2nd Update on the Shenandoah Valley Raptor Study Area April 28, 2023

Whew – it's been a very busy month!

April is our busiest month for kestrel research. Mostly, we are running around to determine if our nest boxes are occupied by kestrels, starlings, or squirrels. So far, we've documented 66 kestrel nest attempts - which translates to about 84% occupancy of our available nest boxes! Last year we had over 90% occupancy, but it is still early in the nesting season.

Our first kestrel eggs hatched around April 23! They are scheduled to be banded at 16 days of age. At that age kestrel nestlings are easily sexed and are relatively passive. We don't risk early fledging - which can happen sometimes while banding chicks past 25 days of age. Another perk of banding at 16 days old is the risk of talon or beak injuries to our fingers is minimal because the nestlings tend to be calmer (and are weaker) at that time.



The good news is we've found only one potential kestrel nest failure to date. We'd captured a male in the box with 2 kestrel eggs on April 20th. We went back yesterday to capture the female but both kestrels were perched together in a tree near the box and there were still only 2 eggs inside (there should have been a full clutch of 5 eggs by this time).

Thus far in 2023, we have not been plagued by a lot of starlings nesting in kestrel boxes. Only 3 or 4 boxes have had signs of starlings: grass nests, blue eggs, or the bedding has been removed. Compared to previous years, it appears the starling population in the SVRSA is decreasing. In our recently published paper "Factors Associated with American Kestrel (*Falco sparverius*) Nest Box Occupancy and Reproductive Success in an Agricultural Landscape" with J. Kolowski in the Journal of Raptor Research, we had 7-30% of SVRSA nest boxes occupied by starlings. This year (so far) starling occupancy is under 5%. But, as noted, the breeding season has just commenced for 2023 so it is too soon to say for sure.



Of the 6 nest boxes commandeered by fox squirrels this year, three have recently been vacated and are now available for kestrel use. Kestrels typically have no problem laying eggs atop an old squirrel nest.



Here is where we are in the grand scheme of kestrels breeding in the SVRSA. Based on 761 nest attempts over the years, you can see the peak of clutch initiation (1st egg laid) is around April 6th. Right now, April 28th, we expect 85% of kestrels have laid their 1st egg and the remaining 15% of the breeding birds will begin laying eggs in boxes between now and the end of June.

The breeding season for our study area runs from March 7th to the end of June which is 114 days long. There are 64 days left in the 2023 season to initiate clutches. For a more in-depth look at this, and other SVRSA kestrel parameters, go to our 2020 paper published in Maryland Birdlife on Research Gate.



We were just informed that Corine, a fellow falconer who lives in Northern Virginia who put up 12 kestrel nest boxes in March this year, has attracted at least one female kestrel so far!

How low can you go?

In March last year we decided to perform a simple experiment to see if kestrels would use nest boxes installed on fences which are about 3' from the ground to the bottom of the nest box, (as opposed to the average SVRSA nest box which is 10' from the ground). We installed 4 nest boxes on fences and they were all available for 2022 - but no kestrel nested in them during 2022. This is not unexpected, because newly installed boxes are frequently ignored by kestrels during the first season, no matter what height. This year we inadvertently acquired another "low" kestrel box because the pole it was installed on for the past 10 years was cut down, but someone reinstalled the box on the stub of the pole about 4' off the ground (thank you Good Samaritan). Simultaneously, we lost one of our initial four 2022 fence boxes because it was literally surrounded by corn in June, so we removed it. So, in summary, we still have 4 low kestrel boxes; 3 have been up for over a year and one is in the same historically productive kestrel site for the past 10 years. In 2023 we've captured 3 females inside low boxes. One kestrel had no eggs, so it appeared she was house hunting and hasn't returned. In the low box that's been there for 10 years, we caught a female kestrel on 4 eggs!



Jill is both shocked and delighted to extract a female kestrel with 4 eggs from this newly lowered box (KBOX62).

In a different low box (KBOX36) we caught a female kestrel with her first egg. To date, our 4 low kestrel boxes have 50% occupancy! (The female with no eggs doesn't count as an occupancy.) This shocked the heck out of us. If the predation isn't increased and these low boxes can successfully fledge nestlings, we may have made a breakthrough. It is MUCH easier to maintain and monitor these boxes since there is no ladder climbing!!



Lance at KBOX36 containing a female kestrel with 1 egg on April 27.

Thanks to our helpers!

