Monthly Discussion on Seasonal Climate Outlooks (No. 152)

(22 October 2026)

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

Outline

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2. Latest State of the Climate System (Sep. 2026) <Slide 5>
3. Three-month Predictions (November - December - January 2027) <Slides 6 – 12>
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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 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

- El Niño conditions, which are considered to have persisted in the equatorial Pacific since Spring 2026, have reached its strongest intensity on record since this September.
- They are virtually certain (100%) to continue until boreal winter.

Prediction for November - December - January 2027 (NDJ 2027)

- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted over the central and eastern Pacific in addition to the western Indian Ocean, while large-scale convergence anomalies are predicted over Southeast Asia.
- In the 850-hPa stream function field, cyclonic circulation anomalies are predicted over the central Pacific, while anticyclonic circulation anomalies are predicted from the Indian Ocean to the vicinity of Southeast Asia.
- A high probability of below-normal precipitation is predicted over most of Southeast Asia. A high probability of above-normal precipitation is predicted over most of East Asia and the northern Middle East.
- A high probability of above-normal temperatures is predicted over most of South Asia and Southeast Asia, and over part of East Asia.

1. Summary and Discussion (cont.)

Prediction for December - January - February 2027 (DJF 2027)

- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted over the central and eastern Pacific, while large-scale convergence anomalies are predicted over Southeast Asia.
- In the 850-hPa stream function field, anticyclonic circulation anomalies are predicted, centered over the western tropical Pacific.
- A high probability of below-normal precipitation is predicted over most of Southeast Asia. A high probability of above-normal precipitation is predicted over part of East Asia.
- A high probability of above-normal temperatures is predicted over most of South Asia and Southeast Asia, and over part of East Asia.

2. Latest State of the Climate System September 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

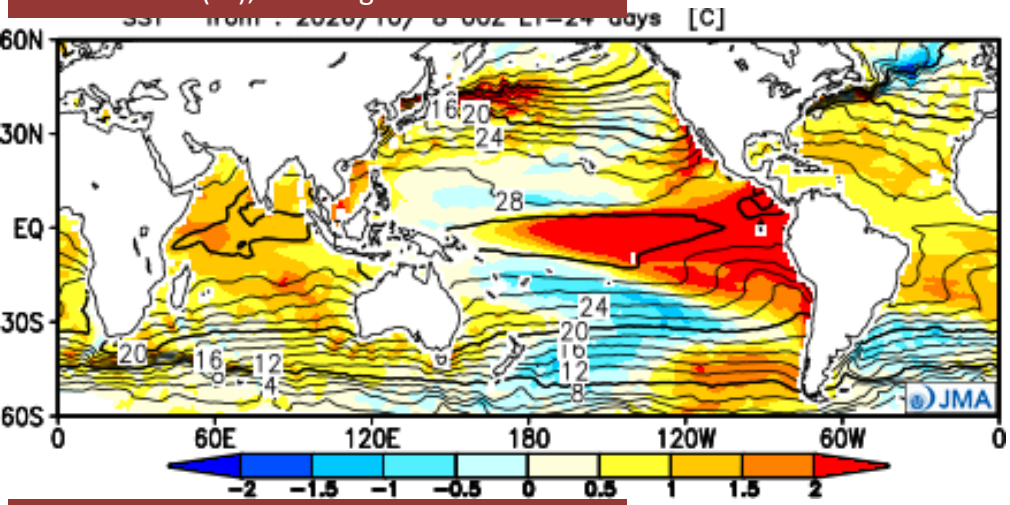
November - December - January 2027 (NDJ 2027)

(Initial date: 8 October 2026)

<NDJ 2027> Sea Surface Temperature (SST)

Three-month mean SST

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



- El Niño conditions, which are considered to have persisted in the equatorial Pacific since Spring 2026, have reached its strongest intensity on record since this September.
- They are virtually certain (100%) to continue until boreal winter.
- The NINO.WEST SST is likely to be below normal until boreal winter.
- The IOBW SST is likely to be above normal until boreal winter.

NINO.3 forecast probabilities

YEAR	MONTH	mean period	
2026	AUG	JUN2026–OCT2026	100
	SEP	JUL2026–NOV2026	100
	OCT	AUG2026–DEC2026	100
	NOV	SEP2026–JAN2027	100
	DEC	OCT2026–FEB2027	100
2027	JAN	NOV2026–MAR2027	100
	FEB	DEC2026–APR2027	100

≧0.5°C -0.4°C～0.4°C ≦-0.5°C

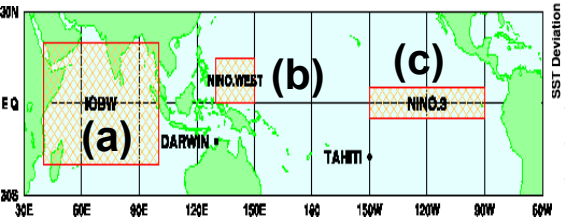
Verification based on hindcast

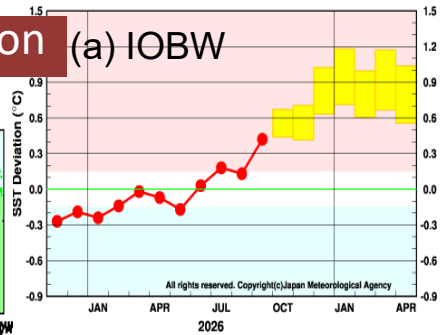
https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

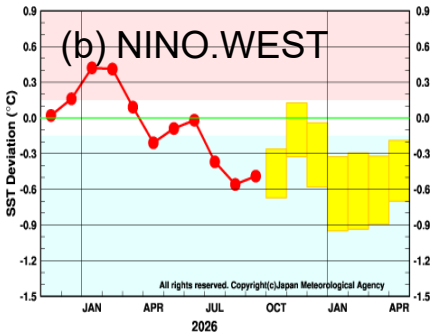
https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/shisu/shisu.html

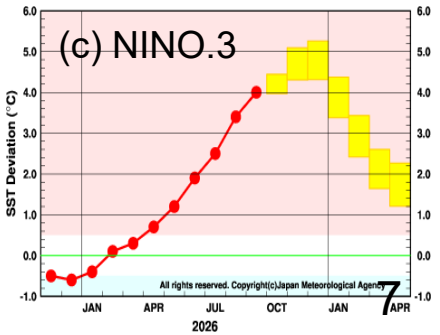
(See “Explanatory Notes (2)” for the definition of the SST indices.)

