

A CDROM on the 1997 El Niño event in the western Pacific region

Mary Voice and Les Turner
Bureau of Meteorology, Australia

This paper describes the content and possible uses of a CDROM produced as a pilot project by the National Climate Centre of the Bureau of Meteorology. The CDROM covers most of the 1997 calendar year, contains animated satellite imagery for the western Pacific region, as well as monthly anomaly maps and some impact information. Commentary from Bureau of Meteorology climatologists is also included. The CDROM should be useful for study of the evolution of the 1997 El Niño episode, for use in teaching, etc.

Introduction

The National Climate Centre of the Bureau of Meteorology is responsible for climate analysis and monitoring for Australia and adjacent regions of relevance to understanding the prevailing climatic state. It produces a range of hard copy monitoring publications and a wide range of climate information on the Bureau's web page: METNET (<http://www.bom.gov.au>). The CDROM enclosed in this issue of *Australian Meteorological Magazine* is the first attempt to compile more extensive information in the very flexible and easily used and interrogated format of CDROM.

Production and objectives

The CDROM was produced during December 1997 and the first few weeks of January 1998, when the 1997-98 El Niño was close to its mature phase. Hence it is not a CDROM on the full El Niño episode, but rather, covers most of the 1997 calendar year and hence the precursor, onset and growth to mature phase of the episode. It was produced using commercially available software as an operational product of the National Climate Centre, and to accompany the *Annual Climate Summary*, a printed

publication distributed widely in Australia and to overseas meteorological services.

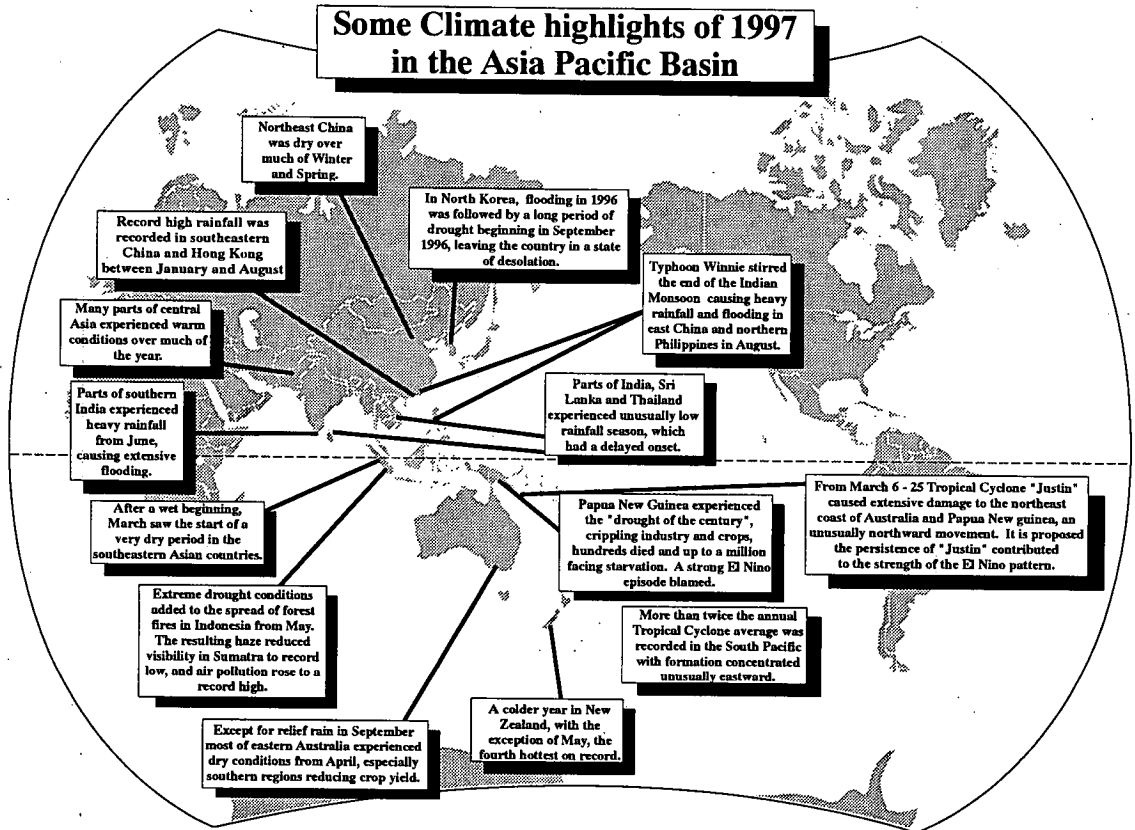
The intention was not to produce an 'infotainment' CDROM or to target schools or the media. Instead, the intent was to produce a documentary record for purposes of study and/or understanding, by those who have a keen interest in the subject. The medium of a CDROM allows more detailed perusal of the evolution of the seasonal patterns and anomalies than is the case with a printed publication. It should also be noted that the new CDROM production packages available, while requiring a fairly steep learning curve, nevertheless allow the compilation of a large amount of information in a very accessible and attractive form in a very short time. The medium is thus very suitable for operational units such as the National Climate Centre.

