Monthly Discussion on Seasonal Climate Outlooks (No. 146)

(23 April 2026)

Tokyo Climate Center (TCC)
Japan Meteorological Agency (JMA)

Outline

Notes:

- The present monthly discussion is intended to assist National Meteorological and Hydrological Services (NMHSs) in WMO RA II (Asia) in interpreting WMC Tokyo's seasonal prediction products. It does not constitute an official forecast for any nation. Seasonal outlooks for individual countries should be obtained from the relevant NMHS.
- Seasonal predictions are based on a JMA's Seasonal Ensemble Prediction System (EPS), which is based on the coupled atmosphere-ocean general circulation model (CGCM).
- JMA provides three-month prediction products around the 20th of every month with warm-season (Jun. – Aug.) prediction products in February, March and April, and with cold-season (Dec. – Feb.) prediction products in September and October.
- Unless otherwise noted, the base period for the normal is 1991 – 2020.

1. Summary and Discussion

ENSO

- ENSO-neutral conditions persisted in March 2026.
- It is more likely (60%) that El Niño conditions will develop than ENSO-neutral conditions will persist (40%) in spring. And it is likely (70%) that El Niño conditions will develop by summer.

Prediction for May - June - July 2026 (MJJ 2026)

- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted over the central part of the tropical Pacific, while large-scale convergence anomalies are predicted over the tropical Indian Ocean.
- In the 850-hPa stream function field, cyclonic circulation anomalies are predicted over the sea east of the Philippines and the area further east.
- A high probability of above-normal precipitation is predicted over the sea east of the Philippines and the central part of Pacific. A high probability of below-normal precipitation is predicted from the southern tropical Indian Ocean to the Southeast Asia.
- A high probability of above-normal temperatures is predicted over a wide area of Asia except in parts of East Asia and Southeast Asia.

1. Summary and Discussion (cont.)

Prediction for June - July - August 2026 (JJA 2026)

- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted over the tropical Pacific, while large-scale convergence anomalies are predicted over the Indian Ocean.
- In the 850-hPa stream function field, cyclonic circulation anomalies straddling the equator are predicted around the Maritime Continent.
- A high probability of above-normal precipitation is predicted over the northern part of Southeast Asia. A high probability of below-normal precipitation is predicted over the southern part of Southeast Asia and South Asia.
- A high probability of above-normal precipitation is predicted over the sea east of the Philippines and the central part of Pacific. A high probability of below-normal precipitation is predicted over the southern part of Southeast Asia and South Asia.
- A high probability of above-normal temperatures is predicted over a wide area of Asia except in parts of East Asia and Southeast Asia.

2. Latest State of the Climate System March 2026

Please see

"Monthly Highlights on the Climate System"

https://www.data.jma.go.jp/tcc/tcc/products/clisys/highlights/index.html

"El Niño Outlook" as for El Niño status

https://www.data.jma.go.jp/tcc/tcc/products/elnino/outlook.html

3. Three-month Predictions

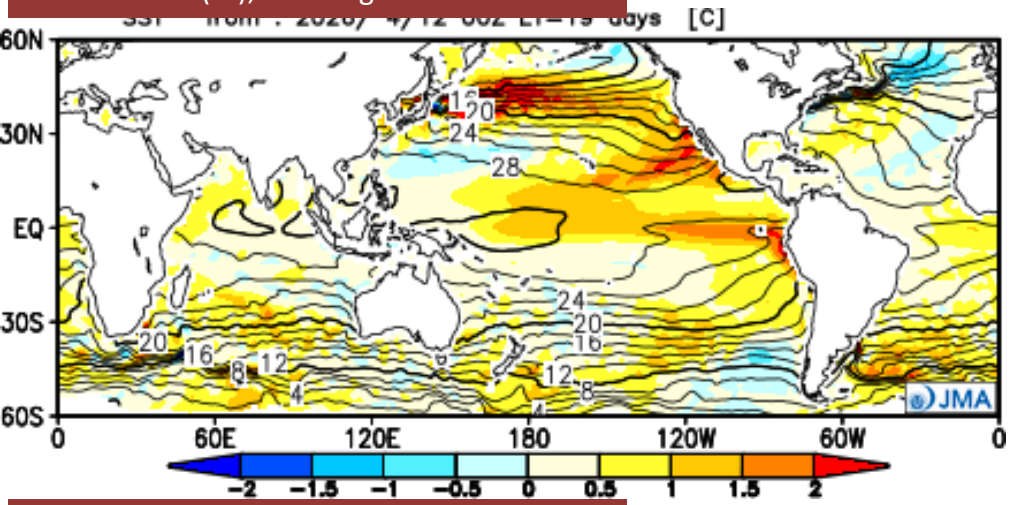
May - June - July 2026
(MJJ 2026)

(Initial date: 12 April 2026)

<MJJ 2026> Sea Surface Temperature (SST)

Three month mean SST

Contour: SST (˚C); Shading: SST anomalies.



- It is more likely (60%) that El Niño conditions will develop than ENSO-neutral conditions will persist (40%) in spring. And it is likely (70%) that El Niño conditions will develop by summer.
- The NINO.WEST SST is likely to be near or below normal during spring and below normal in summer.
- The IOBW SST is likely to be near or below normal until summer.

NINO.3 forecast probabilities

YEAR	MONTH	mean period	≧0.5°C	-0.4°C~0.4°C	≦-0.5°C
	FEB	DEC2025–APR2026		100	
	MAR	JAN2026–MAY2026		100	
	APR	FEB2026–JUN2026	20	80	
2026	MAY	MAR2026–JUL2026	60	40	
	JUN	APR2026–AUG2026	70	30	
	JUL	MAY2026–SEP2026	70	30	
	AUG	JUN2026–OCT2026	70	30	

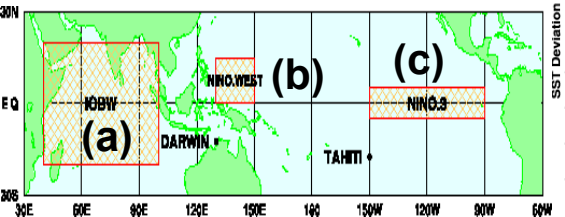
Verification based on hindcast

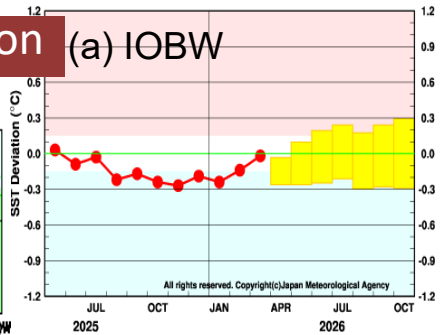
https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

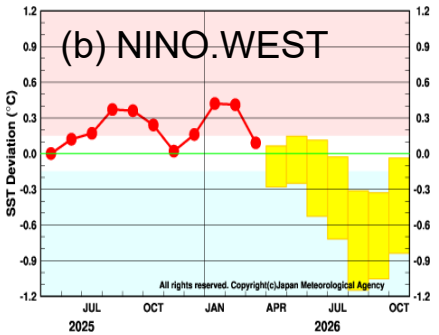
https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/shisu/shisu.html

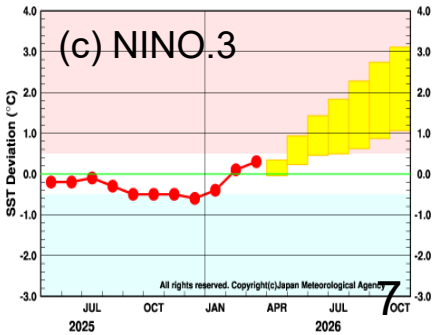
(See “Explanatory Notes (2)” for the definition of the SST indices.)

