

Monthly Discussion on Seasonal Climate Outlooks (No. 136)

(26 June 2025)

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

Outline

1. Summary and Discussion <Slide 3>
 2. Latest State of the Climate System (May 2025) <Slide 4>
 3. Three-month Predictions (July - August - September 2025) <Slides 5 – 11>
- Explanatory Notes <Slides 12 – 16>

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 May.
- It is likely (60%) that ENSO-neutral conditions will persist to boreal autumn.

Prediction for July - August - September 2025 (JAS 2025)

- In the upper troposphere, large-scale divergence anomalies are predicted from the eastern Indian Ocean to the Maritime Continent, while large-scale convergence anomalies are predicted from the eastern Pacific to South America. Anti-cyclonic circulation anomalies straddling the equator are predicted from the Atlantic to Africa, implying the intensified northwestward extension of the Tibetan High. The subtropical jet stream over Eurasia is predicted to shift northward, accompanied by zonally-elongated anti-cyclonic circulation anomalies in the mid-latitudes. Cyclonic circulation anomalies straddling the equator are predicted over the central Pacific, implying the deepening and southwestward extension of the mid-Pacific trough over the subtropical North Pacific compared to the normal.
- In the lower troposphere, cyclonic and anti-cyclonic circulation anomalies straddling the equator are predicted from the eastern Indian Ocean to the Maritime Continent, and the western Pacific, respectively.
- A high probability of above-normal precipitation is predicted over the eastern Indian Ocean and over the southern Maritime Continent. A high probability of below-normal precipitation is predicted over the western Indian Ocean and over the equatorial western to central Pacific.
- A high probability of above-normal temperatures is predicted over a wide area of Asia.

2. Latest State of the Climate System

May 2025

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/el_nino/outlook.html

3. Three-month Predictions

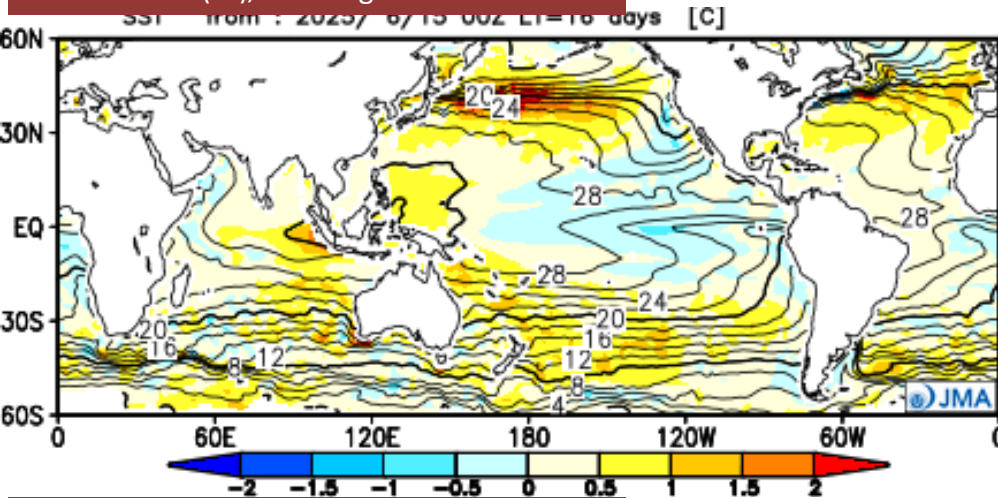
**July - August - September 2025
(JAS 2025)**

(Initial date: 15 June 2025)

<JAS 2025> Sea Surface Temperature (SST)

Three month mean SST

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



ENSO forecast probabilities

YEAR	MONTH	mean period	
2025	APR	FEB2025-JUN2025	100
	MAY	MAR2025-JUL2025	100
	JUN	APR2025-AUG2025	100
	JUL	MAY2025-SEP2025	10 80 10
	AUG	JUN2025-OCT2025	10 80 10
	SEP	JUL2025-NOV2025	10 70 20
	OCT	AUG2025-DEC2025	10 60 30

■ $\geq 0.5^{\circ}\text{C}$
■ $-0.4^{\circ}\text{C} \sim 0.4^{\circ}\text{C}$
■ $\leq -0.5^{\circ}\text{C}$

- ENSO-neutral conditions persisted in May.
- It is likely (60%) that ENSO-neutral conditions will persist to boreal autumn.
- The NINO.WEST SST is likely to be above or near normal until boreal autumn.
- The IOBW SST is likely to be below or near normal until boreal autumn.

