

Satellite imagery to support sheep management in Tierra del Fuego, Chile

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Livestock farming in Tierra del Fuego is characterized by extensive sheep production with animals moved between wintering and summering grounds. Seasonal weather variation and abundant snowfall during winter create problems for sheep management. The aim of this study was to evaluate the critical dates for moving sheep between wintering and summering grounds, in ranches of central Tierra del Fuego, Chile. The analysis correlated a 12 year (2000-2011) series of Normalized Difference Vegetation Index (NDVI), snow cover, and Land Surface Temperature (LST) with sheep movements in four sheep ranches of central Tierra del Fuego. Wintering grounds had higher NDVI from May 8 to July 27. Snow cover is notoriously higher in summering grounds during autumn and winter, specifically from mean dates March 29 to September 5. The LST critical period occurred between March 21 to September 29. The actual movement of sheep to wintering grounds generally occurs at the end of April, as soon as snow precipitation begins. Taking these findings into account, the critical period for overwintering should be between March 21 to September 29, and a prohibitive period is from May 8 until September 13. These findings can be incorporated into sheep management planning, and can help in triggering public support measures when the climatic conditions are extreme.