Outlook of the SST deviation





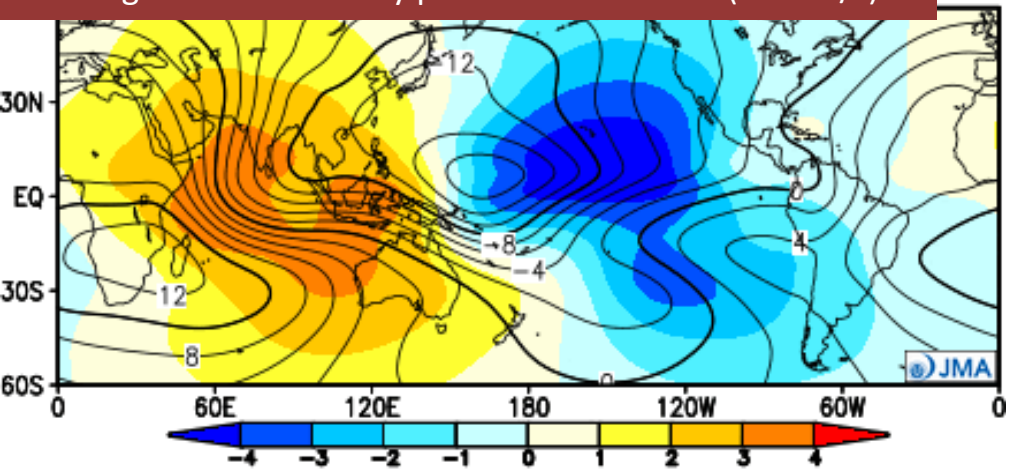




<MJJ 2026> Global Circulation

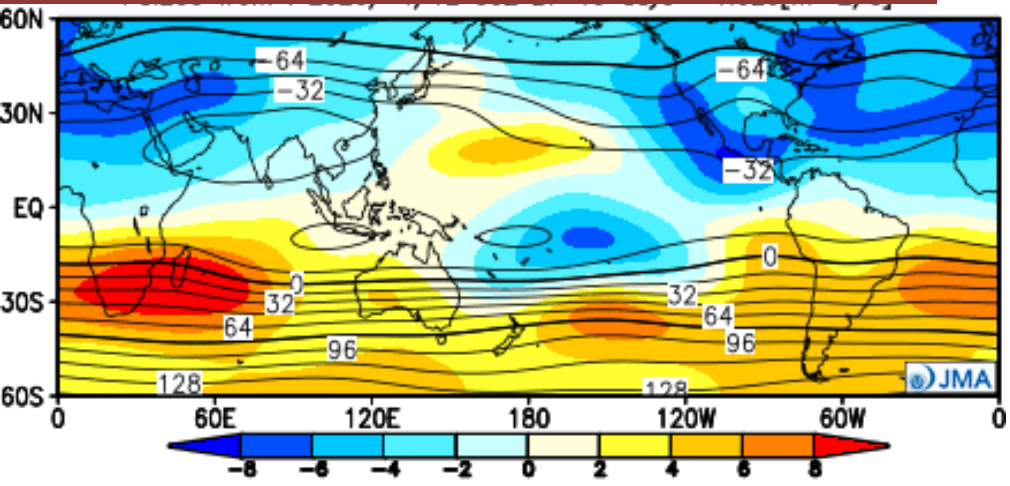
Three month mean 200-hPa velocity potential

Contour: 200-hPa velocity potential (10^6 m^2/s)
Shading: 200-hPa velocity potential anomalies (10^6 m^2/s)



Three month mean 200-hPa stream function

Contour: 200-hPa stream function (10^6 m^2/s)
Shading: 200-hPa stream function anomalies (10^6 m^2/s)

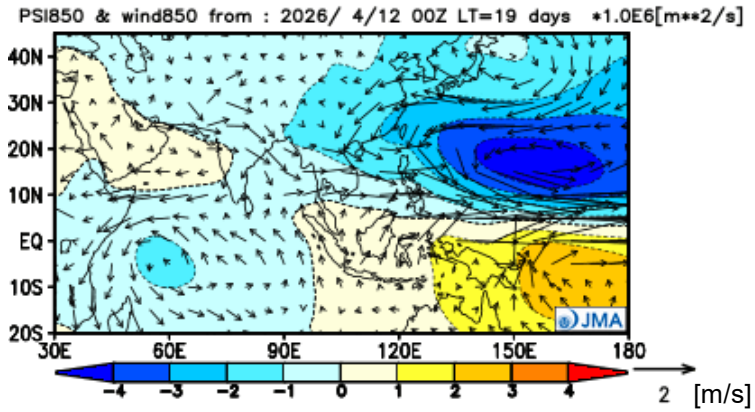


- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted over the central part of the tropical Pacific, while large-scale convergence anomalies are predicted over the tropical Indian Ocean.
- In the 200-hPa stream function field, cyclonic and anti-cyclonic circulation anomalies are predicted from the Mediterranean Sea to the Arabian Peninsula and over the central part of tropical North Pacific, respectively. This pattern is affected by tropical convective activities. Associated with anti-cyclonic anomalies from Japan to the sea east of Japan, the subtropical jet stream over Japan is predicted to shift northward.

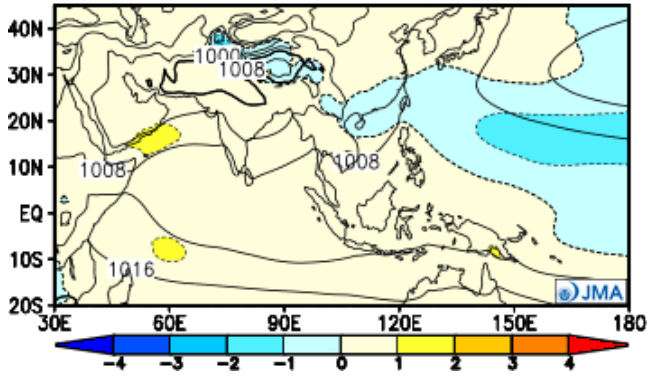
Verification based on hindcast https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

<MJJ 2026> Asian Circulation

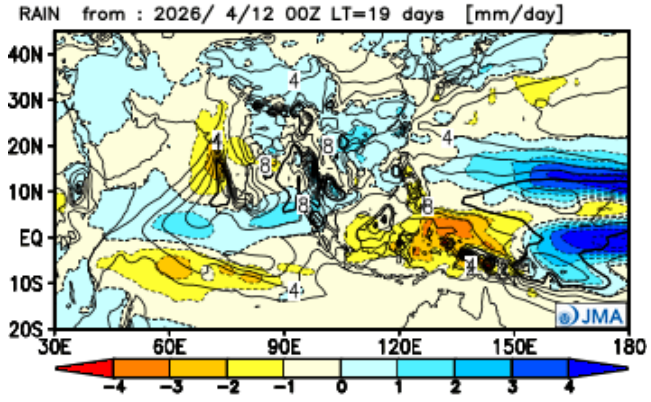
(a)



(b)



(c)



- Above-normal precipitation is predicted over the sea east of the Philippines and the area further east. Below-normal precipitation is predicted over the southern part of Southeast Asia.
- In the 850-hPa stream function field, cyclonic circulation anomalies are predicted over the sea east of the Philippines and the area further east.
- In the sea level pressure field, negative and positive anomalies are predicted over the western tropical Pacific and from the Indian Ocean to the southern Southeast Asia, respectively.