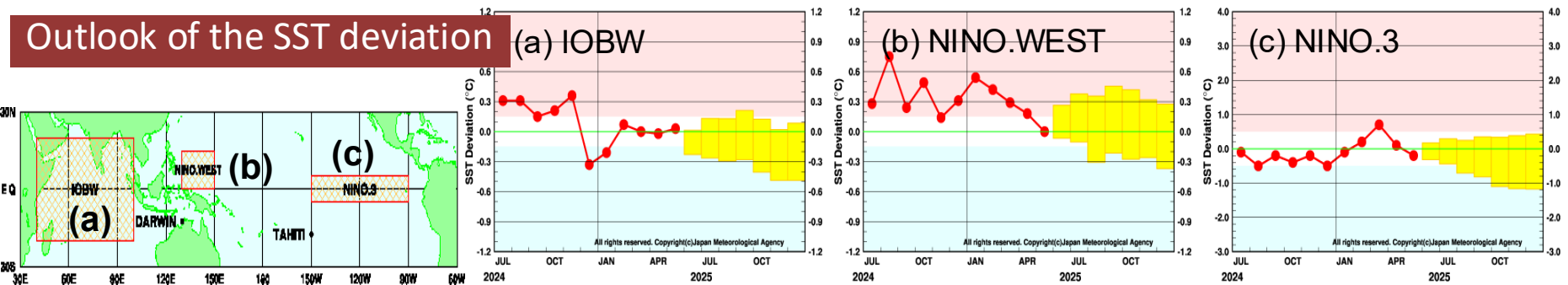
Verification based on hindcast

<https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS3/index.html>

<https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS3/shisu/shisu.html>

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

Outlook of the SST deviation

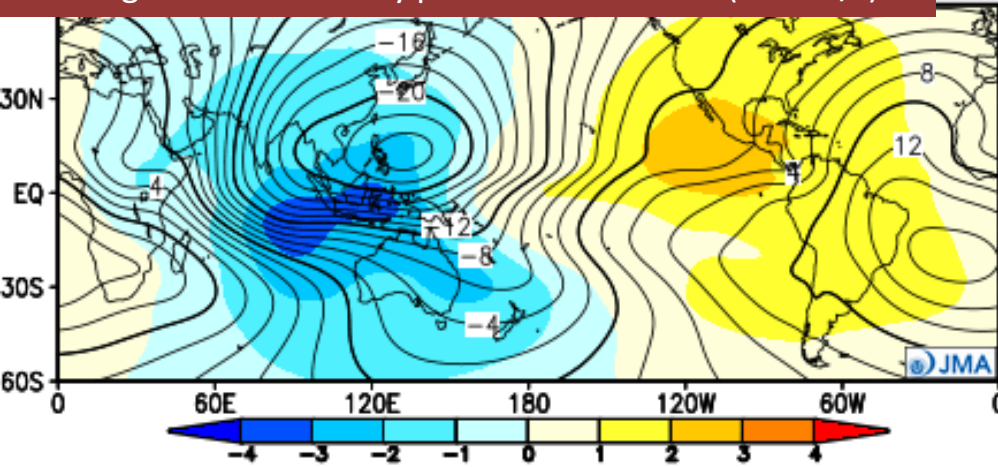


<JAS 2025> Global Circulation

Three month mean 200-hPa velocity potential

Contour: 200-hPa velocity potential ($10^6 \text{ m}^2/\text{s}$)

