Special Issue - December 2016

# PREDICTS Newsletter Special

## Projecting Responses of Ecological Diversity In Changing Terrestrial Systems

## Database release!

We are delighted to announce the publication of the first full release of the PREDICTS database! The data themselves are freely available via the Natural History Museum's data portal, and the accompanying paper – with 515 authors from 61 countries – is now online at Ecology & Evolution. This version of the database includes data added to the database prior to March 2016; the most recent 25 datasets added to the database are therefore not included in this release or this paper, but will instead feature in a future update release. Thanks so much to everyone who has shared their data with us, and allowed us to share the data with the broader research community; thanks too to everyone who has worked on the project over the past four years.

Please click here if you would like to Tweet about the PREDICTS database

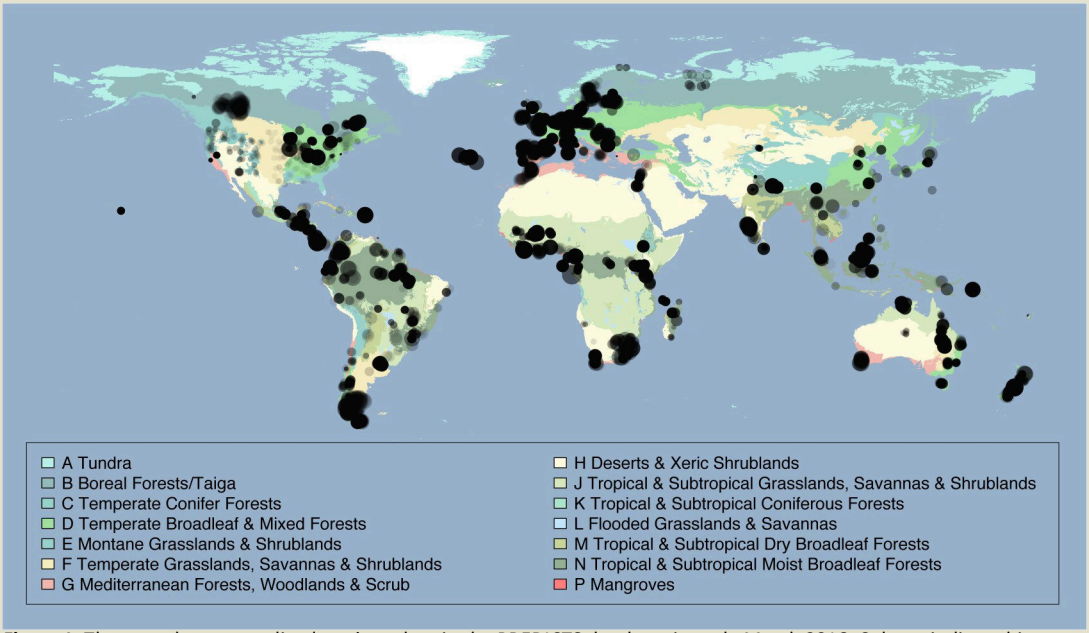



**Figure 1**: The map shows sampling locations data in the PREDICTS database in early March 2016. Colours indicate biomes, taken from The Nature Conservancy's (2009) terrestrial ecoregions of the world dataset (http://maps.tnc.org/gis_data.html). Circle radii are proportional to log10 of the number of samples at that location. All circles have the same degree of partial transparency, so more opaque regions have more sites.

A few highlights:

- 26,114 sites in 94 countries (Figure 1), shared among biomes roughly in proportion to their importance for net primary productivity
- 47,044 taxa – mostly arthropods, then plants and only then vertebrates (Figure 2) – that's around 2.5% of the number of species that have been formally described!
- 3,250,404 observations (each being the abundance or presence/absence of a taxon at a site)

Because the data set is reasonably representative of different major taxa and biomes, we hope that the responses these taxa show to human impacts are representative of how biodiversity as a whole responds.

