

Climate Outlook for Summer 2021

Jiyoung OH

on behalf of

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Climate Prediction Division

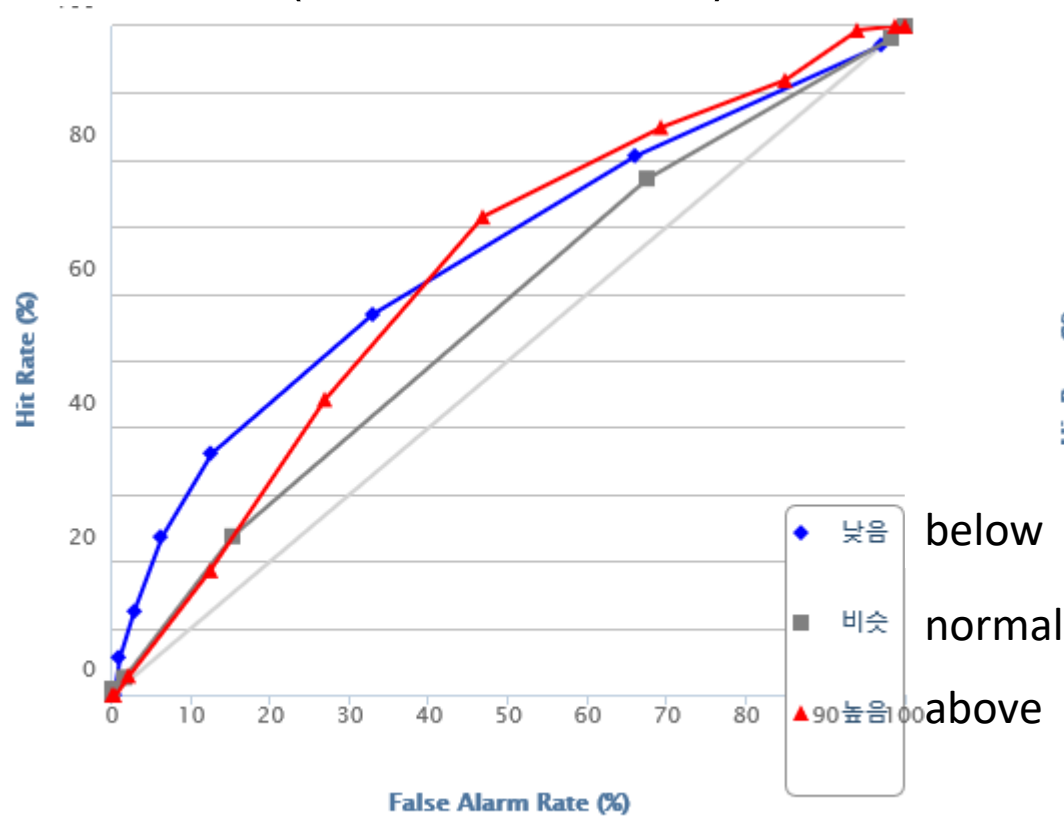


Korea Meteorological Administration

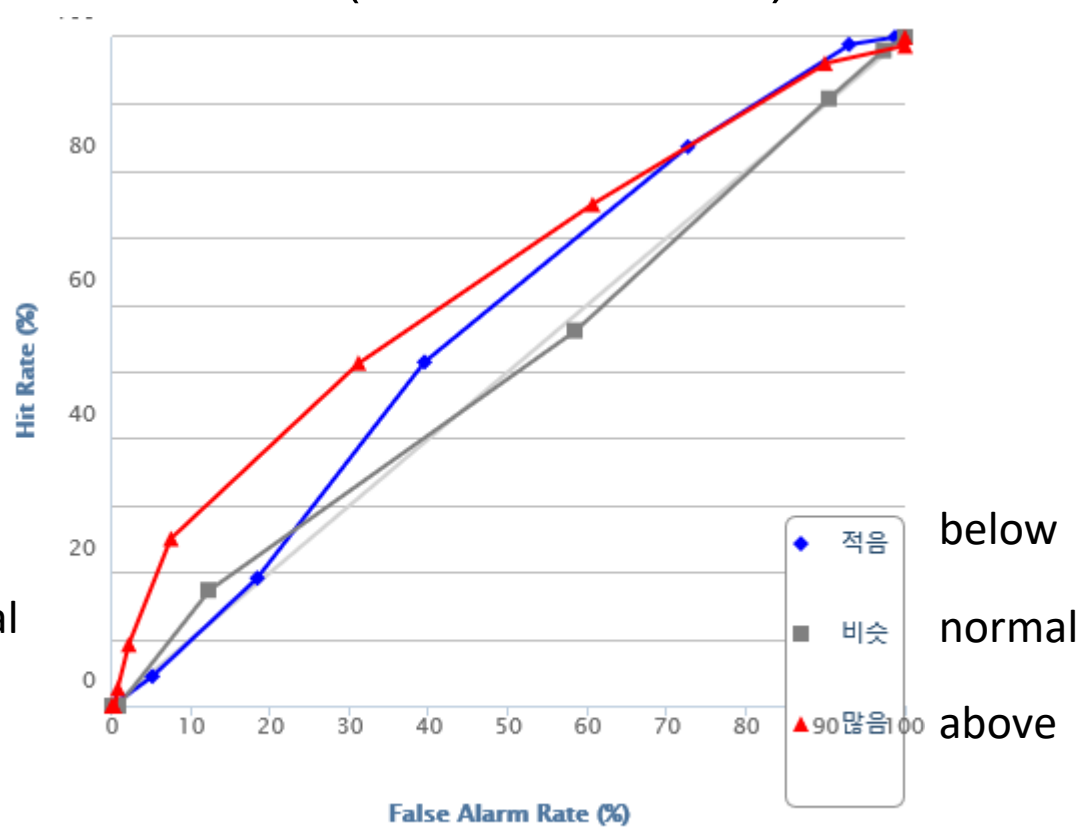
ROC Verification of GloSea5

JJA

Temperature
(0.65/0.57/0.63)



Precipitation
(0.57/0.51/0.63)