Outlook of the SST deviation





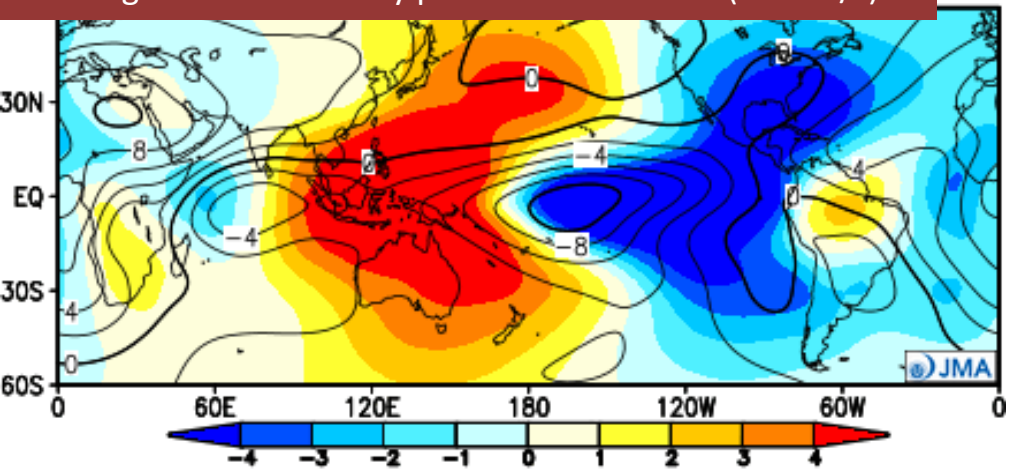




<NDJ 2027> Global Circulation

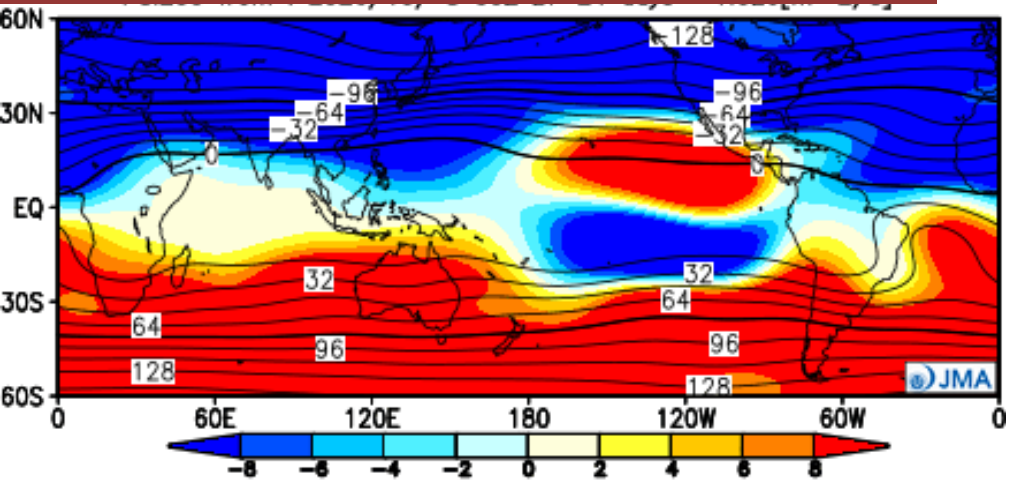
Three-month mean 200-hPa velocity potential

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

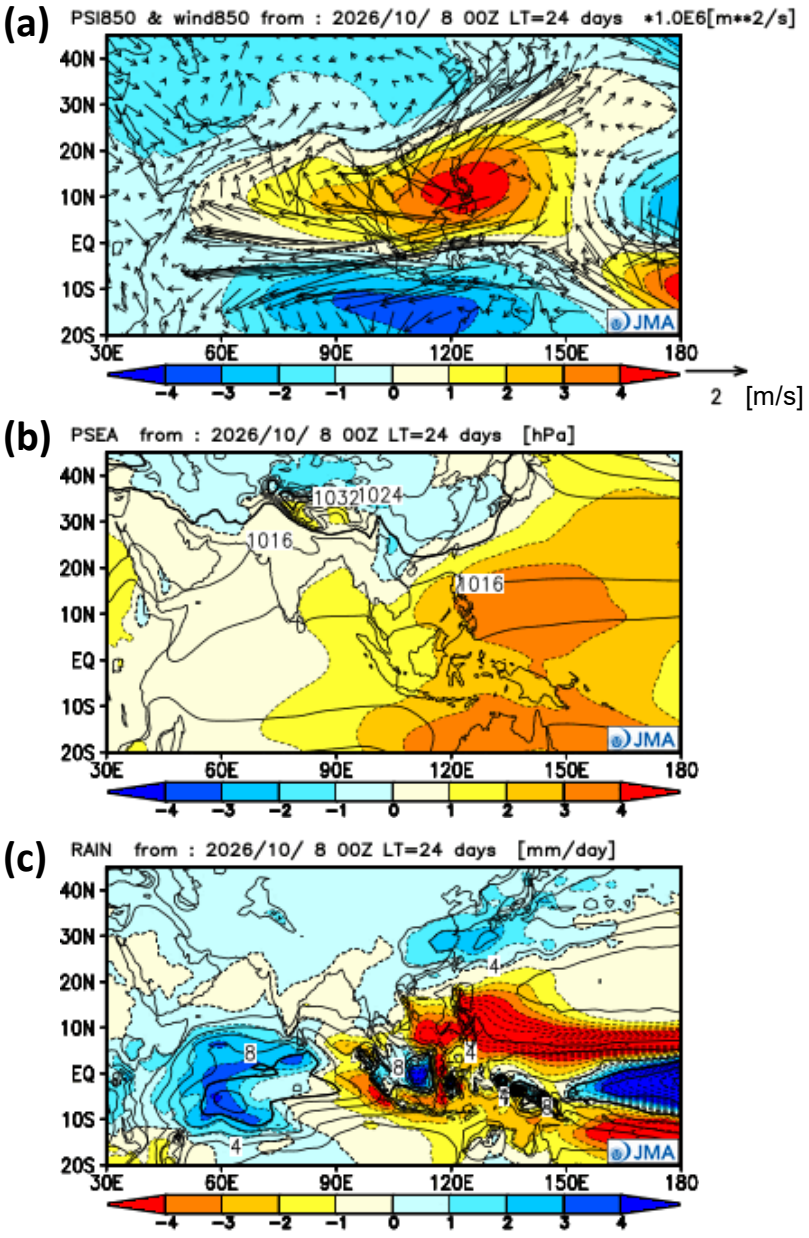
Contour: 200-hPa stream function (10^6 m^2/s)
Shading: 200-hPa stream function anomalies (10^6 m^2/s)



- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted over the central and eastern Pacific in addition to the western Indian Ocean, while large-scale convergence anomalies are predicted over Southeast Asia.
- In the 200-hPa stream function field, cyclonic circulation anomalies are predicted almost globally, except over part of the tropical Pacific, where anticyclonic anomalies appear instead. This pattern is affected by tropical convective activity.

