



2024 BARN OWL NEST BOX MONITORING PROGRAM LANDOWNER REPORT



Prepared by: Rachel Yurchisin and Jordan Brown

BACKGROUND

In 1996, Delaware Division of Fish & Wildlife (DFW) Regional Wildlife Area Manager, Wayne Lehman, began installing and monitoring Barn Owl (*Tyto alba*) nest boxes across Delaware in response to regional population declines. To this day, the nest box program continues, where DFW biologists work to create additional nesting opportunities for Barn Owls by installing nest boxes in suitable habitat. Barn Owls are currently listed as a Species of Greatest Conservation Need (SGCN) in the 2015 Delaware Wildlife Action Plan¹ and are designated a Tier 2 SGCN species. This means they are of moderate conservation concern versus the rarest of species that are classified in Tier 1 and the common, but declining, Tier 3 species. Since the implementation of the nest box program, DFW has monitored these boxes annually, collecting data on physical characteristics, estimating life span, breeding success, and dispersal of Delaware Barn Owls by recapturing, processing, and banding both adult and young Barn Owls. Given the unique ability for Barn Owls to breed year-round, DFW has implemented a two sets of nest checks in the Spring and Fall. DFW biologists want to thank you for your cooperation and support in allowing our program to use your land for these efforts.



Image courtesy of Steve Licata

2024 SPRING SUMMARY



Image courtesy of Rachel Yurchisin

DFW biologists began visiting nest boxes in late March. Each box was checked for adult owls, eggs, and nestlings. During the first visit, adult Barn Owls were opportunistically captured, weighed, measured, and banded (if not already), and subsequently released. Based on the status of each box, a second visit was scheduled when the chicks would be the appropriate size to measure and band, which is no earlier than 2.5 weeks of age. Occasionally, follow-up visits were necessary for unoccupied or failed nest boxes and owl pairs with second clutches (nest of eggs).

During the Spring season, DFW visited 24 Barn Owl boxes. A total of 18 boxes (75%) were active – meaning that the box had eggs and/or chicks present at some point throughout the spring breeding season. A total of 21 adult Barn Owls were captured. All adult owls were weighed and measured, while new, unbanded birds were fitted with uniquely numbered, federal USGS

¹To read more about Delaware's State Wildlife Action Plan, please visit our website:
<https://dnrec.alpha.delaware.gov/fish-wildlife/conservation/wildlife-action-plan/>



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aluminum bands. Some of the measurements that were taken include weight, flattened wing length, the length of the culmen (exposed upper part of the beak), hallux (the first toe on a bird foot that faces backward), and tarsus (the lower bone of a bird's leg). These measurements, over a long period of time, can give insight to trends concerning the species as a whole. Thirteen of the adult owls were recaptured, or previously banded, birds. Three of which had "foreign" bands; bands that are not part of our program, such as the frequently seen New Jersey band numbers. We are currently waiting on reports from the USGS Bird Banding Lab to find out where these owls were originally captured. The remaining 10 birds were banded in Delaware: two chicks from the same clutch in 2016, one in 2018 as an adult, one in 2019 as a chick, four from 2022 (three adults and one chick), and two from 2023 (one adult and one chick). The 2016 chicks were from the nestbox at the DFW office's McKay Barn, where they have dispersed to nearby Woodland Beach and Bombay Hook nestboxes since 2022.

Overall, at least 92 eggs (or an average of 5.4 eggs/active box) were laid this season. When biologists arrived in April, some nest boxes had already hatched chicks meaning that an accurate count of eggs was not possible. As visits to assess hatching and chick age continued into May and June, it was found that four nests unfortunately failed (22% of active boxes), accounting for 19 eggs. Some of which had signs of predation or abandonment, but others simply never hatched (the reason unknown). In total, 40 chicks were measured and banded. The remaining 33 eggs either did not hatch and were removed from the nest, the chicks died between hatching and banding, or the chicks fledged before biologists could return for banding. This information is crucial to our understanding of Barn Owl reproduction in Delaware and as we continue to note these trends, we may be able to rule out or identify causes of decline in this population.

2024 FALL SUMMARY



Image courtesy of Jordan Brown

Beginning in September, biologists began the Fall visits to all 24 Barn Owl boxes once again. On some of these days, old and discarded eggs were observed, that were most likely laid between our Spring and Fall visits and were not included in the season total. Otherwise, five boxes (21%) were active with fresh eggs and chicks. These boxes produced 20 eggs (4 eggs/active box). When staff returned to band chicks, staff found that four of the five nests (80%) failed. It is common for the Fall season to be less productive than the Spring due to fewer available resources, greater disturbances, and inclement weather.

In one location, we observed six eggs on our first visit, only to find one live chick and two skulls from chicks in the same clutch when staff visited for banding. While we will never know exactly what happened to those deceased individuals, it still provides information concerning the timing of the

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mortalities and what could be happening in other nests across the state. One adult and one chick were banded at this nest site, using the same methods as in the Spring.

Finally, one additional chick was banded this season, but not from one of the nestboxes! While preparing deer stands for the approaching hunting season at one of DFW's Wildlife Areas, technicians were surprised to find a Barn Owl nest tucked under one of the deer stand seats. The usual approach technique we use with nestboxes was not going to work in this unique situation, so the adult flushed almost immediately. One chick, however, was not yet able to fly and was captured and banded. We are grateful to the other DNREC staff who reached out about this opportunistic nest!

LOOKING FORWARD



Image courtesy of Jordan Brown

DFW continues to coordinate with landowners to clean, add, remove, or close nest boxes based on information collected throughout the current and previous breeding seasons. More efforts to prevent predators (such as snakes and raccoons) from accessing boxes are also being implemented at some locations. DFW is very aware that some nestboxes are in dire need of repair and replacement. Due to this need, we have now partnered with a volunteer carpenter to make these nestboxes safer and more efficient to access. We have our first new installation planned for later this month! As noted above, Barn Owls can breed multiple times a year so if you suspect a nest box is in use, please do not hesitate to reach out and let us know!

Finally, DFW is grateful for your support. Without landowners like you, we would miss out on the opportunity to gather data on this species of greatest conservation need. We hope that you enjoy being a part of this research and will allow us to continue to visit and monitor these nest boxes in future years.

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