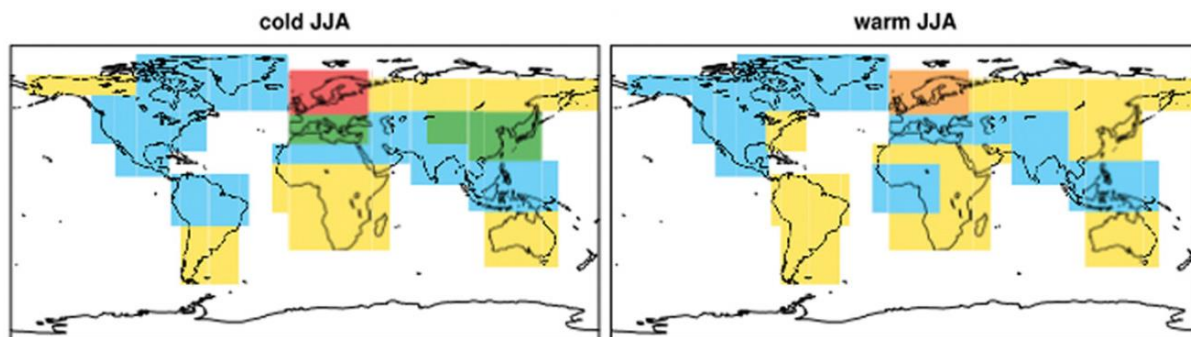


Reliability Map of Temperature

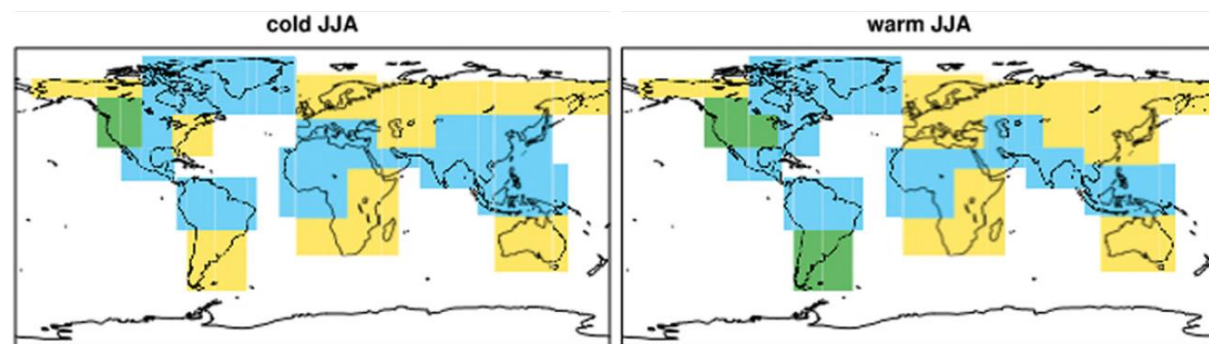
Cold JJA: colder than normal

Warm JJA: warmer than normal

