Natural Heritage &
Endangered Species
Program

Commonwealth of Massachusetts
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

MASSACHUSETTS THREATENED WILDLIFE

Northern Harrier
(*Circus cyaneus*)

DESCRIPTION: The Northern Harrier or Marsh Hawk is a slim, long-legged, long-tailed hawk, about 40 to 60 cm (16 to 24 in.) in length, with an owl-like face and long, rounded, narrow wings extending up to 1.2 meters (46 in.) from wing tip to wing tip. Males are pale bluish gray on the head and upper surface, white on the undersurface, and have black wing tips; the tail has a broad subterminal bar with 5 to 7 narrower dark brown bars. Females are dusky brown on the head and upper surface, and light brown with darker vertical streaks on the lower surface; the tail is dark in the center, becoming paler near the outer edges, and has 5 to 7 broad brown bars. Both sexes possess a conspicuous white rump patch, white upper tail coverts, light orange-yellow legs, and black bills. Northern Harriers have large ear openings, but they are usually hidden underneath their feathers.

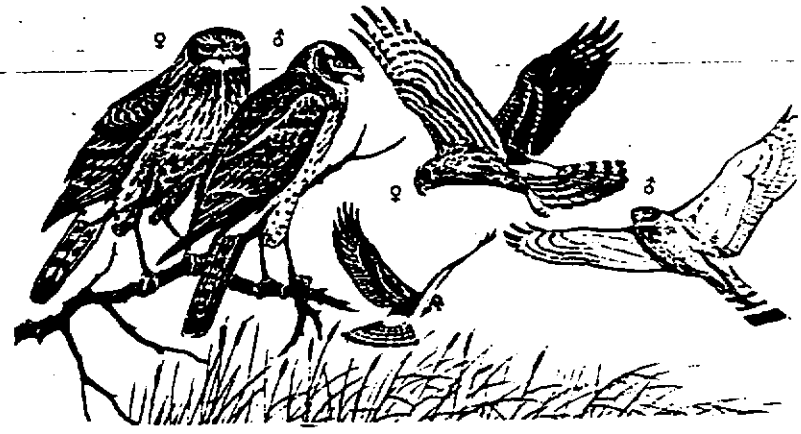
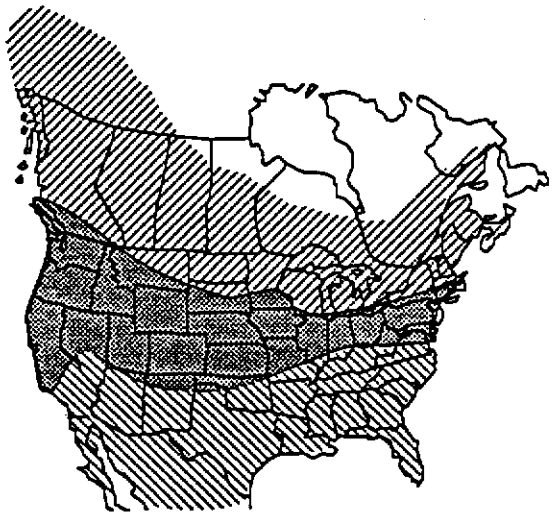


Illustration by Arthur Singer, from Robbins, C.S., Bruun,Bertel, Zim,Herbert. Birds of North America. Golden Press, NY 1966

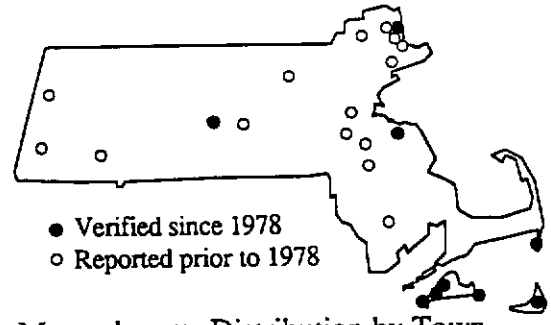
SIMILAR SPECIES IN MASSACHUSETTS: The male Northern Harrier's gray coloration makes it distinct from other local birds. However, the female Northern Harrier vaguely resembles the Short-eared Owl (*Asio flammeus*): both occupy the same habitat type, have a brownish upper surface and white breast with vertical brown streaks, long rounded wings and black wingtips. However, the Short-eared Owl is smaller, with short feathered legs, a white facial disk, and lacks the bright white rump patch possessed by Northern Harriers.

RANGE: The Northern Harrier breeds from Massachusetts north to Newfoundland and Alaska, south to southeastern Virginia, and west to northern Texas and central California. Wintering range extends from New England west to southern British Columbia and south into Central America and the West Indies.



