Delaware Kestrel Partnership
2017 Nest Box Monitoring End-of-Season Report

INTRODUCTION

In response to state-wide and regional declines, the Delaware Kestrel Partnership (DKP) aims to create American kestrel nesting habitat by installing and monitoring nest boxes to document and assess nesting activity, productivity and success of breeding populations of this state-endangered raptor throughout Delaware. DKP thanks you for your cooperation and support in allowing our program to utilize your lands for our efforts.

2017 SEASON SUMMARY

The DKP began preparing nest boxes for breeding season in early February. Nest boxes were monitored from early-March through mid-July. Monitors visited nest boxes once weekly, looking for kestrels, documenting any breeding behaviors such as courtship, copulation or flying in and out of the nest box. Monitors approached the nest boxes and, using a step ladder or camera pole, checked the contents for presence or absence of nesting material, eggs, chicks or adult birds. If signs of American kestrel nesting (e.g. kestrels going in and out of the box, nesting material or eggs found) were noted, the nest box was determined to be active and monitoring was increased to twice weekly in order to capture more details about nesting activity. Beginning in June, boxes with active breeding pairs continued to be monitored twice weekly, in an attempt to document clutch size, completion dates, and hatching dates. Estimated hatching dates were used to schedule a banding date so that chicks could be banded when they were between 16 and 22 days old. Boxes that had not yet shown breeding activity by June were monitored once every other week through mid-July to capture any late nesting or second clutch attempts.

During the 2017 breeding season, the DKP monitored a total of 50 nest boxes across the state, including 14 boxes that were installed this year. DKP currently has 38 nest boxes in New Castle County, eight nest boxes in Kent County, and four nest boxes in Sussex County. At least one American kestrel was sighted within the area of 21 (42%) nest boxes this breeding season, while American kestrel *pairs* were sighted within the area of 11 nest boxes (22%). A total of 10 nest boxes were determined to be active and egg laying occurred in 80% of those boxes. In total, 31 eggs were laid, with 3.1 eggs laid per active box.

Out of the 10 active boxes, four boxes produced 17 chicks (1.7 chicks/active nest box), 11 of which were male, and six of which were female. DKP outfitted these nestlings with a USGS band, took morphometric measurements, and collected a feather sample from one individual of each brood to send to the American Kestrel Genoscape Project (https://fullcyclephenology.com/). Through post-banding monitoring, DKP was able to confirm fledging of 13 young, and was also able to confirm one mortality, as a banded leg was observed in a nest box. Because the banded leg came from the smallest chick in the brood and it was found inside the nest box, DKP hypothesizes that the chick died as a result of siblicide, which is known to occur among American kestrels as well as other raptor species. Of the 10 active boxes observed this year, six did not produce any chicks. DKP expects that some of these failures were due to predation, as the number of eggs observed at some sites decreased over time.

2018 PREPARATION

Following the 2017 breeding season, DKP has begun and will continue to coordinate with landowners to alter, relocate, or remove nest boxes based on information collected throughout the current and previous breeding seasons. The nest boxes will remain open year-round, unless a landowner specifically requests that they are closed, to allow for American kestrels to investigate potential nesting sites; Over-wintering kestrels may roost in these nest boxes during the off season and it may take several years for a kestrel breeding pair to utilize a nest

site. Note that although some of these nest boxes have been installed for several years, this was the first breeding season in which active nesting has been documented!

Next, because we hypothesize that predation may have affected nesting success this year, we aim to outfit nest boxes with a predator guards prior to the 2018 breeding season, where possible. DKP is also interested in identifying new sites to install nest boxes, and in particular we hope to increase the number of boxes in Kent and Sussex Counties.

Finally, DKP is grateful for your support and we hope that you will allow us to continue to monitor the nest boxes in upcoming years!