

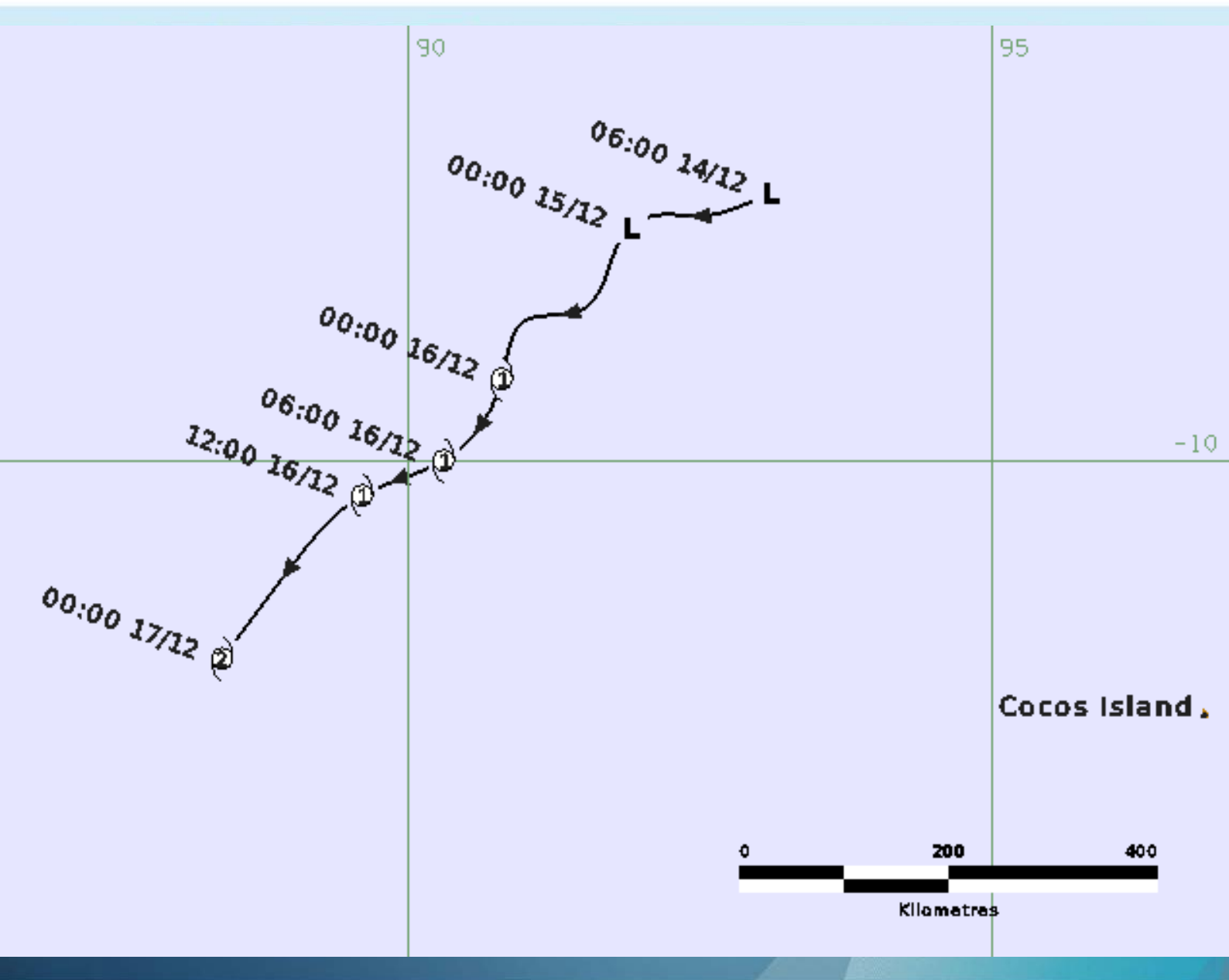


Australian Government
Bureau of Meteorology

Tropical Cyclone Kenanga

14 – 17 December 2018

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9 September 2022



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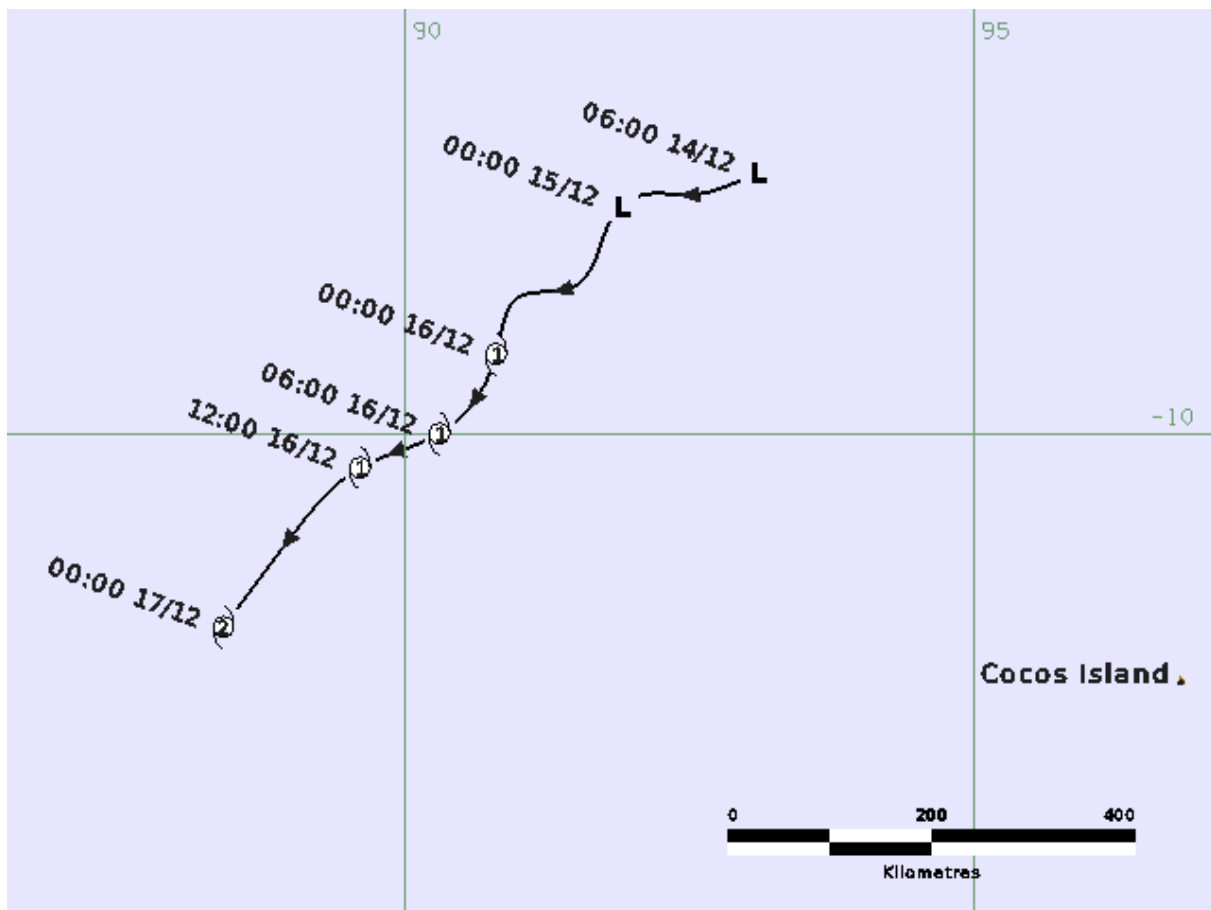
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1. Summary

A tropical low formed on 14 December in the Indian Ocean northwest of Cocos Islands and north of the Australian region (10°S). It was named Kenanga on 15 December by Indonesia's Meteorological agency Badan Meteorologi, Klimatologi, dan Geofisika (BMKG). It tracked to the southwest briefly passing into the Australian area of responsibility as a category one tropical cyclone on 16 December before moving west of 90°E and into La Reunion's area of responsibility. It intensified into a severe tropical cyclone as it continued to track to the southwest over open waters in the Indian Ocean.

There were no known impacts from the cyclone.

Figure 1. Best track of Tropical Cyclone Kenanga, 14–17 December 2016 (times in UTC; UTC=AWST - 8 hours).



2. Meteorological Description

2.1 Intensity analysis

A tropical low formed on 14 December in the Indian Ocean west of Java north of the Australian region. A strong monsoonal inflow assisted in its development although this was offset by moderate to strong easterly wind shear. It was named Kenanga on 15 December by BMKG Indonesia as it moved to the southwest. ASCAT passes during 15 December indicated gales to the northeast and to the south.

