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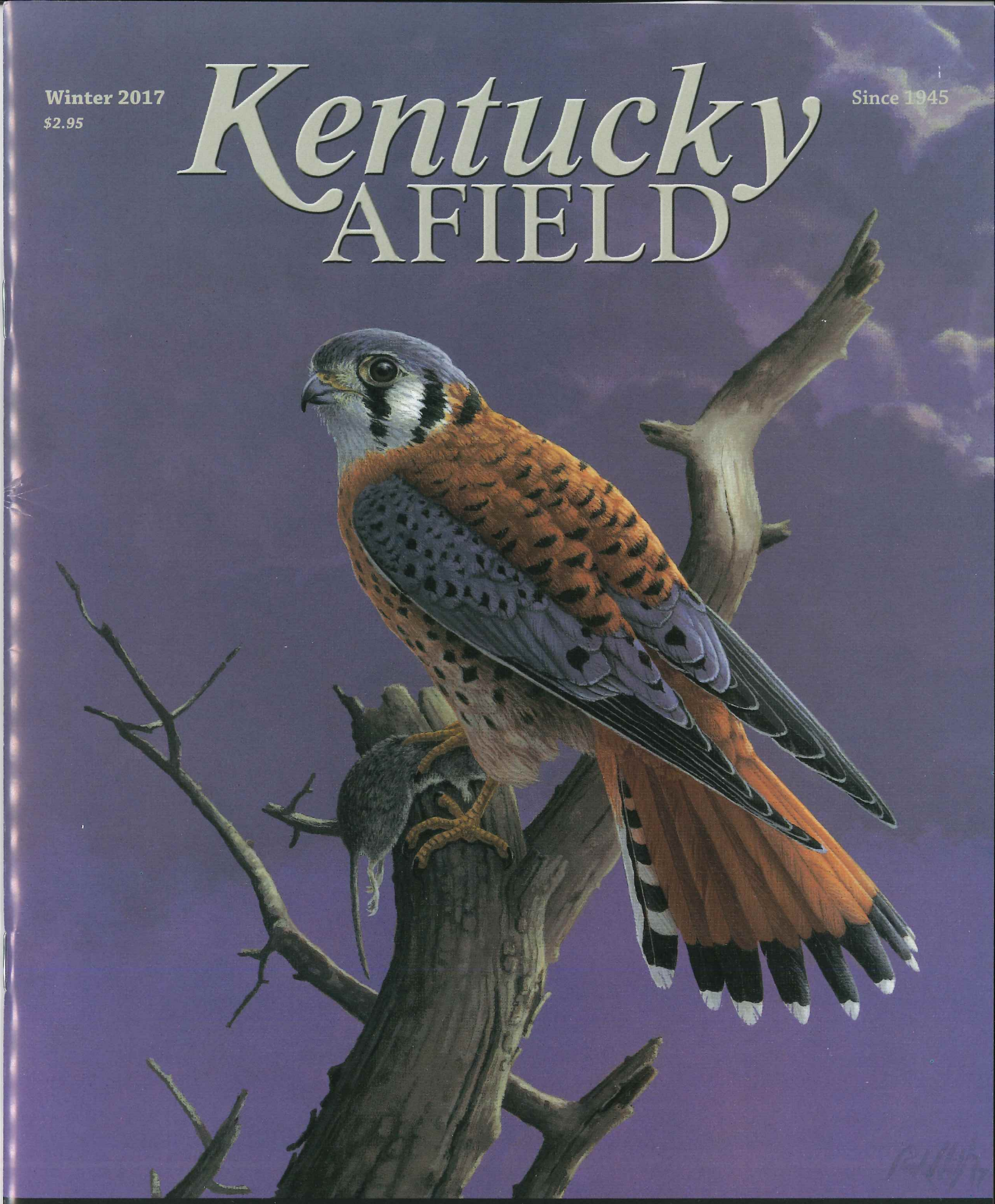

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THE AMERICAN KESTREL

A pint-sized predator slips into decline

By Geoff Roberts

SOMETHING IN THE distance grabs your attention as you drive down a country road. High above a newly mowed field, a small bird splays its tail and holds its extended wings motionless as it hovers in the slight breeze. As you continue to watch, the bird descends rapidly and then begins hovering again. In an instant, it drops to the ground and plucks a mouse from the grass. Flapping its wings now, the bird carries its quarry to a nearby power line to eat what it worked so hard to catch.