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

<NDJ 2027> Asian Circulation



- In the 850-hPa stream function field, cyclonic circulation anomalies are predicted over the central Pacific, while anticyclonic circulation anomalies are predicted from the Indian Ocean to the vicinity of Southeast Asia.
- In the sea level pressure field, positive and negative anomalies are predicted over the low and mid-latitudes of the Asian region, respectively.
- Convective activities are predicted to be enhanced near the International Date Line and to its west, as well as over the western Indian Ocean, while remaining suppressed over the western tropical Pacific.

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)

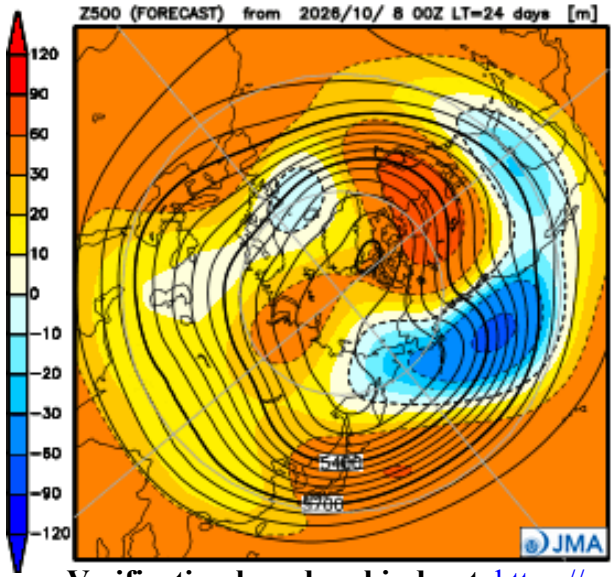
Verification based on hindcast https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

<NDJ 2027> Northern Hemisphere Circulation

- In the 500-hPa height field, positive anomalies are predicted over almost the entire Northern Hemisphere, except from the Bering Sea to off the coast of California, where negative anomalies appear instead.
- In the 850-hPa temperature field, positive anomalies are predicted over almost the entire Northern Hemisphere, except from the Bering Sea to off the coast of California, where negative anomalies appear instead.
- In the sea level pressure field, the Aleutian Low is predicted to be stronger than normal in its eastern part, while weaker than normal in its western part. Positive anomalies are predicted from Southeast Asia to the area south of Japan, as well as near Sakhalin.

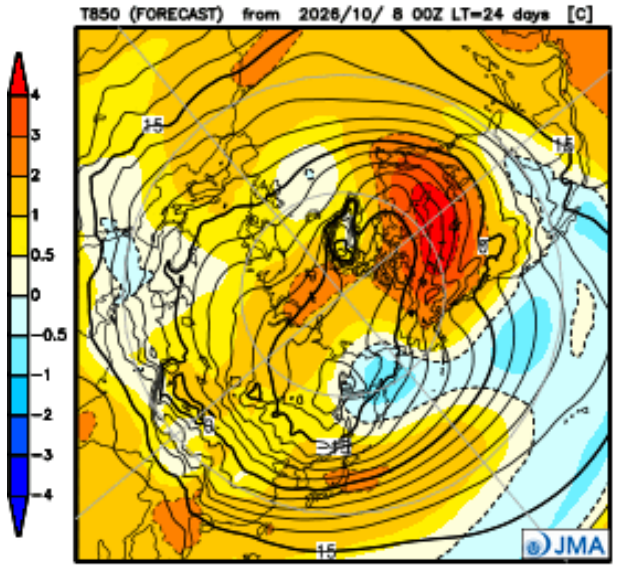
Three-month mean geopotential height and its anomalies at 500-hPa

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



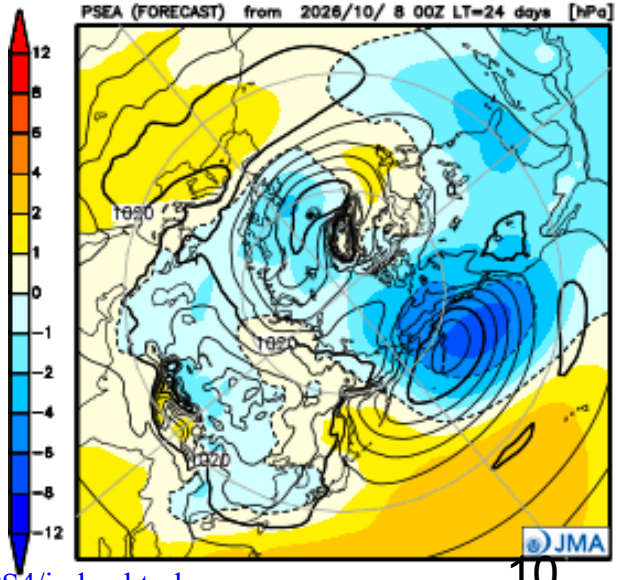
Three-month mean temperature and its anomalies at 850-hPa

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



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

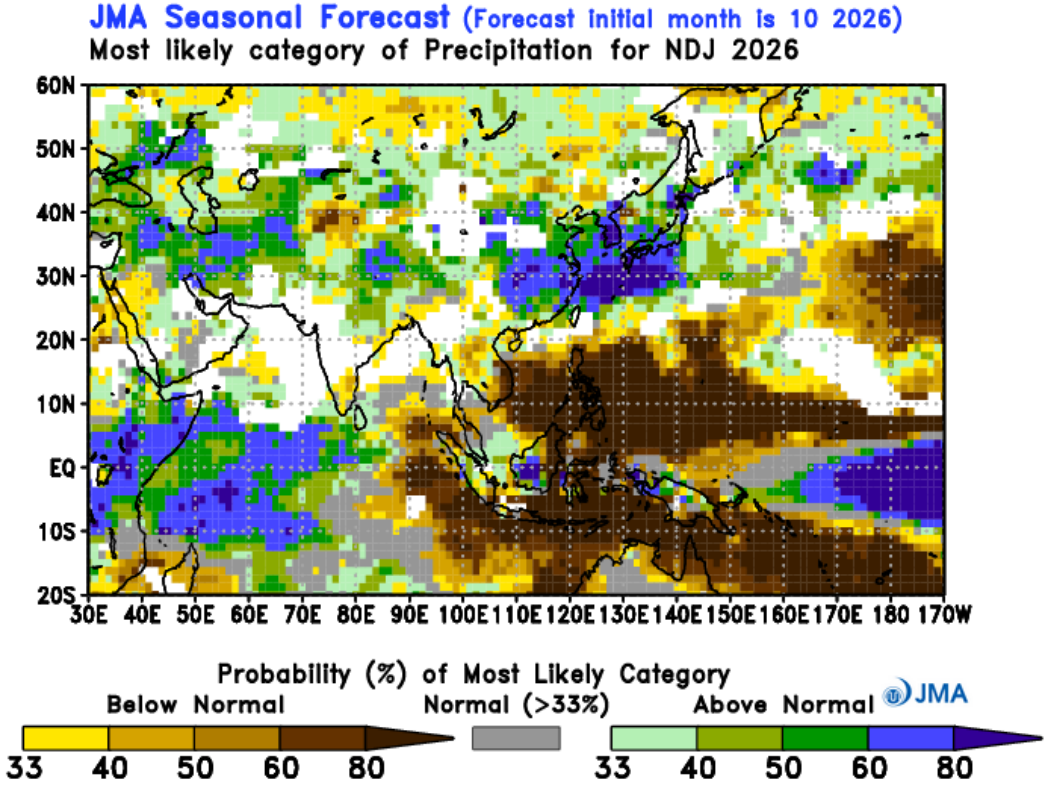
Contour: sea level pressure (hPa)
Shading: sea level pressure anomalies (hPa)



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

<NDJ 2027> Probability Forecasts (precipitation)

- A high probability of below-normal precipitation is predicted over most of Southeast Asia.
- A high probability of above-normal precipitation is predicted over most of East Asia and the northern Middle East.



