



This PhD project will investigate how much the Anthropocene has already reshaped biodiversity patterns.

The studentship is part of the Great Western Four+ Doctoral Training Partnership, funded by NERC and starts September 2019.

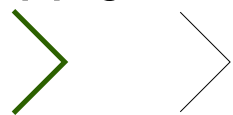
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Read the eligibility criteria and application guidance below, then send your application to postgradoffice@nhm.ac.uk (<mailto:postgradoffice@nhm.ac.uk>).

Application deadline: 7 January 2019



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Summary

The world's biodiversity is in crisis (Pimm et al. 2014), driven by the 'Great Acceleration' of human pressures in the 20th century (Steffen et al. 2015) which many researchers associate with the onset of the human-dominated Anthropocene (Zalasiewicz et al. 2017). However, there is no consensus about how much the Anthropocene has already reshaped biodiversity patterns. At broad taxonomic and spatial scales the best way to estimate a suitable baseline that goes back before human pressures approached their current intensity is by using historical locality data from museum specimens (Lister et al. 2011).

The project will quantify the damage that has already been done by anthropogenic change, identify the key drivers of anthropogenic biodiversity loss, and elucidate the taxa, ecosystems, and geographic locations that are at most risk from ongoing anthropogenic change.

Methodology

For a selected vertebrate group, this project will synthesise early location records with current species' distributions to:

- determine the pre-Anthropocene baseline for the chosen group;
- determine how species ranges have changed since then;
- determine if ranges have changed in response to climate change, land-use change, urbanisation and/or invasive species;
- investigate phenotypic changes in response to environmental change.

The student will work with world-renowned vertebrate collections at the NHM, georeferencing (extracting longitude and latitude from descriptions of locations) specimens that have never before been used in global biodiversity research. The research will employ cutting edge statistical modelling techniques in R, to model changes between species' historic and present day distributions (species distribution modelling).

This will identify species that have been little affected by the Anthropocene, and which could be included in the new IUCN 'Green List'. For species that are found to have been affected by the Anthropocene, species distribution modelling will be used to ask whether urbanisation, land-use change, invasive species, or climate change is the primary driver. The student will also have the opportunity to develop new methods and tools to analyse these data in R (with support from the project supervisors).

The project will provide unprecedented clarity on the Anthropocene impacts of human actions on the chosen vertebrate group. There will also be opportunities to explore changes in how and where museum specimens have been collected through time, and to explore phenotypic changes (e.g. bone shape and size) in a smaller species group.

There is flexibility within the project to allow for student involvement in choice of research direction, in particular the student will be able to choose which vertebrate group they would like to work on (mammals, birds, amphibians, reptiles, or freshwater fishes).

Most activities will take place at NHM with short periods at [University of Exeter](https://www.exeter.ac.uk/doctorscollege/aboutus/fundedcentres/gw4/) (<https://www.exeter.ac.uk/doctorscollege/aboutus/fundedcentres/gw4/>) in Cornwall.

Eligibility

Applications are primarily open to UK residents only (minimum residence of 3 years excluding time in further education), however, a limited number of full studentships are also available to EU residents. All applicants need to comply with the registered university's English-language requirements.

Applicants should have obtained or be about to obtain a First or Upper Second Class UK Honours degree, or equivalent qualifications gained outside the UK. Applicants with a Lower Second Class degree will be considered if they also have a master's degree. Applicants with a minimum Upper Second Class degree and significant relevant non-academic experience are encouraged to apply.

How to apply

Applications for the PhD are processed through the Natural History Museum.

To apply please send the following documents to the Postgraduate Office at postgradoffice@nhm.ac.uk (<mailto:postgradoffice@nhm.ac.uk>):

- Curriculum vitae.
- Covering letter outlining your interest in the PhD position, relevant skills training, experience and qualifications for the research, and a statement of how this PhD project fits your career development plans.
- Names of two academic referees.

The deadline for applications is 7 January 2019.

[Any questions? \(http://www.nhm.ac.uk/about-us/contact-enquiries/forms/emailform.jsp?recip=natalie.cooper&business_title=Natalie+Cooper\)](http://www.nhm.ac.uk/about-us/contact-enquiries/forms/emailform.jsp?recip=natalie.cooper&business_title=Natalie+Cooper)

If you have any questions about the project please contact

Main supervisor: [Dr Natalie Cooper \(http://www.nhm.ac.uk/our-science/departments-and-staff/staff-directory/natalie-cooper.html\)](http://www.nhm.ac.uk/our-science/departments-and-staff/staff-directory/natalie-cooper.html)



Contact us



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Supervisors

The Natural History Museum

Main supervisor: [Dr Natalie Cooper \(http://www.nhm.ac.uk/our-science/departments-and-staff/staff-directory/natalie-cooper.html\)](http://www.nhm.ac.uk/our-science/departments-and-staff/staff-directory/natalie-cooper.html)

Co-supervisor: [Dr Jeff Streicher](http://www.nhm.ac.uk/our-science/departments-and-staff/staff-directory/jeff-streicher.html) (<http://www.nhm.ac.uk/our-science/departments-and-staff/staff-directory/jeff-streicher.html>)

University of Exeter

Co-supervisor: [Dr Regan Early](https://biosciences.exeter.ac.uk/staff/index.php?web_id=Regan_Early) (https://biosciences.exeter.ac.uk/staff/index.php?web_id=Regan_Early)



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Joint PhD training partnerships between the Natural History Museum and the Great Western Four, Bath, Bristol, Cardiff and Exeter universities.

Funded by



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The Natural History Museum (<http://www.nhm.ac.uk/>)

Cromwell Road

London SW7 5BD

Map

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Open daily 10.00-17.50

Last entry 17.30

Closed 24-26 December

The Natural History

Museum at Tring (<http://www.nhm.ac.uk/visit/tring.html>)

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Tring

Hertfordshire HP23 6AP

Map

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Sunday 14.00-17.00
Closed 24-26 December

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