This is the American kestrel (*Falco sparverius*), the smallest and most abundant species of falcon in North America. Barely larger than a robin, the kestrel is frequently misidentified as "some sort of songbird."

Due to their tendency to eat sparrow-sized songbirds, some people refer to them as "sparrow hawks." Kestrels, however, are true falcons.

Laura Burford, a Kentucky Department of Fish and Wildlife Resources biologist who helped restore peregrine falcons to the landscape, said people driving along country roads should keep a lookout for this unique native species.

"They are gorgeous little birds," she said. "You really can't appreciate all of the intricacies of their coloration until you see one up close."

American kestrels are sexually dimorphic, meaning males and females have different coloration. Birders in the field can quickly determine the bird's gender because of these differences.

Males and females share the same rusty brown coloration with black markings throughout. Both sexes have black stripes – commonly referred to as a "mustache" – directly beneath their eyes. These stripes help reduce glare while hunting on bright days.

MIA MCPHERSON PHOTO

Female kestrels (left) lack the bluish-gray coloration of the males (facing page) on the head and wings.

Male kestrels are more colorful than their female counterparts. Males have the blue-gray coloring on their head and wings that the females lack. Another difference: Female kestrels are some 20 percent larger than males.

Kestrels make the most of their small stature. They are fierce predators capable of seizing and carrying away prey half their own body weight. While small rodents make up the bulk of their diet, they will also eat reptiles, birds, large insects and bugs.

Like all birds, they have the ability to detect ultraviolet light. This means they can see the urine trails of small rodents while aloft – a trick that makes them incredibly efficient hunters.

Kestrels rely on elevated perches, such as utility poles, power lines, trees and fence posts, to scan the horizon for prey. They are also one of the few birds capable of hovering in place, which helps them locate and track prey. They hover by flying into the wind, sailing like a kite by maneuvering their wings and tail to provide lift. Kestrels also have stiffer feathers than other falcons, which helps them maintain their position in the air.

Unfortunately, there are fewer kestrels on the current landscape. American kestrel populations have steadily declined since the 1960s. Perhaps most troubling is the lack of a clear reason for this trend. Data to corroborate this decline have come from nationwide surveys including the Breeding Bird Survey and the National Audubon Society Christmas Bird Count.

While the population decline appears to be widespread, the most dramatic declines have occurred in the Midwest, Rocky Mountain, New England and Appalachian Mountain regions of the United States, as well as southern Canada.

"Unfortunately, there aren't any easy answers that explain kestrel decline," said Sarah Schulwitz, director of the American Kestrel Partnership, a non-profit project operated by The Peregrine Fund. "We know they're declining but many current – even popular – hypotheses as to why they are declining don't fit the bill when it comes down to evidence."

These hypotheses are far ranging, from increased predation by Cooper's hawks to habitat loss and degradation, climate change or the use of pesticides and rodenticides. However, research efforts have not been able to identify any one cause as the chief phenomenon behind kestrel decline.

Habitat loss or degradation is a contributing factor to the population decline of many wildlife species. Studies, however, have not been able to address why areas with suitable and unchanged kestrel habitat are experiencing declines.

Ideal kestrel habitat – flat, open areas for hunting and wooded edges for nesting – is often abundant in rural areas. But farmland is also on a national decline due,

