

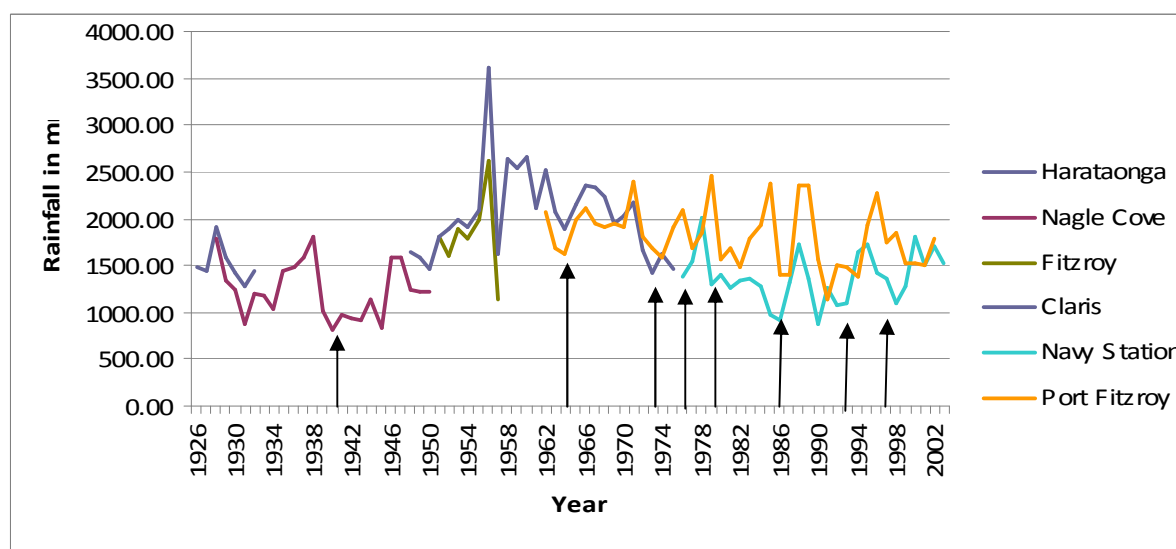
7 Climate

Rainfall

Rainfall statistics were collected on the island until 2005 at various placesⁱ and recorded by NIWA. The Department of Conservation still carries out daily rainfall measurement at Port FitzRoy. However the more comprehensive statistics (rainfall, temperature and wind speed at several sites across the island) are no longer gathered.

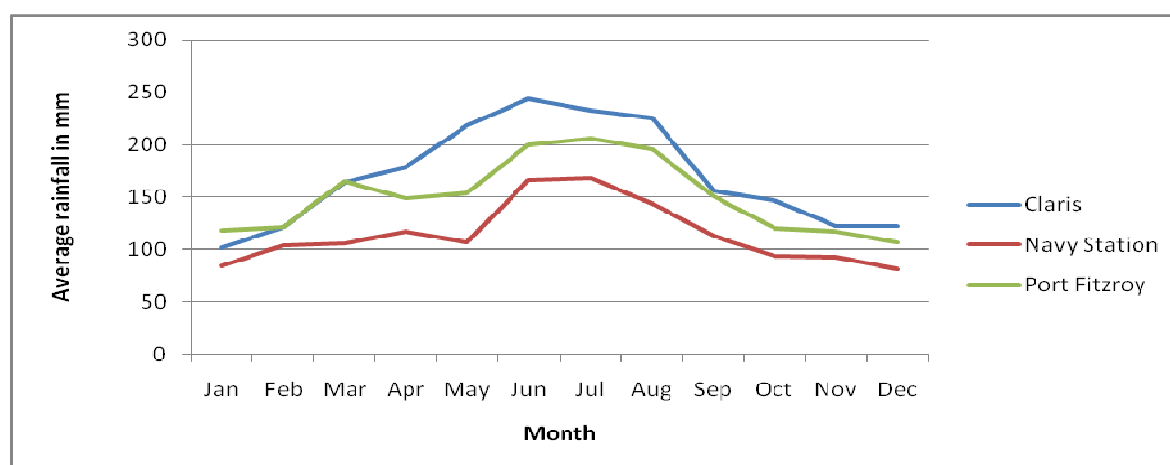
Some additional information was found in an earlier documentⁱⁱ. These appear to show a drier island in the 1930's and 40's, a big rainfall oscillation in 1956/57 and generally wetter years in the 60's and 70's (Fig 7.2). Unfortunately these conclusions are compromised by the changes in recording stations. The 1956/57 oscillation was however widespread, being recorded as a shift from excessive wetness to drought in the Auckland Regionⁱⁱⁱ. El Nino years are usually drier than average, and La Nina years wetter than average. For Example the 1982 and 1987 El Nino events were associated with exceptionally dry conditions on Great Barrier Island. In the period graphed there were 14 El Nino years with an average rainfall of 1436mm, while the 9 La Nina years averaged 1894mm. The overall average was 1633mm/yr.

