

# Blake Seers

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## *Curriculum Vitae*

Coastal marine scientist, statistician, and data scientist. Passionate about science, the coastal environment, statistical modelling and **R** programming.

### Education

#### Academic Qualifications

- 2012–2017 **Doctor of Philosophy (Statistics and Marine Science)**, *University of Auckland*, Auckland.
- 2010–2011 **Master of Science (Statistics)**, *University of Auckland*, Auckland.  
Graduated with second class honours, first division.
- 2009–2010 **Postgraduate Diploma in Science (Statistics)**, *University of Auckland*, Auckland.  
Graduated with merit.
- 2006–2009 **Bachelor of Science**, *University of Auckland*, Auckland.  
Graduated with a double major in Biological Sciences and Statistics with a marine science specialisation.

#### Notable Projects

- 2012–2017 **Ph.D. thesis**, *Investigating the Climatic and Oceanographic Drivers of Spatial and Temporal Variation in Coastal Turbidity and Sedimentation*.

In June 2017 I successfully defended my Ph.D. thesis. I modelled the complexities inherent in environmental monitoring data using various multivariate techniques and created a bayesian hierarchical framework to model and predict the likely impacts of climate change on coastal turbidity and sedimentation.

- 2010–2011 **Masters dissertation**, *Multivariate Analysis of Long-term Trends and Drivers of Coastal Water Quality in the Auckland Region*.

I examined the past and current state of Auckland's coastal water quality. I was initiated into the Auckland Council's Student Partnership Programme, which allowed me to gain valuable experience in analysing environmental monitoring datasets and working on multi-disciplinary projects.

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🌐 <https://www.stat.auckland.ac.nz/people/bsee002>

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## Relevant Employment History

2017 – present **Statistical Consultant**, *Department of Statistics*, University of Auckland.

- Work with a variety of internal and external clients.
- Projects include both research and industry focus.
- Preparation of reports, and communication is fundamental.

Early 2017 **Statistical Consultant**, *Meteor Affinity Inc.*, Pineville, NC.

- Fixed-term contract working remotely from January to April.
- **R** programming, GitHub, report writing, large data sets, SQL.
- Market research, data mining and modelling behavioural traits.

2012 – 2016 **Data Analyst**, *Sage Consultants Ltd.*

- Numerous consulting projects during my Ph.D.
- Extensive use of **R** programming, MS Excel, multivariate data analysis.
- Creating dynamic documents for the client.

2013 – 2016 **Graduate Teaching Assistant**, *University of Auckland*.

- Fundamental in refining my statistical communication and teaching skills.
- Lab demonstrator, tutor, one-on-one and group assistance and ran tutorials.
- Included a range of 2nd and 3rd stage, and postgraduate statistics courses.

2011–2012 **Research Assistant**, *University of Auckland*.

- Research assistant to Dr. Nick Shears.
- Research potential effects of climate change on coastal marine sedimentation.
- Large data sets, data management/QA/QC, MS Excel, **R**, advanced statistical analyses.

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## Scholarships and Awards

2012–2015 **Ph.D. Scholarship**, *University of Auckland*.  
Doctoral fees paid for, along with a \$75,000 stipend over 3 years.

Jun. 2011 **Best Presentation award**.  
This was awarded to the best masters presentation within the statistics department.

2010 – 2011 **Student Partnership Programme**, *Auckland Council*.  
\$5,000 upon completion of my masters dissertation.

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## Research Articles and Technical Reports

- **Seers, B. M.** and Shears, N. T. (2014) Spatio-temporal patterns in coastal turbidity — Long-term trends and drivers of variation across an estuarine-open coast gradient. *Estuarine Coastal and Shelf Science*, 154, pp. 137–151. DOI: <http://dx.doi.org/10.1016/j.ecss.2014.12.018>.
- **Seers, B. M.** and Shears, N. T. (2015) New Zealand's Climate Data in **R** — An Introduction to `clifro` (<http://stattech.wordpress.fos.auckland.ac.nz/2015-02-new-zealands>).
- **Seers, B. M.** and Shears, N. T. (In prep.) Do sediment traps inform us about terrestrial runoff of sediments on rocky reefs?

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## R Packages

I have created, developed and continue to maintain two **R** packages:

`clifro` *Easily download and visualise climate data from CliFlo.*

The `clifro` package was developed to easily download and visualise the data within New Zealand's National Climate Database (see <https://cliflo.niwa.co.nz/>). This software package is hosted by CRAN (<https://cran.r-project.org/package=clifro>) and is also part of the ROpenSci suite of packages on GitHub (<https://github.com/ropensci/clifro>) because of its alignment to their philosophical ideals on open data and reproducibility in science.

`fetchR` *Calculate wind fetch.*

The `fetchR` package automatically calculates and summarises the wind fetch for all specified directional vectors at a given coastal marine location anywhere in the world. The `fetchR` package is hosted on my personal GitHub account (<https://github.com/blasee/fetchR>) and also has a dedicated web application hosted by the Centre for eResearch (<http://windfetch.cer.auckland.ac.nz/>).

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## Conference Presentations, Posters and Workshops

- Jul. 2015 **Joint NZ Marine Sciences Society and Oceania Chondrichthyan Society Conference**, Auckland.
  - *What do sediment traps actually tell us about rocky-reef sedimentation?*
  - *An introduction to the `clifro` R package* (Poster).
- Feb. 2014 **Spatio-temporal Statistical Modelling 3-day Workshop**, Wollongong.
- Aug. 2013 **NZ Marine Sciences Society Conference**, *Spatio-temporal variability in coastal turbidity*, Hamilton.
- Nov. 2012 **NZ Maths and Statistics Postgraduate Conference**, *Auckland's coastal water quality*, Whangaparaoa.

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