Vast biodiversity database now available to all

nhm.ac.uk/our-science/science-news/2016/december/vast-biodiversity-database-now-available-to-all.html

Scientists have a new 'big data' tool to study how human activity affects the planet's biodiversity, with the publication of a gigantic database that compiles studies from across the globe.

The PREDICTS (Projecting Responses of Ecological Diversity In Changing Terrestrial Systems) database, the largest of its kind, is now available on the Museum's Data Portal for anyone to access.

More than 3.2 million records, sampled from over 26,000 locations and representing more than 47,000 species, are being released.

The project is a mass collaborative effort. Hundreds of scientists from around the world are sharing research data through the database.

'We know that landscapes are going to change a lot in the future as the human population grows, but we haven't really known how biodiversity will change in response,' says project lead and Museum scientist Prof Andy Purvis.

'The PREDICTS database allows us to build global models from the individual local studies that help answer this question.'

Birds and bees

A loss of diversity among pollinators could affect crop production worldwide © Ratikova/Shutterstock.com

Biodiversity studies are often biased towards attractive species such as birds and mammals, while invertebrates and plants tend to be overlooked.

But the PREDICTS team has selected studies that cover a wide range of species and localities, building a more balanced portrait of the world's biodiversity on land.

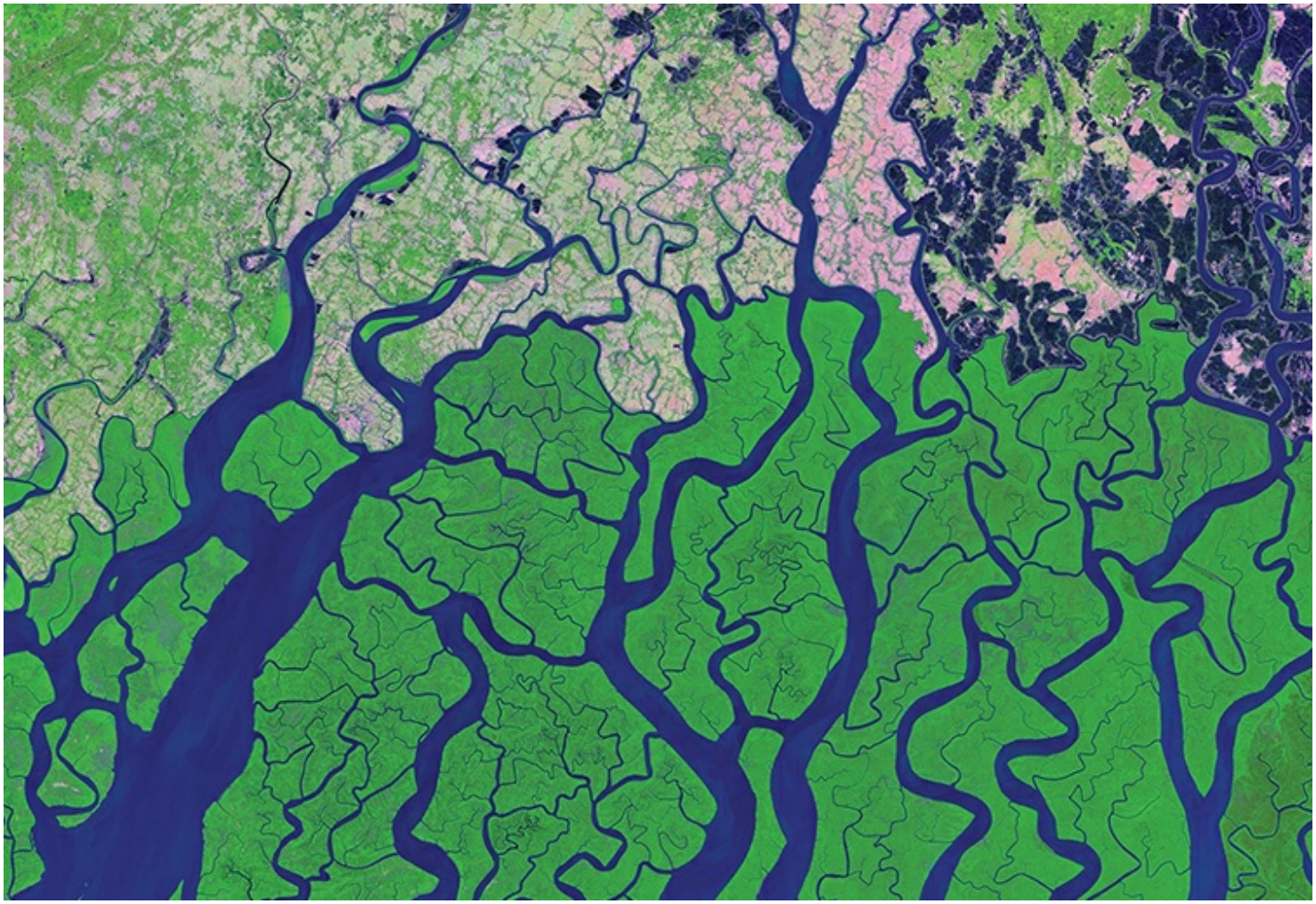
'Different species will respond differently to the same pressures, with some more sensitive to human impacts than others,' explains lead author and Museum scientist Dr Lawrence Hudson.

'If the database didn't reflect overall diversity, then the results from analysing it would be biased.'

Diversity data

Diversity data

Diversity data



A satellite photograph shows developed areas encroaching on the protected Sundarbans mangrove forest in the Bay of Bengal. The pink areas show land being used by humans. © NASA/USGS

This unprecedented level of coverage has already given results.

Work published earlier this year using the database indicated that levels of biodiversity loss are breaching safe

limits in many areas of the world, undermining efforts towards long-term sustainable development.

The research found that human land use has driven down the population of many species to a dangerous extent across 58% of the world's land surface.

Such reductions in biodiversity could threaten vital ecosystem functions such as pollination - but would be difficult to monitor using species databases that lack coverage of invertebrates.

Other analysis of the data has revealed the beneficial impact of protected areas, showing that such areas are home to 11% more species and 15% more individuals than similar unprotected areas.

Open access

The PREDICTS team hope that many more teams will now be able to use the database to perform their own research.

'Science is a team game and I've been blown away by people's willingness to contribute and share,' says Prof Purvis.

'I'd encourage anyone working on how people affect biodiversity to access the site to see if it can help their work.'

- By Conor McKeever