

Final Update 2026 on the Shenandoah Valley Raptor Study Area

16 August 2026

Currently in the Study Area ...

This is our 19th year of bird banding and research in the Shenandoah Valley Raptor Study Area (SVRSA), monitoring 90 kestrel nest boxes, dozens of bluebird boxes, some screech owl boxes, and about 20 barn owl nest sites.

Over the past decade SVRSA nest boxes produced an average of 277 kestrel chicks annually. We place USGS bird bands on all the kestrel nestlings produced in our boxes. Also, we try to capture all the adult female kestrels using our boxes each breeding season to get an idea of how many of the female kestrels that were hatched in the study area return to breed here. This is called “recruitment.” It is gratifying to recapture breeding birds that bear bird bands that we’d placed when they were nestlings. And we are getting more recruits each year!



Here's the priceless expression on a nesting female's face when our endoscopic camera invaded her nest box. We captured her on a clutch of eggs and found out that she had a bird band we'd put on 2 years ago when she was a downy chick. Another recruit! They seem to be calmer than “wild” birds who have never been grabbed by a person before.

This year, we captured 61 of 72 breeding female kestrels using our boxes. Of those 61 females, 21.3% were hatched in the study area nest boxes (i.e. recruits): two hatched last year, three are 2 years old, five are 3 years old, one is 4-year-

old, and two are 5 years old. In addition, we caught 5 breeding females that came from other folks' nest box programs: one was fledged in 2021 from a box near Harrisonburg (one of the late

Zig's) and she's been breeding in our study area ever since she was one year old, another 2 came from nest boxes near Banco, VA about 35 miles ESE from the study area, and another 2 were banded as chicks in Page County (over one mountain range to our east). Several females hatched in our study area have been recaptured breeding in nest boxes outside of the study area, most in Virginia, but they've also been recaptured breeding in nest boxes in Connecticut, Pennsylvania, and New Jersey. So, it seems like our project might be making a difference...

The oldest breeding kestrel this year was hatched in 2017. We have recaptured her **each** breeding season in the **same** kestrel box for the past 9 years! In her long career (2018-2026), this female has produced 47 eggs, of which 36 hatched and survived to banding age (1-3 weeks old). A few words about kestrel life expectancy: most kestrels do not survive fledging, only about 10% survive the first few weeks post-fledging (it is a steep learning curve). In addition, if they survive through their first winter, and become adults, the stats aren't much better. Our records indicate an annual loss of **HALF** of the previous year's breeding adults. However, this doesn't necessarily mean 50% of adult kestrels die each winter. They could have migrated out of the study area, or hang around but are simply not breeding in our boxes - and are thus surviving undetected.



Hatch day for clutch of 5 kestrels! Three downies are hatched, one is emerging, and the last is still in egg. Notice the box is littered with debris: eggshell fragments, a dead beetle, and many bones of prey items. Many years ago we discovered that it was not necessary to clean out the old debris each spring. In fact, we hypothesize that the smell (and possibly the bad taste) of debris might deter starlings from using the box. Plus, it makes less work for us and we like that!



This kestrel box had 6 Fox Squirrels on March 4 – a record number for us. After this nest check, their mother moved them someplace else and kestrels began a clutch of eggs in April.



Last year this box had 3 kestrel eggs but was taken over by bees. Our solution was to install another box on the same pole. It worked; kestrels renested in the new box with bees still occupying the original box! This year we found some bees buzzing around the upper box in March but, for some reason, all the bees had died or moved out of the box by May. They left the box with the entrance plugged by wax so kestrels couldn't use it. Unfortunately for the kestrels, the lower box had a young squirrel. Once the squirrel had gone, kestrels came in and produced 3 nestlings in the lower box.



This is a case of kestrels “egg dumping”. Despite having 8 eggs laid inside it, this box produced **no** kestrels this year. Egg counts were: 5, then 7, 8, 5, and lastly 3 cold eggs. At that point we knew the nest wasn’t being defended, and it was deemed a failure. Although we tried about five times, we never managed to catch a female in the box on eggs – she was too jumpy.



Here we are banding kestrel nestlings in a box that was installed in March of this year and was occupied after less than a month. Suddenly, a school bus comes around the corner and stopped at the box. With the driver's permission, we boarded and gave the kids a look at the banded kestrel nestlings (in the old nail bucket).



They look positively entranced.



While banding kestrel chicks in this box, we (and Ben, squatting) found ourselves amid a crowd of folks attending a symposium at the Seventh Day Adventist school/church near New Market (the boarding school is in the background). They were also given a look-see at chicks in a bucket.