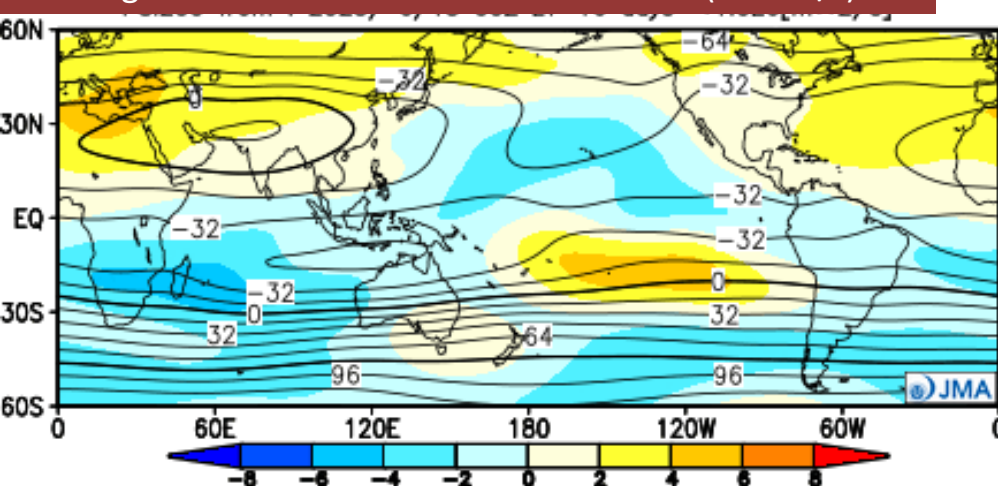
Shading: 200-hPa velocity potential anomalies ($10^6 \text{ m}^2/\text{s}$)



Three month mean 200-hPa stream function

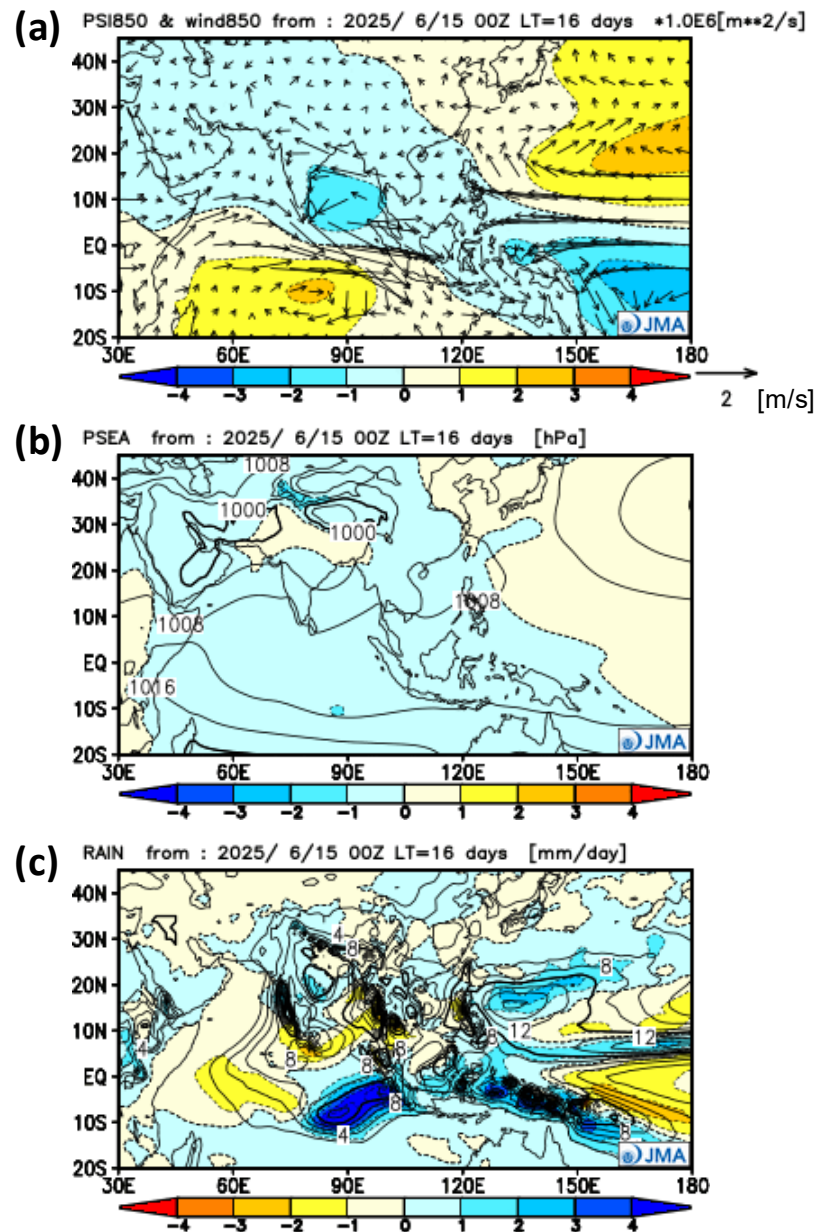
Contour: 200-hPa stream function ($10^6 \text{ m}^2/\text{s}$)

Shading: 200-hPa stream function anomalies ($10^6 \text{ m}^2/\text{s}$)



- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted from the eastern Indian Ocean to the Maritime Continent, while large-scale convergence anomalies are predicted from the eastern Pacific to South America.
- In the 200-hPa stream function field, anti-cyclonic circulation anomalies straddling the equator are predicted from the Atlantic to Africa, implying the intensified northwestward extension of the Tibetan High. The subtropical jet stream over Eurasia is predicted to shift northward, accompanied by zonally-elongated anti-cyclonic circulation anomalies in the mid-latitudes. Cyclonic circulation anomalies straddling the equator are predicted over the central Pacific, implying the deepening and southwestward extension of the mid-Pacific trough over the subtropical North Pacific compared to the normal.

<JAS 2025> Asian Circulation



- Above-normal precipitation is predicted from the eastern Indian Ocean to east of the Philippines, and below-normal precipitation is predicted over the central and western Indian Ocean, and over the equatorial western to central Pacific. The overall activity of the Asian summer monsoon is predicted to be near normal. The above-normal precipitation is predicted along the latitude band of 20° N.
- In the 850-hPa stream function field, cyclonic and anti-cyclonic circulation anomalies straddling the equator are predicted from the eastern Indian Ocean to the Maritime Continent, and the western Pacific, respectively, in association with the aforementioned anomalous precipitation.
- In the sea level pressure field, positive anomalies were seen over the western equatorial Pacific, and negative anomalies were seen from the Indian Ocean to the Maritime Continent.

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

Contour: precipitation (mm/day)
Shading: precipitation anomalies (mm/day)

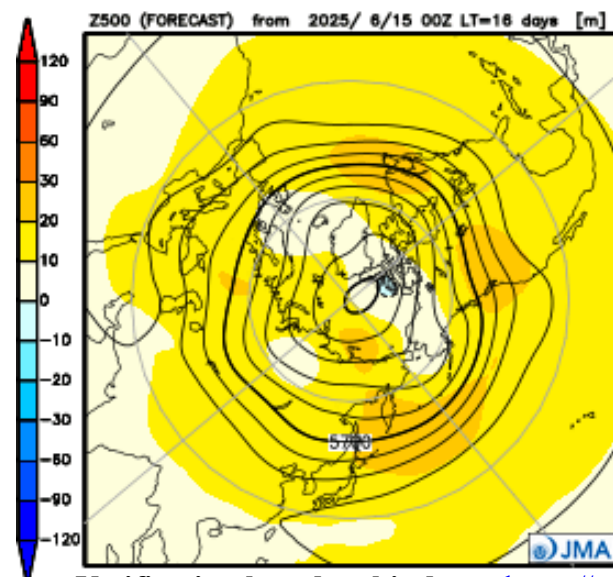
<JAS 2025> Northern Hemisphere Circulation

- 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 except in parts of South Asia and northern Africa.
- In the sea level pressure field, negative anomalies are predicted over a wide area of Eurasia, while positive anomalies are predicted from the Pacific to the Atlantic.

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

Contour: geopotential height (m)

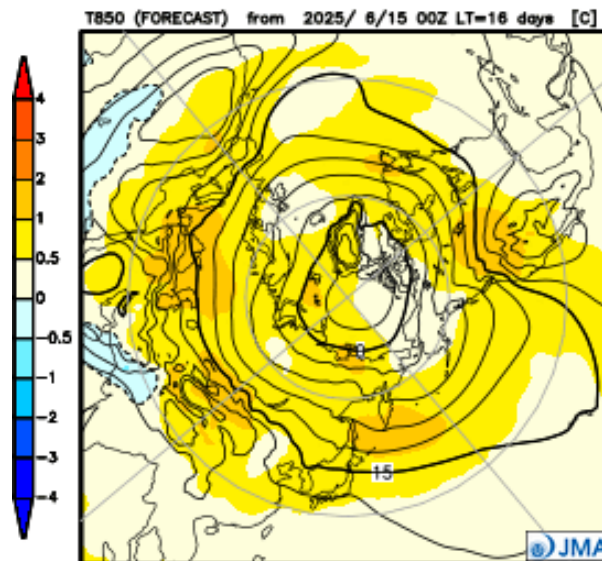
Shading: geopotential height anomalies (m)



Three month mean temperature and its anomalies at 850-hPa

Contour: temperature (°C)

