3RD UPDATE ~ May 5, 2021 SHENANDOAH VALLEY RAPTOR STUDY AREA

LANCE & JILL MORROW

WOW!

The past few seasons were excellent for producing kestrels, but nothing close to what we are experiencing so far this year. We check each box every 3 weeks until kestrels occupy them. Every day out in the field we are still finding more newly occupied boxes! And we've counted 320 kestrel eggs to date. That includes the 9 eggs in 3 boxes that failed (so far). Unless May weather turns nasty with several continuous days of cold rain, we expect to produce our highest number of kestrels ever!



Hatch Day! We have kestrels popping out of eggs all over the study area. In the above photo there are 3 newly hatched babies and 3 eggs (hopefully they will hatch too). A "normal" clutch for kestrels is 5 eggs and normally we get a 75% hatch rate. However, larger clutches (we have documented some rare 7-egg

clutches) have markedly lower hatching rates. Probably this is because the female's brood patch has a physical size limitation so not all eggs are properly incubated.



Speaking of brood patches, we recently recaptured a female kestrel incubating in a box with a huge scab covering most of her brood patch. It appeared to be an injury that was several weeks old because the scab was very hard and thick with distinct margins with thick yellow skin at the edges. We elected to return her to the box to continue incubation of her abnormally small clutch of 2 eggs but have little hope they will hatch because the heat transfer from her body to the eggs is undoubtedly reduced by her injury.

The current status (always in flux until the nesting season ends in August) is, of 80 boxes (minus the one still occupied by young Fox squirrels) leaves 79 available boxes. So far, we have 70 boxes with kestrel eggs = 89% occupancy rate! To date, we have captured 59 of the 70 breeding females and 10 breeding males so we still have some work to do. Expecting to band at least as many kestrel nestlings as last year (n=283), probably more.

Local Virginia's Kestrel Banding Programs

A couple weekends ago we took our new banding subpermittee, Ben, and his friend, Bert, to install a cluster of kestrel boxes south of Bridgewater in areas where we saw good kestrel habitat AND kestrels. The purpose is to find out if the kestrels in our study area (centered on Timberville) to the north will use this cluster of 5 boxes. Although it is late in the 2021 breeding season, we expect these boxes to be occupied by kestrels and Ben has the task of capturing breeding females and banding all the babies they produce. We are also expecting kestrels bearing our bands to be found by other kestrel researchers in the state: Alan Williams in the Luray area, scientists at the Clifton Institute in Warrenton, Charles Ziegenfus near Harrisonburg, and Patti Reum and John Spahr in Highland County. Dr. John Spahr, another subpermittee, is banding kestrels in Highland County. And it will be very interesting when we capture kestrels wearing other banders' bands in the SVRSA.



Ben installing the box, Bert steadying the ladder and Lance supervising!

Windstorm

There were fierce winds on April 30th gusting over 30 mph and sounding like a freight train blowing through the trees. Our aging kestrel boxes took a hit in these unusually strong April winds. At least 2 boxes had their tops blown off (# 45 installed 2011 and # 63 installed 2013). Box # 45 had been occupied by kestrels for 10 years in a row and # 63 for each of the 9 years it has existed. Both boxes were occupied by kestrels when their tops blew off. In box # 45 there were 4 kestrel eggs that happened to be hatching that same windy day/night. Box # 63 had 4 kestrel eggs that were suddenly exposed to the elements when the top sailed away. However, neither box was abandoned by the parents during this time and, 2 days later, we came along and discovered the lack of tops during routine box checks. Tim, one of our intrepid assistants, quietly sneaked up to box # 63 to plug it so we could trap the breeding adult inside. Tim's stalk was perfect but when he plugged the entrance hole, the kestrel simply flushed up and out of the box! Initially we were flummoxed on how the female escaped but then we quickly realized the top was lying in the grass nearby. Tops were restored and we expect all the impacted kestrels will make it. The top of box # 45 blew about 20 feet away in an alfalfa field but we found it.

Barn Owls catching Rabbits?

We have been checking local silos for breeding barn owls since 2009. Lance observed a barn owl egg and, next to it, half of an unusual prey item: a half-grown cottontail rabbit. Normal prey for barn owls consists of voles, mice, shrews and occasional small bird – not rabbits. Guess that even oldsters like ourselves can find something new once in a while.

So far this season, we know of five retired silos with evidence of barn owl breeding. The very cold weather we had with snow on the ground in February probably killed a good portion of the barn owls in the valley. We are situated near the northern extent of barn owl's permanent range. They are not good at surviving cold temperatures and it is even more challenging to capture rodents under an insulating layer of snow with a hard crust, since barn owls hunt almost exclusively by sound. Fortunately, barn owl populations bounce back quickly when there is adequate food and suitable nesting sites.

Starlings & Kestrels

Starlings in our kestrel boxes seem to be less of a nuisance this year; fewer than 10% of available boxes have had a starling nest in 2021 (at this point). We, and others monitoring nest boxes, have documented boxes containing a stray starling egg amongst a full clutch of kestrel eggs. Interpretation of this finding is tricky. Scenario #1 is the starlings began laying a clutch and kestrels took over the box. Others have documented this direct starling-kestrel combat using cameras in boxes. Scenario # 2 is that kestrels occupy the box and have eggs but, during a break the female leaves the box, and a starling slips in and lays an egg. Others have documented "egg dumping" behavior in starlings which is females laying eggs in other female's nests. Scenario # 3 is that an egg-laden starling enters a box which contains an incubating kestrel. A fight ensues during which the starling loses and the egg inside her is expelled and then incorporated into the kestrel's clutch. Please feel free to speculate on how the situation in the

photo below occurred. Note the numerous feathers, the blood spot on the wall and the positions of the starling and kestrel eggs. In addition, the bedding material is grass, which kestrels definitely do not bring into the box. Kestrels do not bring any materials into a box to make a nest, thus we provide bedding, and we don't typically use grass either.