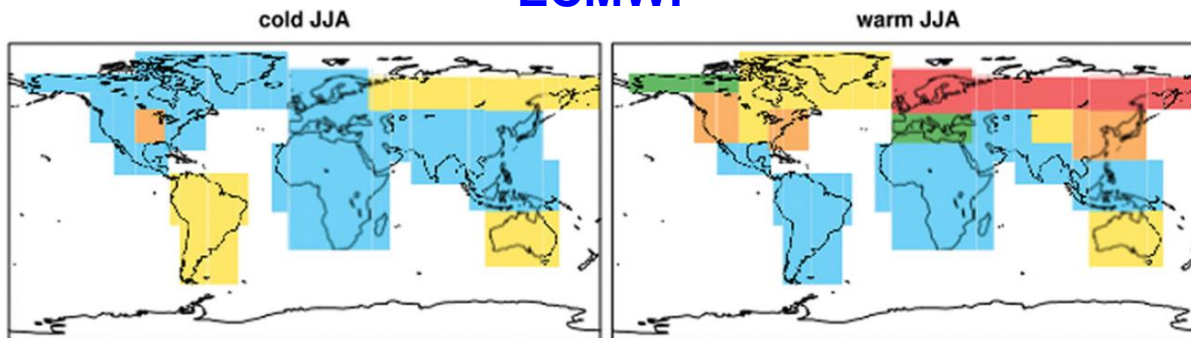
KMA



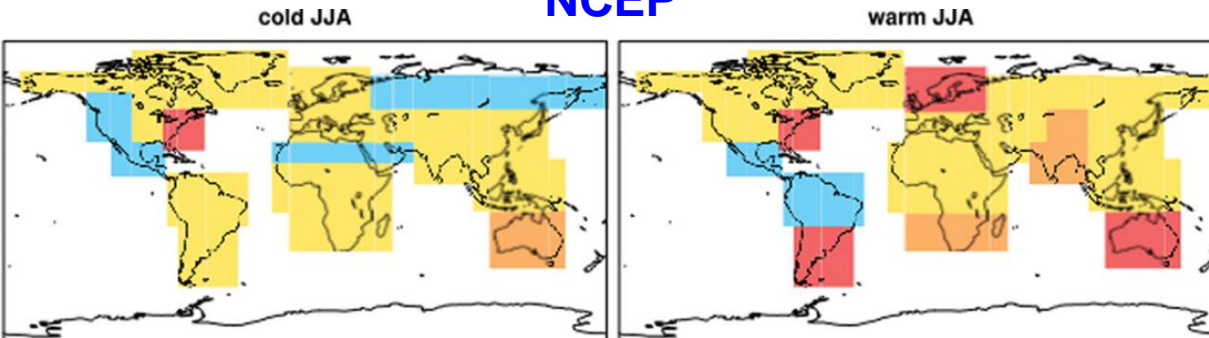
UKMO



ECMWF

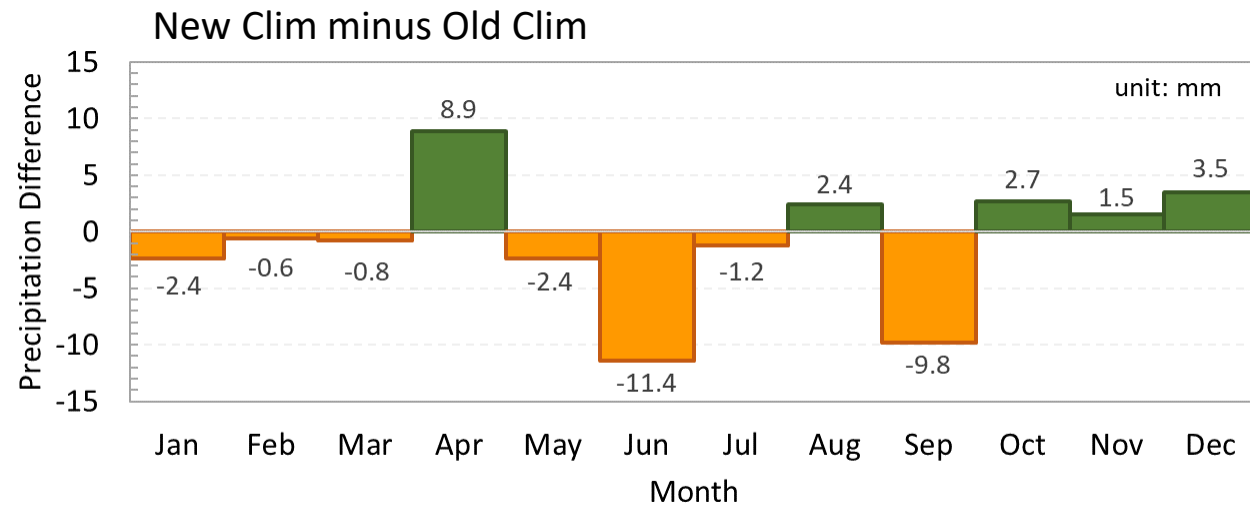
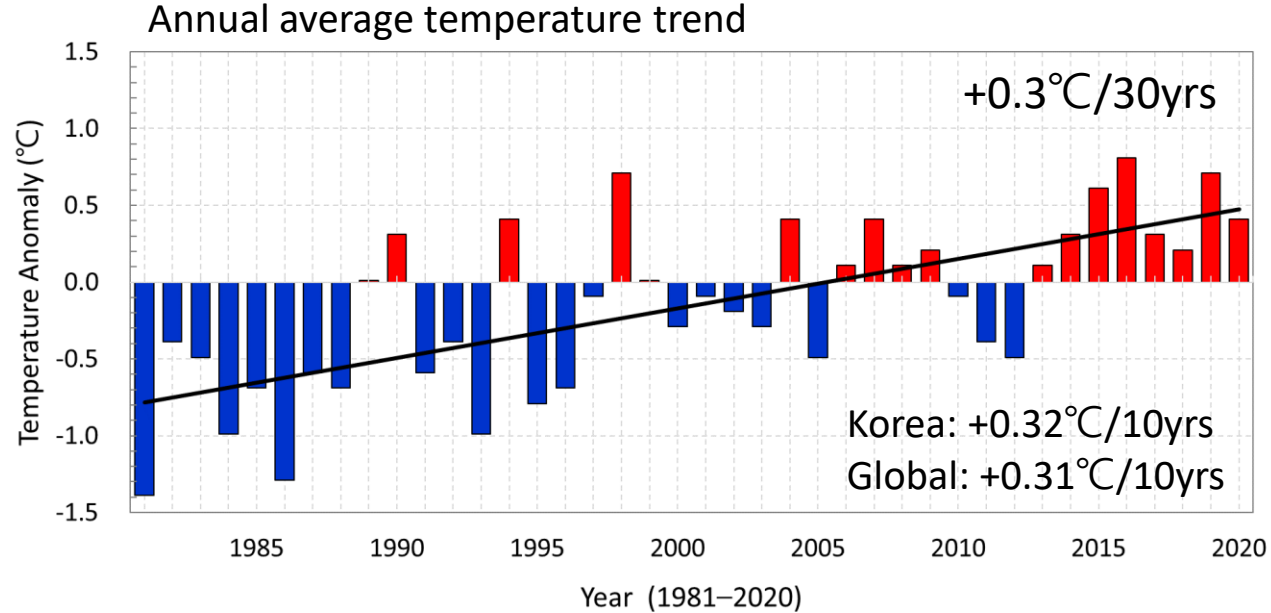


