The First Fleet Weathermen

THE UNIVERSITY OF MELBOURNE

Salvaging Sunken Treasure

Long weather records are essential for evaluating the historical context of extreme weather events. Currently Australia's meteorological record only starts in 1900. To extend the length of this record the SEARCH team at the University of Melbourne has been analysing a range of historical documents including diaries, log books, newspapers and farm records.

The team recently used two of Australia's oldest weather records to provide a unique insight into the conditions experienced by members of the First Fleet during their journey to Australia and in the first few years following European settlement in 1788.

Artwork: 'HMS Sirius Weathering Tasman's Head.' Image courtesy of State Library of New South Wales.

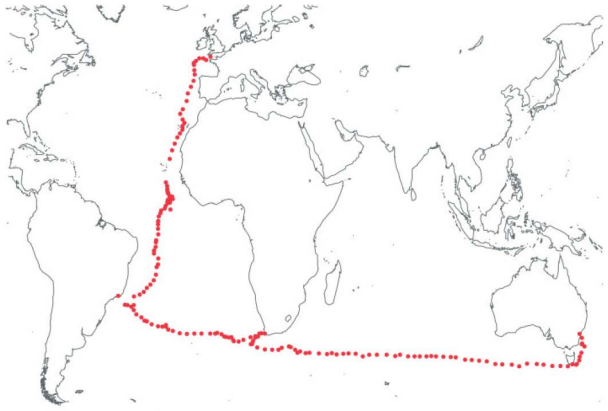

Figure 1: Route taken by HMS Sirius (Gergis et al., 2010).

A Ships Log

The HMS *Sirius* was the flagship of the First Fleet and aboard the historic vessel was the young marine, William Bradley. Bradley kept a daily logbook of weather observations including temperature, barometric pressure and winds.

Gergis et al. 2010 compared each eighteenth–century temperature and pressure reading against a modern climatology for each day's position, given by the ship's latitude and longitude, throughout the eight–month journey.

The study revealed that the observations made between 1787–1788 were useful for comparison with modern day measurements but Bradley's readings should be handled with care due to non-standard measurement practices. The logged observations correlate remarkably well to the accounts written by diarists that provide a glimpse of what life 'behind the numbers' might have been like.

High Seas

The journey from England to Botany Bay took 8 months and the crew of the HMS *Sirius* faced some ferocious weather as they rode the Roaring Forties across the Southern Ocean. The most extreme conditions arose while the ships made their way up what is now the NSW coastline in the middle of summer.

A severe storm centred on 10 January 1788 is described in surgeon, Arthur Bowes Smyth's diary:

> The sky blackened, the wind arose and in half an hour more it blew a perfect hurricane, accompanied with thunder, lightening and rain...I never before saw a sea in such a rage, it was all over as white as snow...every other ship in the fleet except the Sirius sustained some damage...during the storm the convict women in our ship were so terrified that most of them were down on their knees at prayers.

THE UNIVERSITY OF MELBOURNE

Australia's First Weather Record

Bradley continued his ship log upon arrival in Australia and it was supplemented and extended by another recently uncovered treasure trove of information. While stationed in the first colony at Sydney Cove, Lieutenant William Dawes kept a weather journal in which he recorded the temperature, barometric pressure, winds and weather remarks up to six times a day from 14 September 1788–6 December 1791.

The SEARCH team digitised the instrumental observations from Dawes and Bradley in 2008 and went on to compare the readings with anecdotal evidence and independent palaeoclimate reconstructions.

Artwork: Lieutenant William Dawes. Image courtesy of Australian Bureau of Meteorology.

