

# Political instability and weak governance lead to loss of species, study finds

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Black-tailed godwit (*Limosa limosa*). Habitats range from the Russian far-east to Europe, Africa, and Australasia. Credit: Szabolcs Nagy, Wetlands International.

A vast new study of changes in global wildlife over almost three decades has found that low levels of effective national governance are the strongest predictor of declining species numbers - more so than economic growth, climate change or even surges in human population.

The findings, published in the journal *Nature*, also show that protected conservation areas do maintain wildlife diversity, but only when situated in countries that are reasonably stable politically with sturdy legal and social structures.

The research used the fate of waterbird species since 1990 as a bellwether for broad biodiversity trends, as their wetland habitats are among the most diverse as well as the most endangered on Earth.

An international team of scientists and conservation experts led by the University of Cambridge analysed over 2.4 million annual count records of 461 waterbird species across almost 26,000 different survey sites around the world.

The researchers used this giant dataset to model localised species changes in nations and regions. Results were compared to the Worldwide Governance Indicators, which measure everything from violence rates and rule of law to political corruption, as well as data such as gross domestic product (GDP) and conservation performance.

The team discovered that waterbird decline was greater in regions of the world where governance is, on average, less effective: such as Western and Central Asia, South America and sub-Saharan Africa.

The healthiest overall species quotas were seen in continental Europe, although even here the levels of key species were found to have nosedived.

This is the first time that effectiveness of national governance and levels of socio-political stability have been identified as the most significant global indicator of biodiversity and [species loss](#).

"Although the global coverage of protected areas continues to increase, our findings suggest that ineffective governance could undermine the benefits of these biodiversity conservation efforts," says Cambridge's Dr Tatsuya Amano, who led the study at the University's Department of Zoology and Centre for the Study of Existential Risk.

"We now know that governance and political stability is a vital consideration when developing future environmental policies and practices."

For the latest study, Amano worked with Cambridge colleagues as well as researchers from the universities of Bath, UK, and Santa Clara, US, and conservation organisations Wetlands International and the National Audubon Society.





Avocets (*Recurvirostra avosetta*), a migratory waterbird found across Asia, Europe, and Africa. Credit: Szabolcs Nagy, Wetlands International.

The lack of global-level data on changes to the natural world limits our understanding of the "biodiversity crisis", say the study's authors. However, they say there are advantages to focusing on waterbirds when trying to gauge these patterns.

Waterbirds are a diverse group of animals, from ducks and heron to flamingos and pelicans. Their wetland habitats cover some 1.3 billion hectares of the planet - from coast to freshwater and even highland - and provide crucial "ecosystem services". Wetlands have also been degraded more than any other form of ecosystem.

In addition, waterbirds have a long history of population monitoring. The annual global census run by Wetlands International has involved more than 15,000 volunteers over the last 50 years, and the National Audubon Society's annual Christmas bird count dates back to 1900.

"Our study shows that waterbird monitoring can provide useful lessons about what we need to do to halt the loss of biodiversity," said co-author Szabolcs Nagy, Coordinator of the African-Eurasian Waterbird Census at Wetlands International.

Compared to all the "anthropogenic impacts" tested by the researchers, national governance was the most significant. "Ineffective governance is often associated with lack of environmental enforcement and investment, leading to habitat loss," says Amano.



The study also uncovered a relationship between the speed of GDP growth and biodiversity: the faster GDP per capita was growing, the greater the decline in waterbird species.

Diversity on a localised level was worst affected on average in South America, with a 0.95% annual loss equating to a 21% decline across the region over 25 years. Amano was also surprised to find severe species loss across inland areas of western and central Asia.

The researchers point out that poor water management and dam construction in parts of Asia and South America have caused wetlands to permanently dry out in counties such as Iran and Argentina - even in areas designated as protected.

Impotent hunting regulations can also explain [species](#) loss under ineffective governance. "Political instability can weaken legal enforcement, and consequently promote unsuitable, often illegal, killing even in protected areas," says Amano.

In fact, the researchers found that protected conservation areas simply did not benefit biodiversity if they were located in nations with weak governance.

[Recent Cambridge research](#) involving Amano suggests that grassroots initiatives led by local and indigenous groups can be more effective than governments at protecting ecosystems - one possible conservation approach for regions suffering from political instability.

**More information:** Tatsuya Amano et al, Successful conservation of global waterbird populations depends on effective governance, *Nature* (2017). [DOI: 10.1038/nature25139](https://doi.org/10.1038/nature25139)

Provided by University of Cambridge

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