NCEP

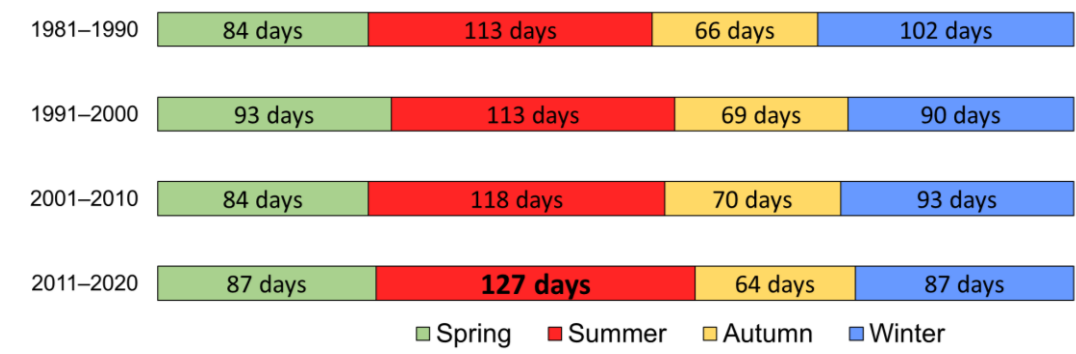
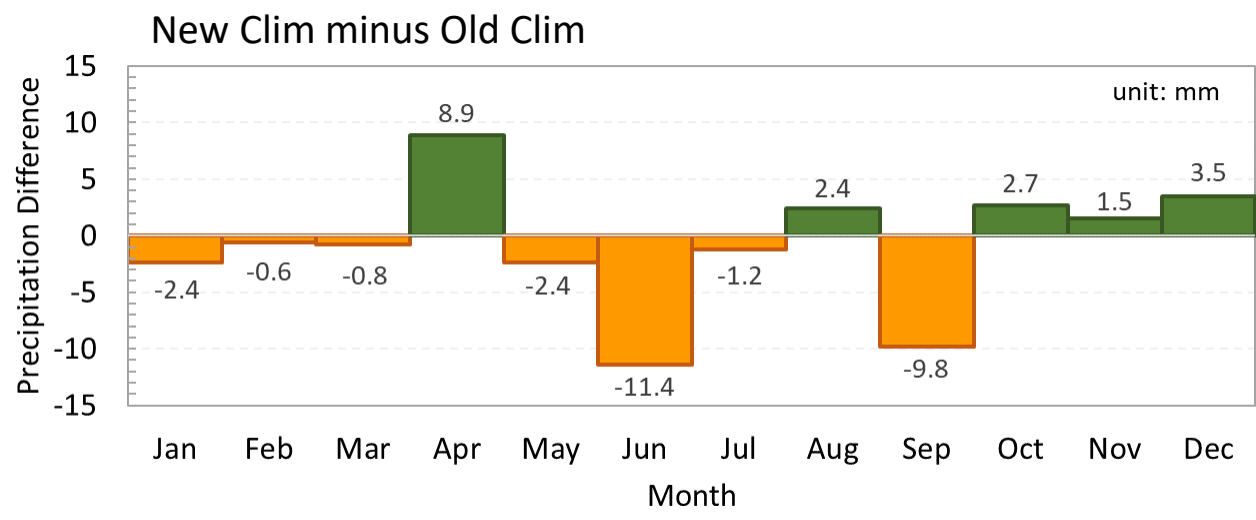
