

5th Update

Shenandoah Valley Raptor Study Area

July 13, 2022

The day after our last update in June we found 2 more kestrel box occupancies (both a late and a 2nd nest) plus another box with 5 flicker eggs!



Flickers are a primary cavity nesting species – they make their own nest cavities or, as in this case, they use existing cavities like our kestrel nest box. Over the past 15 years of monitoring SVRSA nest boxes, we have documented 4 flicker clutches, but only 1 hatched young that survived to banding age (2021).

Flicker eggs are much smaller than kestrel eggs, even though flickers have roughly the same body size as kestrels. As with many other avian species, flickers are experiencing a long-term decline in population possibly due to: (1) competition from European Starlings for nest cavities, (2) declining availability of

suitable nest-cavity substrate (snags, dead branches, and live trees with heart rot), and/or (3) pesticides (flickers eat insects, especially ants, so pesticides decrease food availability).

Unfortunately for this flicker, this 2022 nest in the photo was depredated. The day we returned, hoping to band babies, the box was empty.



In a wild field near our home, we've placed 8 pieces of plywood on the ground for the snakes to use for cover. This summer, our best snake count was 28 garter snakes under the 8 boards. The photo above shows 7 garter snakes under a single board. We also see an occasional milk/mole snake and black rat snakes as well. Sometimes we find a shrew or a white-footed deer mouse nest under the boards.

Recently we found (half) a young garter snake in a kestrel box. The adult female kestrel was feeding it to her chicks when we drove up. She flushed out of the box leaving the tail end of the snake inside. When Jill picked it up, the tail end was still moving, curling around her fingers!

Now – on to the status of kestrels in the SVRSA. So far, the SVRSA has produced 285 banded kestrel babies this year **plus** we have the potential to band 24 more baby kestrels in 6 remaining occupied kestrel boxes! Already, we've broken the SVRSA record for the number of young kestrels produced in the SVRSA in a season!

It's been a very good year with kestrels occupying 73 of 80 available boxes (91.2% occupancy). The weather has been favorable, and we have many older & more experienced female kestrels who've been using the same box for several years in a row (suggesting they are year-round residents). So far this season, we have had 82 nest attempts, of which 63 have been successful - **to date**. This preliminary 77% success rate is slightly better than the SVRSA long term average

success rate of 75%. Right now, there are 6 more kestrel occupied boxes - that we know of – yet to be banded. Out of 80 available kestrel nest boxes, 7 boxes were never used by kestrels: 2 boxes that were installed earlier this year and 5 boxes that have been established for years.



Lance is holding the ladder while Tim Rocke checks nest box #46 on a leaning pole. We call it “Phil’s broken leg box” because a friend of ours (Phil) was high up on the ladder when the pole started leaning further toward the road, so we told Phil, “Jump!” He did, nearly breaking his leg – but not quite. Tim and Ben Spory have both been invaluable for helping us deal with kestrel, bluebird and barn owl boxes this year – so we extend our thanks to them.

Only 2 boxes had fox squirrels nesting inside this year. They usually leave before kestrels need to lay eggs, so squirrels are not usually a problem except for this year, one squirrel kept returning. In box # 85 we found 2 young squirrels inside the box on March 3, and we thought they had fledged by April 11th because the box was empty.



However, a squirrel kept coming back and we found it curled inside the box on May 18th (photo above – the squirrel is hiding under its tail) and again on May 28th! These persistent squirrel visits likely kept the kestrels from using the box. The other squirrel-occupied box had those 2 adorable fox squirrel babies I previously shared a photo of (1 black and 1 orange). They fledged and a kestrel successfully nested afterwards in that box.

Thus far in 2022, we've documented 369 kestrel eggs, of which 83% hatched, which is well above our long-term average of 72% hatchability. Of the hatchlings, 97% survived to banding age – also above the study area's long-term average of 94% hatchling survival. The 63 successful nests (to date) have produced 4.3 nestlings per box – again beating our long-term average of 4.2 chicks per successful box. However, there are still several late and 2nd nests yet to band so that average will drop, as the number of eggs laid decreases as the season progresses.

Now for the precious baby photos...



A newly hatched kestrel chick with feathers nearly done drying. Same chick next to its siblings who are still inside eggs on June 10th. Eventually, this nest produced 4 kestrel chicks who survived to banding age.