Deep convection became more organised during 16 December as the wind shear reduced allowing further intensification. It briefly passed into the Australian area of responsibility as a category one tropical cyclone on 16 December before moving west of 90°E and into La Reunion's area of responsibility. It intensified into a severe tropical cyclone as it continued to track to the southwest over open waters in the Indian Ocean.

2.2 Structure

Gales commenced northeast of the centre around 0600 UTC 15 December and extended to the southeast quadrant at 1200 UTC and to remaining quadrants at 0000 UTC 16 December. The gale radius extended to 80 nm (150 km) northeast of the centre and less in other quadrants. From late on 16 December the gale radius increased in the southeast quadrant as the system accelerated to the southwest.

The radius of maximum winds was initially 30 nm (55 km) as gales commenced but reduced to 15 nm (18 km) when it reached category 2 intensity overnight from 16 to 17 December.

Refer to Table 1 for wind radii estimates.

2.3 Motion

The low was initially slow moving but was steered to the southwest as it passed through the Australian area of responsibility on 16 December.

TABLE 1. Best track summary for Tropical Cyclone Kenanga.

Refer to the Australian Tropical Cyclone database for complete listing of parameters and refer to La Reunion for subsequent track details.

Note: UTC is AWST – 8 hours.

*Not at tropical cyclone intensity using Australian definition as gales in two or less quadrants

Year	Month	Day	Hour UTC	Pos. Lat. S	Pos. Long. E	Pos. Acc. nm	Max Wind 10min kn	Max gust kn	Cent. Press. hPa	Rad. of gales (NE/SE/ SW/NW)	Rad. of storm (NE/SE/ SW/NW)	RMW nm
2018	12	14	0600	7.7	93.1	30	25	45	1002	0/0/0/0	0/0/0/0	-
2018	12	14	1200	7.9	92.5	30	30	45	1000	0/0/0/0	0/0/0/0	-
2018	12	14	1800	7.9	92.1	25	30	45	1000	0/0/0/0	0/0/0/0	-
2018	12	15	0000	8.0	91.9	20	30	45	1000	0/0/0/0	0/0/0/0	-
2018	12	15	0600	8.4	91.7	20	35*	45	999	60/0/0/0	0/0/0/0	-
2018	12	15	1200	8.7	91.5	25	35*	50	999	80/40/0/0	0/0/0/0	-
2018	12	15	1800	8.8	91.0	25	35	50	998	80/40/40/0	0/0/0/0	-
2018	12	16	0000	9.3	90.8	20	40	55	996	80/60/40/70	0/0/0/0	30
2018	12	16	0600	10.0	90.3	20	40	55	995	80/70/60/70	0/0/0/0	30
2018	12	16	1200	10.3	89.6	20	45	65	994	60/80/60/60	0/0/0/0	25
2018	12	16	1800	10.9	89.0	25	50	70	992	60/100/70/60	0/25/0/0	15
2018	12	17	0000	11.7	88.4	25	50	70	992	60/120/80/60	25/25/25/25	15

Figure 2. Plot of intensity estimates for Tropical Cyclone Kenanga.