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

<NDJ 2027> Probability Forecasts (temperature)

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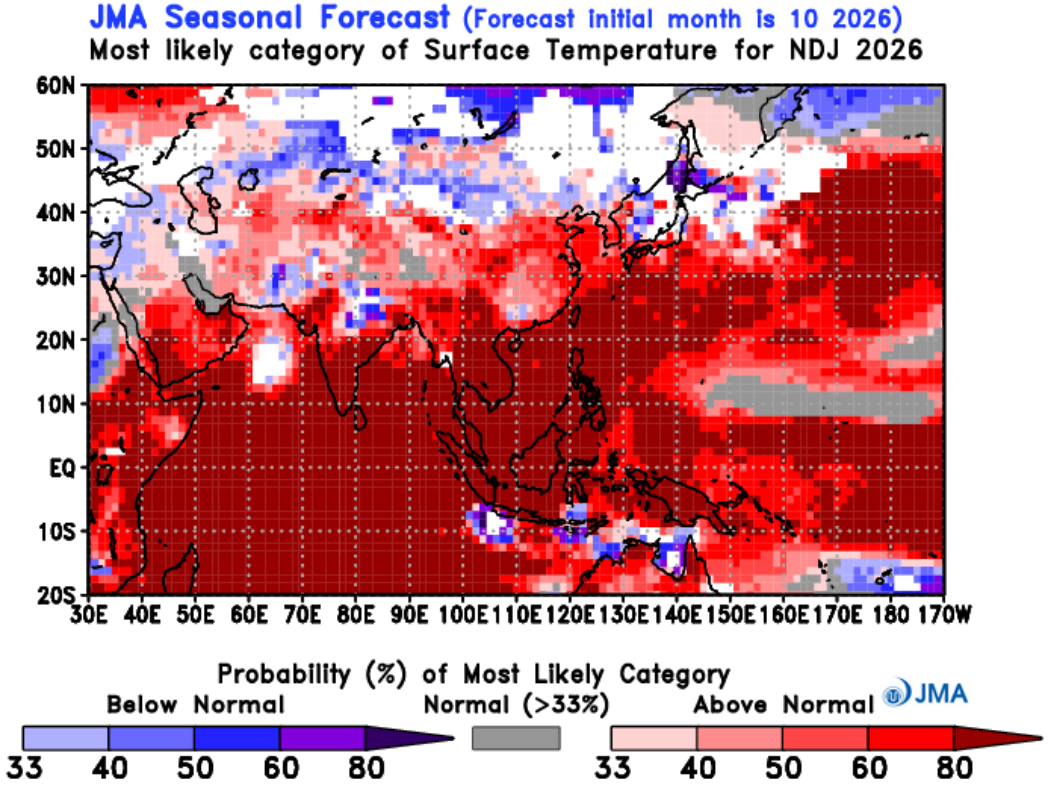

Verification based on hindcast

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4. Cold Season Predictions

December - January - February 2027 (DJF 2027)

(Initial date: 8 October 2026)

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Three-month mean SST

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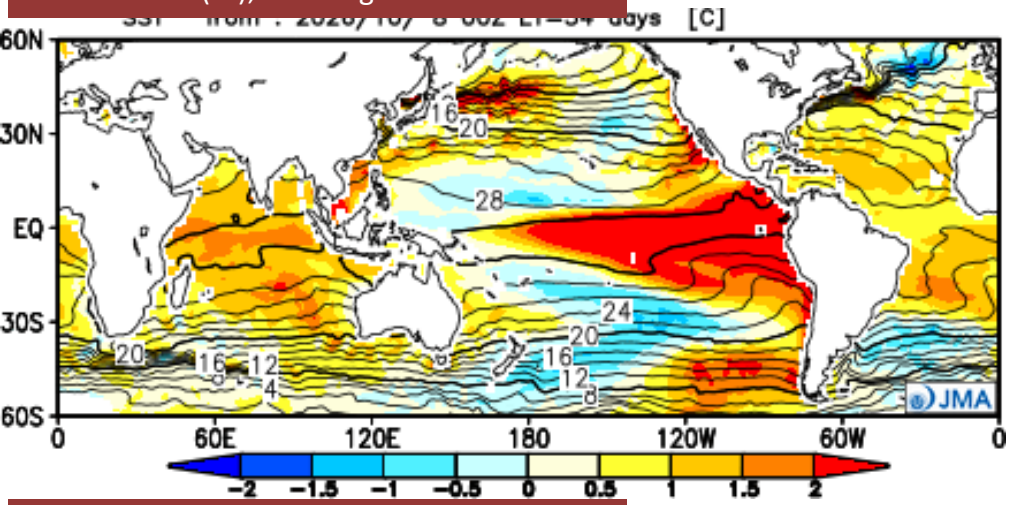

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NINO.3 forecast probabilities

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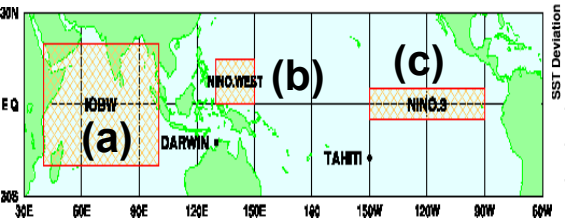
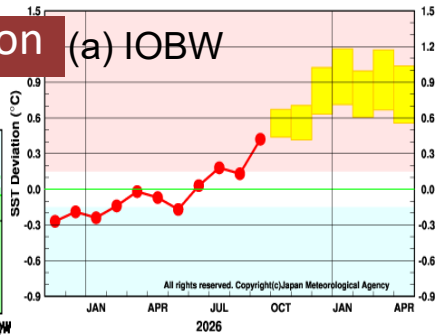
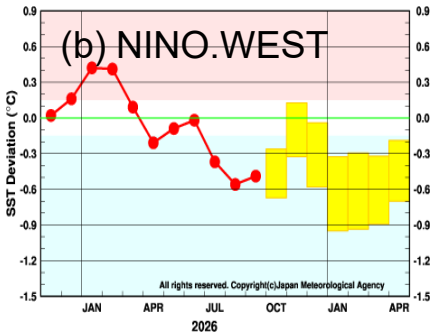
	OCT	AUG2026–DEC2026	100
	NOV	SEP2026–JAN2027	100
	DEC	OCT2026–FEB2027	100
2027	JAN	NOV2026–MAR2027	100
	FEB	DEC2026–APR2027	100