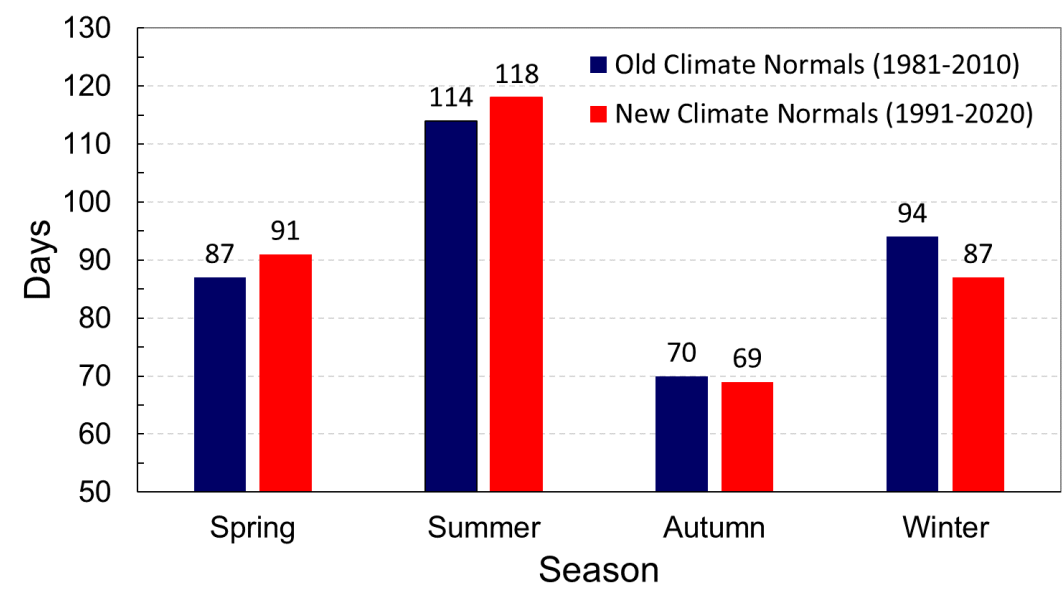
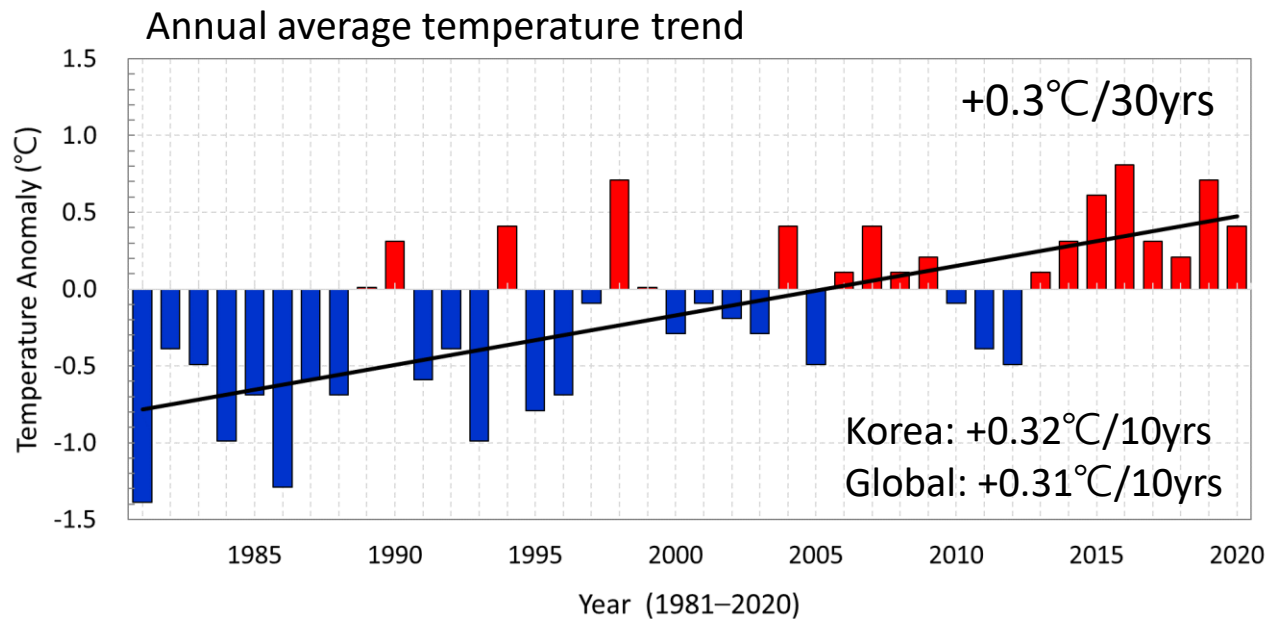