Three month mean

(a) 850-hPa stream function anomalies and wind vector anomalies

Contour&Shading: 850-hPa stream function anomalies (10^6 m^2/s)

Vector: wind vector anomalies (m/s)

(b) sea level pressure and its anomalies

Contour: sea level pressure (hPa)

Shading: sea level pressure anomalies (hPa)

(c) precipitation and its anomalies

Coutour: precipitation (mm/day)

Shading: precipitation anomalies (mm/day)

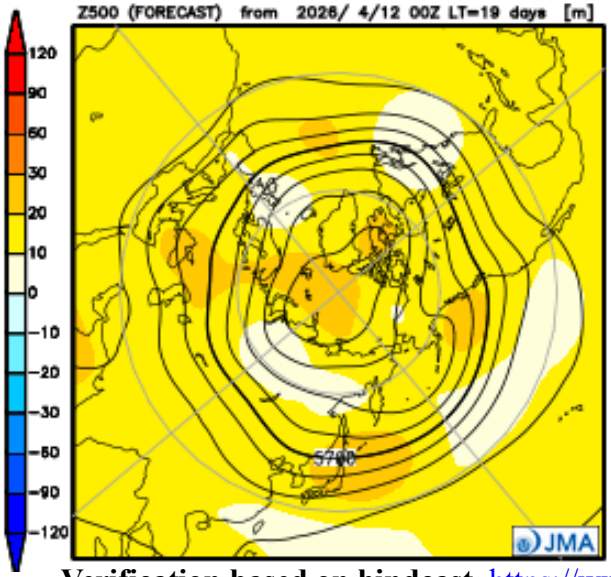
Verification based on hindcast https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

<MJJ 2026> Northern Hemisphere Circulation

- In the 500-hPa height field, positive anomalies are predicted over a wide area in the Northern Hemisphere, especially in Japan and the area further east.
- In the 850-hPa temperature field, positive anomalies are predicted over a wide area in the Northern Hemisphere.
- In the sea level pressure field, positive anomalies are predicted over a wide area in the Northern Hemisphere, except from the north of South China Sea to the North Pacific.

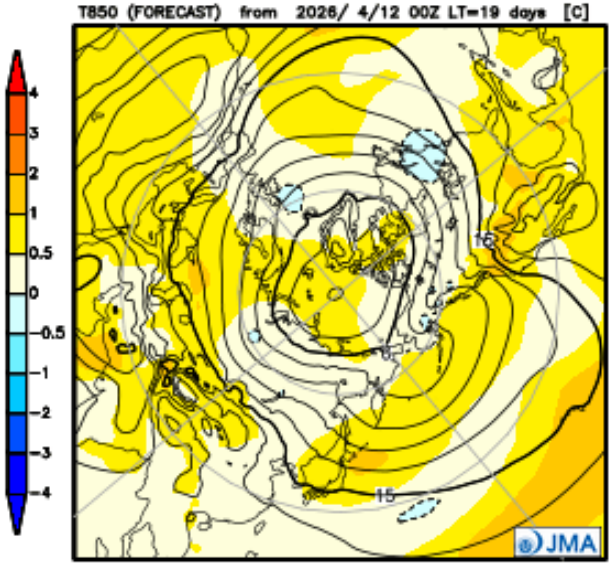
Three month mean geopotential height and its anomalies at 500-hPa

Contour: geopotential height (m)
Shading: geopotential height anomalies (m)



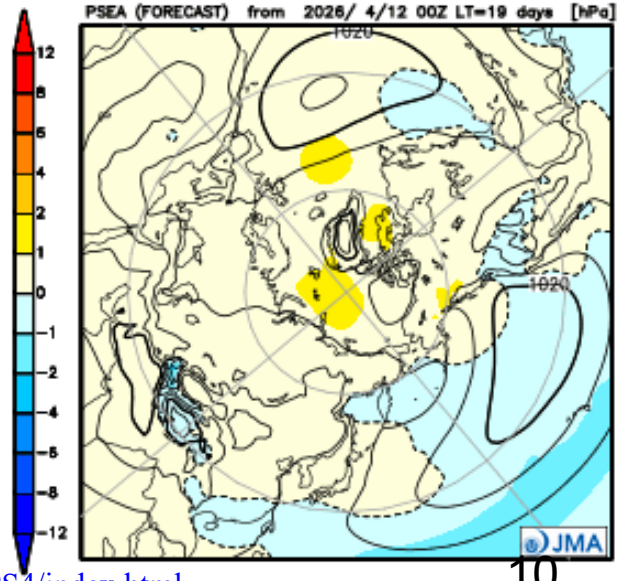
Three month mean temperature and its anomalies at 850-hPa

Contour: temperature (˚C)
Shading: temperature anomalies (˚C)



Three month mean sea level pressure (SLP) and its anomalies

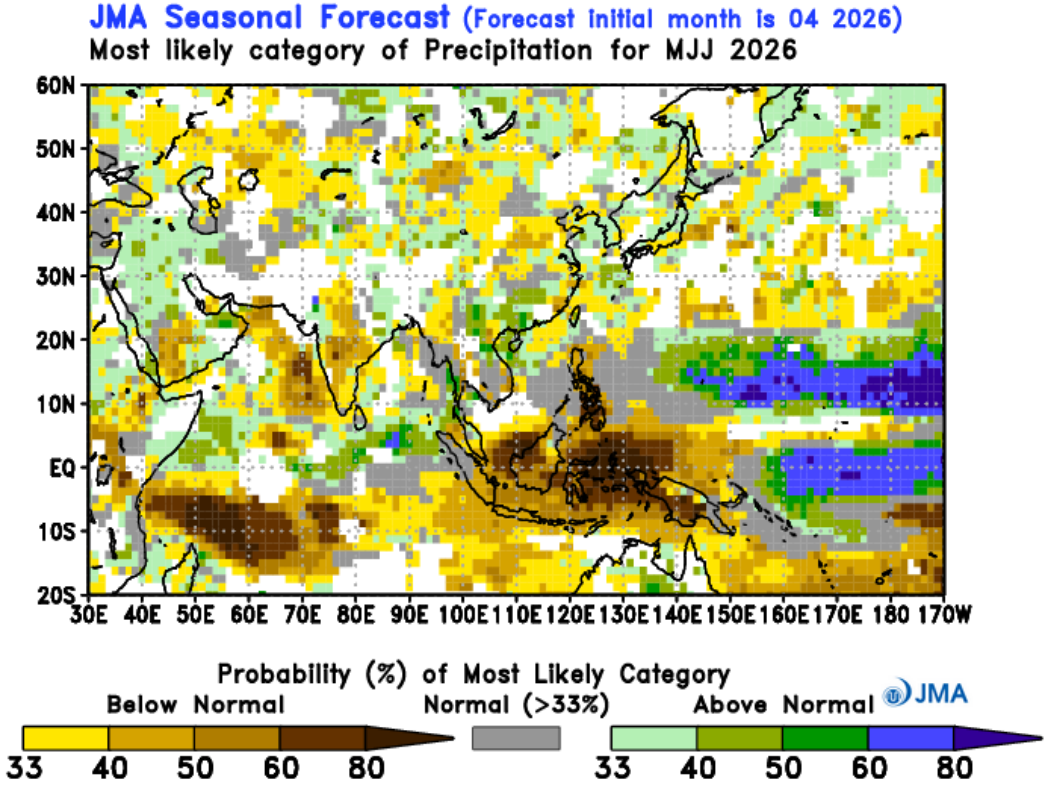
Contour: sea level pressure (hPa)
Shading: sea level pressure anomalies (hPa)



Verification based on hindcast https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

<MJJ 2026> Probability Forecasts (precipitation)

- A high probability of above-normal precipitation is predicted over the sea east of the Philippines and the central part of Pacific.
- A high probability of below-normal precipitation is predicted from the southern tropical Indian Ocean to Southeast Asia.

