills hunt in the crepuscular hours and through the night when adequate moonlight allows, often perching on an exposed branch at a clearing's edge and sallying forth in winged pursuit. Nest initiation typically occurs so that chicks hatch around a full moon, apparently to allow parents to maximize their hunting opportunities. Chicks are fed regurgitated insects. Their diagnostic "*Whip-poor-will*" call is sung only by the male and issued both to attract a mate and to define their territory. Calling, like hunting, is usually most intense during the crepuscular hours, but will continue with intensity through the night when the moon's disk is at least half illuminated.

**Historical Threats:** There has been a dramatic retraction in distribution and abundance of Whip-poor-wills across the state beginning in the 1960s. A combination of factors has likely contributed to this decrease, primary among them habitat loss both from development and from habitat succession. Population loss from development is clearly illustrated in the greater Boston area, where Whip-poor-wills were described as common into the early 20<sup>th</sup> century but are now absent, and the greater Springfield area where they were described as common into the mid-20<sup>th</sup> century but are now absent. More recent retractions correlate with development trends over the past several decades. Many areas that have lost Whip-poor-wills since the 1970s are also areas of the state that have experienced the greatest conversion of forest to development during that time. Plymouth and Bristol Counties, the Lower Cape, and the Upton-Grafton areas have experienced some of the greatest development pressure in recent

decades while also experiencing the greatest retractions in Whip-poor-will presence.

Population retractions in areas *not* lost to development often appear to be the result of habitat succession. While many of these areas are still in a natural state, a closer look shows that often these sites are declining Pine Barrens or upland oak forest with evidence of historical fire. Fire suppression, first widely incorporated in Massachusetts in the 1930s, has caused a shift in these fire-adapted communities toward the more generalist species structure that we see today. This succession away from fire-adapted natural communities may play the largest role in current population declines.

Declines in large moths, predation by domestic and feral cats, and road mortality are other factors that have been suggested as contributing to declining Whip-poor-will populations in the Northeast, but the relative importance of each of these is largely unknown. The importance of predation by native predators as a factor limiting reproductive success and adult survival is also poorly understood. Likewise, the extent to which limiting factors during non-breeding periods (migration and winter) affect Whip-poor-wills that breed in Massachusetts is unknown.

**Population Status in Massachusetts:** Whip-poor-wills have historically bred across the entirety of Massachusetts, but beginning in the 1970s, they largely disappeared from the southern Connecticut River Valley, Bristol County, Berkshire County, and Plymouth County (with the exception of the greater Myles Standish barrens). They are also absent now from much of upper Cape Cod, with the exception of the Massachusetts Military Reservation–Frances Crane WMA complex, and from interior Essex County and most of Middlesex County.

Currently there are only six sites in Massachusetts that support 20 or more pairs of Whip-poor-wills: the Greater Myles Standish Pine Barrens, the Montague Plains Pine Barrens, the Fort Devens/Bolton Flats WMA complex, the Massachusetts Military Reservation/Frances Crane WMA complex, Correllus State Forest and vicinity, and the eastern half of Nantucket. There are only ten known sites that support 5-10 pairs, and of the remaining 100 or so known current sites in Massachusetts, the majority support just single pairs.

Whip-poor-will was listed as a Species of Special Concern under the Massachusetts Endangered Species Act in 2011.

**Management Recommendations:** It is unlikely that Whip-poor-will will be able to reclaim its former distribution across Massachusetts because many former haunts have been rendered uninhabitable due to permanent habitat loss and/or degradation. Instead, conservation should focus on protecting and managing existing Whip-poor-will habitat across the state. Coordinating with land managers, landowners, and foresters to ensure that existing Whip-poor-will habitat remains viable is key in stabilizing the state's population.

Active restoration and management of Whip-poor-will habitat depends upon reintroducing a disturbance regime to the landscape. The exact prescription for management will be unique for each site, but examples of general actions include:

- Introducing prescribed fire to the landscape.
- Conducting logging that mimics the structural effects of wildfire.
- Allowing spent gravel mines to succeed naturally, rather than re-seeding them.
- Siting development as far from Whip-poor-will habitat as possible to conserve habitat and lessen the effects of pets, light/noise pollution, insecticides, roads, etc.

All work, including habitat management, proposed in known Whip-poor-will habitat is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage and Endangered Species Program.

Annual, standardized surveys of calling adults during the breeding season at known sites should be used to track population trends, assess the effectiveness of management, and guide future actions.

Research is sorely needed to characterize and understand basic aspects of Whip-poor-will ecology and demographics, including reproductive success, age-specific survival rates, factors limiting reproductive success and survival, details of nesting and foraging habitat preferences, and responses of habitats and breeding populations to management.

### **Selected References**

- Cink, C.L. 2002. Whip-poor-will (*Caprimulgus vociferus*). In *The Birds of North America*, No. 620 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Chesser, R. T., et al. 2010. Fifty-first supplement to the American Ornithologists' Union *Check-list of North American Birds*. *Auk* 127(3): 726-744.
- Forbush, E. 1927. *Birds of Massachusetts and Other New England States*. Massachusetts Department of Agriculture. Norwood Press, Norwood, MA.
- Hill, N. 1965. *The Birds of Cape Cod, Massachusetts*. William Morrow and Co., New York, NY.
- Massachusetts Audubon Society. 2009. *Losing Ground IV: Patterns of Development and Their Impacts on the Nature of Massachusetts*. Massachusetts Audubon Society, Lincoln.  
<http://www.massaudubon.org/losingground/>
- Motzkin, G., W.A. Patterson, and D.R. Foster. 1999. A historical perspective on pitch pine-scrub oak communities in the Connecticut Valley of Massachusetts. *Ecosystems* 2: 255-273.
- Petersen, W. R., and W. R. Meservey. 2003. *Massachusetts Breeding Bird Atlas*. Massachusetts Audubon Society, Lincoln, MA.
- Sauer, J.R., J.E. Hines, and J. Fallon. 2008. *The North American Breeding Bird Survey, Results and Analysis 1966-2007*. Version 5.15.2008. USGS Patuxent Wildlife Research Center, Laurel, MD.  
<http://www.mbr-pwrc.usgs.gov/bbs/bbs.html>
- USGS North American BBA Explorer. *Massachusetts Breeding Bird Atlas 1974-1979*. Massachusetts Audubon Society, Lincoln.  
[http://www.pwrc.usgs.gov/bba/index.cfm?fa=explore.ProjectHome&BBA\\_ID=MA1974](http://www.pwrc.usgs.gov/bba/index.cfm?fa=explore.ProjectHome&BBA_ID=MA1974)
- USGS North American BBA Explorer. *Massachusetts Breeding Bird Atlas 2007-2011*. Massachusetts Audubon Society, Lincoln.  
[http://www.pwrc.usgs.gov/bba/index.cfm?fa=explore.ProjectHome&BBA\\_ID=MA2007](http://www.pwrc.usgs.gov/bba/index.cfm?fa=explore.ProjectHome&BBA_ID=MA2007)
- Veit, R.R., and W.R. Petersen. 1993. *Birds of Massachusetts*. Massachusetts Audubon Society, Lincoln, MA.

Updated 2012  
Map Updated 2012