Range of Northern Harrier

- Summer (breeding) range
- Year - round range
- Winter range



Massachusetts Distribution by Town
1990

HABITAT IN MASSACHUSETTS: Northern Harriers establish nesting and feeding territories in wet meadows, grasslands, abandoned fields, and coastal and inland marshes, mostly along the coast. Northern Harriers in Massachusetts are uncommon summer residents or migrants, although they once were much more abundant in the state. Most Harriers in the state which do not migrate south spend the winter in coastal marshes on Cape Cod and the offshore islands. Some Northern Harriers that breed in areas north of Massachusetts may also spend the winter on the offshore islands and along the coast. Northern Harriers are known to share habitat and territory with Short-eared Owls.

LIFE CYCLE / BEHAVIOR: The breeding season of Northern Harriers extends from March to July in Massachusetts and is initiated by a spectacular courtship ritual called skydancing, which is usually performed only by males and is used to attract mates. A skydancing Northern Harrier performs an aerial acrobatic display of dives, somersaults, loops, and tumbles, often accompanied by shrill screaming calls.

Once the male has found a mate, the female Northern Harrier builds a nest made of grasses, weeds, water plants, and other vegetative material supplied to her by her mate. The nest is usually located in a slight hollowed-out area on the ground, among bushes, grasses, and other low vegetation, and consists of a thick pad of grasses surrounded by dry stalks of plants, weeds, and small twigs. Sometimes the nest is built over shallow water on a raised mound of sticks, hollowed in the center and lined with dry grass, stubble and weed stalks.

After courtship and mating have occurred, the female lays from 2 to 9 bluish-white eggs (3 to 6 on average), about 1 egg every other day. Both parents help incubate the eggs until they hatch 30 to 32 days later. The male Harrier provides all the food to his mate and young until they fledge 30 to 35 days after hatching. Although Northern Harriers are known to readily abandon nests when disturbed before the eggs hatch, they vigorously defend their nests once their young have hatched. After the young have fledged, they may hunt together with their parents through the remainder of the summer, until they disperse on their own or are driven off. The Northern Harriers which do not spend the winter in Massachusetts begin to migrate south in late August or early September.

Northern Harriers prey on a variety of small creatures, including rodents, rabbits, and other small mammals, small birds, insects, amphibians, reptiles, and carrion. In Massachusetts, voles constitute a very important component of the Harrier's diet; there is a direct correlation between the breeding success of Northern Harriers and the number of voles found in their territory. When hunting, the Northern Harrier flies low over the ground, slowly and systematically, usually in early morning and late afternoon or early evening. When it detects prey, it hovers a moment before swooping straight down to the ground. The Harrier uses its talons to capture prey and then kills its catch via repeated stabs with its sharp beak.

POPULATION STATUS IN MASSACHUSETTS: The Northern Harrier is listed as a Threatened Species in Massachusetts, with 26 current (post-1978) breeding sites and 16 historical breeding sites. The Northern Harrier was once a common breeder throughout Massachusetts from the mid-1800's to the early 1900's. Today, almost all of the breeding Harriers in the state are confined to the offshore islands, Cape Cod, and Plum Island.

The most significant factor in the Northern Harrier's decline has been destruction of suitable habitat by reforestation of agricultural land and destruction of coastal and freshwater wetlands. In coastal areas, human disturbance may cause some Harriers to abandon their nests. Natural factors such as prey abundance, prolonged periods of rain (which may destroy nests and eggs), and predation on eggs and nestlings all affect the breeding success of Northern Harriers. In order to prevent further decline in the Northern Harrier's population, it is crucial to protect suitable habitats from development and destruction.

Selected References

Clark, W. S. & B.K. Wheeler. 1987. A field guide to hawks. Houghton Mifflin Co. Boston.

Johnsgard, P. A. 1990. Hawks, Eagles, & Falcons of North America. Washington: Smithsonian Institution Press.

Palmer, Ralph S. 1962. Handbook of North American Birds. Yale University Press,New Haven & London

Serrentino, P. 1992. Northern Harrier, *Circus cyaneus*. Pages 89-117 in K.J. Schneider and D.M. Pence, eds. Migratory nongame birds of Management Concern in the Northeast. U.S. Dept. Interior, Fish & Wildlife Service, Newton Corner, MA 400pp.

Serrentino, P. & M. England. 1989. Northern Harrier, p. 37-46 in Proc. northeast raptor management symposium and workshop. Natl. Wild. Fed., Washington, D.C.

Terres, John K. 1991. The Audubon Society Encyclopedia of North American Birds. New York: Wing Books.