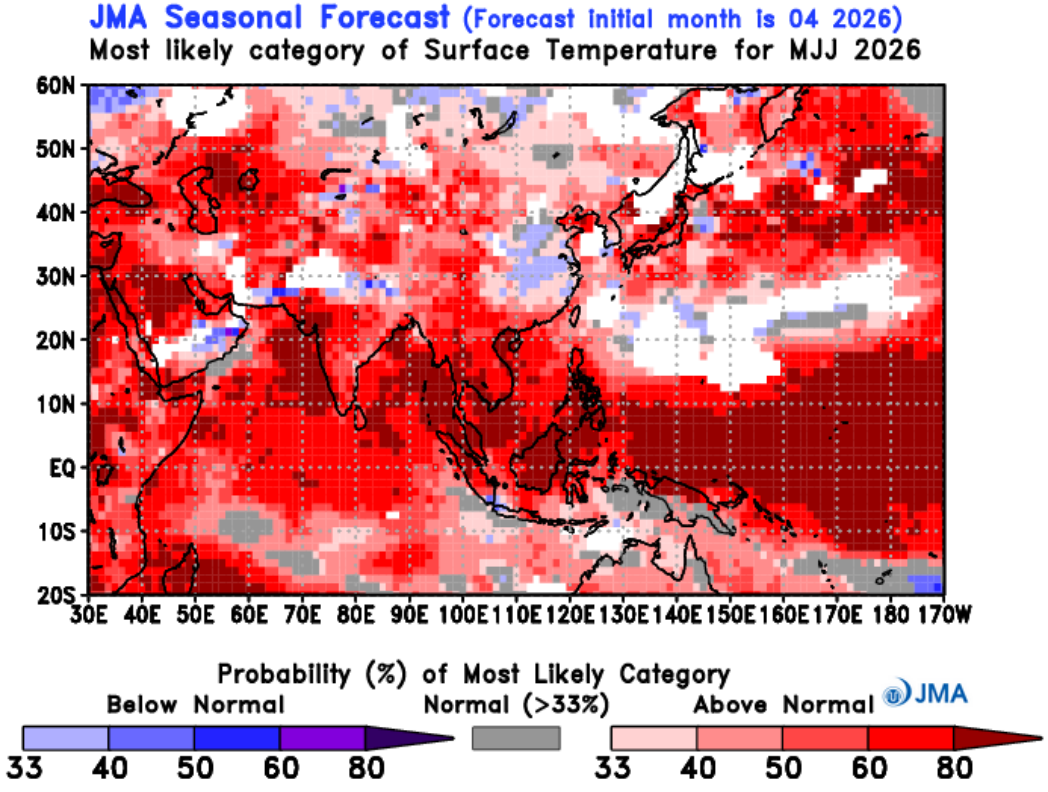


Verification based on hindcast

https://www.data.jma.go.jp/wmc/products/model/probfcst/3-mon/hind/html/skill_score_reg.html
https://www.data.jma.go.jp/wmc/products/model/probfcst/3-mon/hind/html/skill_2d_3-mon.html

<MJJ 2026> Probability Forecasts (temperature)

- A high probability of above-normal temperatures is predicted over a wide area of Asia except in parts of East Asia and Southeast Asia.



Verification based on hindcast

https://www.data.jma.go.jp/wmc/products/model/probfcst/3-mon/hind/html/skill_score_reg.html
https://www.data.jma.go.jp/wmc/products/model/probfcst/3-mon/hind/html/skill_2d_3-mon.html

4. Warm Season Predictions

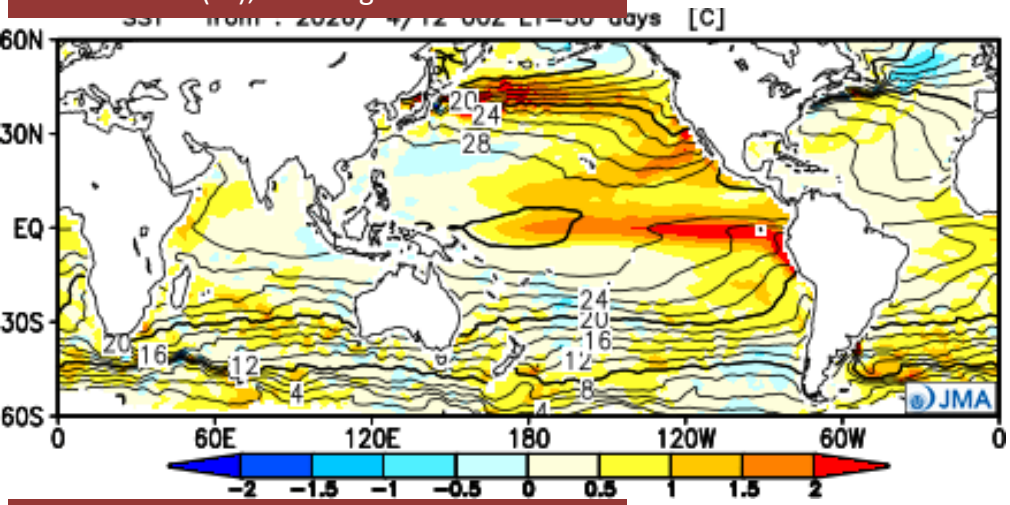
June - July - August 2026
(JJA 2026)

(Initial date: 12 April 2026)

<JJA 2026> Sea Surface Temperature (SST)

Three month mean SST

Contour: SST (˚C); Shading: SST anomalies.

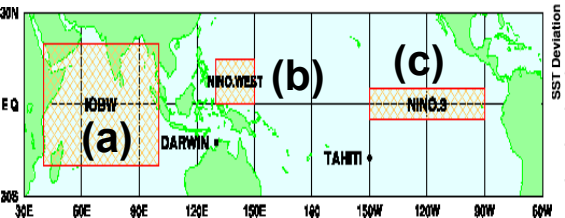


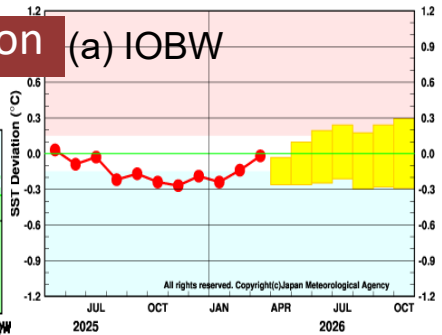
- It is likely (70%) that El Niño conditions will develop by summer.
- The NINO.WEST SST is likely to be below normal in summer.
- The IOBW SST is likely to be near or below normal until summer.

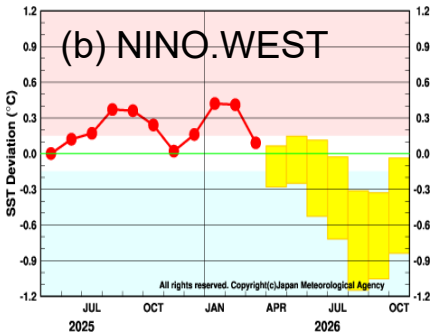
NINO.3 forecast probabilities

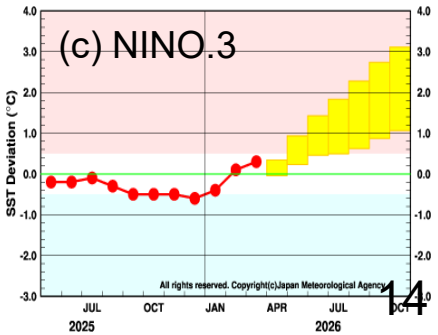
YEAR	MONTH	mean period	≧0.5°C	-0.4°C~0.4°C	≦-0.5°C
	FEB	DEC2025–APR2026		100	
	MAR	JAN2026–MAY2026		100	
	APR	FEB2026–JUN2026	20	80	
2026	MAY	MAR2026–JUL2026	60	40	
	JUN	APR2026–AUG2026	70	30	
	JUL	MAY2026–SEP2026	70	30	
	AUG	JUN2026–OCT2026	70	30	