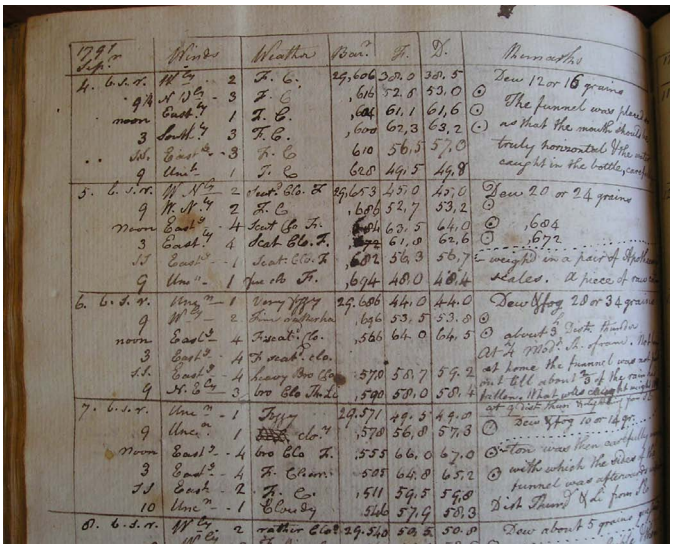

Photo: William Dawes' journal (Joëlle Gergis).

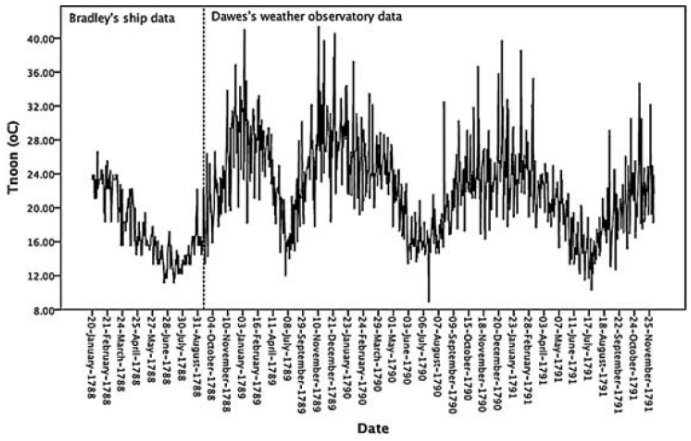

Figure 2. A noon temperature reconstruction for Sydney Cove, January 20, 1788–December 4, 1791, using William Dawes' weather journal and William Bradley's logs aboard the *Sirius* anchored in Sydney Harbour. The reconstruction shows distinct seasonal variation comparable to twentieth-century observations recorded from Sydney (Gergis, 2010).

The weather data recovered from the Dawes and Bradley journals together with palaeoclimate records suggested that the First Fleet may have arrived during a very wet La Niña event.

According to our research, the El Niño–Southern Oscillation cycle switched in 1790 to an El Niño event that brought forth three years of drought. Historians from the SEARCH team concluded that these weather conditions stymied the development of the colony and had a significant impact on the way Australian society developed following first European settlement.

Further information:

1. Gergis, J., Karoly, D.J. and Allan, R.J. (2009). A climate reconstruction of Sydney Cove, New South Wales, using weather journal and documentary data, 1788–1791. Australian Meteorological and Oceanographic Journal 58 83-98.
2. Gergis, J., Brohan, P. and Allan, R.J. (2010). The weather of the First Fleet voyage to Botany Bay, 1787–1788. Weather 65 (12): 315-319.
3. Gergis, J., Garden, D. and Fenby, C. (2010). The influence of climate on the first European settlement of Australia: a comparison of weather journals, documentary data and palaeoclimate records, 1788–1793. Environmental History, 15 (3): 485-507.

Or visit the SEARCH website: www.climatehistory.com.au

SEARCH South Eastern Australian Recent Climate History
THE UNIVERSITY OF MELBOURNE
Australian Government Australian Research Council
State Government Victoria Department of Sustainability and Environment
STATE LIBRARY NEW SOUTH WALES
NATIONAL LIBRARY OF AUSTRALIA
State Library of Victoria
Australian Government Bureau of Meteorology
MURRAY–DARLING BASIN AUTHORITY
Victoria The Place To Be
Melbourne Water
phm powerhouse museum science+design
NIWA Taihoro Nukurangi
MONASH University
Met Office