Figure 7.2 Average monthly rainfall 1926 – 2003. Arrows indicate main El Nino years associated with lower rainfall.



Sixty percent of the rain falls in the months April through September and more than half of this winter rain falls between June and August (Fig 7.3).

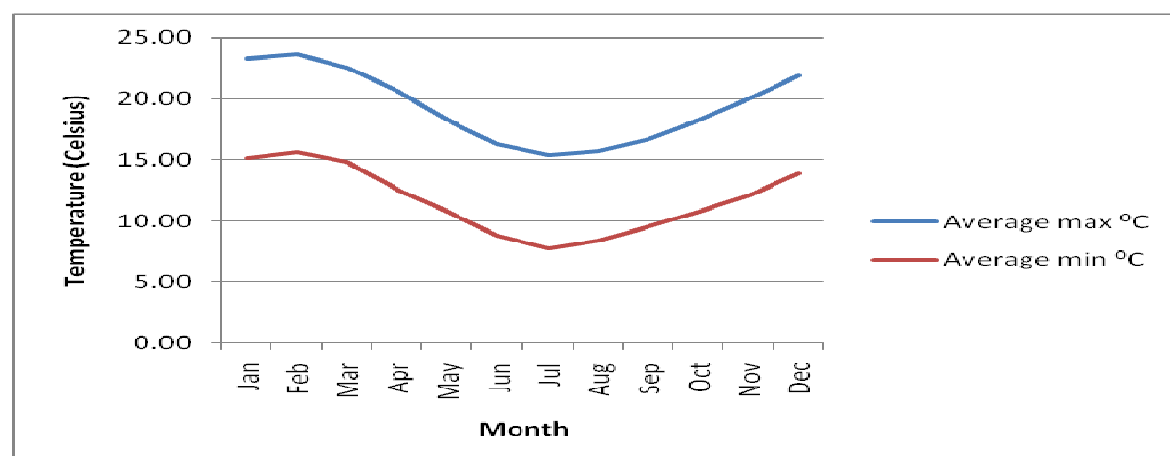
Fig 7.3 Rainfall distribution. Average monthly values 1947 – 2007.



Temperature

Temperature data was found for the years 1961-2003. As is typical for New Zealand, July is the coldest month with an average 7.75°C minimum. January and February are the warmest with average maximums around 23°C (Fig 7.4):

Fig 7.4 Average temperature 1961 – 2003



Wind

Surface wind observations (at 9.00am) were collected by NIWA (Table 7.1). Monthly averages between 1978 and 2004 show little monthly pattern, except for generally windier conditions in September and October. The summer period (December – April) is generally less windy, but cyclones can occur then.

Table 7.1. Average surface wind speeds at 9.00am in km/hour. Yellow indicates windier months, pink generally less windy.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Naval Station	20.19	19.81	21.13	19.70	21.13	21.64	21.76	21.79	22.68	22.20	21.20	19.66
Port Fitzroy	15.74	15.39	16.34	15.81	16.92	16.39	16.85	16.79	20.81	20.22	17.72	16.50

The prevailing winds are from the south-westerly quarter. Wind strength shows little variation on average, although the infrequent north-easterly blows tend to be stronger than average on

the east coast (Fig 7.5). At Port FitzRoy the prevailing west and south-west winds are generally the strongest (Fig 7.6).

Fig 7.5. Strength and frequency of surface wind at 9.00am at the Naval Station. The ‘spider graph’ shows increasing wind speed from the centre outwards (to 8m/second) and the spokes indicate wind direction. The blue line gives the average speed of winds blowing from different directions. The frequency of winds from different directions is shown on the right.

