

# Sam Hillman

Cardiff

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Undergraduate Ecologist with an interest in disease transmission and animal behaviour. Experience of both laboratory and field work, with laboratory experience including both post-mortem and archiving work. Three years' previous experience of leading and managing teams of up to 15 people, including abroad. Confident presenting to both technical and less-technical audiences, with experience of running citizen science projects. Member of the British Ecological Society and The Association for the Study of Animal Behaviour.

## Professional Experience

Research Assistant, Cardiff University

July 2017 - September 2017

Investigating the effect of temperature on the in vitro growth rate of the oomycete *Saprolegnia parasitica*.

Funded research placement working in the CRIPES (Cardiff Research in Infection and Parasites in Ecological Systems) lab under Emily Matthews and Dr Amy Ellison. Focused on samples from Welsh salmonid species and worked with Salmon and Brown Trout. ImageJ used for automatic and manual image processing and R for data analysis. Wrote macros for automatic image analysis and used R/Tidyverse for data processing and analysis.

Bat Survey Assistant, Wildwood Ecology

May 2017 - August 2017

Assisting on transect and emergence (dawn and dusk) bat surveys.

Clinical Trials Administrator, Wales Cancer Trials Unit

June 2016 - June 2017

Responsible for gathering and analysing confidential patient clinical data and establishing trends and patterns with data managers and statisticians.

Data Administrator and Researcher, CIPR Wales

January 2016 - July 2016

Consultant for the Chartered Institute of Public Relations Wales, working on data and database administration under strict NDA (non-disclosure agreement) conditions.

## Other Experience

President, Cardiff University Wildlife Conservation Society

May 2016 – July 2017

Elected President of Cardiff University's Wildlife Conservation Society.

CENNAD Lichen Apprentice Scheme, Plantlife Wales

May 2016 – Present

Awarded two-year CENNAD Lichen Apprenticeship. Working with lichenologists to learn the full range of skills needed to carry out site surveys, including detailed microscopy work and ID skills.

Research Assistant, Bag And Remove in Cymru (BARC)

September 2015 – June 2016

BARC is a Cardiff University citizen science project analysing parasite distribution in UK soil samples. I used microscopy and ID skills to assess *Toxacara* species prevalence.

Post-Mortem and Archival Assistant, The Otter Project

September 2015 – June 2016

The Otter Project is a Cardiff University, Environment Agency-funded long-term environmental surveillance scheme using deceased otters to study population biology and disease in UK otter populations. I worked with researchers, making observations and dissecting organ samples which were used for further research, storing new samples in long-term storage and retrieving up to ten-year old samples used for specific PhD research projects.

## Research Projects

Investigating the effect of temperature on the in vitro growth rate of the oomycete *Saprolegnia parasitica*: July 2017 - September 2017

Ran an eight-week research project on the effect of temperature on the growth rate of different *S. parasitica* samples isolated from different environments and assisted on a similar experiment looking at the effect of temperature on spore production. Worked on the analysis of previous data to create a prediction model using Linear Mixed Effect Models.

Code available at <https://github.com/samhillman/Saprolegnia-Analysis>.

Analysing the effect of temperature on invertebrate assemblage composition, using the Porth yr Ogof cave system as a natural temperature regulator: June 2017

River ecology field course project. Collected kick samples from three sites around the Porth yr Ogof cave system and identified invertebrates down to genus or species level. This abundance data, combined with historical abundance data and river temperature measurements, allowed for multivariate analysis of species abundance using the mvabund R package to test for changes in assemblage composition due to temperature and non-metric Multidimensional scaling using vegan.

Code available at <https://github.com/samhillman/River-Analysis>

## Education

BSc. (Hons) Ecology with a Year in Industry, Cardiff University 2015 – 2019

Second Year Modules included Animal Behaviour (1st), Animal Diversity (including parasitology) (2:1), Molecular Ecology and Evolution (2:1), Microbial Ecology (1st), Population Ecology (2:1) and Advanced Statistics (1st).

## Skills

ID Skills: Excellent Lichen and Tree ID knowledge. Good Plants, Birds and Mammals

Data Analysis: Intermediate R. Tidyverse convert. Enjoys data wrangling. Worked on GLMs, (G)LMMs, multi-variate analysis. Beginner Python, HTML, CSS, SQL and Git/Github. Basic macro writing with ImageJ.

Laboratory Work: Mammalian post-mortem and archival experience. Experienced in various microscopy techniques. Experience of working in sterile conditions with infectious tissue.

Field Work: Small mammal trapping and handling. Experience with transect surveys on plants, lichens, bats and mammals. lichen surveys. Extensive work on land management and tree planting.

Team Work: Previously managed 15 sales staff, directly trained many staff. Extensive experience working with highly diverse teams in both field and office settings.

## Awards

August 2017 Professional Training Year (PTY) Bursary, Cardiff University. £600

July 2017 CUROP Research Grant, Cardiff University. £1600

## Training and Courses

### Data Analysis

- August 2017 Data Manipulation with R - DataCamp
- March 2017 Intermediate R – DataCamp
- August 2016 Introduction to Python for Data Science (97%) – Microsoft / EdX

### Ecology

- August 2017 John Muir Conserve Award
- July 2016 BES Summer School
- April 2016 Great Crested Newt Survey Training
- May 2016 Conducting Environmental Surveys using Open Air Laboratories (OPAL)