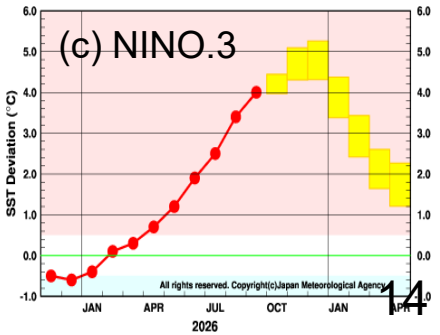
≧0.5°C -0.4°C～0.4°C ≦-0.5°C

Outlook of the SST deviation





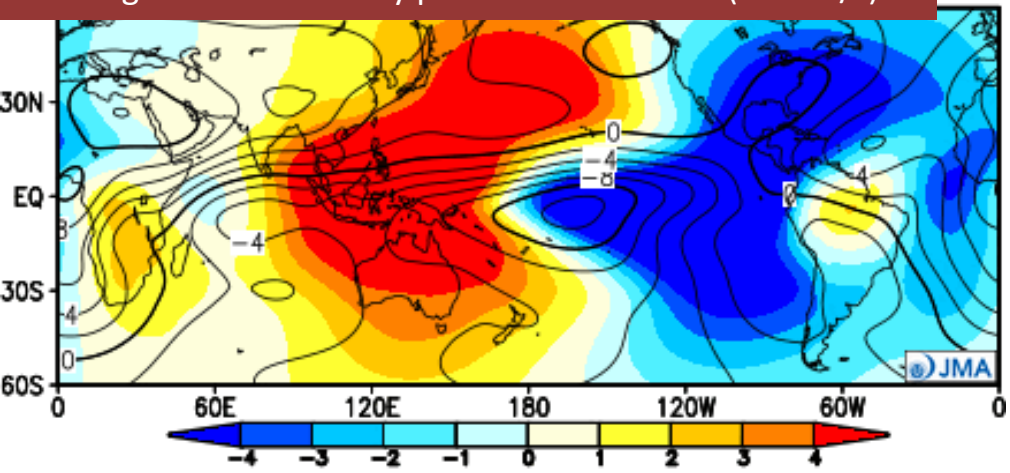




<DJF 2027> Global Circulation

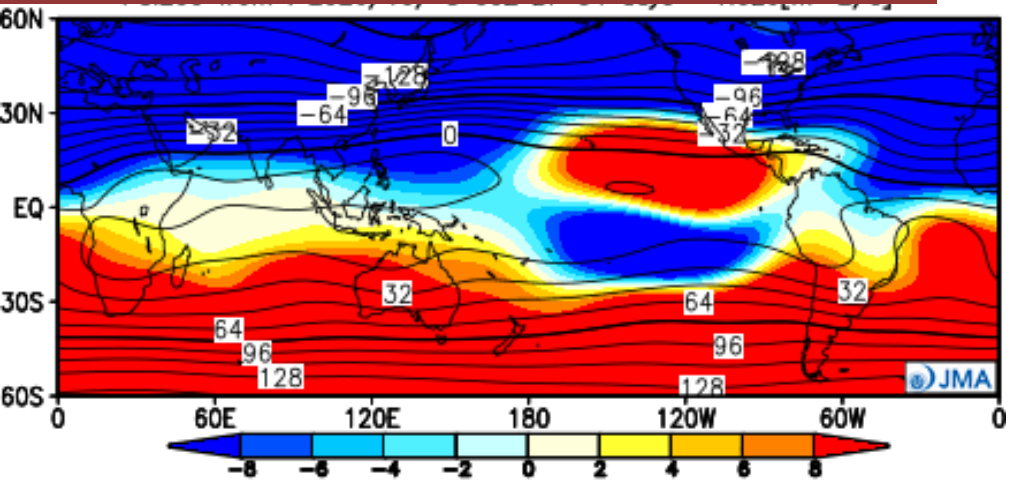
Three-month mean 200-hPa velocity potential

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)

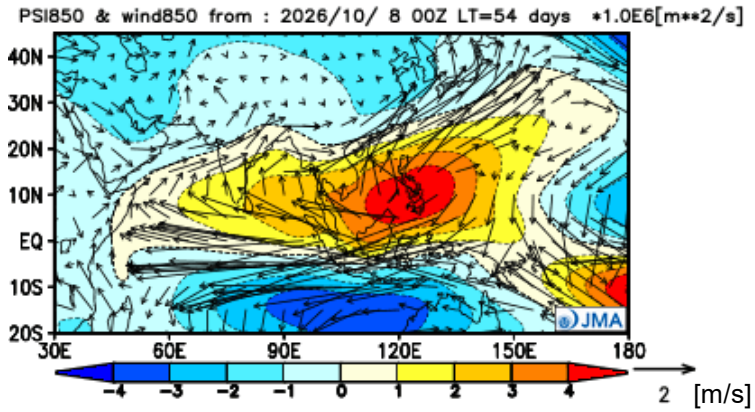


- In the 200-hPa velocity potential field, large-scale divergence anomalies are predicted over the central and eastern Pacific, while large-scale convergence anomalies are predicted over Southeast Asia.
- In the 200-hPa stream function field, cyclonic circulation anomalies are predicted almost globally, except over the central and eastern tropical Pacific, where anticyclonic anomalies appear instead. This pattern is affected by tropical convective activity.

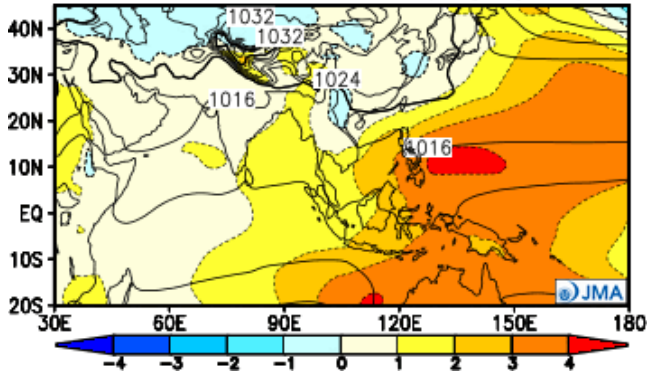
Verification based on hindcast https://www.data.jma.go.jp/wmc/products/model/hindcast/CPS4/index.html

<DJF 2027> Asian Circulation

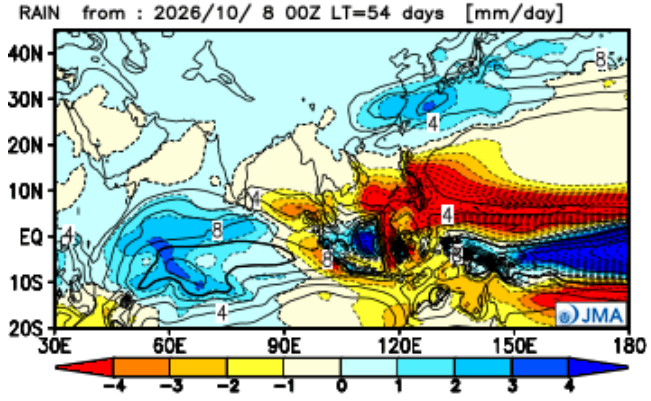
(a)



(b)



(c)



- In the 850-hPa stream function field, anticyclonic circulation anomalies are predicted, centered over the western tropical Pacific.
- In the sea level pressure field, positive anomalies are predicted over most of the Asian region.
- Convective activities are predicted to be enhanced from the East China Sea to Japan, as well as over the western Indian Ocean, while remaining suppressed over the western tropical Pacific.

