

Digitisation of early Antarctic Peninsula meteorological records for climate research
Steve Colwell

Early instrumental observations are valuable resources for climate products and services. By extending records back in time, such observations provide a means to better estimate long-term climate trends and variability. Pre-satellite-era records from Antarctica are extremely valuable due to scarceness of observations in the region. Since 1944, three to twelve hourly surface meteorological observations were taken at fifteen stations operated by the UK near the Antarctic Peninsula. Only four of the stations have had the records continuously digitised. Handwritten, paper-based records from eleven stations are archived at National Meteorological Library as well as the British Antarctic Survey (BAS). These early-era data sets are at risk of damage and even permanent loss due to paper degradation and ink fading.

Digitising the entire records would be a strenuous and time-consuming process as it requires keying in millions of numbers manually. With recent advancement of digital technology, this project digitised meteorological data back in time at these eleven stations. The paper-based records were first gathered, sorted, and scanned at BAS archive. The records on the scanned images were then automatically converted to numbers and outputted as Excel format files using an inhouse-built Optical Character Recognition software. The Excel files were then manually checked against the original scanned images. Quality controls, including comparison with reanalysis data sets, were then carried out for each station. The digitised data sets will be made available for studying climate variability and extreme weather events and to be incorporated into future reanalysis projects.