As always, we appreciate everyone who showed the fortitude to help us monitor boxes. Tim Rocke has been a rock of support – haha – for several years. Both he and Robert Gettleman recently helped Jill for two long days while Lance was ill last week. Bad timing on Lance's part getting sick in April! What was he thinking?

Our long-time friend Jennifer Westoff took time from her busy business (<u>Raptor Hill Falconry | Falconry</u> <u>Experiences near Luray, Virginia, USA</u>) to help us for a day recently.



Jennifer and Jill recording and looking up a recaptured adult female kestrel's band number.

We also had the pleasure of training a new volunteer, Ariel Derby, and she proved to be excellent at capturing kestrels in boxes!



Ariel and Lance preparing to release a kestrel captured in a nest box south of Bridgewater.

Recaptured kestrels

We maintain a list of all the kestrels we've banded in the study area since 2008 (over 3,000 kestrels) and, when we recapture a banded bird, this list is immediately consulted to determine:

- 1) Was the bird banded by us or by someone else;
- 2) the bird's original banding data and current age;
- 3) if he/she is one of our "most wanted". These are birds have notes reporting anything abnormal, be it plumage, behavior, or injuries.

A few days ago we recaptured a female kestrel on eggs in KBOX49 and looked her up on our list. She was on our "most wanted" list – having had bumblefoot during her initial banding. Bumblefoot is an infection causing swelling and/or scabbing in a raptor's footpad. Note her central foot pad is very swollen and has a dark scab in the center in the photo below.



Bumblefoot in the female kestrel upon her initial banding in 2018. She was almost 1 year old when we first encountered her breeding in our KBOX78. The next spring, we trapped her with a mouse BC in March and then captured her breeding in a different SVRSA box. In 2020 she moved to her current box and has been using it for 3 years in a row. Right now she is at least 6 years old and going strong.

It is hard to survive in the wild if birds are in good condition, but much more difficult if birds are handicapped by injuries. We are pleased to report that her bumblefoot has cleared up and both feet are in tiptop shape.



Feet of recently captured male kestrel showing an abnormal swelling of his left "ankle". He'll go on our "most wanted" list to check his leg if he's ever recaptured.

Another example is a male kestrel on our most wanted list who had been injured by an electric shock. In the photo below, you can see his toes and talons have been severely damaged. He was captured raising chicks in KBOX172 and succeeded in fledging them, but we have never recaptured him since (which doesn't necessarily mean he died). We generally recapture birds up to, and including, 7 years of age but none older, especially those with injuries.



Killdeer nesting at a drive-thru

A couple of days ago, while waiting in the line at the drive-thru, we noticed this killdeer (*Charadrius vociferus*) apparently incubating eggs on a narrow strip of gravel under a fence that lines our local pharmacy's drive-thru lane!



To take photos, Lance got within 5' of the killdeer which caused her to vocalize and flare her lovely tail. Upon further research, we learned this is called the "ungulate display" which is usually reserved for grazing animals approaching the nest. She refused to arise from the nest site so we couldn't tell if she had eggs or not. Based on her behavior, we would bet the farm on it. Since both sexes of killdeer incubate, it was sexist of us to refer to this bird as "she" – apologies. Also of interest is the light-colored gravel that's been displaced by the birds making their scrape (the depression where eggs are laid), note a bit of gravel in the concrete gutter and a lot on top of the dark bluestone under the fence.



Hopefully this nest will succeed but it is doubtful given that dozens of vehicles drive within inches of the nest every day. Note the area behind the nest is another paved parking lot and there is about a 3' drop down from the nest! Perils abound for these "shorebirds" here.

Barn owls – and other raptors - are breeding in the study area too

Even though we spend the bulk of our time on kestrels during April, we do check on barn owl nest sites plus the nesting progress of bluebirds and other species. Fortunately, since we are short of time in April, most barn owls and bluebirds aren't old enough to band at this time.

During a routine check of a consistently productive barn owl nesting site (an unused old silo), we found an incubating barn owl so snapped a quick photo and left her to it.



We know of at least 3 active Bald Eagle (*Haliaeetus leucocephalus*) nests in our study area this year. Since we don't have a fancy telephoto lens – sorry no eagle photos. In addition, we have a couple of Great Blue Herons (*Ardea herodias*) nesting in our woodlot. This is the 3rd year this colony has been active. Happy birding y'all!

As always, you can go to our Research Gate page to read any of our published papers: <u>ResearchGate</u>

Feel free to forward to friends and let them know we will add them to our email list if they contact us: Lance & Jill Morrow saltlick2003@gmail.com

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