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)

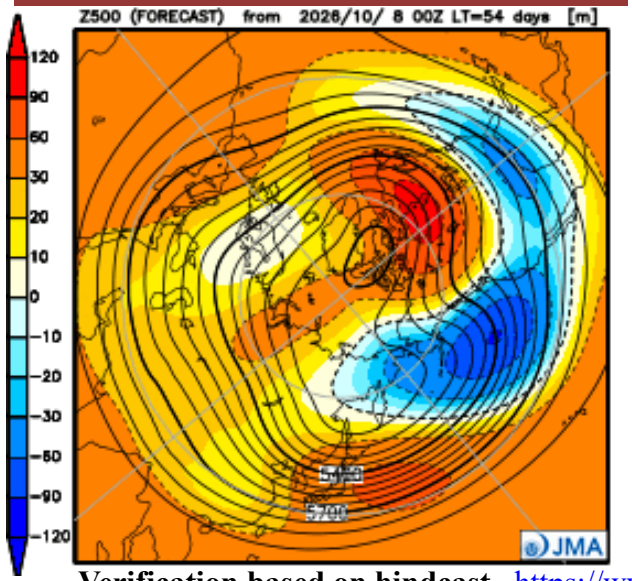
Shading: precipitation anomalies (mm/day)

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

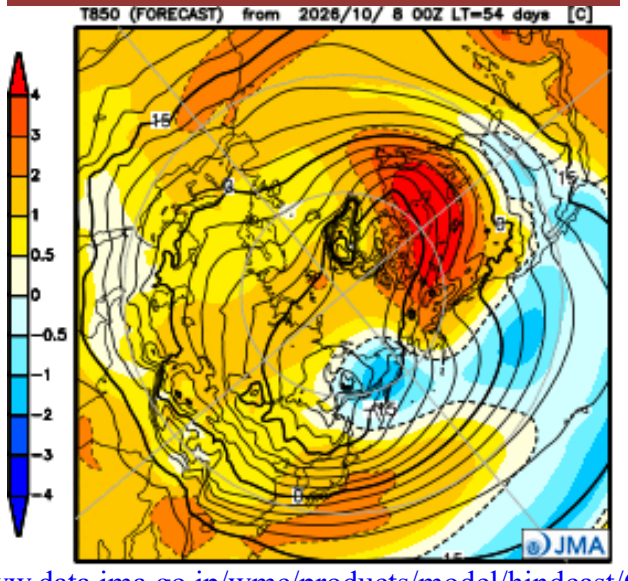
<DJF 2027> Northern Hemisphere Circulation

- In the 500-hPa height field, positive anomalies are predicted over almost the entire Northern Hemisphere, except from the Bering Sea to off the coast of California and the mid-latitudes of the North American continent, where negative anomalies appear instead.
- In the 850-hPa temperature field, positive anomalies are predicted over almost the entire Northern Hemisphere, except from the Bering Sea to off the coast of California and the mid-latitudes of the North American continent, where negative anomalies appear instead.
- In the sea level pressure field, the Aleutian Low is predicted to be stronger than normal in its eastern part, while weaker than normal in its western part. Positive anomalies are predicted over part of the Asian region.

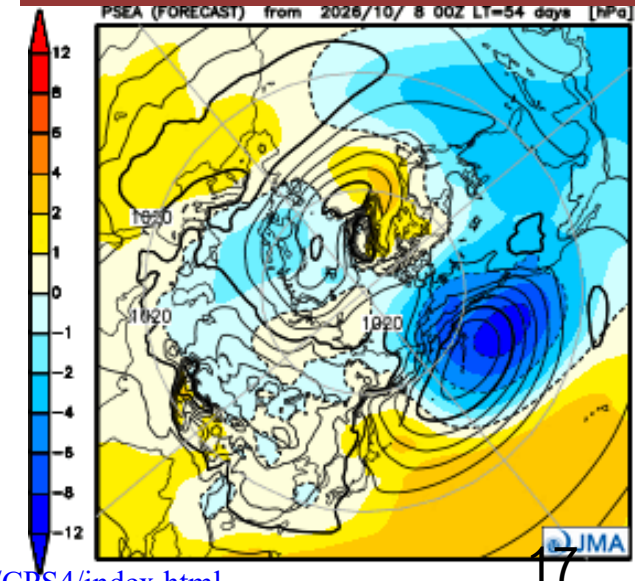
Three-month mean geopotential height and its anomalies at 500-hPa
Contour: geopotential height (m)
Shading: geopotential height anomalies (m)



Three-month mean temperature and its anomalies at 850-hPa
Contour: temperature (˚C)
Shading: temperature anomalies (˚C)