Outlook of the SST deviation





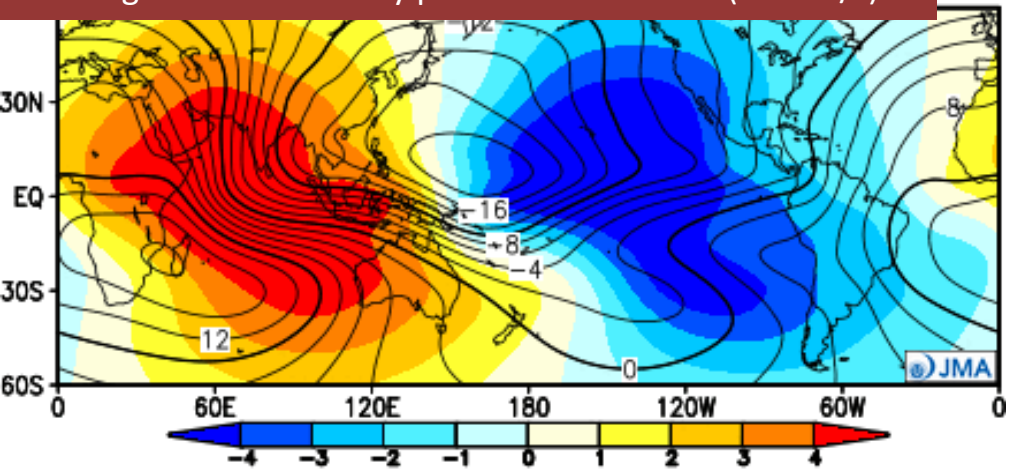




<JJA 2026> Global Circulation

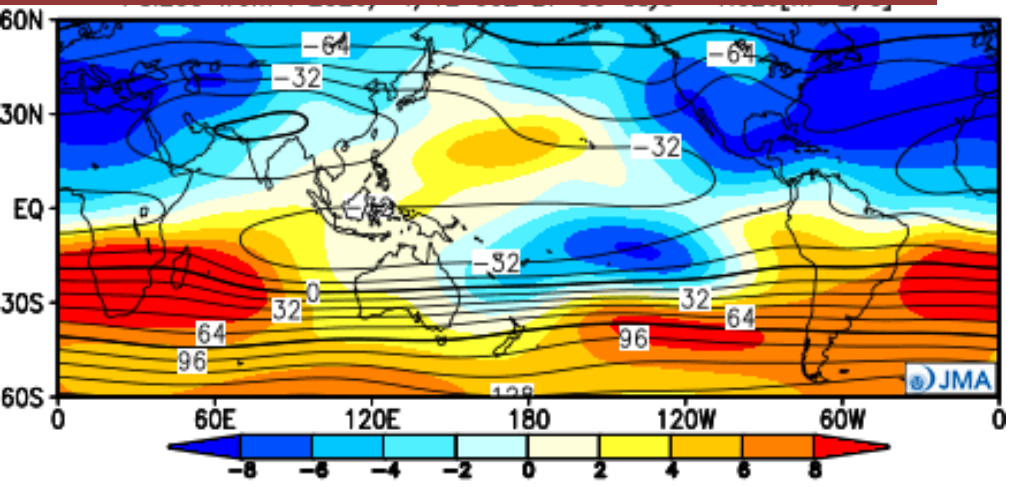
Three month mean 200-hPa velocity potential

Contour: 200-hPa velocity potential (10^6 m^2/s)
Shading: 200-hPa velocity potential anomalies (10^6 m^2/s)



Three month mean 200-hPa stream function

Contour: 200-hPa stream function (10^6 m^2/s)
Shading: 200-hPa stream function anomalies (10^6 m^2/s)

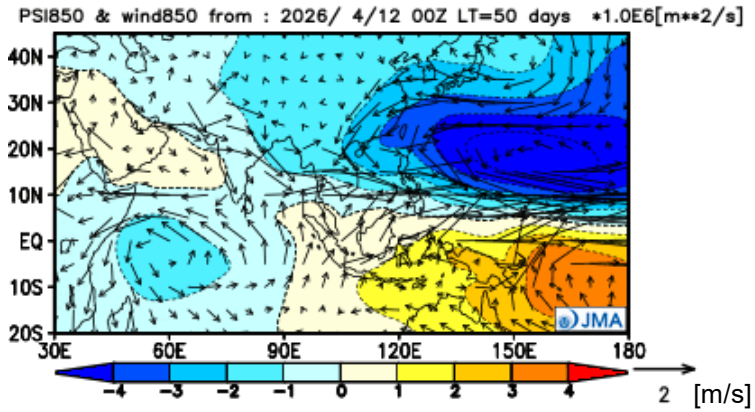


- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted over the tropical Pacific, while large-scale convergence anomalies are predicted over the Indian Ocean.
- In the 200-hPa stream function field, cyclonic and anti-cyclonic circulation anomalies are predicted from Africa to the Indian Ocean and over the tropical western Pacific, respectively. This pattern is affected by tropical convective activities.

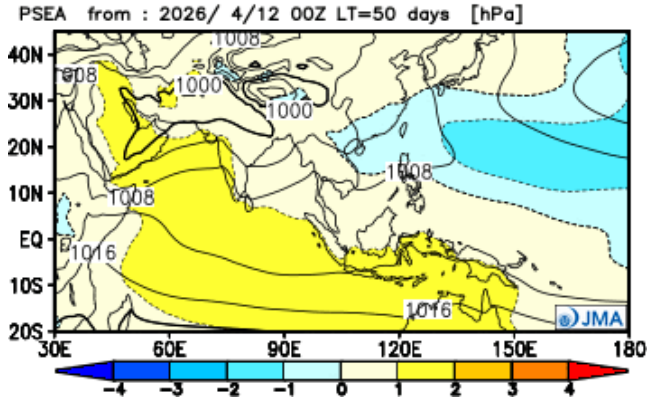
Verification based on hindcast https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

<JJA 2026> Asian Circulation

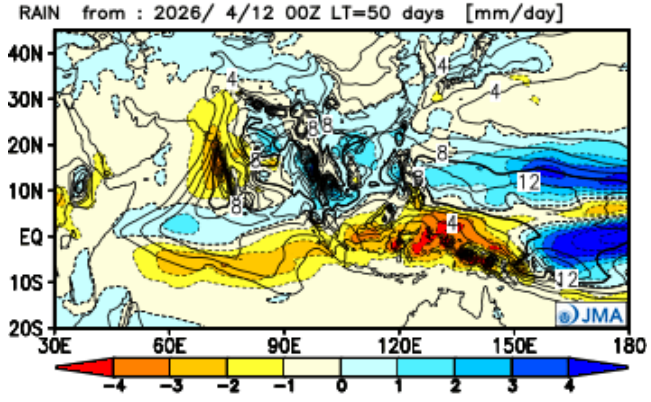
(a)



(b)



(c)



- The activity of the Asian monsoon is predicted to be above-normal over the northern part of Southeast Asia, mainly the east of the Philippines.
- In the 850-hPa stream function field, cyclonic circulation anomalies straddling the equator are predicted around the Maritime Continent.
- In the sea level pressure field, positive anomalies are predicted over the Indian Ocean. The monsoon trough is predicted to be deeper-than-normal over the sea east of Philippines.

Three month mean

(a) 850-hPa stream function anomalies and wind vector anomalies

Contour&Shading: 850-hPa stream function anomalies (10^6 m^2/s)

Vector: wind vector anomalies (m/s)

(b) sea level pressure and its anomalies

Contour: sea level pressure (hPa)

Shading: sea level pressure anomalies (hPa)

(c) precipitation and its anomalies

Coutour: precipitation (mm/day)

Shading: precipitation anomalies (mm/day)

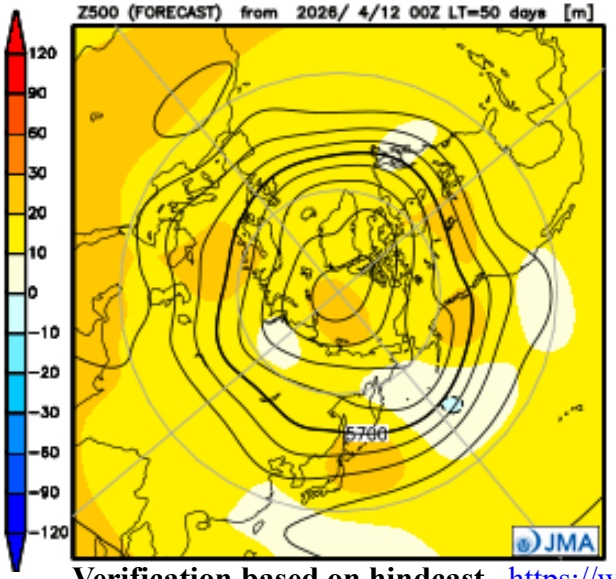
Verification based on hindcast https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

<JJA 2026> Northern Hemisphere Circulation

- In the 500-hPa height field, positive anomalies are predicted over a wide area in the Northern Hemisphere.
- In the 850-hPa temperature field, positive anomalies are predicted over a wide area in the Northern Hemisphere.
- In the sea level pressure field, the North Pacific subtropical high is predicted to be weaker than normal especially in the southwestern part.

