

# QUINN ASENA

PhD candidate at the University of Auckland exploring ecosystem change using palaeoecological and modelling techniques. I develop ecological simulations to investigate underlying ecosystem dynamics and the reliability of statistical methods used in ecological analyses. I also get hands-on in the field and the lab.

Master's research involved environmental monitoring using sensor networks and robotics.



## EDUCATION

2021  
|  
2017

### PhD, University of Auckland

School of Environment

📍 Auckland, NZ

- PhD explored virtual ecological methods for generating pseudoproxy data to assess statistical inferences under data uncertainty.
- Supervised by George Perry and Janet Wilmshurst

2016  
|  
2012

### MEnv. Environmental Science

University of York

📍 York, UK

- 1st class integrated masters degree in environmental science. Master's research involved environmental monitoring using sensor networks and robotics.
- 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  
|  
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

### Certified Carpentries instructor

Global digital skills community

📍 Virtual

- Certified to host and assist in running workshops from [The Carpentries](#) organisation



## SELECTED POSITIONS

Present  
|  
2022

### Post-doctoral research associate

University of Wisconsin-Madison

📍 Madison, WI

- NSF grant, developing state-space modelling methods to analyse palaeoecological records
- Abrupt change in ecosystems project lead by Jack Williams and Anthony Ives

2022  
|  
2021

### Research Assistant

University of Auckland

📍 Auckland, NZ

- Conducting a bibliometric analysis on the topic of climate justice

2022  
|  
2021

### Engagement Specialist

Centre for e-Research

📍 Auckland, NZ

- Engaging with researchers to provide advice and resources for their research compute needs
- Includes technical skills for virtual machines (Linux, Bash, Slurm), high performance computing, and version control

## CONTACT

✉ [qasena@wisc.edu](mailto:qasena@wisc.edu)

🐦 [QuinnAsena](#)

🌐 [github.com/QuinnAsena](https://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

Made w/ [pagedown](#).

Source code:  
[github.com/nstrayer/cv](https://github.com/nstrayer/cv).

- 2021 • **Data Analyst**  
Auckland Council  Auckland, NZ  
· Role: analyse citizen science bird count data and write a technical report.
- 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



ARTICLES AND PUBLICATIONS

- Accepted • **Is the past recoverable from the data? Pseudoproxy modelling of uncertainties in palaeoecological data**  
Holocene  
· Asena, Perry and Wilmshurst
- 2019 • **[Guidelines for Reporting and Archiving 210Pb 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.

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

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

- 2018 ● **Assessing the links between resilience, disturbance and functional traits in paleoecological datasets**  
Past Global Changes Magazine, vol. 26(2), 87  
· Hamilton et al.

## PACKAGES AND APPS

- 2023 | 2022 ● **Authoring collaborative research projects in Quarto**  
Workshop  
· Workshop resources for hosting collaborative research projects using Git and GitHub  
· Hosted on [GitHub for ResBaz 2022-2023](#)
- 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

## SELECTED WORKSHOPS AND CONFERENCES

- 2023 ● **ESA**  
Ecological Society of America 📍 Portland, OR  
· Speaker: [Modelling palaeoecological community data: a state-space approach](#)
- 2023 ● **INQUA**  
International Union For Quaternary Research 📍 Rome, IT  
· Lead Convenor: [Data science and paleoecology: current intersections and advances](#)
- 2023 | 2021 ● **ResBaz**  
Research Bazaar 📍 Auckland, NZ; Madison, WI  
· Organiser and helper in ResBaz Aotearoa 2021  
· Workshop lead on [Quarto for Collaboration](#) virtual session for ResBaz NZ 2022  
· Workshop lead on [Quarto for Collaboration](#) in-person Madison, WI, 2023
- 2022 ● **BES: Palaeo in R**  
British Ecological Society 📍 Virtual  
· Speaker on virtual ecological methods to assessing uncertainty in palaeoecological data using pseudoproxies

### 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*

- 2022 ● **AGU**  
American Geophysical Union 📍 Chicago, IL  
· Speaker on virtual ecological methods for assessing uncertainty in palaeoecological data using pseudoproxies
- 2022 ● **AMQUA**  
American Quaternary Association 📍 Madison, WI  
· Poster session on virtual ecological methods to assessing uncertainty in palaeoecological data using pseudoproxies
- 2019 ● **INQUA**  
International Union For Quaternary Research 📍 Dublin, Ireland  
· Speaker on pseudoproxy modelling for assessing statistical inferences
- 2019 ● **Durham**  
Durham University 📍 Durham, UK  
· Invited speaker on modelling resilience in ecosystems
- 2019 ● **Biological Heritage Science Challenge**  
University of Canterbury 📍 Christchurch, NZ  
· Speaker on resilience in ecosystems
- 2018 ● **International Swiss Climate Summer School Earth systems variability through time: processes, observations and models**  
University of Bern 📍 Bern, Switzerland  
· Poster presentation and participant  
· Accredited course worth 3 ECTS credits
- 2018 ● **Te Punaha Matatini Biomaths**  
University of Auckland 📍 Auckland, NZ  
· Speaker
- 2018 ● **EcoRe3: Resistance, Recovery and Resilience in Long-term Ecological Systems**  
PAGES - University of Utah 📍 Utah, USA  
· Speaker on modelling resilience in ecosystems
- 2018 ● **Paleodata Demo Derby Workshop**  
University of Wisconsin 📍 Wisconsin, USA  
· Participant
- 2017 ● **Biological Heritage Science Challenge**  
University of Canterbury 📍 Christchurch, NZ  
· Speaker



## VOLUNTEERING AND OTHER EXPERIENCE

- 2016 ● **Database Work for Literature Review**  
📍 York, UK  
· Literature review work for Assoc. prof. Andy Marshal (unpublished)
- 2015 ● **NightSafe Volunteer**  
University of York 📍 York, UK  
· Student organisation taking care of student safety throughout the night in the City of York

2015	<ul style="list-style-type: none"> <li>● <b>Science and Outreach – York Institute for Tropical Ecosystems</b> University of York <ul style="list-style-type: none"> <li>· Developed short films and interviews overviewing the work done by the York Institute for Tropical Ecosystems (KITE)</li> <li>· <a href="#">Link to film</a></li> <li>· <a href="#">Link to short</a></li> </ul> </li> </ul>	📍 York, UK
2014	<ul style="list-style-type: none"> <li>● <b>York Students in Schools Volunteer</b> University of York <ul style="list-style-type: none"> <li>· Volunteering as an assistant in school teaching a range of sciences</li> </ul> </li> </ul>	📍 York, UK
2012	<ul style="list-style-type: none"> <li>● <b>Flood Defences – certified course</b> University of York <ul style="list-style-type: none"> <li>· Design a flood defence plan for the City of York</li> <li>· Team won first place</li> </ul> </li> </ul>	📍 York, UK
2012	<ul style="list-style-type: none"> <li>● <b>Environment Department Media Development</b> University of York <ul style="list-style-type: none"> <li>· Filming and editing a series of interviews of academics in the environment department for open-day presentations</li> </ul> </li> </ul>	📍 York, UK