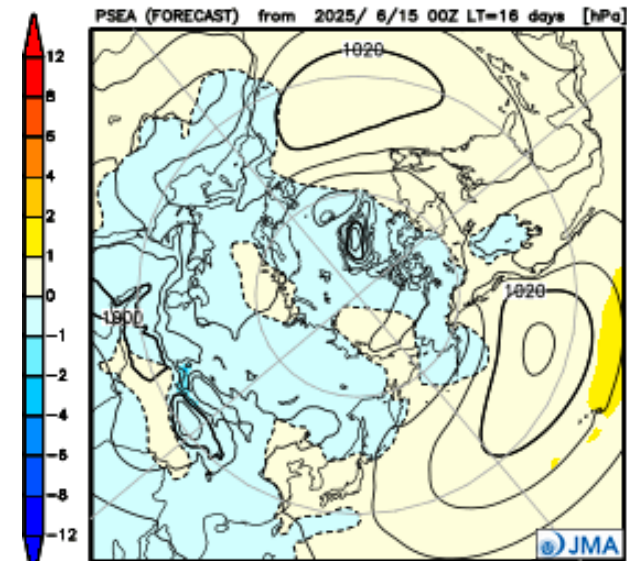
Shading: temperature anomalies (°C)



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

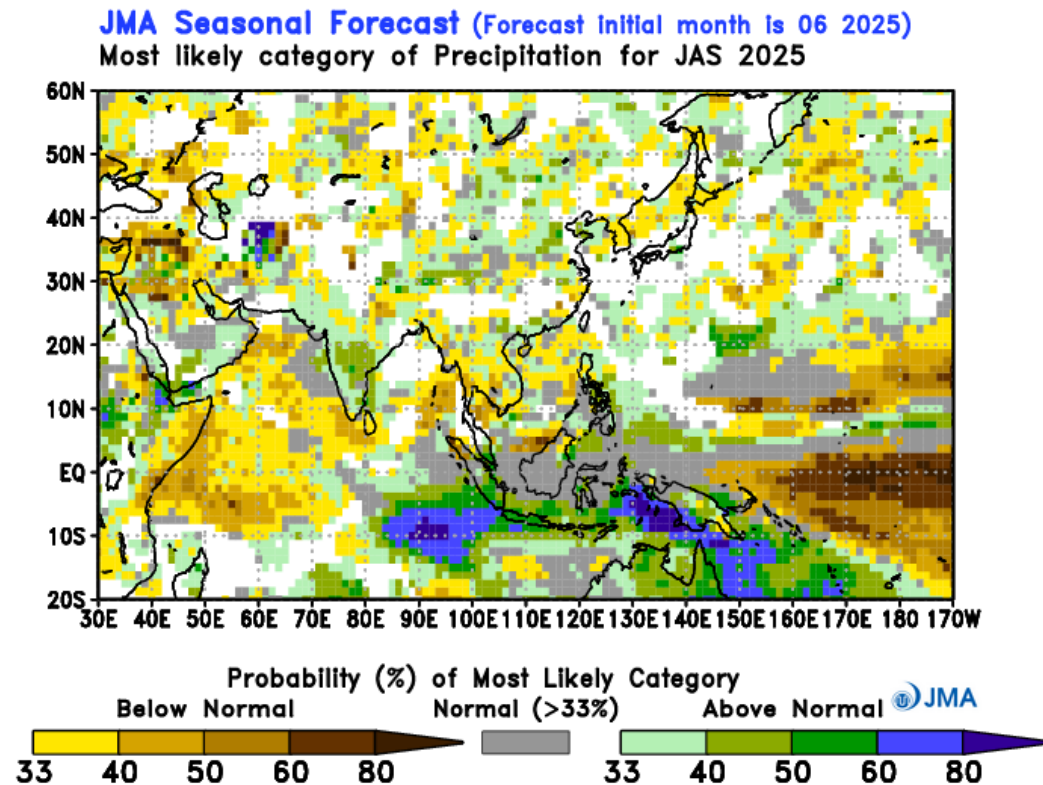
Contour: sea level pressure (hPa)

Shading: sea level pressure anomalies (hPa)



<JAS 2025> Probability Forecasts (precipitation)

- A high probability of above-normal precipitation is predicted over the eastern Indian Ocean and over the southern Maritime Continent.
- A high probability of below-normal precipitation is predicted over the western Indian Ocean and over the equatorial western to central Pacific.



