Pioneering new study identifies why some birds are better known than others

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Landmark analysis shows how culturomics-based tools could boost conservation outcomes.

A pioneering new study, carried out by a team of scientists from the UK, Portugal and Brazil, has used a culturomics-based approach to rank the frequency with which scientific bird names appear online. The results show how culturomics - the study of human culture through the analysis of words appearing in enormous digital databases - could be used to evaluate global public interest in any particular conservation-related subject. This could be of enormous benefit to those involved in protecting and recovering nature.

The analysis, which has just been published in the British Ecological Society journal *People and Nature*, reveals four factors that explain why some bird species have more prominence in culture than others.

Firstly, they have been known to science longer. This is perhaps unsurprising as it is likely that naturalists described the most culturally important, extraordinary or common species first.

Secondly, they are more conspicuous either because they are large, or are active during the day, or both.

Thirdly, they are species with which humans have directly interacted with over the decades through activities such as birdkeeping and hunting.

And finally, they are mainly found in countries where there is widespread use of the Internet.

The study also revealed that only a small proportion of the world's 12,000 bird species are well known, with nine out of ten species generating few if any mentions.

Implications for conservation

Until recently it has only been possible to identify which bird (and other wildlife) species people know about through limited questionnaires. But over the last five years the team involved with the new study has developed innovative internet analysis techniques which can rank differences in the prominence of species names on the internet. The team figured that people are most likely to generate internet content about species that are prominent in their outlook on the world, a characteristic they term "cultural salience".

The accurate determination of cultural salience has wider implications for how we attempt to rescue and restore wildlife populations across the world.

"While the Internet is clearly not a perfect representation of global culture, our finding that birds famous in Victorian times remain famous today suggests that cultural interest in nature moves slowly," says Professor Richard Ladle, lead author of the study. "This is significant because it illustrates the challenge of raising awareness of threatened species discovered in more recent times."

Dr. Paul Jepson, study co-author and Nature Recovery Lead at ecological consultancy and contractor Ecosulis, believes that the team's research could promote new ways of conducting and engaging people in conservation.

"Our techniques can be used to identify wildlife species with the characteristics to become famous, to map 'hotspots' of well-known endangered species, and identify links between countries where they are famous and where they are endangered," says Jepson. "Such knowledge could improve conservation planning and fundraising.

"Our research also raises the question of whether conservation resources should be focused on saving threatened (but maybe less well-known) species, or whether a proportion should be directed at recovering well-known species across their former ranges," he continues.

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While the top-100 lists of species generated by culturomics techniques make for interesting discussion, the research team point out that these should be read with a note of caution.

"There is significant language variation on the Internet, which is dominated by English language content," explains Dr Ricardo Correia of the University of Aveiro in Portugal, who developed the techniques to extract, clean and analyse the data. "We used scientific names to minimise these biases. However, we currently lack a technique to reliably check that some scientific names don't also have popular meanings.

"Our technique is designed to analyse relationships in large data sets, rather than generate robust league tables of the presence of species on the Internet," he continues. "Nevertheless, these tables are fascinating and will improve as the research develops."

Scientific name
Gallus gallus
Buteo buteo
Corvus corax
Sturnus vulgaris
Anas platyrhynchos
Parus major
Falco peregrinus
Passer domesticus
Columba livia

Blue tit Cyanistes caeruleus

Eagle Owl Bubo bubo

Osprey Pandion haliaetus

Robin Erithacus rubecula

Barn Swallow Hirundo rustica

Great tit Parus major

Peacock Aglais io

Goldfinch Carduelis carduelis

Blackbird Turdus merula

Magpie Pica pica

Grey heron Ardea cinerea

The global top 20 most well-represented bird species on the Internet, based on data from the new study.

Press Contacts

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About Ecosulis

As a leading ecological consultancy and contractor, Ecosulis restores habitats and enhances biodiversity at sites across the United Kingdom. Underpinned by our investment in cutting edge research, innovation

and technology, we work on landscape-scale projects that support wild nature, add value for our clients and benefit wider society. Our proprietary culturomics tool is just one of many specialised services that we offer. For more details, please visit www.ecosulis.co.uk.

About the University of Alagoas

Located in the city of Maceió, the Federal University of Alagoas (Universidade Federal de Alagoas) is the major university in the coastal state Alagoas and one of the main research centres in northeastern Brazil.

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