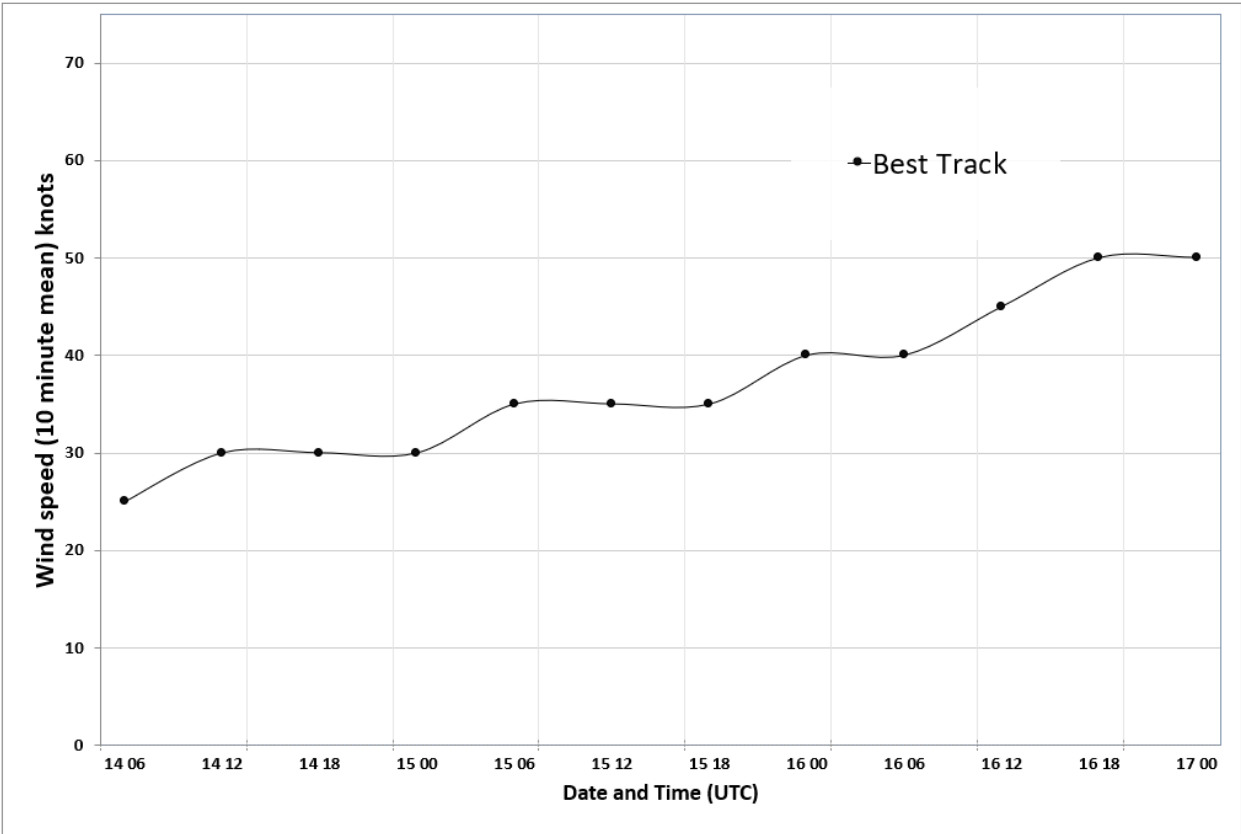
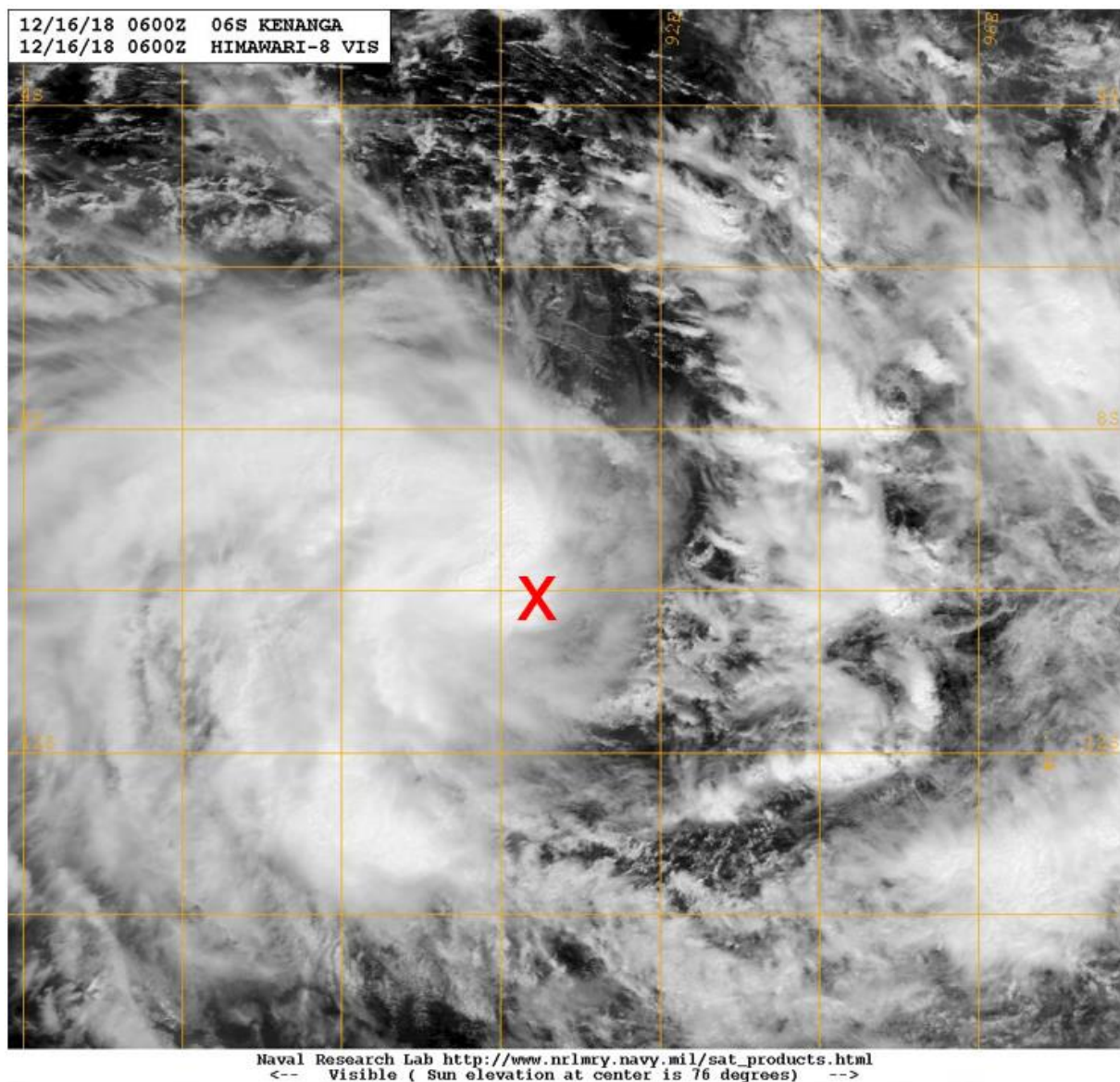


