

QUINN ASEN

Post-doctoral research associate developing and applying new statistical methods to palaeoecological data to understand ecosystem responses to environmental change. Working with Jack Williams and Tony Ives on data across North America on an NSF funded project: *Abrupt Change in Ecosystems*. I also like to get hands on in the field and lab.

EDUCATION

2021
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2017

- **PhD, University of Auckland**

School of Environment

 Auckland, NZ

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

2016
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2012

- **MEnv. Environmental Science**

University of York

 York, UK

- 1st class integrated masters degree in environmental science. Master's researched 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
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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.

- **Certified Carpentries instructor**

Global digital skills community

 Virtual

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

SELECTED POSITIONS

Present
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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
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2021

- **Research Assistant**

University of Auckland

 Auckland, NZ

- Conducting a bibliometric analysis on the topic of climate justice.

2022
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2021

- **Engagement Specialist**

Centre for e-Research

 Auckland, NZ

- Engaging with researchers providing extensive research support by setting up virtual machines, data storage, and analytical workflows for graduate students and research staff.
- Includes technical skills for virtual machines (Linux, Bash, Slurm), high performance computing, and version control.

CONTACT

 qasena@wisc.edu

 [QuinnAsena](#)

 github.com/QuinnAsena

 +1 (608) 598 8345

REFERENCES

Professor Jack Williams
(Postdoc PI)

jwilliams1@wisc.edu

Professor George Perry (PhD Supervisor)

george.perry@auckland.ac.nz

Professor Anthony Ives
(Postdoc PI)

arives@wisc.edu

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

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2018

- **Graduate Teaching Assistant**

University of Auckland

📍 Auckland, NZ

- GTA: Natural and Human Environmental Systems; Discovering Environmental Modelling; and, Environmental Science and Management.

2017

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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

2024

- **Statistical analyses of community and paleoecological time series to identify environmental drivers and biotic interactions.**

In-prep

- Asena, Q., Williams, J., Stefanova, V., Johnson, J., Shuman, B., Ives, A.

2024

- **Information loss in palaeoecological data from process and observer error**

In-prep

- Asena, Q., Perry, G.L., Wilmshurst, J.

2024

- **Is the past recoverable from the data? Pseudoproxy modelling of uncertainties in palaeoecological data**

Holocene

- Asena, Q., Perry, G.L., Wilmshurst, J.

2024

- **A Bibliometric Review and Topic Analysis of Climate Justice Literature: Mapping Trends, Voices, and the Way Forward**

Climate Risk Management

- Parsons, M., Asena, Q., Johnson, D., Nalau, J.
- [Code repository publicly available.](#)

2019

- **Guidelines for Reporting and Archiving ^{210}Pb Sediment Chronologies to Improve Fidelity and Extend Data Lifecycle**

Quaternary Geochronology

- Courtney-Mustaphi, C.J., Brahney, J., Aquino-Lopez, M.A., Goring, S., Orton, K., Noronha, A., Czaplewski, J., **Asena, Q.**, Paton, S.

Courses

I regularly attend courses and workshops to improve my software proficiency and scientific understanding including:

Software courses:

- Python for geospatial analysis
- Google Earth Engine for spatial analysis
- Software Carpentry
- Research Bazaar

University Modules:

- Environmental Data Analysis
- Modelling of Environmental Systems

Skills

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

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, A., Burn, W.L., Asena, Q., Jones, A., Ashby, M.

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, A., Asena, Q., Burn, W.L., Jones, A.
 - Role: core preparation and microscopy - charcoal and spheroidal spheroidal carbonaceous particles

2018

- Population viability analyses in New Zealand: a review
New Zealand Journal of Ecology
 - Simpkins, C.E., Lee, F., Powers, B.F., Anderson, S., Asena, Q., Brock, J.M.R., Perry, G.L.
- Assessing the links between resilience, disturbance and functional traits in paleoecological datasets
Past Global Changes Magazine, vol. 26(2), 87
 - Hamilton, R., Brussel, T., Asena, Q., Bruel, R., Marcisz, K., Slowinski, M., Morris, J.

PACKAGES, APPS AND RESOURCES

2024

- multinomialTS
R package
 - R package for state-space modelling of multinomially distributed data
 - Hosted on [GitHub](#)

George Perry Lab

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

2024

- State-Space Methods for Testing Hypotheses About Environmental Drivers and Biotic Interactions in Community and Paleoecological Time Series
Workshop

2024

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2022

- Authoring collaborative research projects in Quarto
Workshop
 - Workshop resources for hosting collaborative research projects using Git and GitHub
 - Hosted on [GitHub](#) for ResBaz 2022-2024

Williams Lab

Check out the [Williams lab](#)

2019

- fisheR
R package
 - R package for calculating Fisher's Information on time-series data
 - Code available on [GitHub](#)

Ives Lab

See what the [Ives Lab](#) group do

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

2024

● **ESA 2024**

Ecological Society of America

 Long Beach, CA

- **Speaker:** Hypothesis testing of the drivers of long-term ecological change in Michigan
- **Workshop host:** State-Space Methods for Testing Hypotheses About Environmental Drivers and Biotic Interactions in Community and Paleoecological Time Series

2024
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2021

● **ResBaz**

Research Bazaar

 Auckland, NZ; Madison, WI

- **Organiser:** ResBaz Aotearoa 2021
- **Workshop lead on Quarto for Colaboration virtual session for ResBaz NZ 2022-2024**
- **Workshop lead on Quarto for Colaboration in-person Madison, WI, 2023**

2023

● **ESA 2023**

Ecological Society of America

 Portland, OR

- **Speaker:** Modelling palaeoecological community data: a state-space approach

2023

● **INQUA 2023**

International Union For Quaternary Research

 Rome, IT

- **Lead Convenor:** Data science and paleoecology: current intersections and advances

2022

● **BES: Palaeo in R**

British Ecological Society

 Virtual

- **Speaker on virtual ecological methods to assessing uncertainty in palaeoecological data using pseudoproxies**

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 2019**

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**

Hobbies and Interests

Keen musician improving my piano skills

Rock climber, if I'm not working I'm probably up a mountain. I teach rock climbing safety at university clubs.

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 on modelling resilience in ecosystems

 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

Present
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2024

- Neotoma Leadership Council
Neotoma
 - Early career representative on the Neotoma leadership council.

 Virtual

2016

- Database Work for Literature Review
University of York
 - 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

2014

- York Students in Schools Volunteer
University of York
 - Volunteering as an assistant in school teaching a range of sciences

 York, UK

2012

- Flood Defences - certified course
University of York
 - Design a flood defence plan for the City of York
 - Team won first place

 York, UK