The 1997-98 El Niño episode

This El Niño evolved into one of the strongest events of the century in terms of its classical sea-surface temperature, tropical wind anomaly and tropical convection signatures. Its impacts were wide-ranging globally. A summary of some of the climate anomalies and impacts in the western Pacific region is shown in Fig. 1. Further information on the anomalies and impacts are available on the CDROM.

Corresponding author address: Mary Voice and Les Turner, Bureau of Meteorology, GPO Box 1289K, Melbourne, Vic. 3001, Australia.

Fig. 1 A summary of some of the climate anomalies and impacts in the western Pacific region.



Content and use of the CDROM

The CDROM has a number of sections, including animated twice-per-day satellite cloud photographs from the GMS5 satellite, courtesy of the Japanese Meteorological Agency. In addition, month-by-month anomalies of mean sea-level pressure (MSLP), upper and lower level wind and Australian rainfall are included. Commentary by Australian climatologists adds both information and interest.

Table 1 lists month by month some of the key features to note on the CDROM and also possible study questions.

Summary

The CDROM enclosed with this issue of the *Australian Meteorological Magazine* is an operational product. Consequently, it is not intended to provide a complete analysis of the 1997-98 El Niño episode. It is hoped that timely availability of information and analysis in this format will prompt more extensive study of the unusual features of the 1997-98 El Niño. Depending on user reactions, consideration will be given to producing an annual climate survey in this format. If readers have any technical difficulty with the CDROM, please consult the README file, which has helpful suggestions for computers with slightly different configurations.

Table 1. Use of the CDROM: suggestions on things to look for and questions to ask about the western Pacific region, month by month.

<i>Month</i>	<i>General character of impacts</i>	<i>Features</i>	<i>Questions to ask</i>
Jan	Asian-Australian monsoon active		
Feb	Wet	* wet through tropics *strong Walker circulation from Indian Ocean to central Pacific	Is this typical pre-El Niño behaviour for the Indian Ocean?
Mar	Dry Only very, very small SST anomaly on South American coast, at this time	*sharp decrease in rainfall through large areas of Asia *Indonesia dry, Tropical Pacific wet from this month onwards * TC Justin *strong northerly wind anomalies in western Pacific north of TC Justin, strong cross-equatorial flow	Why? Why so early?
Apr	Dry	* sharp declines in rainfall from 50N to 40S, right through Asia and Australia	Why, since El Niño signal in ocean is still relatively weak?
May	Wetter, especially in mid-latitudes	Tropical convection eastward of normal position	Was the intra-seasonal oscillation involved in the return to wetter conditions in mid-latitudes?
Jun	Generally dry again	slow start to Indian Monsoon (IM)	
Jul	Mixed outside tropics	mid-months of IM close to normal	Since this El Niño started early, why was IM so little affected?
Aug	Mixed. Tendency for drier in southern hemisphere, wetter in northern hemisphere	dry NE China wet SE China	
Sep	Mixed outside tropics	dry NE China wet SE China	Why was there good rainfall over Australia?
Oct	Close to normal outside tropics	dry NE China wet SE China	
Nov	Strong impacts continue in the tropics	more rain events over Australia	Why was southern Spring so atypical for El Niño?
Dec	Strong impacts continue in the tropics	El Niño appears to be at mature phase	