MIA MCPHERSON PHOTO

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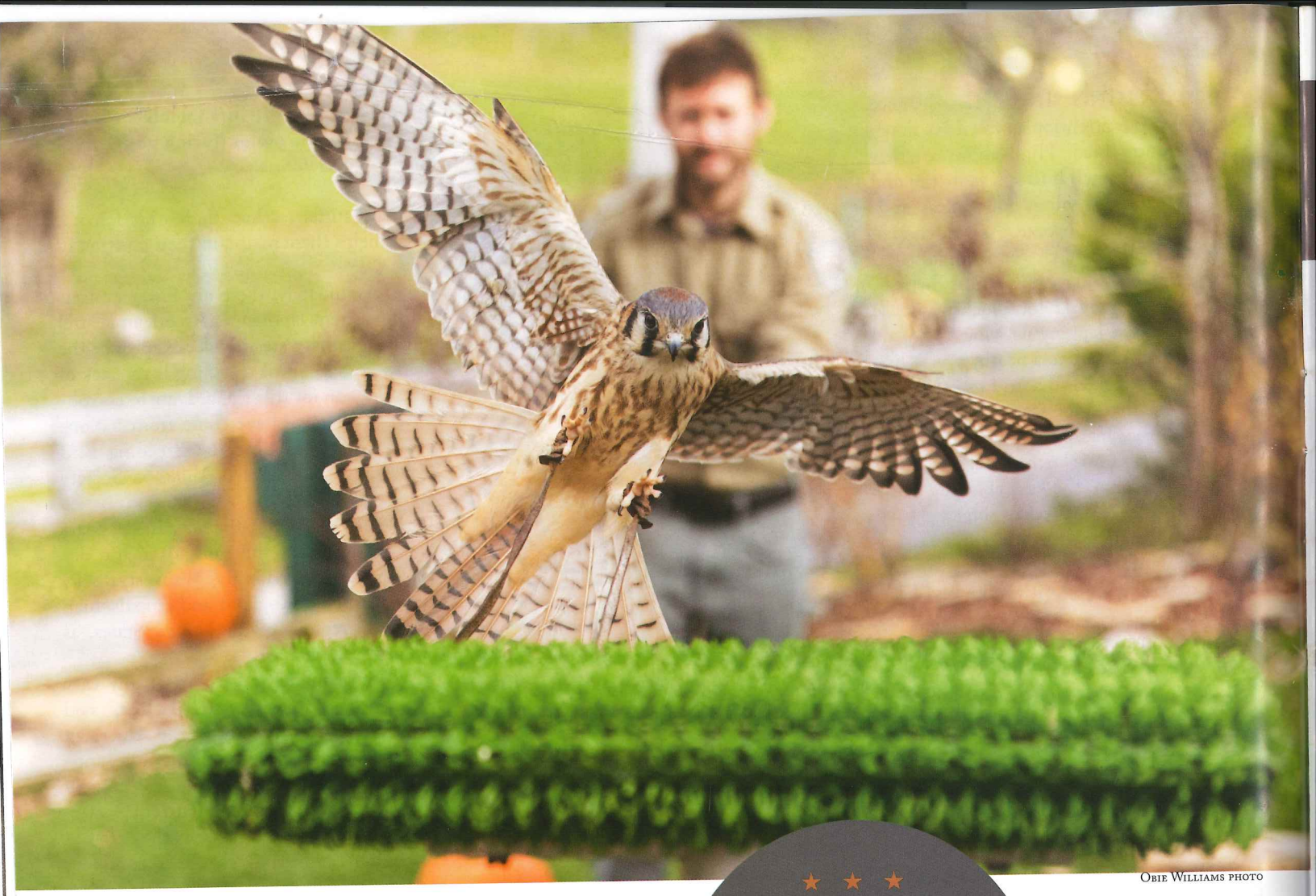

OBIE WILLIAMS PHOTO

SALATO

Author Geoff Roberts flies one of the kestrels that visitors may see at the Salato Wildlife Education Center in Frankfort from spring through fall.

in large part, to commercial development. Kentucky, for example, lost 943,000 acres of farmland between 2007 and 2012, according to the U.S. Department of Agriculture.

Still, the drops are not as bad here as in other areas.

"Kentucky's kestrel population isn't declining as steeply as the rest of the Eastern region," said Loren Taylor, avian biologist with Kentucky Fish and Wildlife. "However, we still need to implement good management practices if we hope to turn the current trend around."

Taylor and other biologists suspect habitat loss and changes in agricultural practices might be contributing to kestrel decline within the state. The use of pesticides and rodenticides may also be a factor.

Because of their specialized diet, the widespread use of chemical poisons to combat rodents and insects can pose serious health hazards to kestrels that feed upon poisoned prey. Rodenticides, in particular, can cause serious problems for kestrels who ingest them. High toxicity levels can cause internal bleeding, anemia and death.

Kentucky Fish and Wildlife Veterinarian Iga Stasiak cautions that even low levels can be harmful. "Kestrels that feed upon poisoned rodents will likely experience low toxicity levels, but even this is cause for concern," she said.

Even low levels can compromise the birds' immune systems. "This means these birds are more likely to succumb to illnesses and infections that a healthy bird would otherwise be able to fight off," Stasiak said.