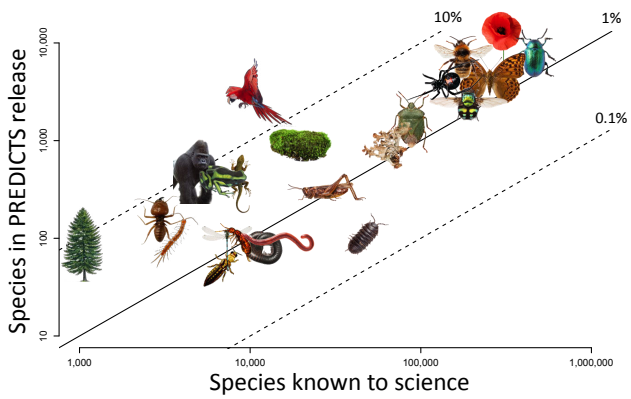



**Figure 2:** Taxonomic representativeness of the PREDICTS database.

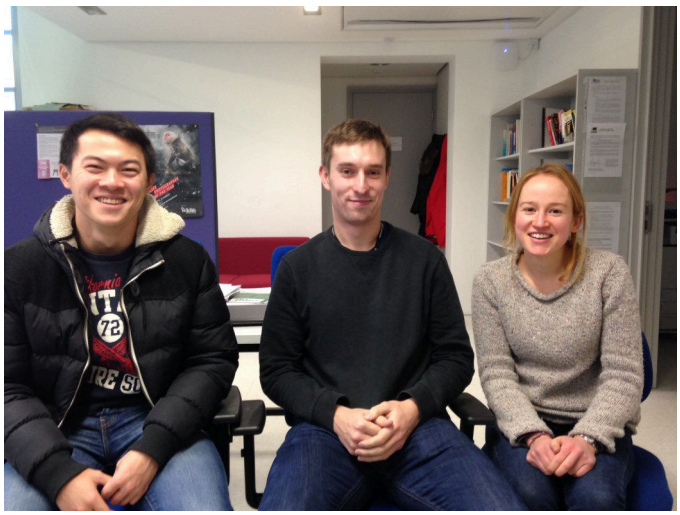
## State visit!

On 2nd November, the Natural History Museum hosted a visit from President Juan Manuel Santos of Colombia (who was recently awarded the Nobel Peace Prize) and His Royal Highness the Prince of Wales. During his visit, Susy Echeverria-Londoño – a Colombian national, whose PhD studentship is funded by the Colombian government through COLCIENCIAS – had the opportunity to present some of her research to the visitors. She did a terrific job of summarising her recent – and very appropriate – PREDICTS paper, "Modelling and projecting the response of local assemblage composition to land-use change in Colombia", after which she discussed some of its implications with the Colombian environment minister!

**Picture: Susy Echeverria-Londoño meeting President Santos**

## PREDICTS2 update

As we explained in our Winter 2016 newsletter, PREDICTS is now collating biodiversity data from temporal comparisons, where terrestrial sites have been surveyed over time; we are especially interested in data where samples have been taken both before and after a change in land use or intensity. (Please email enquiries@predicts.org.uk if you have relevant data that you'd be willing to share!) To help with that work, three project students, all from the excellent MRes programme in Ecology, Evolution and Conservation at Imperial College London, have started to collate temporal data on how different land-use changes affect biodiversity.



**Picture: From left to right, Terence, Tom and Emily in the Purvis lab at the Natural History Museum, London.**

**Terence Chung** graduated in Biology from Imperial College London in 2016. His previous research experience includes studying disease transmission in wild wood mice and ecotoxicology in blue orchard bees. His PREDICTS project will assess how conversion of land to grow biofuels affects local biodiversity.

**Tom Brewer** graduated in 2015 from the University of Leeds with a BSc (Hons) in Zoology, which included a 12 month research placement at the Defence Science and Technology Laboratory. His project aims to investigate the responses of biodiversity to agricultural expansion and intensification.

**Emily Warner** Having graduated from a degree in Biological Sciences from the University of Oxford in 2015, Emily spent a year volunteering and working for a number of conservation NGOs, including Trees for Life and Herefordshire Wildlife Trust. Her PREDICTS project will build on her interest in restoration ecology, looking at the terrestrial biodiversity response following habitat restoration.

It's a busy time for the lab, as we will also have more students joining in January!

**Call for data:** With the new phase of PREDICTS we are trying to collate biodiversity data from temporal comparisons, where terrestrial sites have been surveyed over time. We are particularly interested in obtaining before-after-control impact studies, but are also looking for before-after comparisons (which do not have control sites) and control-impact studies that sample for several years at known times after a land-use change. If you have data you are happy to share with the project and that are suitable for Terence (biofuel crop effect on biodiversity), Tom (responses of biodiversity to agricultural expansion, intensification or de-intensification) or Emily (biodiversity response to restoration) please get in contact with them or with us at enquiries@predicts.org.uk.

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