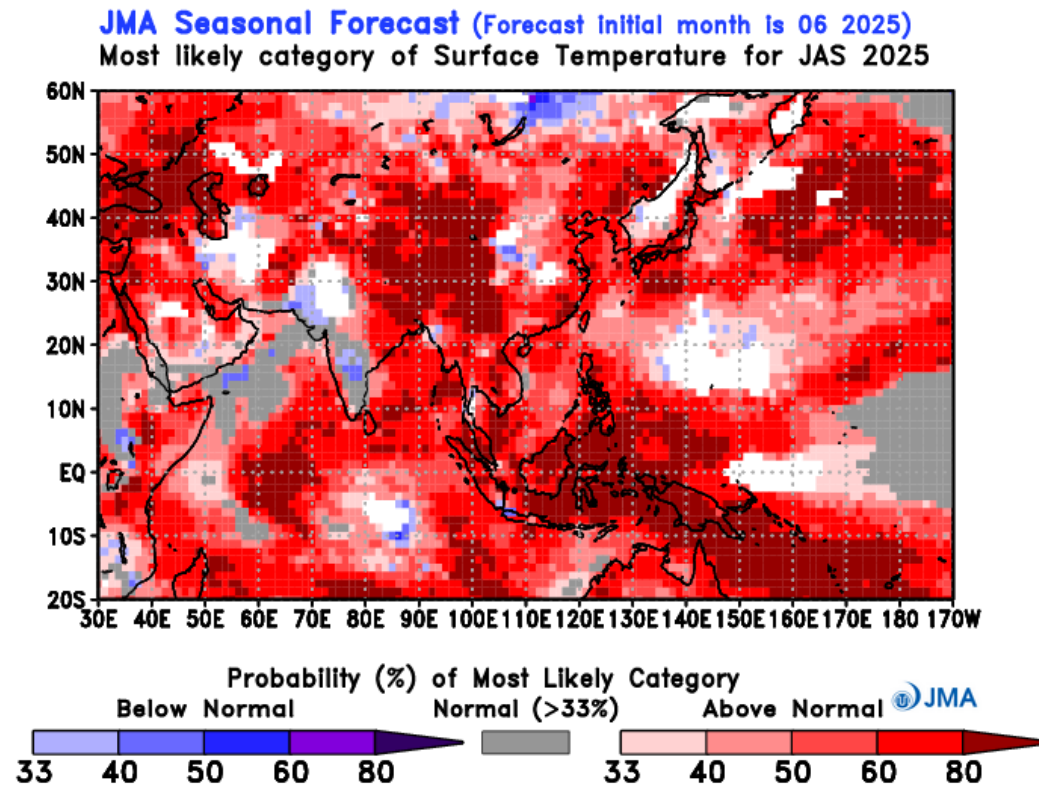
Verification based on hindcast

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

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

<JAS 2025> Probability Forecasts (temperature)

- A high probability of above-normal temperatures is predicted over a wide area of Asia.
- A high probability of below-normal temperatures is predicted over a part of South Asia.



