Northern Harrier (*Circus cyaneus)*

The Northern Harrier, or marsh hawk, is a slender bird with a distinctive owl-like face. They range over most of North America and are found in Europe and Asia as well. In New York and New Jersey they can be found year-round, especially where habitat is suitable and prey (mostly rodents) is abundant. They prefer open space such as the brackish and saline marshes of the Estuary or the remaining meadows, pastures, wetlands, grasslands and woodlands of both states.

The Northern Harrier's owl-like facial disk provides directional hearing and its soft feathers make for quiet flight. These qualities make it a superior hunter. It can fly low and nearly silent, plunging onto unsuspecting prey on the ground. Northern Harriers eat rodents, small mammals, frogs, reptiles, insects, small birds and carrion or the carcasses of dead animals. In urban areas especially, this bird helps control rats, mice and other small rodents.

The Northern Harrier can reach 18-23 inches in length with a total wing span of about 4 feet. Adult males are silver-blue with black wingtips. Adult females are dark brown with lighter brown streaks. The Harrier has a white patch on its rump that can be seen only when they are in flight. Their flight is distinctive; low, gliding and languid. Unlike most hawks, the Northern Harrier nests on the ground in the high marsh, open field or meadow. Their nests are built of dry grasses and small sticks, hidden among weeds and vegetation in fields and in the drier areas of marshes dominated by salt hay, marsh elder or reed grass (phragmites).

Harriers do not mate for life but choose a new mate each breeding season. A male may also have multiple mates during a breeding season. The male attracts potential mates by "sky dancing." He swoops down from 60-100 feet to about 10 feet, then climbs back up and repeats the maneuver. This continuous swooping and climbing can best be described as a long series of barrel rolls or u-shaped turns and dives. The nest site is usually mixed into the grasses or tall plants of an open space such as the high marsh or a meadow. The female will usually lay 4-5 pale blue eggs, sometimes marked with light brown spots. The nest is made of dead reeds or grass and blends into the surrounding area. The incubation period is 31-32 days and chicks fledge at 30-35 days.

During the nesting period the male does most of the hunting while the female watches the nest and her chicks. When the male has caught prey, it flies high over the nest. The female will fly up towards the male, who then drops the prey for the female to catch in mid-air. The female feeds the chicks, tearing the prey into small manageable pieces. If the female dies during the time the chicks are dependent on her for food, they will usually die as well. The male will bring prey to the nest but will not tear it into pieces, and the chicks starve. Northern Harriers spend approximately 50% of the day searching for prey. They might fly up to 100 miles in a day in search of food.

The Northern Harrier is protected federally and is classified as threatened in New York and endangered in New Jersey. Although the Northern Harrier appears to be secure globally, in New

York and New Jersey they are considered imperiled due to low population size, sensitivity to disturbance and continued loss of suitable nesting habitat. In the area of the New York/New Jersey Harbor Estuary, the most significant threat to the Northern Harrier is the alteration of wetland habitat due to the draining, filling and dredging, and the loss of open space due to intense development.

Until the 1950's Northern Harriers were considered common throughout our region although some decline in breeding pairs was noted in New Jersey as early as the 1920's. Between the 1950's and 60's however, the overall population started to decline for reasons never specifically determined. Besides attributing the downward trend to habitat loss (extensive dredging and filling of coastal wetlands did take place during this period), the use of the pesticide DDT could have been a factor. DDT, used extensive then, caused reproductive failure for the harriers as well as other birds. DDT, which biomagnifies as it moves up each level of the food chain, accumulated in top level predators like the Northern Harrier. This contamination inhibited the bird's ability to metabolize calcium, resulting in eggs with thin shells. During incubation, these eggs would break under the weight of the adult. Following the federal ban of DDT in 1972, the harrier population, along with other affected birds of prey like the osprey and peregrine falcon, began to recover. However, DDE, a residual component of DDT, may still impact the species.

This entry was researched and written by Claire Antonucci, Rosemary Higgins and Cathy Yuhas of the New Jersey Sea Grant Consortium Extension Program
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