We captured this breeding female in a different nest box near the New Market school. The outer toe of her right foot was completely gone (compare it to the number of toes on the other foot). There should be 3 toes in front and 1 on the back of the foot (anisodactyly). Other than lacking a toe, she seemed healthy and fledged 5 chicks this season.



One vacant box was used by a different species: a yellow-shafted flicker (*Colaptes auratus*), a type of woodpecker that usually excavates a cavity in a dead tree. In fact, kestrels will use an old flicker hole if it is situated in the open. Photo shows the male flicker that was in the box incubating the 6 eggs. Flicker nest failed.

Summary of kestrel productivity in the SVRSA ~ 2026

Our 2026 kestrel banding season is over, as of July 30th, with 90 kestrel boxes producing 250 chicks in 2026, which is 10 fewer than last year. There were 72 nest attempts, with an 85% success rate (success means the nest produces at least 1 chick that survives to banding age). The number of nest attempts was lower than normal this year; however, their success rate was higher – so productivity was on par with the previous 2 years. The weather this season was fairly mild, which likely contributed to the high success rate. In addition, fewer kestrel nests were depredated this year, coinciding with our observation of fewer black rat snakes than ever.

Looking further back in SVRSA history, our occupancy rate peaked at 95% in 2021. This year's occupancy rate was 79%; the lowest rate in a decade! This is typical of a shrinking population of breeding adults which appears to be the problem with the declining kestrel population continent-wide.

Similar nest box programs by our banding subpermittees: John Spahr in Highland County, Tim Rocke in Page County, and Ben Spory has been monitoring 5 kestrel boxes near Bridgewater in Augusta and Rockingham Counties. John is currently in Africa and hasn't submitted his kestrel banding data yet. Tim has been increasing the number of boxes he monitors each year. Ben banded the aforementioned 6 barn owls plus 19 kestrels this season. The SVRSA has exchanged kestrels with both Tim and Ben but not John (yet). Maybe next year...

BARN OWL NEWS

Ben Spory took us to an unused silo near Harrisonburg where we watched him band the nestlings. This is one of only two barn owl broods we recorded this year. As you may recall, we had a “snowcrete” situation last January/February in the region. In late January 3-4” of snow fell and was followed by 2” of sleet which promptly froze on top of the snow making a nearly impenetrable layer of ice. This situation lasted for about 3 weeks with consistently cold air temperatures. The occasional harsh winter here in the Shenandoah Valley causes starvation of barn owls because they do not migrate, they cannot access the grassy areas to catch food, and they are not very cold tolerant (lack proper downy undergarments).



There are 6 barn owlets in this photo from Ben’s silo, from 3 to 5-weeks old.

Due to the bad winter weather, we suspect most of the barn owls in the study area had died. In fact, we had just 1 active barn owl nest in the entire study area (plus Ben’s silo south of the SVRSA). Our active site was in the old red tile silo that has been active every year for as long as we’ve been checking. Jill had given up on barn owls for the season, having seen all the usual nesting sites without eggs. However, Lance, being the optimist, suggested we check one more time and, voila, there were 5 barn owl chicks inside flapping around and raising dust. They were

just days from fledging, but we were able to catch and band five owlets. A few days later, a landowner found and reported a dead banded barn owl that had come from that silo. It probably hit a fence or was hit by a car. It's a very dangerous world for youngsters with zero experience.

SCREECH OWLS IN THE SVRSA

Once again, the SVRSA had only one successful screech owl box this year (out of 14 boxes). The box had been installed by a very knowledgeable birder who told us that he had screech owl chicks and asked if we wanted to band them. We did; plus we captured and banded the mother owl at the same time.



Eastern Screech Owlets in a nest box within the SVRSA. Credit Chad Coffman.

