




# QUINN ASENA






PhD candidate at the University of Auckland studying regime shifts in terrestrial ecosystems. Incorporating palaeoecological techniques and modelling. Investigating a range of resilience indicators / early warning signals and their application to palaeoecological data. Developed a multi-species-response model for investigating regime shifts.

Previously researched environmental monitoring using sensor networks and robotics.

## EDUCATION

- Present  
|  
2017
- **PhD. Candidate, Environmental Science**  
University of Auckland  Auckland, NZ
    - Working on regime shift modelling and palaeoecology
    - Supervised by George Perry and Janet Wilmshurst
- 2016  
|  
2012
- **MEnv. Environmental Science**  
University of York  York, UK
    - 1st class degree: Integrated masters degree in environmental science
    - Courses included: Ecological Principles; Biogeography, Applied Ecology and Environmental Management; Protected Areas; Design and Implementation; Climate Change: Science, Observation & Impacts; Research Skills and Statistical Methods
- 2010  
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2005
- **Music School**  
Royal Academy of Music  London, UK
    - Study in performance, composition and musical theory. Multiple competition awards
    - ABRSM Grade 8 Piano Performance
    - ABRSM Grade 5 Music Theory

## SELECTED POSITIONS

- 2019
- **Graduate Teaching Assistant and Assistant Coordinator**  
University of Auckland  Auckland, NZ
    - GTA and assistant coordinator for Discovering Environmental Modelling
    - Guest lecturer on population growth
    - Developed application as a teaching aid: [shiny app for lecture](#) and [lecture slides](#)
- 2019  
|  
2018
- **Graduate Teaching Assistant**  
University of Auckland  Auckland, NZ
    - GTA: Natural and Human Environmental Systems; Discovering Environmental Modelling; and, Environmental Science and Management
- 2017  
|  
2016
- **Research Assistant**  
Stockholm Environment Institute  York, UK
    - Assisting in the reconstruction of fire regimes in the North York Moors
    - Core preparation and microscope analysis for charcoal and SCPs
    - Statistical analysis and compilation of data
- 2016  
|  
2013
- **Student Ambassador**  
University of York  York, UK
- 2015
- **IT Services Media Development Intern**  
University of York  York, UK
    - Filming, editing, scripting and directing a series of short educational films
    - Creating posters

## CONTACT



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[QuinnAsena](#)



[github.com/QuinnAsena](#)



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## ONLINE RESOURCES

`fisher`: R package for calculating Fisher's Information on time-series available at [github](#).

app [Population growth](#)

app [Population growth for lecture](#)

lecture [slides](#)

## REFERENCES

Professor George Perry

[george.perry@auckland.ac.nz](mailto:george.perry@auckland.ac.nz)

Associate Professor Janet M Wilmshurst

[janet.wilmshurst@auckland.ac.nz](mailto:janet.wilmshurst@auckland.ac.nz)

Additional references available on request



## ARTICLES AND PUBLICATIONS

- 2019 ● **Guidelines for Reporting and Archiving  $^{210}\text{Pb}$  Sediment Chronologies to Improve Fidelity and Extend Data Lifecycle**  
Quaternary Geochronology  
· Courtney-Mustaphi et al.
- 2019 ● **Response to comment on Peatland carbon stocks and burn history: Blanket bog peat core evidence highlights charcoal impacts on peat physical properties and long-term carbon storage by Evans et al.**  
GEO: Geography and Environment  
· Heinemeyer et al.  
· Role: core preparation and microscopy - charcoal and spheroidal carbonaceous particles
- 2018 ● **Peatland carbon stocks and burn history: Blanket bog peat core evidence highlights charcoal impacts on peat physical properties and long-term carbon storage**  
GEO: Geography and Environment  
· Heinemeyer et al.
- 2018 ● **Population viability analyses in New Zealand: a review**  
New Zealand Journal of Ecology  
· Simpkins et al.
- 2018 ● **Assessing the links between resilience, disturbance and functional traits in paleoecological datasets**  
New Zealand Journal of Past Global Changes Magazine, vol. 26(2), 87  
· Hamilton et al.



## PACKAGES AND APPS

- 2019 ● **fisher**  
R package  
· Translation of python script for calculating Fisher's Information on time-series data  
· Code available on [github](#)
- 2019 ● **Population growth app**  
Shiny app  
· [Population growth app](#) exploring different population growth equations for educational purposes
- 2019 ● **Population growth lecture aid app**  
Shiny app  
· [App to accompany population growth lecture](#) and help students through population growth calculations

### Courses

*Attended several courses during my PhD to improve my software proficiency and scientific understanding including:*

Software courses:

- Software Carpentry
- Winter Bootcamp
- Research Bazaar

University Papers/Modules:

- Environmental Data Analysis
- Modelling of Environmental Systems

### Skills

- R programming
- High performance computing
- Microscopy
- ITRAX core scanning
- Peat core preparation



## SELECTED WORKSHOPS AND CONFERENCES

- 2019

**INQUA**  
International Union For Quaternary Research

· Presentation on resilience

Dublin, Ireland
- 2019

**Durham**  
Durham University

· Invited speaker on modelling resilience in ecosystems

Durham, UK
- 2019

**Biological Heritage Science Challenge**  
University of Canterbury

· Speaker

Christchurch, NZ
- 2018

**International Swiss Climate Summer School Earth systems variability through time: processes, observations and models**  
University of Bern

· Poster presentation and participant  
· Accredited course worth 3 ECTS credits

Bern, Switzerland
- 2018

**Te Punaha Matatini Biomaths**  
University of Auckland

· Speaker

Auckland, NZ
- 2018

**EcoRe3: Resistance, Recovery and Resilience in Long-term Ecological Systems**  
PAGES - University of Utah

· Speaker

Utah, USA
- 2018

**Paleodata Demo Derby Workshop**  
University of Wisconsin

· Participant

Wisconsin, USA
- 2017

**Biological Heritage Science Challenge**  
University of Canterbury

· Speaker

Christchurch, NZ



## VOLUNTEERING AND OTHER EXPERIENCE

- 2016

**Database Work for Literature Review**

· Literature review work for Assoc. prof. Andy Marshal (unpublished)

York, UK
- 2015

**NightSafe Volunteer**  
University of York

· Student organisation taking care of student safety throughout the night in the City of York

York, UK
- 2015

**Science and Outreach - York Institute for Tropical Ecosystems**  
University of York

· Developed short films and interviews overviewing the work done by the York Institute for Tropical Ecosystems (KITE)

· [Link to film](#)  
· [Link to short](#)

York, UK

### George Perry Lab

Interested in the lab group?  
Visit George Perry's lab group: [Spatial Ecology Group](#)

### Hobbies and Interests

*Keen musician improving my piano skills*

*Rock climber, if I'm not working I'm probably up a mountain. Been teaching rock climbing safety in the university club for two years*

2014



**York Students in Schools Volunteer**

University of York

📍 York, UK

- Volunteering as an assistant in school teaching a range of sciences

2012



**Flood Defences – certified course**

University of York

📍 York, UK

- Design a flood defence plan for the City of York
- Team won first place

2012



**Environment Department Media Development**

University of York

📍 York, UK

- Filming and editing a series of interviews of academics in the environment department for open-day presentations