

# P 4.45 Effects of relocation on mood/anxiety

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Research Team**

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**Project Participants**

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**Public sector** – Canterbury District Health Board (CDHB)

**Objectives**

Track Christchurch residents and link different mobility types with stress-related health outcomes after the 2011 Christchurch earthquake

**Outcomes**

Examine the relationship between relocation after the 2011 Christchurch earthquake and clinically diagnosed mood/anxiety disorders in a longitudinal study:

- Track Christchurch residents and categorise them into three post-disaster mobility groups
- Categorise Christchurch residents into five hazard exposure groups based on their residency during the 2011 Christchurch earthquake
- Relocation within the city was the most protective factor for being clinically diagnosed with a mood/anxiety disorder after the 2011 Christchurch earthquake

**Background**

The 22<sup>nd</sup> February 2011 Christchurch earthquake resulted in 185 deaths, 8,000 injured and caused severe damage to the built environment. In addition 7,000 residents (~2%) left the city and there has been a significant population shift from the most damaged land in the eastern suburbs to the western and northern ones.

These events along with other stressors, like living through thousands of aftershocks and/or living in disrupted communities, has resulted in a range of stress-related health outcomes.

**Hypothesis**

*Relocation to less affected areas following the 2011 Christchurch earthquake reduces the likelihood of being clinically diagnosed with a mood or anxiety disorder than staying in an affected area.*

**Methods**

Incident and relapsed cases of clinically diagnosed mood and anxiety disorders were assessed in this follow-up study, which investigated three 6 month time intervals after the Feb 22<sup>nd</sup> 2011 Christchurch earthquake.

The study population of Christchurch residents were tracked on a 6 month basis.