BLUEBIRD BOXES

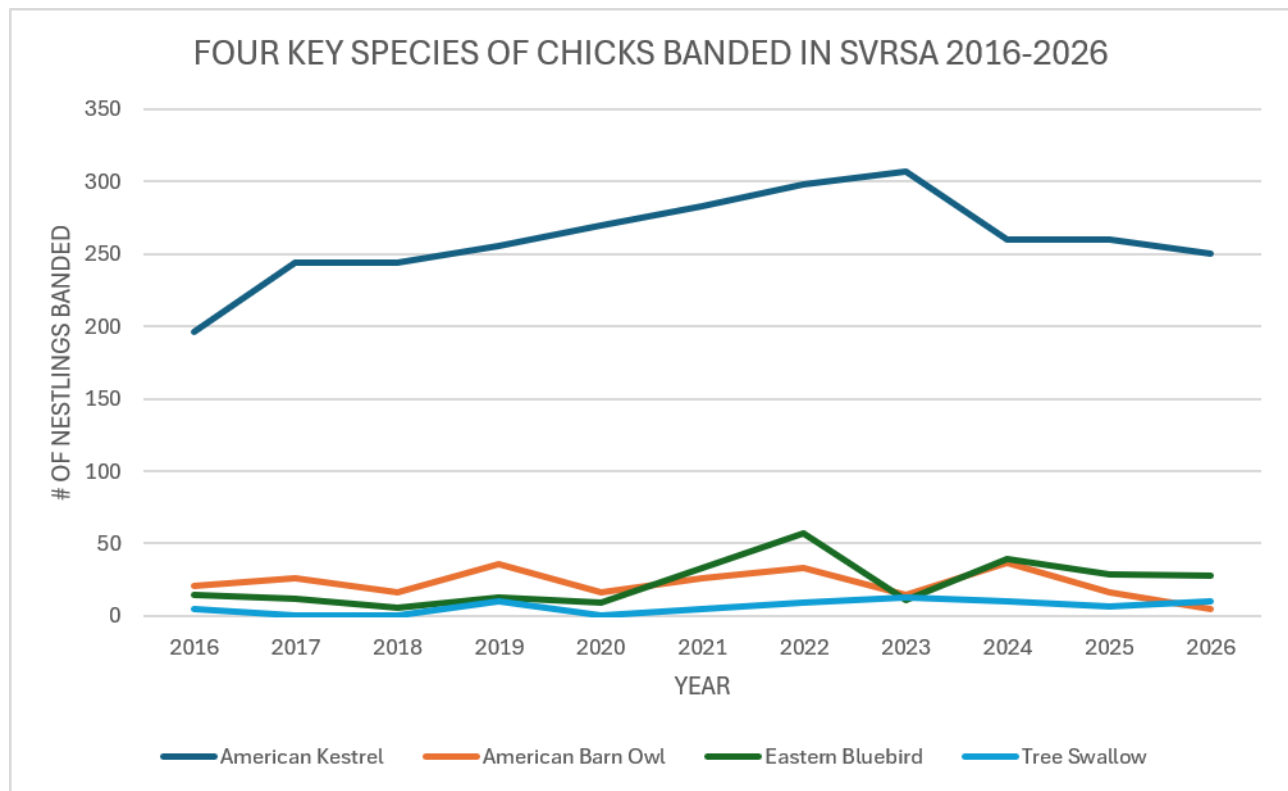
This was a poor year for bluebirds and tree swallows in the SVRSA. We think it is due to the lack of insects which are the main food items for these, and many other, species. Most of the bluebird boxes were vacant but several had nests with failures. Still crunching numbers so don't have any exact stats.



Several dead half-grown bluebirds in a nest box. Couldn't say why they died but this is usually an indication that one of the parents died or was incapacitated. Possibly they starved.



An adult tree swallow captured on eggs in a bluebird box.



We graphed numbers of nestlings produced by the four keys species banded annually in the SVRSA from 2016 to present. Kestrel productivity increased until it peaked in 2023 and decreased by 15% the next year; but kestrels have remained steady since. Barn owls peak and fall on a regular basis, but this year they really bottomed out (due to the “snowcrete” event last Jan./Feb.). Looks like the bluebirds and tree swallows peak with the barn owls at times. This chart has little scientific merit because it is also a reflection of how much effort was put into finding and banding the barn owls, bluebirds, and tree swallows. Kestrels come first and have always been our priority.

Many thanks to...

All the folks who came out and helped us check/install/maintain boxes. Tim Rocke, Corine Hagan, Cynthia Mackie, Robert Gettleman, Sasha Quintana, Scott Dalhquist (and kids), Marky Dewhirst, Steve Twombly, Ben Spory, Liam McGranaghan, and Chad Coffman.

In addition, we thank the Virginia Falconers’ Association and the North American Falconers’ Association/The Falconry Fund for financial support these past two years. Grant funds go toward buying materials to construct and replace old nest boxes, publication fees for peer-reviewed papers, banding supplies, and monitoring expenses.

In a memo to all bird banders in North America, USGS wrote:

“If you discuss or share your banding projects to any public platform or social media, please indicate all banding, marking, and sampling is being conducted under a federally authorized Bird Banding Permit issued by the U.S. Geological Survey.”

New REPORTBAND.GOV link If you host a website that encourages folks to report banded birds to the North American Bird Banding Database, please note we have updated the LONG URL link to make it more secure. New updated link: https://www.pwrc.usgs.gov/BBL/Bander_Portal/login/reportband.php

If you are deeply interested in our work, go to our Research Gate page to read any of our published papers, photos and other items: [ResearchGate](#)

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

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