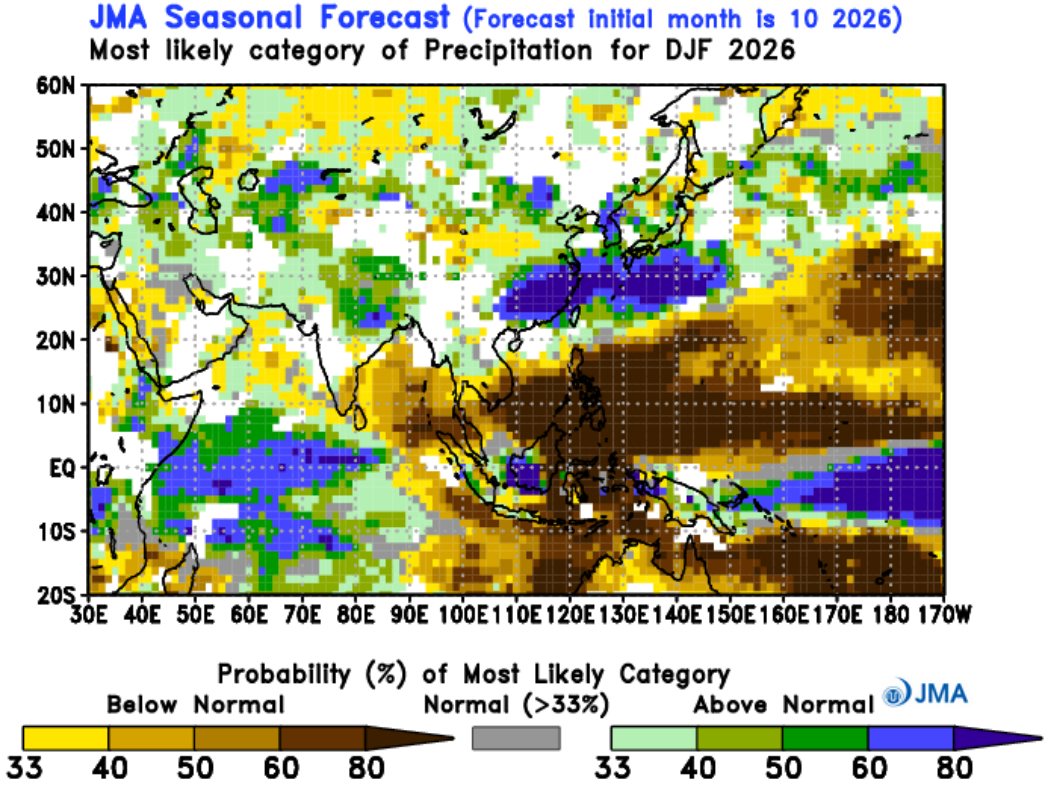
Three-month mean sea level pressure (SLP) and its anomalies
Contour: sea level pressure (hPa)
Shading: sea level pressure anomalies (hPa)



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

<DJF 2027> Probability Forecasts (precipitation)

- A high probability of below-normal precipitation is predicted over most of Southeast Asia.
- A high probability of above-normal precipitation is predicted over part of East Asia.

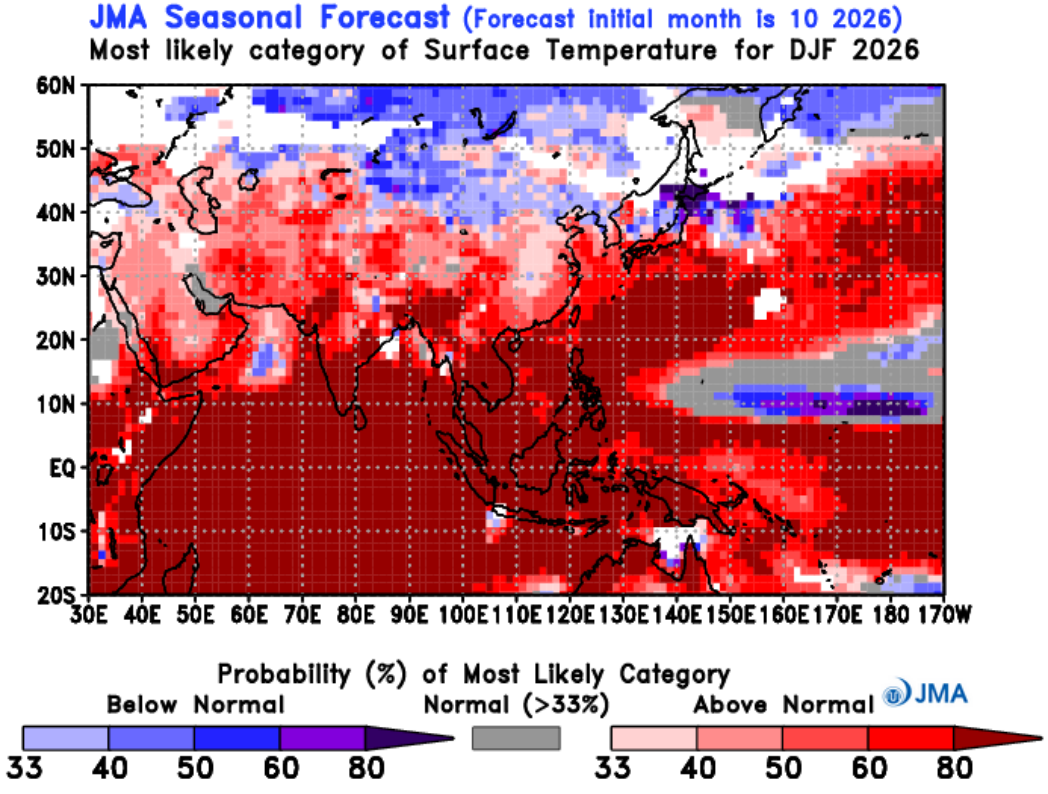


Verification based on hindcast

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

<DJF 2027> Probability Forecasts (temperature)

- A high probability of above-normal temperatures is predicted over most of South Asia and Southeast Asia, and over part of East Asia.



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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/html/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

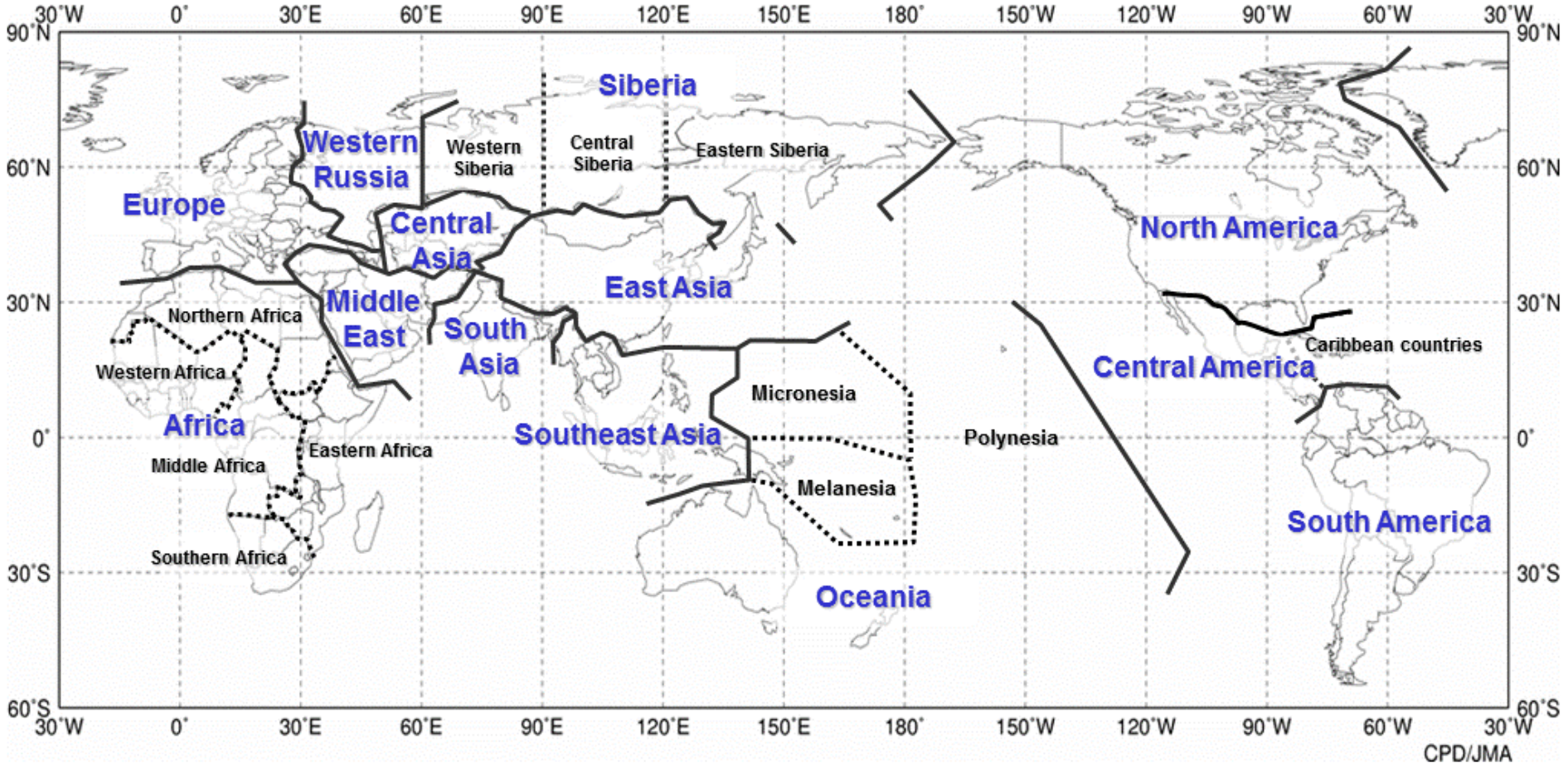
Explanatory Notes (2)