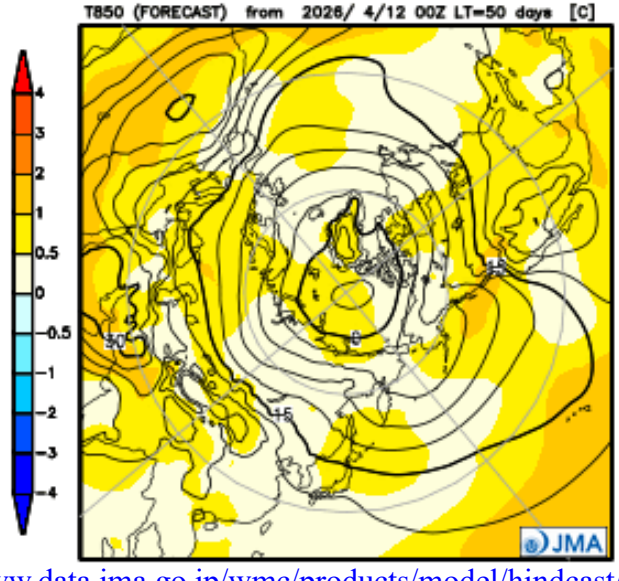
Three month mean geopotential height and its anomalies at 500-hPa

Contour: geopotential height (m)
Shading: geopotential height anomalies (m)



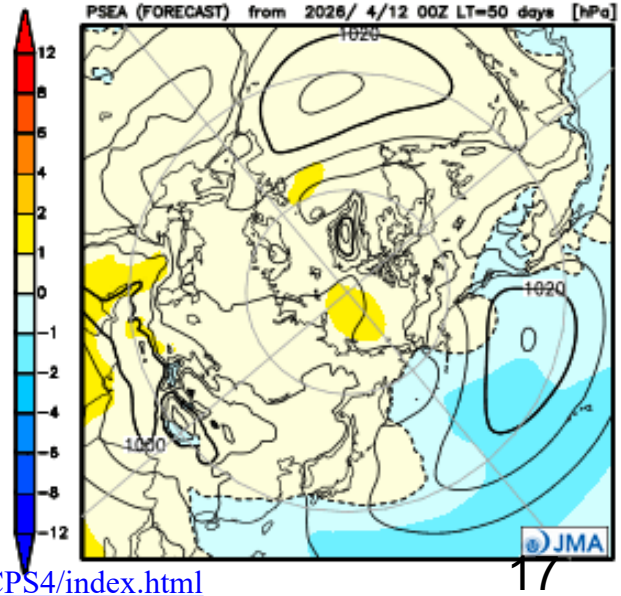
Three month mean temperature and its anomalies at 850-hPa

Contour: temperature (˚C)
Shading: temperature anomalies (˚C)



Three month mean sea level pressure (SLP) and its anomalies

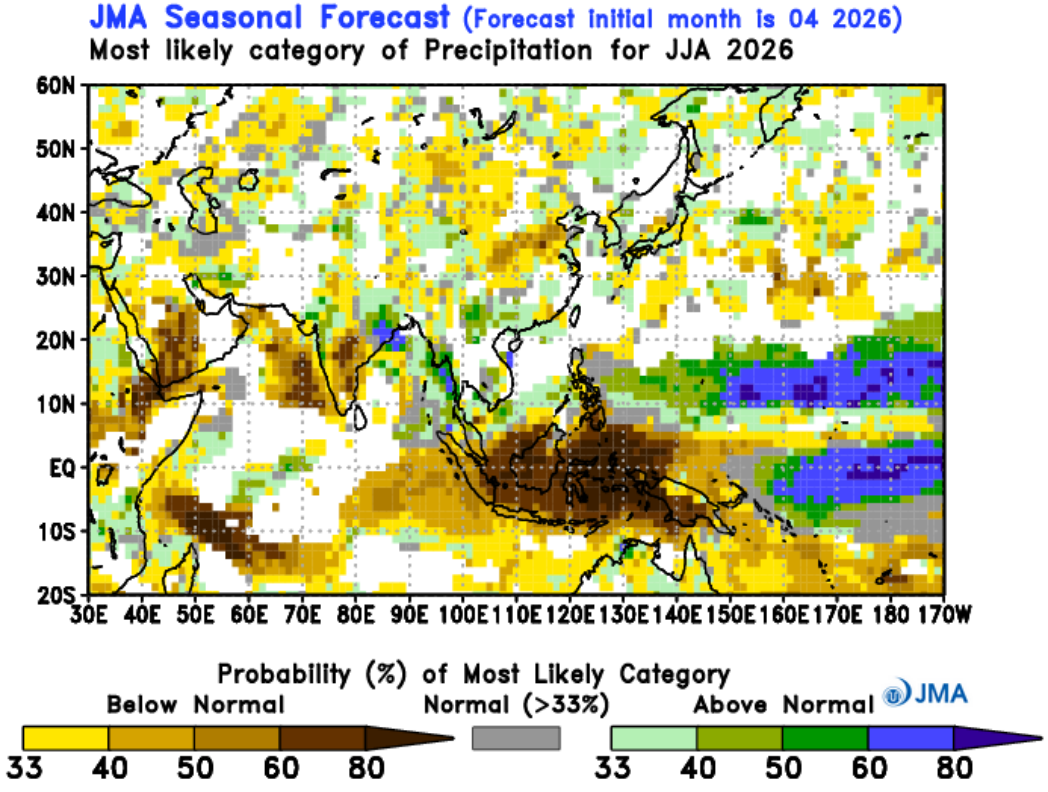
Contour: sea level pressure (hPa)
Shading: sea level pressure anomalies (hPa)



Verification based on hindcast https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

<JJA 2026> Probability Forecasts (precipitation)

- A high probability of above-normal precipitation is predicted over the sea east of the Philippines and the central part of Pacific.
- A high probability of below-normal precipitation is predicted over the southern part of Southeast Asia and South Asia.