Biologists encourage landowners and property managers to use discretion when deciding how to best deal with pest and nuisance issues, due to the potentially far-reaching impacts of chemicals.

Recent research aimed at monitoring chemical contaminants in various raptor species found rodenticides present in samples taken from American kestrels in Kentucky.

"We advise landowners to use non-poisonous techniques to manage rodent pests, such as conventional mouse traps," Taylor said.

Landowners who use poison for rodents should clean up carcasses promptly and dispose of them out of the reach of wildlife or pets. "If you think about it," Taylor said, "you don't want your pet dog or cat ingesting poisoned mice, either."

Taylor said it is easy for landowners to manage their property for kestrels by providing the birds with hunting grounds and nesting opportunities. Mowing edges or strips along overgrown fields provides ideal hunting hot spots for kestrels. Rodents and large insects congregate along these kinds of edges.

Kestrels nest in available cavities such

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as tree hollows, old woodpecker holes or rock crevices. One theory holds that kestrels could be in decline due to a lack of nest cavities, or too much competition for existing cavities.

Landowners who want to help with the plight of the kestrels should leave tree snags standing, as these provide kestrels a place to nest. Snags also provide good perches for hunting.

Kestrels are opportunists. If a tree snag is not available, they'll use rotten utility poles instead, or nest in the nooks and crannies of barns, carports or sheds. They do not carry nesting materials into a cavity, laying eggs directly on the floor.

Birds typically lay a clutch of three to seven eggs in late March and April. The parents will incubate eggs for about 30 days before they hatch. Chicks stay in the nest for approximately 30 days before they're ready to fly.

Because of their willingness to nest in artificial cavities, kestrels readily utilize manmade nest boxes that are properly situated. Install nest boxes 15 to 30 feet above the ground in an area with good kestrel habitat, such as hay fields pocketed with wood lots. Barns and silos are good locations for nest boxes. Don't install one on a tree, as squirrels or other animals may take up residence instead.

Nest boxes installed in areas with the least amount of noise and human disturbance will have the best chance for nesting success. Kestrels may use the same nest for many years.

Look for construction plans and placement tips for kestrel nest boxes on the Kentucky Fish and Wildlife website, *fw.ky.gov*. Search under the keywords, "kestrel nest boxes."

Schulwitz believes monitoring kestrel nest boxes for productivity may help researchers understand the species decline better. "Nest box monitoring generates valuable data," she said.

The American Kestrel Partnership's goal is to further research and conservation of kestrels through unifying data generated by scientists and birding enthusiasts. The organization is currently gathering data from more than 1,400 kestrel nests throughout North America.

Nest box research could address potential issues kestrels experience while nesting and attempting to rear young. Data could also help pinpoint when, during the life cycle of the kestrel, these birds are experiencing problems. A recent hypothesis suggests that whatever is happening to kestrels may be occurring during winter, when northern populations of kestrels migrate south and populations condense. Kentucky's kestrels don't migrate elsewhere in winter.

The decline of any native species is cause for alarm, especially when the species serves such a vital function. "Generalist raptor species like the American kestrel play an important role in the ecosystem by helping to keep prey populations stable," said Taylor.

KATE SLANKARD PHOTO

Wildlife Biologist Kyle Sams installs a kestrel nest box on a utility pole that is no longer in use. Barns are other good places to hang boxes.

In the spring and summer, kestrels feed almost entirely on insects before shifting to small mammals in the fall and winter. "Because their diet is so varied, they can help to prevent populations of pest species from exploding," Taylor said. "Without predators like the American kestrel, this balance can become skewed."

The answers behind the American kestrel's decline lie somewhere amid a large number of factors that overlap and compound one another. It is also probable that what may explain the decline in one area does not hold in another part of the continent. Further research is needed to shed light on the when, where and why of population declines.

Burford is hopeful, but cautious, when she thinks about the future. "It's scary when the common things become less common, especially something as beautiful as a kestrel," she said. "My mother showed me my first kestrel when I was a child. One day, when I have grandchildren, I'd like to show them a kestrel as well."

Those hoping to catch a glimpse of a kestrel should venture to the countryside to find ideal hunting grounds, then scan the horizon for a pint-sized predator that will likely be perched somewhere on a look out for its next meal. ■