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Hundreds more species than we thought might be endangered



The velvet-purple coronet might be more endangered than we thought
By Aviva Rutkin

The [velvet-purple coronet](#) lives a life of little concern. Conservationists think that this iridescent hummingbird, found in

parts of Colombia and Ecuador, isn't likely to be endangered.

But a new study indicates that this bird, and 210 other bird species, may be at greater risk than we thought. The work, which uses detailed satellite data of elevation and forest cover to assess suitable habitats, suggests that we need to rethink how we classify endangered creatures.

“If this bird disappears from Colombia, it disappears from the world,” says [Natalia Ocampo-Peñuela](#) of ETH Zurich in Switzerland, who led the work.

Since 1964, endangered species have been tracked by the International Union for Conservation of Nature (IUCN) in Switzerland. Their [Red List](#) assigns species a threat level according to population numbers and changes in their habitat.

But that assignment process is flawed, argue Ocampo-Peñuela and her colleagues, because it doesn't take into account the rich [geospatial data](#) now freely available from satellites.

“We're encouraging the IUCN to take advantage of all of this data,” she says. “We should use the best information we can to decide which species to conserve.”

View from the sky

Armed with elevation models and data from Landsat satellites, the team took a closer look at 586 bird species from Asia, the Americas and Madagascar.

First, they refined the potentially suitable habitats for each species according to the elevations that those birds prefer to live at. Then, they examined the changes in forest cover in those regions.

Their new maps suggest that 43 per cent of those bird species currently not considered threatened are more vulnerable than their current IUCN ratings indicate. Eight species currently considered to be of low-concern are, according to this system, actually critically endangered.

“At the time the IUCN came up with the criteria, these sorts of technologies weren’t available,” says [Wesley Hochachka](#) at the Cornell Lab of Ornithology in Ithaca, New York. An approach like this one can help modernise the classification system, particularly for parts of the world where data on the ground is scarce.

“What the authors are doing, it’s almost like a plea for more data and more information to make even better and clearer and more accurate assessments of where species are living,” Hochachka says.

The team suggests that using geospatial data like this could help clarify the threat status of many species – not just birds, but plants and vertebrates, too. They’ve already used their findings to advise North Carolina NGO Saving Species on where to invest money in land for conservation.

Criteria confusion

In an emailed statement, the IUCN said the team misunderstood the IUCN criteria and incorrectly classified many species in their study.

“Fortunately, extensive guidelines and training materials have been developed by IUCN to prevent these sorts of errors, and all Red List assessments are carefully reviewed before they are published to ensure that the criteria are applied correctly and consistently,” said Stuart Butchart, head of science at BirdLife International – the IUCN Red List authority on birds – in Cambridge, UK.

However, Ocampo-Peñuela's team says its approach is accurate.

“What we do most carefully is to show that while IUCN's assessments may be consistent, they fail to include readily available geospatial data that would greatly improve the accuracy of evaluations of a species' risk of extinction,” they said in an email. “We make specific suggestions on how IUCN could improve its guidelines for more consistent assessments.”

“Our study finds that many species have much smaller remaining ranges than is widely assumed and that most of their remaining habitat is highly fragmented,” they say. “The IUCN Red List guidelines do not include specific criteria for remaining habitat that we produced.”

Science Advances, <http://advances.sciencemag.org/content/2/11/e1601367>

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