Brazil to Panama. Many of the communities of the affected area suffered drought. The period of below average rains commenced during June 1997 and continued until April 1998. A number of locations in Guyana had accumulated rainfall deficits exceeding 1 000 mm over the period and by March 1998 the discharge from many rivers was reduced to about 20 per cent of normal flow.

Crops over the region were severely affected by lack of rainfall and reduced river flow affected irrigation, especially in the lower reaches where saline encroachment was an added problem. The land became parched under the hot tropical sun and wildfires were frequent during early 1998, many burning out of control until relief rains arrived. Also, pastures were diminished through drought or were burned by wildfire and cattle were severely affected.

Severe health problems compounded the impacts of drought and crop failure over the northeast Water supplies became contaminated as creeks and streams stopped flowing. As a consequence of contaminated water many people were affected by diarrhoea and water purification tablets were distributed throughout communities. Crop failures meant that local food supplies were inadequate and malnutrition particularly affected children Smoke caused respiratory problems for many people in areas affected by wildfires.

North and Central America

During the last half of 1997 sea surface temperatures throughout the central and eastern equatorial Pacific Ocean remained between 28°C and 29°C, which were record values for that time of year. Strong warm (ENSO) episode conditions continued until May 1998, when ocean surface temperatures cooled rapidly, signifying the end of oceanic warm episode conditions. The persisting deep atmospheric convection over the eastern equatorial Pacific Ocean and the meridional circulation of the Hadley Cell had a major influence on the upper atmosphere westerly flow and the subtropical jetstream. The influence of subsiding air associated with the descending branch extended across Mexico. The United States was affected by increased wintertime Pacific storms and, through teleconnections, abnormally heavy rainfalls over the southeast.

Puerto	PH(m)	AC(m)	AE (m)	Alt 1983 (m)	Alt.1992 (m)	Alt. 97/98 (m)
Rio Paraná						
Corrientes	3.23	5.50	6.70	9.04 – 18/Jl	8.64 – 08/Jn	8.39 – 04/My
La Paz	3.24	5.40	6.15	9.04 – 29/Jn	7.37 – 19/Jn	7.11 – 11/My
Paraná	2.53	4.20	5 50	6 83 – 05/Jl	6.89 – 21/Jn	6.72 – 13/My
Rosario	2.54	4.00	5.30	6.15 – 23/Mr	6 27 – 25/Jn	6.43 – 15/My
San Nicolás		3.00	5.00	6.00 – 26/Mr	6 08 – 29/Jn	6.23 – 19/My
San Pedro	1.49	3.00	3.60	5.72 – 13/Jl	5.03 – 01/Jn	5 52 – 19/My
Ibicuy		2 50	2.02	514–12/Jl	4.20 – 02/Jl	4 73 – 20/My
Rio Paraguay						
Pilcomayo	3.18	5 50	6.00	9.22 – 30/My	8.79 – 02/Jn	7.60 – 06/My
Formosa	3.81	7.00	7.75	10.78 – 05/Jn	10 13 – 11/Jn	9.46 – 07/My

Table II
River levels (metres) reached at various locations on the Rio Parana and Rio Paraguay following the abnormal Southern Hemisphere summer rains of 1997–98. Reference levels and levels reached during the 1982–83 and 1991–92 El Niño events are included for comparison
(National Meteorological Service, Argentina)

Legend
PH Historical average height
AC Critical height
AE Height requiring evacuation
Alt (year) Peak height in the year indicated

Some of the climate anomalies over the region of North and Central America during the 1997–98 El Niño event were:

- An expanded area of tropical cyclone activity over the eastern Pacific;
- Greatly reduced hurricane activity over the tropical Atlantic Ocean during the 1997 season;
- Abnormally warm waters spreading along the Pacific Coast of the United States and Mexico;
- Extreme drought over Mexico and most of Central America from June 1997 through June 1998;
- Wetter than normal conditions over the Pacific West Coast and southeastern United States during November 1997 through February 1998;
- Much warmer than normal conditions over the northern United States and sections of Canada during December 1997 through February 1998; and
- Extreme drought and heat over the southern United States during April through June 1998.

Outside of the tropics in the Northern Hemisphere the largest climate anomalies associated with El Niño occur during the winter and spring seasons This seasonality in the El Niño response is also the time of maximum pole-to-equator temperature gradient. It is driven by the anomalous patterns of heating by deep atmospheric convection in the tropics and the direct interaction with the wintertime East Asian jetstream. As the seasons progress from fall to winter the East Asian jetstream normally strengthens and shifts equatorward in response to the strengthening Hadley Cell circulation During strong El Niño episodes, when deep tropical convection shifts to the central and eastern equatorial Pacific Ocean, the East Asian jetstream extends further eastward than normal over the