

Brilliant Birds Use Anti-Roosting Spikes to Their Advantage

These birds are known for their uncanny intelligence; are they using metal spikes as replacements for twigs, or to ward off predators?

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- Crows and magpies are using anti-bird spikes to their advantage, creating nests out of the sharp metal pieces
- The spikes were not only used to add structure but may even serve the purpose of keeping away predators
- The dome-shaped roof of one magpie nest contained 61 anti-bird strips made up of 604 metal spikes that together amounted to 16.72 meters of anti-bird strips
- It's possible the birds are choosing the metal spikes as replacements for natural branches simply because thorny twigs are difficult to find in cities, but future research may also delve into whether birds have a preference for one material over the other
- Separate research found that 176 bird species include man-made materials like plastic in their nests, which poses both benefits and risks to birds

Bird spikes, sometimes referred to as anti-roosting spikes, are long, needle-like spikes used to deter birds and prevent them from landing on roofs and ledges. With many bird species facing steep population declines,¹ we should be embracing these creatures and living together with them — not trying to deter them, notes Kees Moeliker, the director of the Natural History Museum Rotterdam in The Netherlands.²

Many birds are masters at adapting to urban environments, however, especially the corvid family, which includes crows, ravens, magpies, jackdaws and jays. These birds are known for their **uncanny intelligence** that's far above that of most other birds and even many mammals.

Moeliker and colleagues even found that some savvy birds are taking bird spikes and using them to their advantage, creating nests out of the metal pieces. "I really thought I'd seen it all," Moeliker told The Guardian. "I didn't expect this. These anti-bird spikes are meant to deter birds, they are supposed to scare them off, but on the contrary, the birds just utilize them."³

'The Irony' — Birds Put Anti-Bird Spikes to Good Use

Typically, birds make their nests out of twigs, grasses, feathers and leaves. But birds are also known to use manmade materials in their nests, including items you wouldn't expect, like candy wrappers, cigarette butts and pieces of plastic bags.

Reports of birds using surprising human-generated materials in their nests date back to the 1830s,⁴ when an estimated 4% of nests contained anthropogenic, or manmade, materials. By 2018, this had increased to nearly 30%.

There are also many media reports of birds using sharp and potentially dangerous objects as nesting materials, including nails, screws, barbed wire, knitting needles and even drug syringes. Moeliker and colleagues, however, chronicled the discovery of two nests made by crows and magpies made almost entirely of anti-bird spikes.

They published their findings in the journal *Deinsea*, revealing that the spikes were not only used to add structure but may even serve the purpose of keeping away predators:⁵

“Two anti-bird spike nests, now in the collections of Natural History Museum Rotterdam (crow) and Naturalis Biodiversity Center (magpie), were analyzed for composition and structure. Magpies may use the anti-bird spikes not just as ordinary nest material, but specific placement in the dome, over-arching the nest, hints at functional use.

The anti-bird spikes may be used by birds in the same way as they were intended to be used by humans: to ward off (other) birds. Crows, for example, are known to prey on magpie eggs and offspring and the specific choice of this sharp material could benefit nest defense, for which magpies may normally rely on thorny branches.”

The irony wasn't lost on researchers, including those from the University of Birmingham, who found that 176 bird species include man-made materials like plastic in their nests.⁶ “I was really struck by the irony, to take anti-bird devices and use them to their own ends,” ornithologist Jim Reynolds told *The Guardian*. “They are even more amazing than I think they are.”⁷

Birds May Be Using Anti-Bird Spikes to Mimic Natural Materials

Magpies instinctively use thorny branches to create protective domes over their nests. The birds are known to fly up to three miles just to find ideal thorny twigs to add to their nests. The roof of one magpie nest collected by the research team, however, contained 61 anti-bird strips in the roof alone made up of 604 metal spikes that together amounted to 16.72 meters of anti-bird strips.⁸

“The anti-bird spikes may represent the urban equivalent of the thorny branches used in ‘natural’ magpie nests, and is another example of artificial nest material that mimics natural materials,” the team explained.⁹ It's likely the spikes were used to enhance nest defense, but there are other potential reasons why birds may be choosing anti-bird spikes as nesting materials, including to:¹⁰

- Strengthen the nest
- Repel parasites
- Function for signaling

It's quite possible the birds are choosing the metal spikes as replacements for natural branches simply because thorny twigs are difficult to find in cities, but future research may also delve into whether birds have a preference for one material over the other.

That said, as natural habitats are increasingly encroached upon, even stranger materials may show up in birds' nests. At this point, the researchers said, it's likely that anything goes:¹¹

“In today’s Anthropocene epoch, there is more anthropogenic material present than natural biomass, and it may thus not come as a surprise that these spikey alternatives are being adopted by urban birds. If even bird deterring material is used as nesting material, anything may become part of a bird’s nest today.”

Birds’ Use of Manmade Nesting Materials Comes With Benefits and Risks

It’s possible that building a nest with anti-bird spikes has advantages, such as offering even better protection from predation than branches — but the use of manmade materials comes with both benefits and risks. For instance, nicotine in cigarette butts may repel parasites from nests, while plastics may provide insulation.

However, chemicals in these materials can be harmful, while bright colored plastic may attract predators and other materials pose a risk of entanglement. Zuzanna Jagiełło with the Poznań University of Life Sciences in Poland, who was involved in the study that found nearly 200 bird species build nests with manmade items, noted:¹²

“A wide variety of bird species included anthropogenic materials into their nests. This is worrying because it is becoming increasingly apparent that such materials can harm nestlings and even adult birds. More studies are needed to gain a more complete understanding of how many bird species worldwide include such materials into their nests for us to fully comprehend the extent of the problem.”

Sources and References

¹ [Phys.org May 6, 2022](#)

^{2,3,7} [The Guardian July 11, 2023](#)

⁴ [Oecologia. 2021 Aug;196\(4\):1207-1217. doi: 10.1007/s00442-021-04982-z. Epub 2021 Jul 8](#)

^{5,8,9,10,11} [Deinsea July 11, 2023](#)

^{6,12} [University of Birmingham July 9, 2023](#)