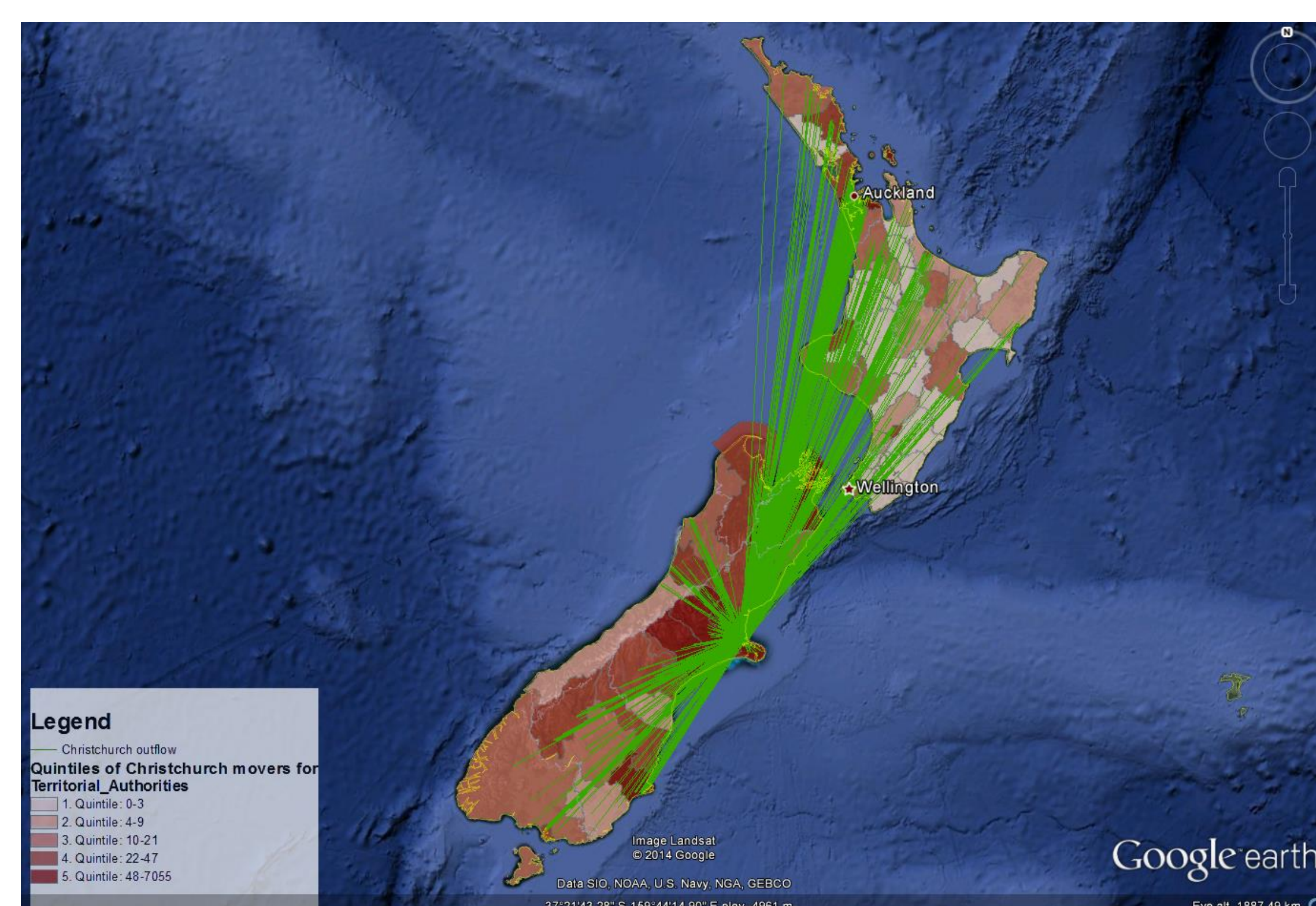
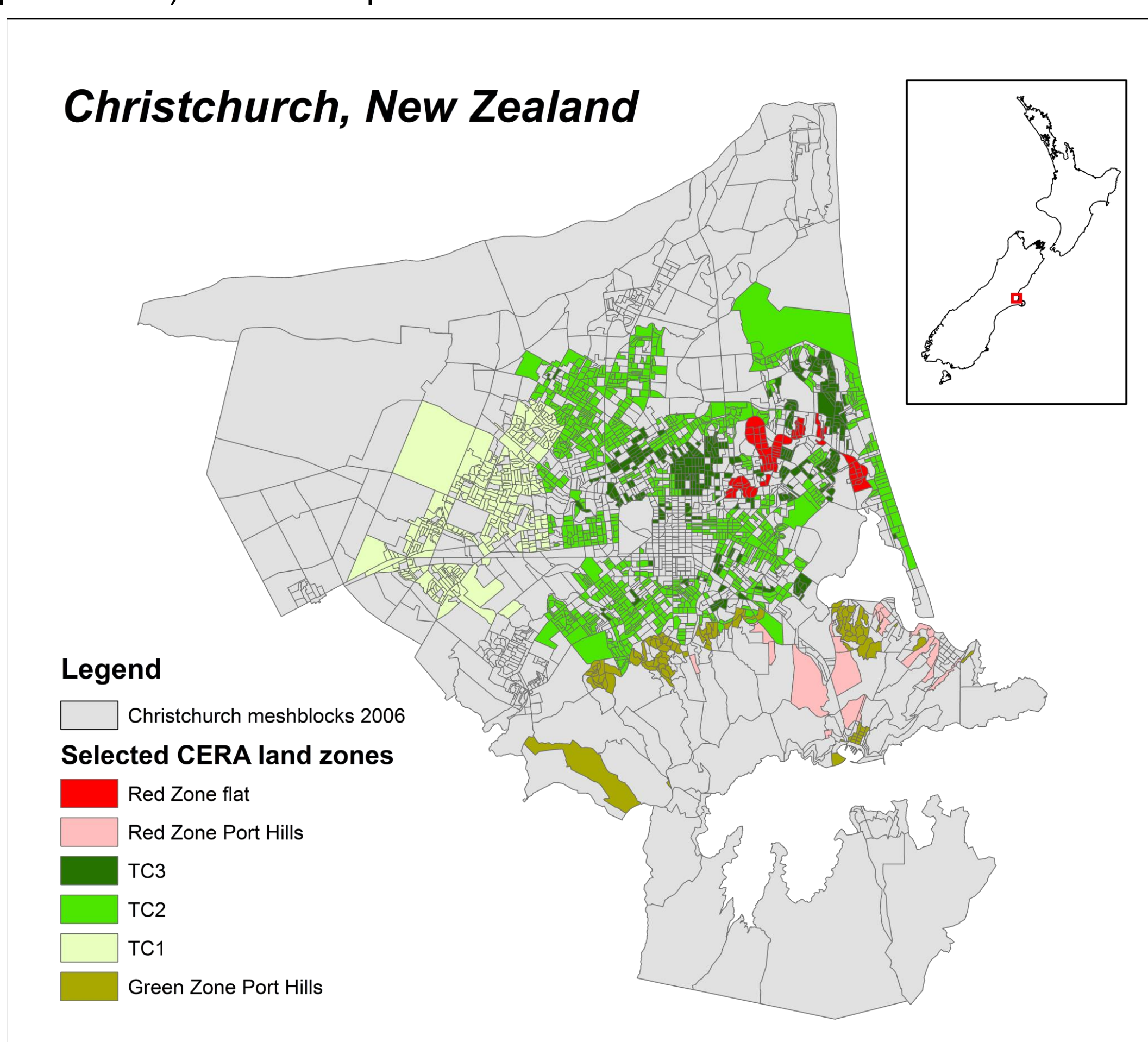
According to residential movement, the population was categorized into “stayers”, “within-city movers” and “out-of-city movers”.