Verification based on hindcast

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

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

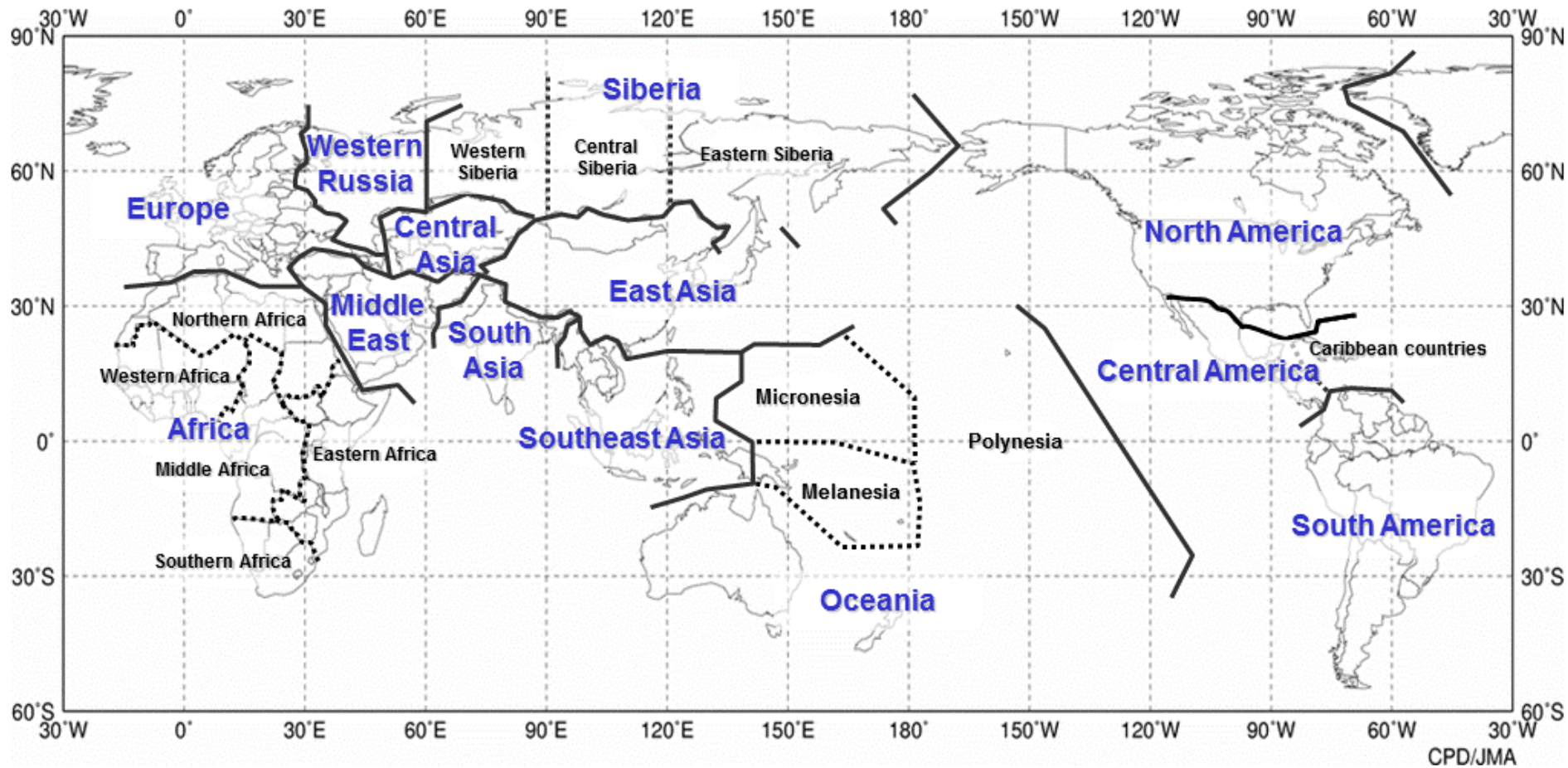
Explanatory Notes (2)

