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News Release

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Flickr study gives snapshot of coral reefs' value to global economy

Computer-led analysis of tourist snaps has estimated that coral reefs contribute \$36 billion per year to the global tourist economy.

Scientists used big data computing techniques to study 20 million images uploaded to image hosting website Flickr. The pictures enabled them to create a map detailing the value of coral reefs around the world.

The authors hope that their findings will encourage the tourism industry to act responsibly, and to lobby governments on how best to manage coral reefs.

Researchers used a technique known as data mining – in which computers speed-read information associated with each image – to analyse photos taken by visitors to reefs. They were able to assess details of visits to reefs and tourists' spending nearby.

Scientists were able to differentiate the value of water-based activities – such as diving and boat trips – from associated costs such as spending in hotels and restaurants.

Some 70 million trips a year world-wide can be attributed to the draw of coral reefs, the figures showed. However, tourists focus on 30 per cent of the world's coral reefs, the rest being too hard to reach.

Threats to coral reefs are many and varied – such as pollution, shipping and fishing – and there are growing concerns about their long-term future in a changing climate.

The study, published in *Marine Policy*, was awarded the World Travel and Tourism Council's Tourism for Tomorrow Innovation Award, in recognition of the value of the findings and the study's methods. It was carried out by the Universities of Siena, Washington, Stanford, Cambridge and Edinburgh and the World Resources Institute.

Dr Philine zu Ermgassen of the University of Edinburgh's School of GeoSciences, who took part in the study, said: "Coral reefs are valuable to local economies across the world. More than 70 countries and territories in the world have million-dollar reefs. These generate jobs and earnings for many small island states with few alternative sources of employment and income."

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