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

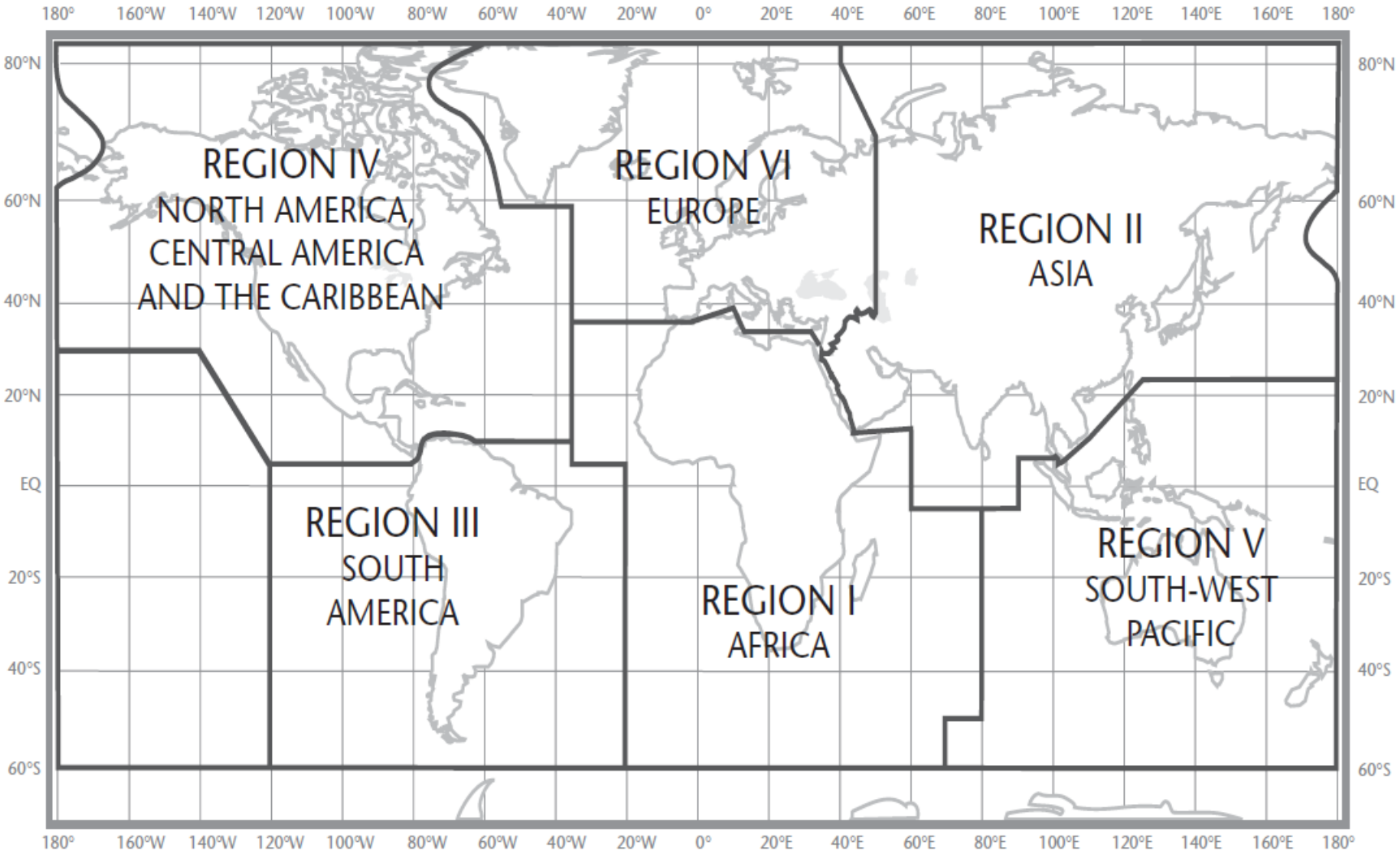
- The SST baseline for NINO.3 region (5˚S – 5˚N, 150˚W – 90˚W) is defined as a monthly average over a sliding 30-year period (e.g., 1995 – 2024 for 2025). The thresholds of above the baseline, near the baseline, and below the baseline categories are +0.5 and -0.5.
- The SST baselines for the NINO.WEST 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

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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...

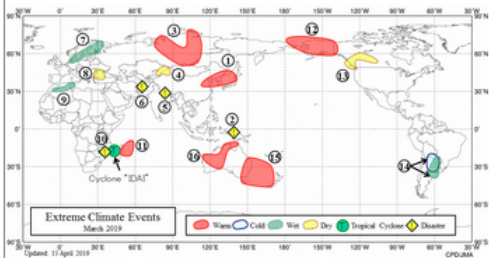
RCC Functions

- **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.



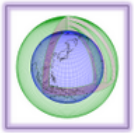
Distribution of Extreme Climate Event (March 2019)

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.

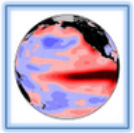


WMC Tokyo

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

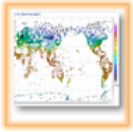
Monthly Discussion on Seasonal Climate Outlook

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