

# Warming trends in Patagonian subantarctic forest

Olivares-Contreras, V. A.

Mattar, C.

Gutiérrez, A. G.

Jiménez, J. C.

The forests in the Aysén region (ca. 43°49' S, Chile) have a high degree of wilderness and cover more than 4.8 million hectares, making it one of the largest areas of subantarctic forest in the Southern Hemisphere. The impact of global warming on this region is poorly documented. The main objective of this work was to analyze the normalized difference vegetation index (NDVI), land surface temperature (LST) and precipitation over Aysén forests in the context of ongoing global warming. We used average monthly images of LST and NDVI derived from the MODIS sensor covering the period 2001–2016 and precipitation from gridded datasets. The Aysén region was divided into three nested spatial scales: i) regional, ii) regional considering only forests, iii) local scale considering an evergreen subantarctic forest area covering around 5 × 5 km and a local deciduous forest area (dominated by *Nothofagus pumilio*). Trend analysis showed a warming rate of +0.78 K/decade ( $p < 0.05$ ) o