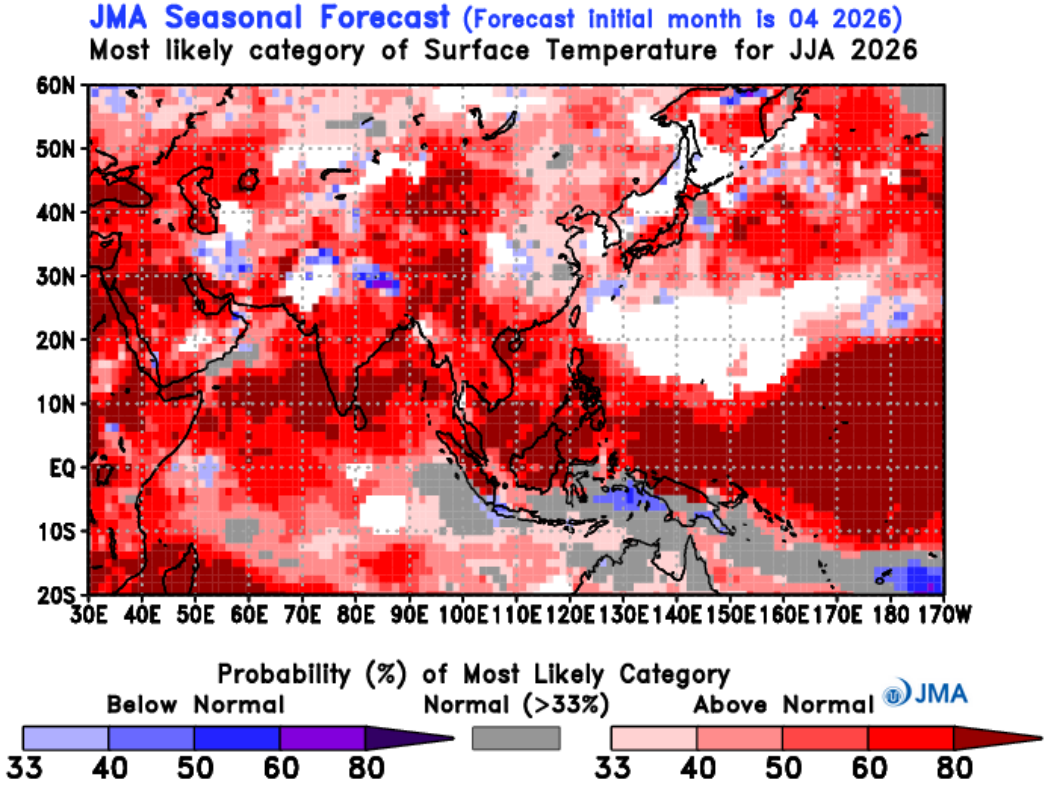


Verification based on hindcast

https://www.data.jma.go.jp/wmc/products/model/probfcst/warm_cold_season/hind/html/skill_score_reg.html
https://www.data.jma.go.jp/wmc/products/model/probfcst/warm_cold_season/hind/html/skill_2d_warm_cold_season.html

<JJA 2026> Probability Forecasts (temperature)

- A high probability of above-normal temperatures is predicted over a wide area of Asia except in parts of East Asia and Southeast Asia.



Verification based on hindcast

https://www.data.jma.go.jp/wmc/products/model/probfcst/warm_cold_season/hind/html/skill_score_reg.html
https://www.data.jma.go.jp/wmc/products/model/probfcst/warm_cold_season/hind/html/skill_2d_warm_cold_season.html

Explanatory Notes (1)

Latest state of the climate system

- Extreme climate events and surface climate conditions are based on CLIMAT messages.
  For details, see https://www.data.jma.go.jp/tcc/tcc/products/climate/index.html
- SST products are based on MGDSST and COBE-SST2 data.
  For details, see
  MGDSST https://www.data.jma.go.jp/goos/data/rrtdb/jma-pro/mgd_sst_glb_D.html
  COBE-SST2 https://www.data.jma.go.jp/tcc/tcc/products/elnino/cobesst2_doc.html
- Atmospheric circulation products are based on JRA-3Q data:
  https://jra.kishou.go.jp/JRA-3Q/index_en.html
  For details, see https://www.data.jma.go.jp/tcc/tcc/products/clisys/index.html
- The base period for the normal is 1991 – 2020.

Three-month predictions and warm/cold season predictions

- Products are generated using JMA's seasonal EPS which is based on the CGCM.
  For details, see https://www.data.jma.go.jp/wmc/products/model/index.html
- Unless otherwise noted, atmospheric circulation prediction products are based on the ensemble mean, and anomalies are deviations from the 1991 – 2020 average for hindcasts.

Contact: tcc@met.kishou.go.jp

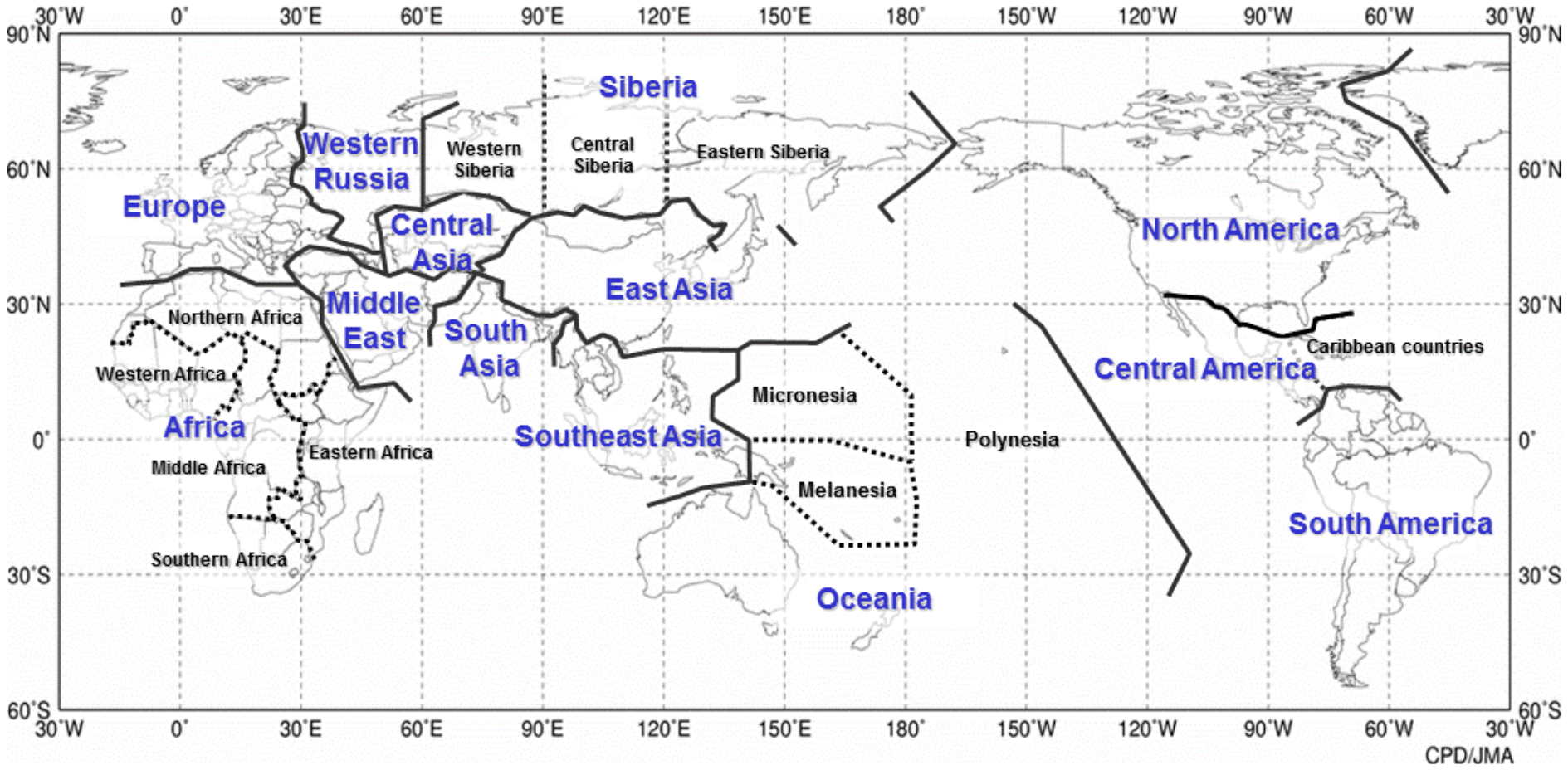
Explanatory Notes (2)

SST monitoring indices (NINO.3, NINO.WEST and IOBW)