<u>Bluebirds</u>

For several years now we have been installing bluebird boxes near kestrel nest boxes to determine: 1) if bluebirds will use boxes near active kestrel boxes, and 2) whether bluebirds end up being fed to young kestrels. Thus far, the evidence suggests bluebirds and kestrels can nest nearby without conflict. We are banding bluebirds, trees swallows and wrens who use our bluebird boxes but have not yet found any of those bands in our kestrel nest boxes to date.



Bluebird box mounted on fence is about 30 feet from active kestrel box on the utility pole. The kestrel box has 4 kestrel eggs while the bluebird box has 4 tree swallow eggs, so both are active at the same time.



The first bluebird box we checked this year held this beautiful female bluebird. To our astonishment, she was banded. Our records showed we had banded her as an adult in the exact same box nearly 4 years ago, meaning this bird was a minimum of 5 years old! Thank you, Ben, for this excellent photo of Lance holding the bird while Jill records the band number, date, box number, # eggs, and so on.

Premature Shameage

Lance loves to mentor people in the art of capturing kestrels, bluebirds and other species. He does so with the idea that sending the newbie out to capture a bird requires "premature shameage" (we made up that term). It involves telling the person that the bird they are out to capture is the most important scientific data possible and they will be shamed if they screw it up.



Lance also advocates people to handle kestrels without gloves to avoid harming the adults or eggs. He put these on after capturing a very feisty female to protect himself.

Chocolate Kestrels

Somehow, we have been blessed to catch several birds with abnormal plumage. It is bound to happen, we suppose, since we handle a lot of birds. In 2019 we documented a young female kestrel with abnormally subdued dark brown feathers. Instead of dark brown, her feathers were more of a milk chocolate color. She came from a 2019 kestrel nest in box # 452 containing 2 normal males, 1 normal female and herself (the chocolate nestling).



The aberrant plumaged (chocolate) nestling on the left beside the normal plumaged female on right (siblings in same box on banding day, 5/19/2019). We wanted to see what she looked like later, so we returned to photograph her again 5 days after banding.



Here is the chocolate female kestrel 5 days later showing the pale brown interspersed with normal reddish brown barring.



Her littermate in normal female kestrel plumage. Remember, neither nestling has been out in the sunlight so the normal dark brown feathers appear almost black at this point.

The chocolate kestrel's mother has been using the same nest box for the past 5 years since it was installed in 2017. This year she produced another chocolate female nestling!



First photograph of "Clover" at approximately 18 days of age on 3 May 2021. This nestling was taken under the auspices of Lance's master falconry permit. Our goal is to raise her and hunt with her this fall. Plus, we will have many opportunities to photograph her unusual plumage this year and when she molts into her adult plumage next spring.



This is female kestrel was captured in Texas many years ago. We jokingly dubbed her the "negative" kestrel. You can read all about her in our paper published in the 2014 Bulletin of the Texas Ornithological Society: (PDF) Capture of an American Kestrel with Dilute Plumage (researchgate.net)

Kestrel Condos

At our mailbox we have twin power poles with nesting structures bolted onto them about 80 off the ground. These two boxes face each other about 10 feet apart. Over the years we have observed kestrels and starlings nesting in these 2 facing boxes simultaneously with no apparent conflicts.

In an attempt to understand kestrel and starling competition for nest boxes, we installed 4 sets of back to back boxes on the same pole in 2019 (8 paired boxes on 4 poles). Since one set of boxes only got starlings, we removed it this spring, as we never should have installed a kestrel box there in the first place (we sucker-punched ourselves).



This year all 3 of the paired box sites have kestrels on eggs in one box with the other box occupied by starlings. Two of the 3 starling nests have eggs at the same time kestrels have eggs.



Example of paired boxes with kestrels in one box and starlings in the other. This kestrel nest also contained a starling egg which did not hatch (it disappeared).



Kestrels produced 5 eggs, one did not hatch but 4 nestlings were banded and fledged. The starlings also hatched and fledged. This could be a way to increase kestrel occupancy, as we think the starlings keep other starlings away and kestrel keep other kestrels away – benefitting both species.

Other Kestrel Research in Virginia

For years we have wanted to figure out exactly where our local kestrels are traveling, whether they migrate, where exactly they forage for food, and all their other secrets. Dr. Joe Kolowski (Smithsonian Conservation Biology Institute (SCBI)), Alan Williams and Dr. Bert Harris are putting GPS backpacks on kestrels at the Clifton Institute near Warrenton Virginia to monitor their every movement. We are so jealous that they are not using "our" SVRSA kestrels, but we're excited that this new technology is being deployed to learn more about kestrels in our region. Can't wait to see the results! Here is a link to their exciting research: https://www.facebook.com/clifton.institute/posts/5370831779625030

Also, it is exciting to have other kestrel nest box programs locally, especially the long running Highland County folks who'll be banding like crazy this year (John Spahr and Patti Reum) and, hopefully, we'll see some of their banded birds come to our study area next year. Alan Williams has found our banded kestrels in his study area in the Luray area, but he hasn't sent us any of his banded kestrels (yet). And, Zig has just begun his kestrel box program (and he is also banding bluebirds in his 140 boxes) to our southeast. Good luck to all.

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