Figure 3. Visible image at 0600 UTC 16 December 2018. The centre is marked with an 'x' just inside the Australian area of responsibility.

Image courtesy NRL: <https://www.nrlmry.navy.mil/TC.html>



3. Impact

There were no known impacts from Tropical Cyclone Kenanga.

4. Observations

There were no known surface observations associated with Tropical Cyclone Kenanga as it passed through the Australian region.

5. Forecast Performance

There were no tropical cyclone products issued by the Bureau of Meteorology. Ocean wind warnings were issued by BMKG Indonesia and La Reunion for this event.

6. Appendix: List of abbreviations

ADT	Advanced Dvorak Technique	km/h	kilometres per hour
ACST	Australian Central Standard Time	kn	knot
AEST	Australian Eastern Standard Time	LLCC	low level cloud centre
AMSR2	Advanced Microwave Scanning Radiometer	MET	Model Expected T-number
ASCAT	Advanced Scatterometer	METOP	Meteorological Operational Satellite
ATMS	Advanced Technology Microwave Sounder	MJO	Madden-Julian Oscillation
AWS	automatic weather station	mm	millimetres
AWST	Australian Western Standard Time	MSLP	mean sea level pressure
C	Celsius	nm	nautical mile
CI	Current intensity	NOAA	National Oceanic and Atmospheric Administration
CIMSS	Cooperative Institute for Meteorological Satellite Studies (USA)	NRL	Navy Research Lab (USA)
CIRA	Cooperative Institute for Research in the Atmosphere (USA)	PAT	Pattern T-number
EIR	Enhanced InfraRed	RH	relative humidity
ERC	eyewall replacement cycle	RMW	radius of maximum winds
FNMOCC	Fleet Numerical Meteorology and Oceanography Centre (USA)	RSMC	Regional Specialised Meteorological Centre
FT	Final T-number	SAR	Synthetic Aperture Radar
GCOM	Global Change Observation Mission	SATCON	satellite Consensus
GHz	Gigahertz	SMAP	Soil Moisture Active Passive
GMI	Global Precipitation Measurement Microwave Imager	SMOS	Soil Moisture and Ocean Salinity
h	hour	SSMIS	Special Sensor Microwave Imager/Sounder
hPa	hectopascal	TC	Tropical Cyclone
HSCAT	Hai Yang 2 Scatterometer (HY-2B, HY-2C)	TCWC	Tropical Cyclone Warning Centre
km	kilometres	UTC	Universal Time Co-ordinated