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

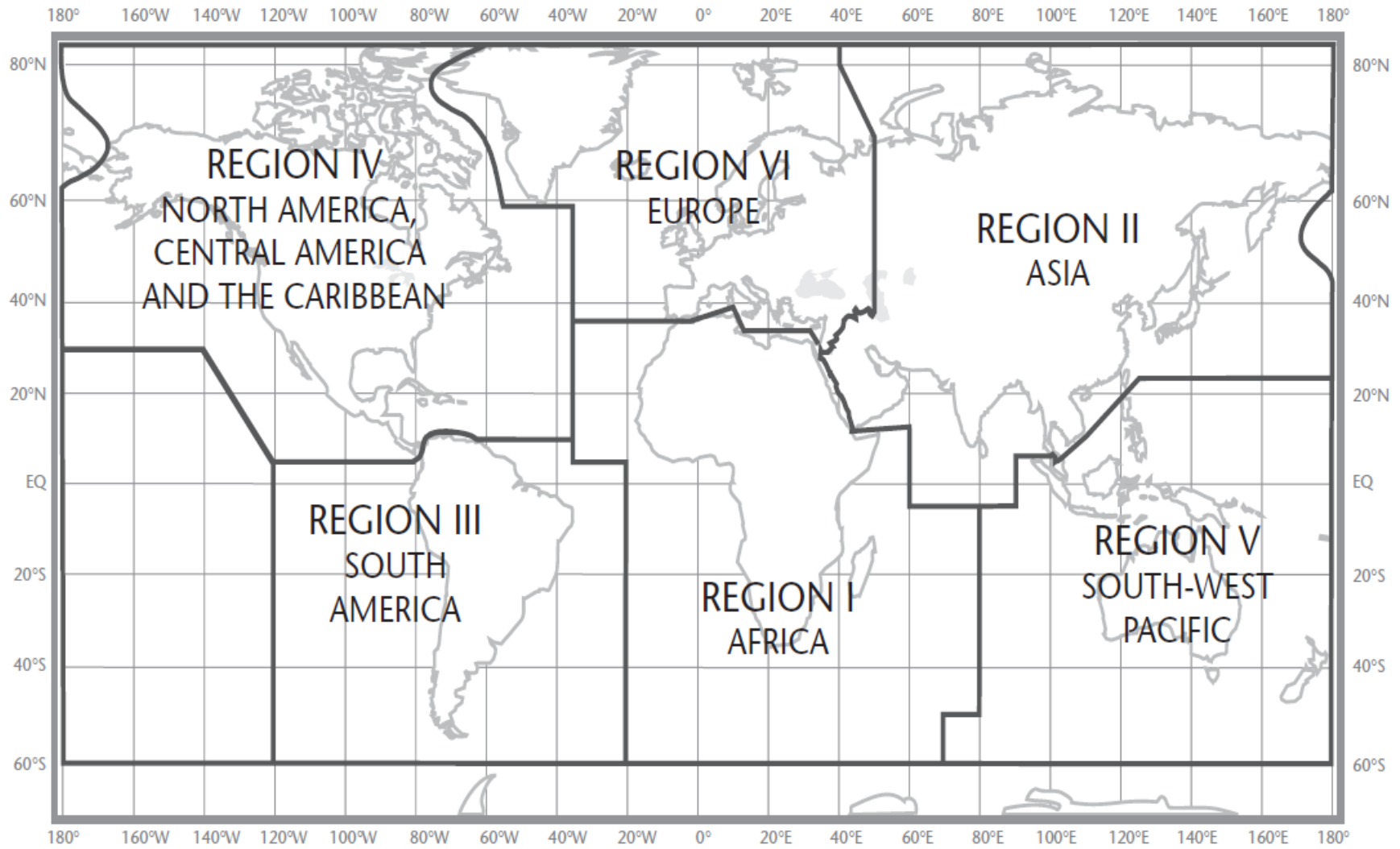
- The SST baseline for NINO.3 region ($5^{\circ}\text{S} - 5^{\circ}\text{N}$, $150^{\circ}\text{W} - 90^{\circ}\text{W}$) is defined as a monthly average over a sliding 30-year period (e.g., 1995 – 2024 for 2025). The thresholds of above the baseline, near the baseline, and below the baseline categories are +0.5 and -0.5.
- The SST baselines for the NINO.WEST region ($\text{Eq.} - 15^{\circ}\text{N}$, $130^{\circ}\text{E} - 150^{\circ}\text{E}$) and the IOBW region ($20^{\circ}\text{S} - 20^{\circ}\text{N}$, $40^{\circ}\text{E} - 100^{\circ}\text{E}$) 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 MGD SST 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

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

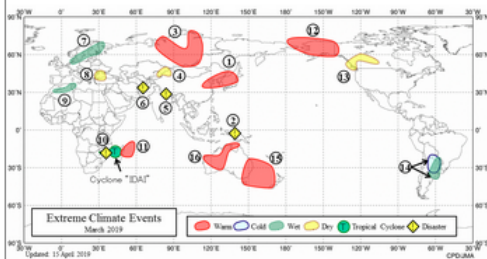
Training in the use of operational RCC products and services

Latest Updates

World Climate

Updated: 15 April 2019

The latest monthly report is issued on 15 April 2019.



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

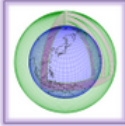
STRATALERT TOKYO

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.



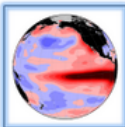
WMC Tokyo

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



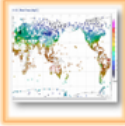
Monthly Discussion on Seasonal Climate Outlook

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



19 March 2019 [IW NE](#)

Announcement: Incorporation of [Standardized Precipitation Index \(SPI\)](#) into the [ClimatView](#) tool.

14 March 2019 [IW NE](#)

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

1 March 2019 [IW 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 [IW 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 \[IW NE\]\(#\)](#)

[» North Eurasian Climate Center \(NEACC\)](#)

[» WMO RA VI RCC-Network](#)

Regional Climate Outlook Forum (RCOF)

[» Forum on Regional Climate Monitoring-Assessment-Prediction for Asia \(FOCRAI\)](#)

[» 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>