

Nature counting on global unity in preventing biodiversity loss

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Biodiversity is vital to the survival of the human race. We rely on biodiversity for medicine, the growth of our crops, the purity of our water systems and the durability of our rainforests. But biodiversity is diminishing at an alarming rate. It is estimated that 0.1% of the world's species become extinct every year. For every species that goes extinct, its associated species – parasites, predators, prey – are also affected.

The United Nations (UN) [Convention on Biological Diversity](#) (CBD) has set international targets to halt the [loss of biodiversity](#) by 2020. But to halt the loss of [biodiversity](#) scientists first need to be able to accurately measure it – a task which divides international opinion.

A new paper co-authored by Cardiff University sets out an innovative set

of objective measures that can be used by organisations throughout the globe to monitor biodiversity.

"We have developed Essential Biodiversity Variables (EBVs) that could form the basis of monitoring programs worldwide; many initiatives collect data that could be integrated into a biodiversity global observation network," said the author of the paper, Professor Mike Bruford of the School of Biosciences at Cardiff University; "EBVs help prioritisation by defining a minimum set of essential measurements to capture major dimensions of biodiversity change which complement each other, and other [environmental change](#) observation initiatives.

"At present, different organisations adopt different measures for biodiversity and no global harmonised observation system exists. Nearly 100 competing [monitoring systems](#) have been submitted to the United Nations in order to meet the 2020 targets – two thirds of these systems lacked evidence-based information on biodiversity change. Yet there remains insufficient consistent national or regional biodiversity monitoring or sharing of such information. Along with inadequate human or financial resources, a key obstacle is the lack of consensus about what to monitor."

Dozens of biodiversity variables were screened to identify those that best fit the biodiversity criteria on scalability, temporal sensitivity, feasibility and relevance. EBVs can be defined as a measurement required for the study, reporting, and management of biodiversity change. Hundreds of variables potentially fit this definition.

Variables were scored for importance and organised into six classes on the basis of commonalities: genetic composition, species populations, species traits, community composition, ecosystem structure, ecosystem function. The variables selected as EBVs fill a niche not yet covered by global observation initiatives looking at environmental pressures.

The paper is a call to action for scientists to measure the right biodiversity components in a coordinated way across the world. Together with Cardiff University, it was prepared by an international group of scientists united under the Global Earth Observation Biodiversity Observation Network (GEO BON).

The proposed EBVs will likely feed into the targets for the CBD's 2020 process. The measures outlined in the paper were collaboratively prepared by Cardiff University and the Biodiversity Observation Network of the Global Earth Observation system (GEO).

Current scientific estimates place over 3000 animal species on the global endangered list, which include African elephants, Asian elephants, black-footed ferrets, bald eagles, West Indian manatees, Canadian lynxes, American alligators, Western gorillas, grizzly bears, caribou, Florida cougars, jaguars, short-tailed chinchillas, tigers, black rhinos and California condors, to name but a few.

Provided by Cardiff University

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