This year we have had 9 kestrel nest failures **so far**; 3 nests were likely abandoned in the egg stage and 6 nests were probably depredated. We define a box as being depredated if all the eggs or young disappear between nest checks. This year our overall failure rate is about 11% of all nest attempts. This includes abandonment and depredation because it is difficult to figure out the exact cause of most nest failures (unless you actually catch the snake in the box eating the eggs)!

However, kestrels have renested in 5 of the same boxes: 2 by females who were successful in fledging young during their first attempt and the same female laid a second clutch. This “true double clutching” is only possible when the 1st nesting is early in the season, leaving enough time to pull off a 2nd brood. We’ve found that only experienced females can pull this off. One of these double clutching females has used the same box for 5 years in a row and the other has used the same box for 5 of 6 breeding seasons – so both are older, more experienced females trying to do their 2nd nestings in the same season! The other 3 second nests in boxes that failed were made by different females who had likely failed earlier this year in another nest site (**not** in our boxes). We managed to capture all the breeding females using our boxes this year – except one. At the time we didn’t realize the first clutch of 2 eggs had been abandoned by the female we caught, and another female (or maybe the same one) came in later and added 3 more eggs so it appeared to be a typical clutch. Once we banded the babies and backdated the clutch initiation date, it was obvious the first nest had failed (2 abandoned eggs didn’t hatch) – oops.



On July 10th we checked box # 203, in which we had previously banded 3 male nestlings – and found this mess. In the box we found 2 of the 3 male chicks banded on June 6th had expired and were reduced to skeletons with bands on their legs. The visible bone is the pelvic girdle of one unfortunate nestling. Skulls were also found in the box. Not sure what the cause of death was, likely starvation from abandonment or death of one parent leading to half rations provided by the remaining parent. An alternative scenario is that the one kestrel who managed to fledge survived by eating the dead siblings after they all were abandoned by parents. Thankfully, this is not a common occurrence.



In one box we had 5 eggs and all 5 hatched, but this kestrel apparently choked to death on some food about 2 days before we came to band the box. We found her dead in the box with the 4 living siblings who weren't so unfortunate. They apparently had enough food being brought in by their parents, because they didn't eat her body.

If it is a somewhat cool day and we have no human helpers, we bring our 2 dogs out checking boxes. By now they both know every kestrel box and, especially which fields where we let them out to run. About a mile from the box, both dogs start acting more alert and excited. The bird dog especially likes to smell the young kestrels while we are banding them.



We installed box #75 in this vast hayfield in 2016 that was 100s of acres of vole habitat!



Unfortunately, 2 years ago, the land was sold to a dairy that tore out all the fences, wet areas, and old snag trees so they can grow a huge monoculture of first barley then a 2nd crop of cow corn every year. Barley grown this spring has been harvested and the next crop of corn is sprouting. In spite the monocultures surrounding the box with accompanying pesticides and herbicides,

this box produced 5 young kestrels this year and 4 last year. It would be of great interest to put telemetry on these birds to see how far they now have to fly to hunt.



Jill checking box on highway 42 which is a divided 4-lane highway between Broadway and Harrisonburg. In spite of the vast amount of traffic on the highway, this box produces kestrels every year. Note the dead field has just been sprayed so turning yellow so a corn crop can be planted between the highway and Linville Creek (tree line on the left). In spite of the noise, cars and trucks whizzing by, lack of habitat except the ditches, and the corn crop, this box produces a brood of kestrels every year. A couple years ago kestrels persisted raising babies in the box while milling machine (extremely noisy) and paving machine (extremely smelly) crews slowly clanged past repaving the highway.



Jill releasing a banded adult female kestrel who is flying towards Lance in the background. The black arrow is almost touching her outstretched left wingtip. Good cell camera on Tim's new phone.



Tree swallows on hatch day. This is a typical tree swallow nest in one of our bluebird boxes: dried grasses with nest cup lined with feathers. In this photo there are 4 newly hatched swallows and one unhatched egg.



Here is the nest of tree swallows on banding day. Generally, tree swallows show little fear of humans and mount a fierce united defense of their nest; note both parents flying around while they both are continuously screeching at Jill. Very cool behavior.

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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