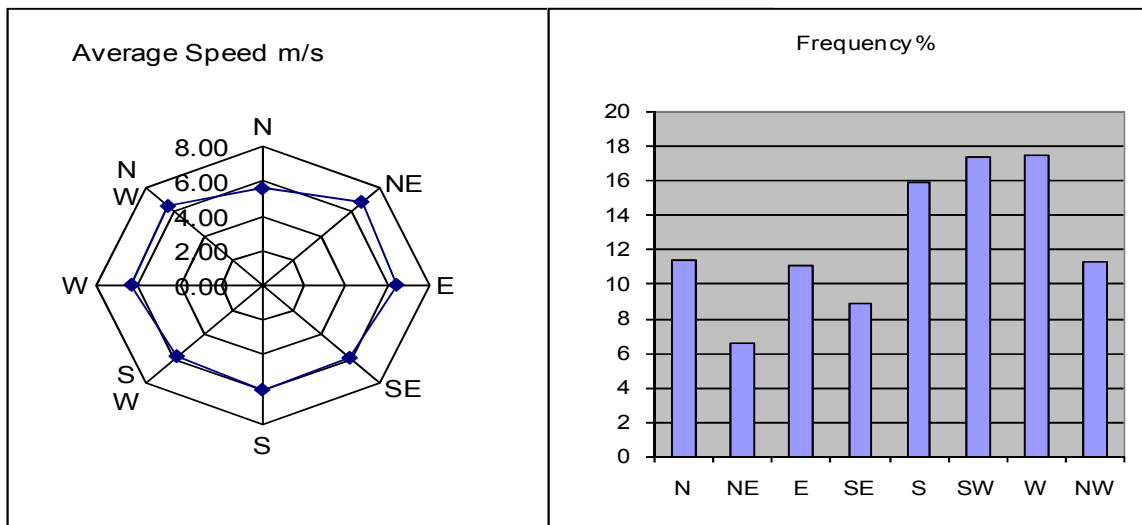
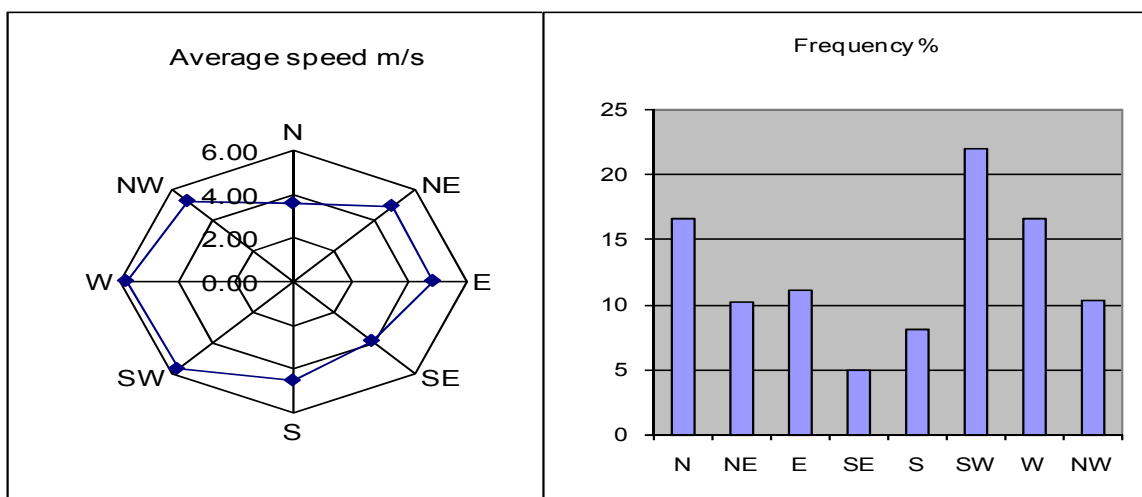


Fig 7.6. Strength and frequency of surface wind at 9.00am at Port FitzRoy



i Claris 1947 – 1977; Naval Station 1977 – 2004; FitzRoy 1961 – present.

ii Ron Lloyd, *GBI State Forest: An historical account*, 1955. Department of Conservation, Port FitzRoy

iii Fowler, A. & Adams, K. 2004. *Twentieth century droughts and wet periods in Auckland (New Zealand) and their relationship to ENSO* Int. J. Climatol. 24: 1947-1961.