Additionally a classification based on meshblock level and CERA land zones# was done (Fig. 1). To remove classification uncertainty, anyone whose meshblock of residence intersected more than one CERA land zone was excluded.

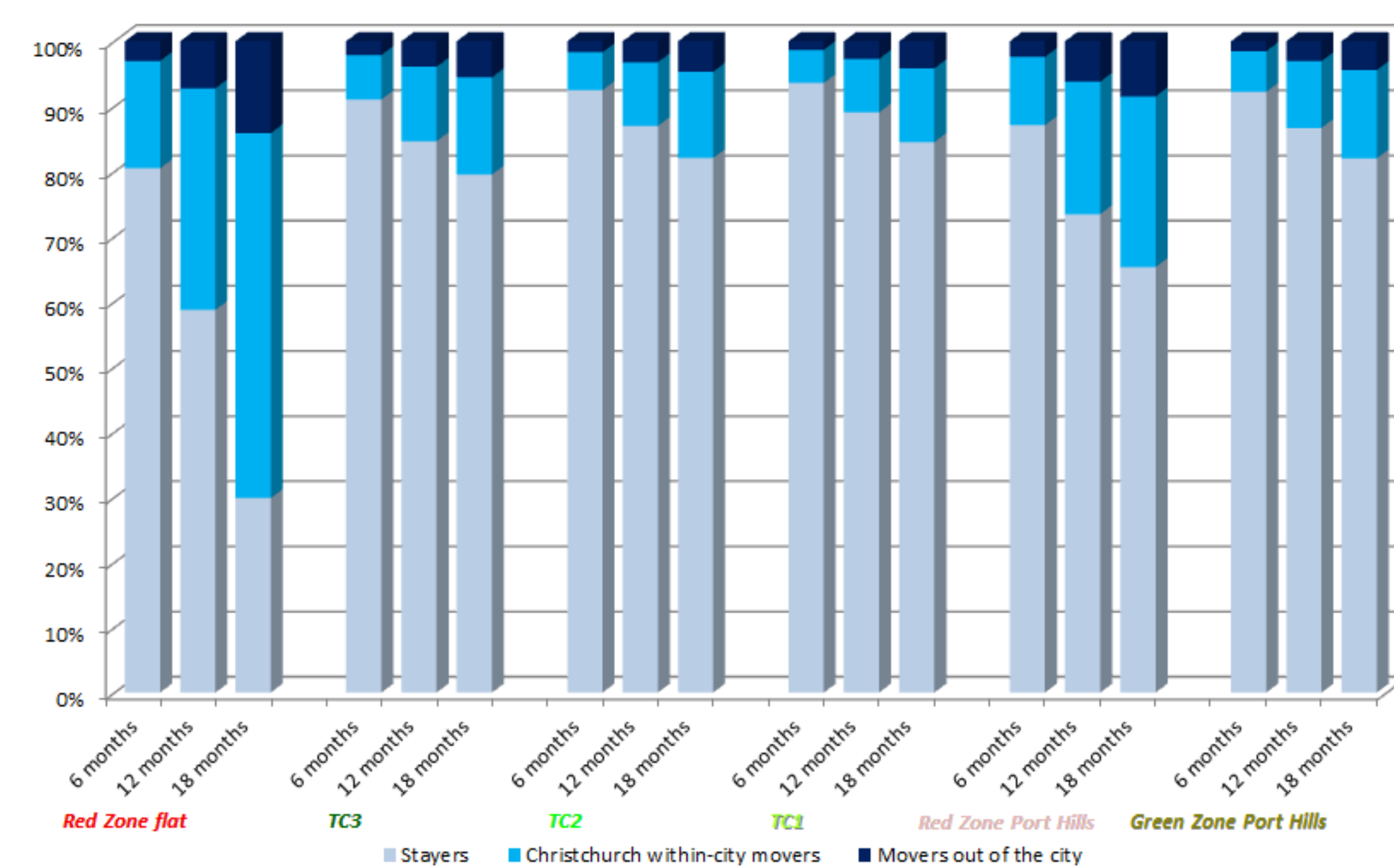
Generalized Estimating Equations (GEE) were used to assess the relationships between the different mobility groups, as well as areas of residence and mood/anxiety outcomes over time accounting for known risk factors including gender, age, ethnicity, deprivation, mental health pre-conditions and comorbidity.