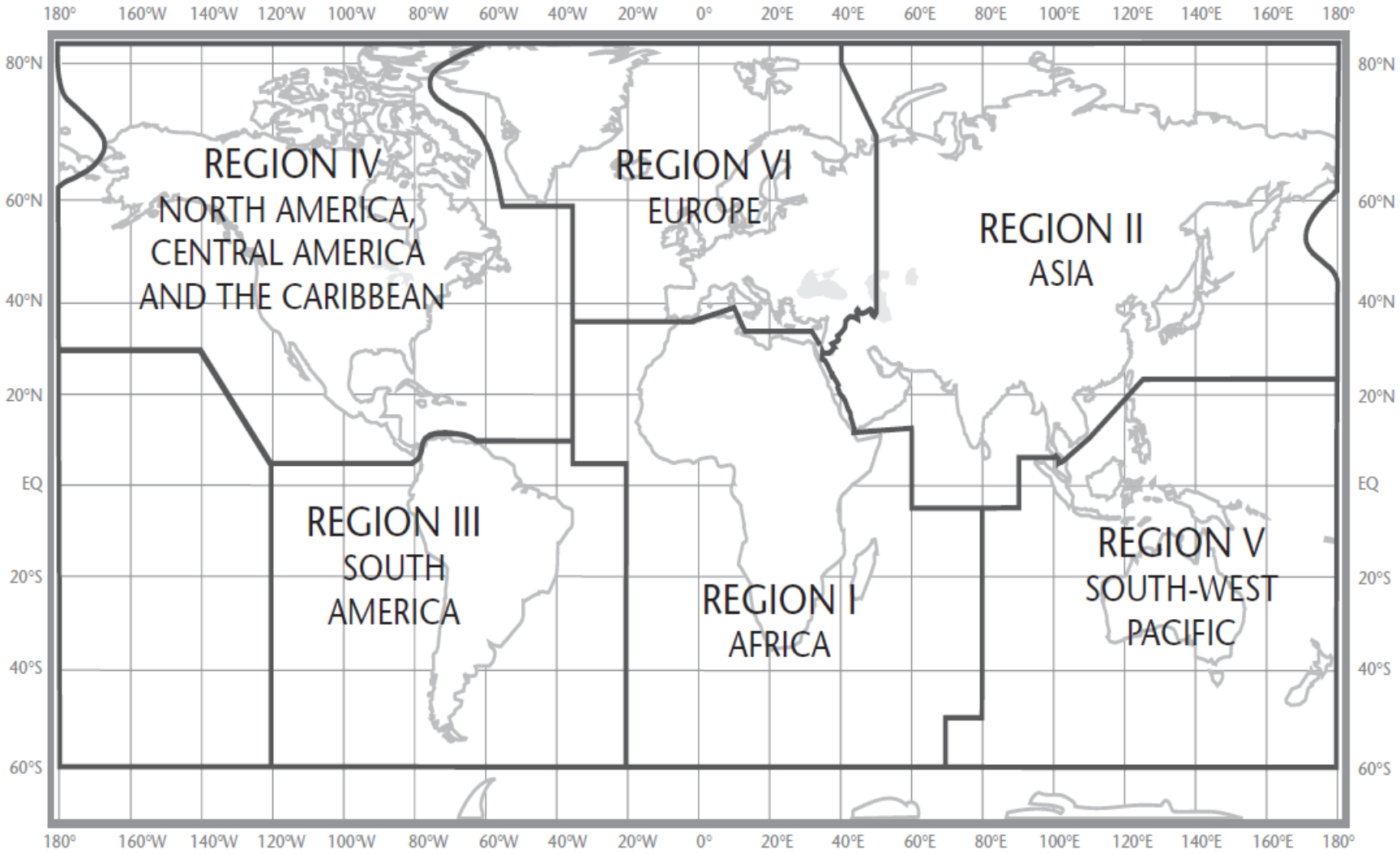
- The SST baseline for NINO.3 region (5˚S – 5˚N, 150˚W – 90˚W) is defined as a monthly average over a sliding 30-year period (e.g., 1995 – 2024 for 2025). The thresholds of above the baseline, near the baseline, and below the baseline categories are +0.5 and -0.5.
- The SST baselines for the NINO.WEST region (Eq. – 15˚N, 130˚E – 150˚E) and the IOBW region (20˚S – 20˚N, 40˚E – 100˚E) are defined as linear extrapolations with respect to a sliding 30-year period in order to remove the effects of significant long-term warming trends observed in these regions. The thresholds of above the baseline, near the baseline, and below the baseline categories are +0.15 and -0.15.
- These SST indices are derived from MGDSST datasets after June 2015 and those of COBE-SST2 before this.

Contact: tcc@met.kishou.go.jp

Names of world regions



WMO Regional Association regions



Reference: WMO General Regulations

TCC website

気象庁 Japan Meteorological Agency

Tokyo Climate Center
WMO Regional Climate Center in RA II (Asia)

WMO

TCC home | About TCC | Site Map | Contact us

Home | World Climate | Climate System Monitoring | El Niño Monitoring | NWP Model Prediction | Global Warming | Climate in Japan | Training Module | Press release | Links

HOME

What are WMO RCCs

WMO RCCs are centres of excellence...

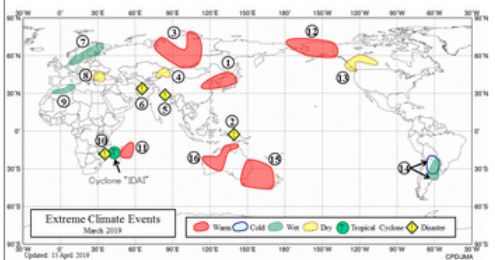
RCC Functions

- **Operational Activities for Long-range Forecasting (LRF)**
- **Operational Activities for Climate Monitoring**
- **Operational Data Services, to support operational LRF and climate monitoring**
- **Training in the use of operational RCC products and services**

Latest Updates

World Climate	Updated: 15 April 2019

The latest monthly report is issued on 15 April 2019.



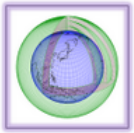
Distribution of Extreme Climate Event (March 2019)

Climate System Monitoring	Updated 15 April 2019
El Niño Monitoring	Updated: 10 April 2019
Monthly Discussion	Updated: 25 March 2019
Global Warming	Updated: 15 April 2019
Climate in Japan	Updated: 10 April 2019
STRATALERT TOKYO	

Main Products

iTacs

iTacs, Interactive Tool for Analysis of the Climate System, is a web-based application to assist NMHSs to analyses extreme climate events and to monitor climate status.

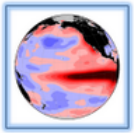


WMC Tokyo

Products of long-range forecast from World Meteorological Centre (WMC) Tokyo are available. These products are based on JMA's ensemble prediction system.

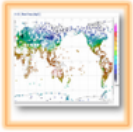
Monthly Discussion on Seasonal Climate Outlook

This is intended to assist NMHSs in the Asia-Pacific region in interpreting WMC Tokyo's three-month prediction and warm/cold season prediction products.



El Niño Monitoring

"El Niño Outlook" consists of a diagnosis of current condition and prediction of El Niño/Southern Oscillation. This is issued every month around 10th.



ClimatView

The ClimatView tool enables viewing and downloading of monthly world climate data, including monthly temperature/precipitation statistics and 30-year climate normals.

TCC News

TCC News, a quarterly newsletter from Tokyo Climate Center, acquaints with significant climate disasters and events, forecaster's commentaries on seasonal outlooks, besides topics on the renewal and the usage of TCC products.

What's New

RSS

19 March 2019 W NE

- Announcement: Incorpotation of Standardized Precipitation Index (SPI) into the ClimatView tool.

14 March 2019 W NE

- Announcement: New JMA's One-month Guidance Tool (password required) is launched. Please refer to the commentary for details.

1 March 2019 W NE

- TCC News No. 55 (Winter 2019: PDF)
  - Global surface temperature for 2018 the fourth highest since 1891
  - Highlights of the Global Climate in 2018
  - Summary of Japan's Climatic Characteristics for 2018
  - TCC Activity Report for 2018
  - TCC contribution to WMO International Workshop on RCC Operations

21 December 2018 W NE

- Press release: Global temperature for 2018 to be the 4th highest since 1891 (Preliminary)

» Previous news

» Press release

Links

Regional Climate Centers

- RA II Regional Climate Center (RCC) Network Homepage
- Beijing Climate Center
- National Climate Centre, Pune W NE
- North Eurasian Climate Center (NEACC)
- WMO RA VI RCC-Network

Regional Climate Outlook Forum (RCOF)

- Forum on Regional Climate Monitoring-Assessment-Prediction for Asia (FOCRAII)
- East Asia winter Climate Outlook Forum (EASCOF)
- South Asian Climate Outlook Forum (SASCOF)
- ASEAN Climate Outlook Forum (ASEANCOF)

WMO RA II Climate Services

https://www.data.jma.go.jp/tcc/tcc/index.html