



## PhD in Physical Geography / Geoscience

Applications are invited for a fully funded PhD available in the Geosciences Group at Massey University, Palmerston North, New Zealand, on the topic of: **Evaluating the long-term activity and sediment delivery of large, soft-rock landslides in New Zealand.**

This is an opportunity to join a major MBIE-funded Research Programme with [Manaaki Whenua - Landcare Research](#) and [Massey University](#), New Zealand. The research programme 'Smarter Targeting of Erosion Control' is aimed at helping to quantify the sources and nature of erosion and sediment delivery in the New Zealand landscape and to inform better ways to manage erosion problems. This PhD project is to tackle one part of the research programme, **to assess the pre-historical activity of deep-seated landslides in the soft rock terrain of New Zealand.** Thousands of large landslides have been mapped within the soft-rock terrain of New Zealand, and many of these are likely active today, causing erosion, sediment delivery to rivers, and damaging land and infrastructure. The size of these landslides (some occupying entire farms) and the connectivity of these to the rivers that tend to destabilise them, makes them a potentially significant source of sediment delivery that has been poorly accounted for in sediment budgets to date. Assessing the modern-day movement rates and sediment delivery of large soft-rock landslides is the focus of one of the existing PhD projects within the programme. The advertised PhD project is complementary to this, helping to put the modern-day landslide activity into wider context - little is known of whether the stability and movement rates of such soft-rock landslides have changed over time, in response to land-use or climate changes. The project will involve geomorphological mapping of selected landslides, dating the landslides by coring sediments and organics accumulated in lakes within the landslide bodies, and reconstruction of past landslide movement and drivers of activity. In addition, regional-scale geomorphic terrain analysis will be used in combination with the dated landslides to develop an index for landslide age and regional scale, long-term sediment delivery from such landslides.

### Requirements

Candidates will have an excellent (ideally 1<sup>st</sup> class) MSc or BSc Hons degree in Physical Geography or Earth Science, or a closely related subject, with some background knowledge of mass movement / landslide processes and/or landscape evolution. Proficiency in spoken and written English is essential. Some experience/skillsets in the following is essential: Fieldwork (e.g. mapping, sedimentology, structural geology), and GIS or geospatial data analysis. Experience of one or more of the following is desirable: coring and core-logging, radiocarbon dating or tephrochronology, and modelling. This research will require significant time in the field in challenging terrains. Therefore, applicants will need to be physically fit, and comfortable in the outdoor environment. Candidates will ideally have a track-record of research with one or more publications or publications in preparation. All who are interested in this PhD opportunity should also ensure they meet the university's generic [PhD eligibility criteria](#) before applying.

## **Award**

Scholarship funding is in the form of a 3-year scholarship with a minimum stipend of \$25,000 NZD (tax-free) per year and payment of (domestic or international) student fees at Massey University. In addition, research-related expenses and research equipment will be supported.

## **Supervision Team**

The candidate will join the Environmental Sciences Group within the School of Agriculture and Environment, Massey University, Palmerston North. The supervisory team will comprise Dr [Sam McColl](#), Prof. [Ian Fuller](#), Dr [Kat Holt](#), Dr [Alastair Clement](#) (Massey University) and Dr [Hugh Smith](#) (Manaaki Whenua - Landcare Research) and would be based in [Palmerston North](#), New Zealand. Massey University Geography (as a natural science) has been ranked in the top 200 in the latest QS Global Rankings. You will be joining a world-class team of researchers.

## **Application Procedure**

To apply, please email Dr. Sam McColl ([s.t.mccoll@massey.ac.nz](mailto:s.t.mccoll@massey.ac.nz)) with a full C.V. (with the contact details of three referees), a copy of any relevant academic transcripts (i.e. list of completed courses with grades), and an accompanying letter of application detailing how your experience, background and qualification are suited to this position. Shortlisted candidates will be notified within two weeks of the closing date.

## **Closing date**

Sunday 20<sup>th</sup> September 2020.

## **Start date**

Funding is available immediately and ideally the candidate will be able to begin before February 2021.

## **More information**

If you have any questions, please do not hesitate to contact Dr Sam McColl ([s.t.mccoll@massey.ac.nz](mailto:s.t.mccoll@massey.ac.nz)), Geosciences Group, School of Agriculture & Environment, Massey University +64 6 951 7201.