# CERA zoned land according to level of damage and costs of repair/rebuild from Red (most damaged and uneconomic to repair/rebuild) to TC1 and Green Zoned Port Hills (least damaged and easiest to repair/rebuild). These are proxies for different levels of affectedness and vulnerability.

**Figure 1:** Different residential areas of the study population



**Figure 2:** Relocation of Christchurch residents 6 months post-Feb 2011



**Figure 3:** Mobility types in each CERA land zone at three time periods (6, 12 and 18 months) post-Feb 2011

**Results**

- Out-of-city movers mainly moved to adjacent districts (Waimakariri, Selwyn and Ashburton), Auckland, Wellington and Dunedin City (Fig. 2)
- Over 2/3 of Residential Red Zone residents on the flat had relocated to other areas in or outside the city 18 months post-Feb 2011 (Fig. 3)
- Within-city movers were less likely to be clinically diagnosed with a mood/anxiety disorder than stayers (OR: 0.829; p < 0.01; CI: 0.728-0.944)
- Within-city movers were less likely to be clinically diagnosed with a mood/anxiety disorder 13 - 18 months compared to 1 - 6 months post-Feb 2011 (OR: 0.845; p < 0.01; CI: 0.758-0.942)
- Within-city movers were the least likely group to be clinically diagnosed with a mood/anxiety disorder 13 - 18 months post-Feb 2011, followed by out-of-city movers (OR: 1.155; p < 0.05; CI: 1.01-1.321) and stayers (OR: 1.36; p < 0.001; CI: 1.166-1.587)
- Stayers were more likely to be clinically diagnosed with a mood/anxiety disorder 13 - 18 months compared to 1 - 6 months post-Feb 2011 (OR: 1.04; p < 0.01; CI: 1.011-1.077)
- Green Zone Port Hills residents were generally less likely to be clinically diagnosed with a mood/anxiety disorder than residential Red Zone residents (OR: 0.806; p < 0.05; CI: 0.679 - 0.956)