



Monthly wind roses showing the strength and direction of the wind in Chagos. The sustained Southeast Trades from May till October cause heavy seas. Photo ocean side Diego Garcia.

Trade Winds in Chagos

Chagos, like all Indian Ocean islands, is subject to annual trade winds, so called because sail driven trading ships took advantage of them in their ocean passages. These trade winds are found in two bands, north and south of the equator, and are caused by air flowing from higher latitudes towards the lower pressure equatorial region.

Where the sun is directly overhead it heats the earth's surface the most strongly, and the warm air of that belt rises. Air from high pressure bands of the horse latitudes (between 30° and 35° north and south, also called the subtropical ridge) blows inwards towards that warmest belt to replace it, but because of the Earth's spin, these air flows are not perpendicular to the low pressure belt, but are angled westwards: the two airstreams are the Northeast and Southeast Trades.

When the sun is over the northern hemisphere, the Southeast Trades blow directly over Chagos to fill the low pressure belt lying in the north of the Indian Ocean. They blow strongly and consistently, from May to September. During this time, these winds cause waves to pile up on south easterly facing shores. When the sun is in the south, the low pressure belt lies over or near to Chagos, and the Southeast Trades do not reach the archipelago. During this period (November-March) winds are light, variable or cyclonically driven, coming from many directions, but commonly from the northwest, which is the opposite direction to the Trades. These variable winds flatten the waves and lead to sustained periods of calm.

The warmed, low pressure belt is called the Intertropical Convergence Zone, or ITCZ (the doldrums). Its position is not regular but dynamic, and is affected both by continents and seasonality.

Cyclones occur in the southern Indian Ocean during the southern summer (December to March), although these pass to the south of Chagos, frequently hitting the western Indian Ocean islands. In 2005 Intense Tropical Cyclone Bento came to within 175nm east southeast of Diego Garcia, the closest a South Indian Ocean tropical cyclone of this intensity has come to the equator.

Wind roses from Posford Haskoning 2002 *Feasibility study for the resettlement of the outer islands of the Chagos Archipelago*. Foreign and Commonwealth Office, London.

The **Chagos Conservation Trust** is a charity (Registered in the UK No. 1031561), whose aims are to promote conservation, scientific and historical research, and to advance education concerning the archipelago. The Trust is a non political association.

If you would like more information on the publications or membership, please contact the Secretary simonhughes@hughes-mccormack.co.uk or visit www.chagos-trust.org