Australian Government
Bureau of Meteorology

Gridded Average Tropical Cyclone Metadata

Dataset	
Title	Tropical cyclone gridded datasets.
Custodian	
Custodian	Bureau of Meteorology
Jurisdiction	Australia
Description	
Abstract	The grids show the average annual number of tropical cyclones over the Australian region in the form of two-dimensional array data. The data are based on the period 1969/70 to 2017/18. See LINEAGE below for more information.
Search Word(s)	Gridded, analyses, tropical, cyclone, meteorology
Geographic Extent Names(s)	Australia
General Category	Gridded neutral, La Nina, El Nino and all years annual data
General Custodian Jurisdiction	Australian Government Australia
Geographic Extent Polygon	Not applicable
Geographic Bounding Box	See Below
North Bounding Latitude	90.0
South Bounding Latitude	-90.00
East Bounding Longitude	1.0
West Bounding Longitude	360.0
Data Currency	
Beginning Date	1969/70
Ending Date	2017/18
Dataset Status	

Progress	Completed
Maintenance and Update frequency	Infrequent
Access	
Stored Data Format	NetCDF
Available Format Type	Gridded ASCII row major, NetCDF
Access Constraint	Use of these data should be acknowledged to the Bureau of Meteorology. These products are made available under the Bureau's default terms of use (noted at http://www.bom.gov.au/other/copyright.shtml). If you wish to use the material outside of the Bureau's default terms of use then you must contact us for a licence agreement at climatedata@bom.gov.au
Other constraints	Please refer to http://www.bom.gov.au/other/disclaimer.shtml for disclaimer details
Data Quality	
Lineage	The southern hemisphere tropical cyclone (TC) archive consists of cyclone best track data for the TC seasons from 1969/70 to 2017/18. The creation of a reasonably complete 48-year dataset for the whole Southern Hemisphere provided the basis for the generation of a set of climatological data sets showing the frequency of TC occurrence. In the Australian region, historical TC records go back to the late 1700s, however there are limitations associated with the older data. The introduction of routine satellite coverage in the late 1960s saw a significant increase in the quality of the TC records - particularly in the identification and positioning of TCs (Holland, 1981). A number of quality control/validation procedures were applied as part of the TC archive generation process. For example, the data was cross-checked with TC archive data from the Joint Typhoon Warning Centre, Hawaii, USA. We believe that the 1969/70 to 2017/18 TC archive accurately represents cyclone best track data in the Southern Hemisphere. For the 36-year period corresponding to the 1969/70 to 2017/18 TC seasons, cyclone tracks were analysed across the southern hemisphere at a resolution of 2^{o} x 2^{o}. The number of occurrences of cyclones in each 2^{o} x 2^{o} square was then calculated and the data converted to two-dimensional gridded format. The derived gridded information shows the average annual occurrence of tropical cyclones as well as the average annual cyclone occurrence during El Niño, La Niña and neutral years. Note, El Niño and La Niña years were taken from Wright (2001). For the 48-year period corresponding to the 1969/70 to 2017/18 TC seasons, cyclone tracks were analysed across the southern hemisphere at a resolution of 2° by 2°. All data south of -40 degrees latitude was discarded. The number of occurrences of cyclones in each 2° x 2° square was then calculated and the data converted to two-dimensional gridded format. For the production of images, the raw gridded data was smoothed using the python scipy ndimage module using a uniform filter of size 3 – see

	https://docs.scipy.org/doc/scipy/reference/generated/scipy.ndimage.uniform_filter.html The calculation of cyclone occurrence in this study was similar to the analysis done by Lourensz (1981) which was based on 5^{o} lat/long squares. However, these gridded data sets show annual occurrence rather than decadal incidence information, and a finer rectangular resolution was used in this analysis (2^{o} lat/long squares). References Holland, G.J., 1981: On the quality of the Australian tropical cyclone data base. Aust. Meteor. Mag., 29, 169-181. Lourensz, R.S. 1981. Tropical cyclones in the Australian region July 1909 to June 1980. Australian Government Publishing Service, Canberra, 94 pp. Wright, W.J, 2001: A review of Australian climate in the 20th Century. Preprints, CLI-MANAGE 2000 (Conference on Managing Australian Climate Variability), Albury, NSW, Australia, Bureau of Meteorology, 127-130.
Attribute Accuracy	Not applicable
Logical Consistency	Not applicable
Completeness	No missing data
Contact Information	
Contact Organisation	Bureau of Meteorology
Contact Position	Climate Data Services
Mail Address	PO BOX 1289, Melbourne 3001, Australia
Locality	
State	Victoria
Country	Australia
Postcode	3001
Telephone	(03) 9669 4082
Facsimile	(03) 9669 4515
Electronic Mail	climatedata@bom.gov.au
Metadata date	2019