



# Sophie Newsham

Enthusiastic PhD student exploring tree rings to uncover insights into past earthquakes. Have dual citizenship with Aotearoa New Zealand and the United States. Driven by a love of learning, a collaborative spirit, a strong sense of fairness, and a dedicated work ethic.

## Contact

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## Education

- 2022- current | University of Canterbury | PhD in Geology
- 2021 | University of Canterbury | Masters in Disaster Risk and Resilience [MDRR]
- 2018-2020 | University of Canterbury | Bachelor of Science in Geology and Environmental Science
- 2009-2010 | Tai Poutini Polytechnic | Outdoor Education
- 2003-2007 | Marlborough Girls' High School

## Skills

- Tree coring
- Core preparation
- Microsoft applications
- ArcGIS mapping
- Project management
- Leadership
- Critical thinking
- Organisation
- Team Player

## Research interests

- Dendroseismology
- Earthquakes
- Structural geology
- Environmental Sciences

## Qualifications

- 2022-current | PhD in Geology
- 2021 | Masters in Disaster Risk and Resilience (with Distinction)
- 2017-2020 | Bachelor of Science in Geology and Environmental Science
- 2010 | Certificate in Advanced Leadership and Guiding
- 2009 | Certificate in Outdoor Recreation
- 2003-2007 | University entrance through NCEA level 3
- NZRA Grade 4/5 Raft Award
- NZRA Grade 3 Senior Raft Award
- Red Cross First Aid Certificate (current)
- 4WD driving Certificate

## Presentations and Conferences

- 2024 | Geoscience Society New Zealand (GSNZ) conference Dunedin | Oral presentation | *Was the most recent surface rupturing earthquake on the Alpine Fault in 1717 AD?*
- 2024 | School of Earth and Environment (UC) Christchurch | Oral presentation | *What is the timing of the most recent surface rupturing earthquake on the Alpine Fault?*
- 2023 | GSNZ Wellington
- 2022 | GSNZ New Plymouth | Poster presentation | *Using tree ring growth anomalies to date earthquakes.*

## Publications

- Newsham, S., Nicol, A., Howell, A., Lorrey, A., & McGrath, J. (In Prep) A review of Alpine Fault earthquake timings over the last 500 years.
- Newsham, S., Nicol, A., & Lorrey, A. (In prep). Dendrosiesmological methods in Aotearoa New Zealand.
- Newsham, S., Challies, E., & Dixon H. (2021). *Perspectives of high-country farmers of the Upper Rangitata: Oral histories and future considerations of land and water management.* Waterways for Freshwater Management. Report 2021-001.
- Newsham, S., & Robinson, T. (2021). *Using tree rings to precisely date earthquake in Aotearoa New Zealand.* MDRR dissertation. University of Canterbury
- Frazer, C., Harris, L., Newsham, S., & Fogarty, D. (2020). *Baseline study of the Rangitata River mouth environment.* GEOG309 collaborative report with Environment Canterbury. University of Canterbury.

## Awards

2024 | School of Earth and Environment Postgraduate Team Player of the Year

## Scholarships

- 2023-2026 | University of Canterbury Doctoral Scholarship (Course fees + stipend)
- 2024 | Mason Trust Grant (\$3000)
- 2021 | University of Canterbury Summer Scholarship (\$6000)
- 2021 | Department of Conservation Summer Research Scholarship (\$6000)

## Personal pursuits

- Mountain biking
- Backpacking
- Dog walking
- Gardening

## Volunteer service

- Coordinated multiple postgraduate writing retreats [2024].
- Board of Trustee for Peel Forest Outdoor Centre, incl. monthly meetings and weekly emails [2017-current].
- Canterbury Civil Defence response team (NZRT1) incl. weekly training [2019-current].
- GSNZ conference AV support [2020].

## Referees

- Andy Nicol | PhD supervisor
- Julie Grant | Previous manager
- Raewyn Larcombe | previous employer

## Research experience

- Using tree rings to date Alpine Fault earthquakes with University of Canterbury, PhD [2022-current].
- Understanding the impact on growth patterns of *Fuscospora solandri* due to the 1855 Wairarapa earthquake, MSc [2022].
- Use tree rings to precisely date earthquakes in Aotearoa New Zealand, MDRR [2021].
- Perspectives of high-country farmers of the Upper Rangitata; Oral histories and future considerations of land and water management. Waterways Centre for Freshwater Management Report [2021].

## Relevant work experience

- University of Canterbury [2020 – current]
  - Teaching Assistant Fieldtrip to Kaikōura.
  - Structural mapping support for students
  - Developing cross-section support
  - Health and Safety for group and students
- Frontiers Abroad [2023 – current]
  - Teaching Assistant Fieldtrip to Cass
  - Teaching Assistant Fieldtrip to Tongariro National Park
- University of Canterbury [2023]
  - Examination Support for Disability Services

## Additional work experience

- Wakitipu High School, Branches Camp [2014 – current]
  - 12-day camp on Branches Station with 150-200 Year 10 students
  - Rafting and tramping instructor
  - Health and safety
  - Group management
- Peel Forest Outdoor Pursuits Centre [2015 – 2018]
  - Rafting, river safety, orienteering and high ropes courses
  - Senior outdoor instructor (trip organizing, weather contingency planning, briefings and teaching)
- Land Care Services [casual 2015 – 2018]
  - Family-owned weed and pest control operation
  - Gorse, broom and wilding pine sprayer
  - Greater insight to New Zealand's invasive species and control methods.
- Tai Poutini Polytechnic [2016]
  - Raft instructor
  - Multi aged students in higher risk environments
  - Institute experience
- Rafting in New Zealand [summers of 2010 – 2019]
  - Clarence River Rafting [2010- 2019]
  - Hidden Valleys [2015/2016]
  - Queenstown Rafting [2012/2013 & 2014/2015]
- Rafting overseas (Northern hemisphere summers of 2011 – 2017)
  - Canadian Outback – Squamish, British Columbia [2016 and 2017]
  - Happy Raft - Shikoku, Japan [2015]
  - Denali Raft Adventures - Denali, Alaska [2013 and 2014]
  - Dvorak Expeditions - Colorado, USA [2012]
  - American Whitewater Expeditions – California, USA [2011]