

## Late Quaternary tephrostratigraphic record of Siete Lagos region, South-Central Chile

Karen Fontijn<sup>1</sup>, Harriet Rawson<sup>1</sup>, David M Pyle<sup>1</sup>, Tamsin A Mather<sup>1</sup>, Maarten Van Daele<sup>2</sup>, Jasper Moernaut<sup>3</sup>, Ana M Abarzãza<sup>4</sup>, Marc De Batist<sup>2</sup>, Hugo Moreno<sup>5</sup>, Jose Antonio Naranjo<sup>5</sup>

<sup>1</sup>University of Oxford, United Kingdom, <sup>2</sup>Ghent University, Belgium, <sup>3</sup>ETH Zurich, Switzerland,  
<sup>4</sup>Universidad Austral de Chile, Chile, <sup>5</sup>SERNAGEOMIN, Chile

E-mail: karenf@earth.ox.ac.uk

The volcanoes of the Siete Lagos region in South-Central Chile form part of the Southern Volcanic Zone of the Andes and include some of the most active volcanoes in South America, i.e. Villarrica and Llaima. The Late Quaternary (ca. last 15 ka) regional tephrostratigraphic record for this region is however still poorly developed. We combine detailed stratigraphic logging of terrestrial sections in the vicinity of Llaima, Sollipulli, Villarrica, Quetrupillan and Mocho-Choshuenco volcanoes with petrological, whole-rock and glass geochemical data and correlate the on-land sequences with existing <sup>14</sup>C-dated lacustrine records of Laguna Las Ranas and Lagos Villarrica, Calafquen and Rinihue. The combined record includes previously described major eruptions, e.g. Llaima Pumice (Llaima) and Alpehue Pumice (Sollipulli), which help to constrain the relative timing of events. For Llaima Pumice, we present newly updated dispersal maps and magnitude estimates. The record also includes at least 8 newly described pumice-producing events for Quetrupillan. The new stratigraphy contributes to the regional stratigraphy of major explosive eruptions in the Southern Volcanic Zone, and will shed light on the relation between deglaciation and eruptive frequency in this continental arc segment.