

# Jacob Brown

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<https://jacob-brown.github.io/>

## Personal Profile and Career Aims

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My primary interests fall broadly under evolutionary ecology, specifically assessing genetic data on an environmental and spatial scale. I equally enjoy field and analytical computational work, of which I have experience in both. After spending the last 2 years managing a field research project, assisting with the implementation of experiments and maintenance of long-term data collection, I intend to focus on answering my own research questions.

## Education

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**BSc (Hon) Zoology**, Second Class First Division - Cardiff University (2013 - 2016).

## Relevant Skills

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### Informatics and Analytical Skills

**R** - My primary means of analysing and handling data; I have a high level of understanding, specifically with *tidyverse*. Through the package *Shiny*, combined with MySQL, I developed a number of applications for displaying, entering, and checking data.

**MySQL** - Working with a large MySQL database at the Kalahari Meerkat Project, I achieved a vast understanding of MySQL; including handling data and establishing new databases.

**Python** - Intermediate understanding of Python, including use of NumPy and Pandas.

**Spatial Data Analysis** - Calculating kernel density home-ranges for groups of meerkats from GPS data in R, and creating orientation maps in QGIS.

**Population Modelling** - Familiar with using Vortex and Populus.

**Markdown** - Experience with markdown, Jupyter, and R-Markdown, primarily for generating reports, data-collection protocols, and integration within git repositories.

**L<sup>A</sup>T<sub>E</sub>X** - Basic understanding for generating and formatting documents.

**Git** - Use for personal, and multi-person-project, repositories; regular use of Gitlab and Github.

### Practical, Lab, and Field-Based Skills

**Capturing and Sampling** - Upwards of 400 procedures on habituated meerkats, involving catching, drawing blood, measuring morphometrics, and taking x-ray images, with periodic attachment of VHF, GPS, and accelerometer collars. Equally comfortable with operating Havahart cage-traps for un-habituated individuals.

**Blood Fractionation** - Experience with using a centrifuge and pipette to separate plasma and red-blood cells.

**Universal Laboratory Etiquette** - Fortnightly work during undergraduate studies, and daily processing of blood and DNA samples in the Kalahari Meerkat Project's on-site laboratory.

**Collection of Life-History Data** - Recording data for individual meerkats, monitoring potential pregnancies, health status, and dominance hierarchies.

**VHF tracking** - Three years experience tracking collared meerkats.

**Behavioural Observation Data Collection** - Adlib, focal, and scans observations on habituated meerkat groups.

**Driving** - Experience of 4x4 driving off-road, additionally competent pulling a trailer - both of which were carried out on loose sand and dirt roads.

### Managerial and Organisational Skills

**Scheduling Data Collection** - Arranging daily data collection for 10-14 research assistants, whilst routinely sampling a population of meerkats and ensuring a variety of experiments are conducted.

**Logistics of Field-Site Living** - Arranging travel for new arrivals to and from the site, stocking of supplies, and general site organisation and safety.

**Chairing Research-Site Meetings** - Holding fortnightly site meetings, addressing general site concerns and data-collection issues.

**Learning of Programming Languages** - Effective time management skills allowed me to learn a number of new programming languages (namely those described above).

## Relevant Experience

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### Kalahari Meerkat Project Manager (2017 - present)

I currently hold the position of Project Manager at the Kalahari Meerkat Project, a behavioural and evolutionary biology research field site in the southern tip of the Kalahari desert, South Africa. My role is to facilitate data collection primarily for two research groups, at Cambridge and Zurich, along with a number of collaborators. I lead a team of 10-14 assistants, arranging their working schedule and ensuring their well-being and enthusiasm remains high during their stay, a challenging task in a remote and highly demanding environment. Alongside coordinating the collection of long-term data, I have organised and implemented a number of experiments for off-site researchers. Additional responsibilities consist of collecting tissue and morphometric data from, and attaching VHF, GPS, and accelerometer collars to, habituated meerkats. I also have experience using cage traps, in which I have caught and collared a number of un-habituated individuals - facilitating tracking of and visits to their groups. Complimentary to the field work, I developed a strong understanding of handling data and using large datasets.

### Kalahari Meerkat Project Research Assistant (2016 - 2017)

As an assistant, I focused primarily on behavioural, life history, and weight data collection of meerkats. I worked as part of a small, research driven, team. Tasks were carried out at a remote field site in extremely dry conditions, with temperatures varying from sub 0°C to above 40°C.

### Comparing Sampling Capabilities of Two Widely Used Moth Traps (2016)

**Undergraduate Dissertation Project** - Using long-term data to compare capture efficiencies of Actinic and Black light moth traps, highlighting discrepancies in the species composition caught between the two trapping methods.

## Other Field Experience

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**Damselfish behaviour and tropical reef fish surveying (2015)** - An independent project, undertaken in Tobago as part of a university field course, assessing damselfish aggression in relation to density and algae coverage. Additionally, reef biodiversity assessments on several reefs in Tobago.

**Bird Ringing of Small Woodland Birds (2015)** - Assisted with catching a number of British passerine species using mist nets.

**Bat Surveying (2015)** - Recording of bat calls (heterodyne detector) and analysis (Raven) in a number of city parks across Cardiff.

**Small Mammal Trapping (2015)** - Capture-mark-recapture survey of field mice and bank voles, using Ugglan cage-traps.

**Insect Surveying (2015)** - Assisting with research on ground beetle abundance, predominantly setting and checking pit-fall traps.

## Achievements and Interests

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### Science and the Natural World

**CREST Award: Gold (2010)** - Organised by the British Science Association, and aimed at high-school students. Achieved the highest level (Gold) for a project on hypertension.

**Orienteering and Hiking** - Primarily local routes across Dartmoor and the South-West of England.

**Photography and Videography** - Specifically, wildlife, landscape, and nature, although I have a wider appreciation and interest throughout photography and film.

**Skeleton Articulation** - During my spare time at the Kalahari Meerkat Project, I cleaned, re-constructed, and mounted a Red Hartebeest skeleton - a novice attempt, however now in search of future challenges.

### Teaching and Leadership

**R and MySQL Guidance (2018-present)** - Producing guides, assisting with the writing of scripts, and hosting beginner tutorials.

**Teaching of Sport** - Young Ambassador for Sport (2009 - 2012), UK Sports Leaders (2011 - 2013), junior-level rugby refereeing and coaching.

**High School Science Club Leader (2011 - 2013)** - Organising and running of a weekly lunch-time science club for students aged 11-15.

### Volunteering

**Member of the Cardiff University Wildlife and Conservation Society (2013-2016)** - Partaking in habitat management and attending talks from guest speakers.

**Exeter's Horizon Club Volunteer (2011 - 2013)** - Assisting at a social club for adults with learning difficulties.

## Referees

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**Prof. Marta Manser** - University of Zurich, P.I. at the Kalahari Meerkat Project - [marta.manser@ieu.uzh.ch](mailto:marta.manser@ieu.uzh.ch)

**Prof. Tim Clutton-Brock** - University of Cambridge, P.I. at the Kalahari Meerkat Project - [thcb@cam.ac.uk](mailto:thcb@cam.ac.uk)