

Barn Owls Coming Back To Gateway

By Robert P. Cook

The barn owl (*Tyto alba pratincola*) is a declining raptor species, long ago "blue listed" by the National Audubon Society and recently listed as a "species of special concern" by the New York State Department of Environmental Conservation. Loss of habitat in general, as well as loss of specific nesting habitat have been major factors in this species' decline.

At Gateway's Jamaica Bay Unit, the barn owl was known to occur, and presumed to be nesting in abandoned buildings both within and adjacent to the park. Recognizing the potential of the nearly 5,000 acres of suitable habitat that existed within the Jamaica Bay Unit, New York naturalist Peter Post suggested the placing of barn owl nest boxes. Since the habitat in question was man-made, and since it lay within the Jamaica Bay Wildlife Refuge, this suggestion was consistent with management goals to restore and maximize the diversity of native wildlife. Using a prototype nest box developed and donated by Len Soucy of the Raptor Trust, staff and volunteers of Jamaica Bay Wildlife Refuge began in 1980 a program of erecting and monitoring nest boxes throughout Jamaica Bay.

Success required an interval during which local owls could find the boxes and take up residence. This part of the project took two years, but once the owls caught on, the occupancy rate and total number of owls produced has increased annually (Table 1). Fledged barn owls generally disperse from their natal area, but apparently some have remained local, taking up residence in unoccupied boxes and thereby increasing the occupancy rate.

Banding of the young began in 1983, and in 1984 both young and adult females were banded. It is expected that, in time, some incubating females captured will have been banded as young in a nearby box. To date, two band recoveries have been made. One was of a bird banded as a nestling and recaptured by owl banders in Cape May, N.J. approximately 125 miles further south. The second recovery was that of a young bird dead at nearby JFK Airport.

Barn owl food studies have demonstrated that the species composition of prey items varies seasonally and according to prey availability. Pellet material for prey analysis was collected from nest boxes in late summer, follow fledging of young. The bulk of this material is presumably pellets produced by the young, but these boxes also are used as roosts year-round,

and winter pellets of adults undoubtedly were present. Despite these limitations, prey item analysis provides some interesting insights into the Jamaica Bay barn owls. Typical of Northeastern barn owls, meadow voles constitute the predominant prey item by numbers (Table 2). However, the occurrence of Norway rat, in numbers and particularly by percent weight, is much higher than elsewhere in the Northeast. This is due to the large naturalized rat population which occurs throughout the islands and periphery of Jamaica Bay, and the paucity of other potential prey species such as moles and shrews. In this case, the increased incidence of Norway rat supports the gen-

eral perception of barn owls as opportunistic feeders.

The present outlook seems very encouraging. It is hoped that the Jamaica Bay barn owl population will form a nucleus which will help bolster a significant population within the Park and throughout the Tri-State area, reversing the decline.

Volunteers and staff of Jamaica Bay Wildlife Refuge, particularly Mary Hake, Clive Pinnock, Don Riepe, Chris Rose, and Russell Trieller, made this program possible.

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Banded baby barn owl – a nestling from one of the Jamaica Bay barn owl boxes, is held here by Bob Cook, NPS Natural Resource Management Specialist trainee with the North Atlantic Region. Photo by D. Riepe.



Barn owl nest box in Jamaica Bay Wildlife Refuge is one of many erected at Jamaica Bay Wildlife Refuge, beginning in 1980. Photo by D. Riepe.

Table 1. Summary of Barn Owl Nest Box Productivity, Jamaica Bay Wildlife Refuge

	1980	1981	1982	1983	1984
Number of boxes in place	3	8	9	10	10
Number of active nest boxes	0	0	2	4	6
Occupancy rate	0	0	22%	40%	60%
*Productivity	0	0	8	14 + 4 eggs	26
*Productivity/active box	0	0	4.0	4.5	43

*Productivity is the number of young and/or eggs produced. While not every egg results in a fledged bird, logistical constraints and a desire to minimize disturbance prevents following closely the fate of all young. Therefore, any calculation which includes eggs are probably higher than the actual number of birds that survived and fledged.

Table 2. Prey items of Jamaica Bay Barn Owls.

Based on analysis of pellet material from three nest boxes, collected 9/27/83.

Prey Species	# Individuals	% Frequency	% by weight
Meadow Vole (<i>Microtus pennsylvanica</i>)	1156	73.0	43.2
White-footed Mouse (<i>Peromyscus leucopus</i>)	8	0.5	0.3
Muskrat (<i>Ondatra zibethica</i>)	1		
House Mouse (<i>Mus musculus</i>)	23	1.5	0.6
Norway Rat (<i>Rattus norvegicus</i>)	373	23.5	54.5
Avian*	24	1.5	1.4
Total	1585	100	100

*Avian remains were not always identifiable to species. Those species found include Starling (*Sturnus vulgaris*), Common Flicker (*Colaptes auratus*), and unidentified sparrow (*Fringillidae* or *Ploecidae*). Anecdotally, remains of a Kestrel (*Falco sparverius*) were found in a box not included in the above analysis.

**based on average live weight of prey species obtained from literature sources.