

Winged predators seek certain trees when foraging for caterpillars

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Location matters for birds on the hunt for caterpillars, according to researchers at UC Irvine and Wesleyan University. Findings suggest that chickadees and others zero in on the type of tree as much as the characteristics of their wriggly prey.

Unfortunately for caterpillars, munching on [tree leaves](#) that are healthy and tasty can dramatically boost their own risk of becoming food. Study results, published online this week in *The [American Naturalist](#)*, show that dining on the [trees](#) that are most nutritious for caterpillars – such as the black cherry – can increase by 90 percent their chances of being devoured by a discerning bird.

"The jump in risk is surprising," said co-author Kailen Mooney, assistant professor of ecology & evolutionary biology at UCI. "It shows that for caterpillars, moving from one tree to the next can mean the difference between getting eaten and surviving."

The findings indicate a "neat potential pest control system," because the healthiest tree species harbor the greatest number of caterpillars, thereby offering the easiest pickings for winged predators, said lead author Michael Singer of Wesleyan. "Our study addresses basic theoretical questions in ecology, but we also want forest managers and conservation biologists to take away practical knowledge."

Mooney, who specializes in the ecology of predatory [birds](#), said tree identification is probably learned by birds, not genetic. He added that

Southern California bird species probably do the same with coastal sage scrub, determining which types of bushes afford a better chance of tasty insect treats.

With help from a small army of students, the scientists conducted a two-year experiment in Connecticut forests involving hundreds of tree branches either covered with bird-proof netting or left bare.

Mooney noted that the results illustrate a stark choice between gaining strength through a good diet but being more vulnerable to predators and remaining weaker and hungrier but more safe.

"If a caterpillar could feed on nutritious, high-quality tree species and be left alone, this would be the best of all worlds," he said. "Instead, it's faced with a trade-off. Overall, it appears that it's better to feed on poor-quality tree species and have fewer [caterpillars](#) around you than to be on a nutritious plant with many others."

Provided by University of California - Irvine

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