① perfect ② still useful ③ marginally useful ④ not useful ⑤ dangerous

New Climate Normals (1991-2020) in Korea

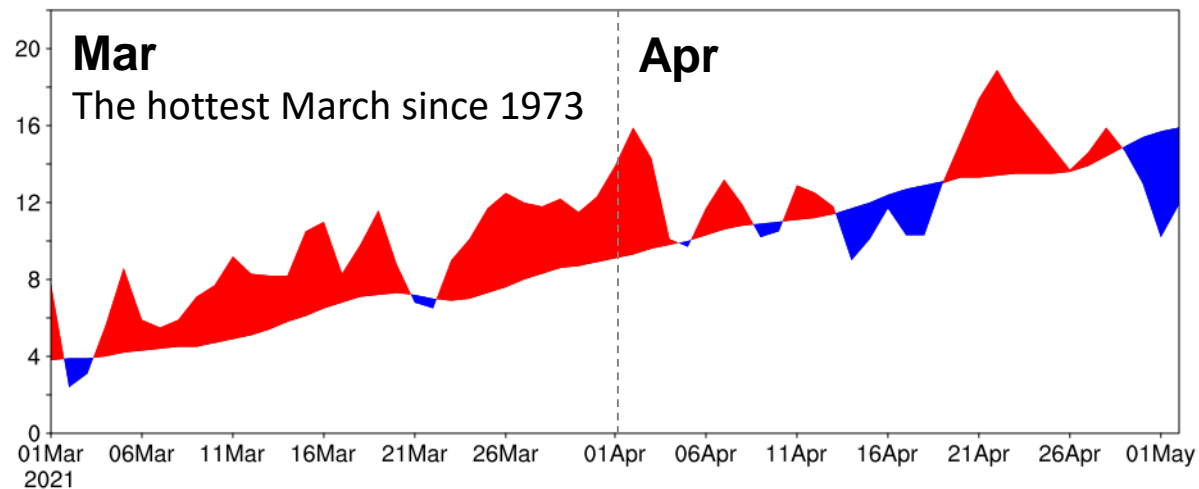
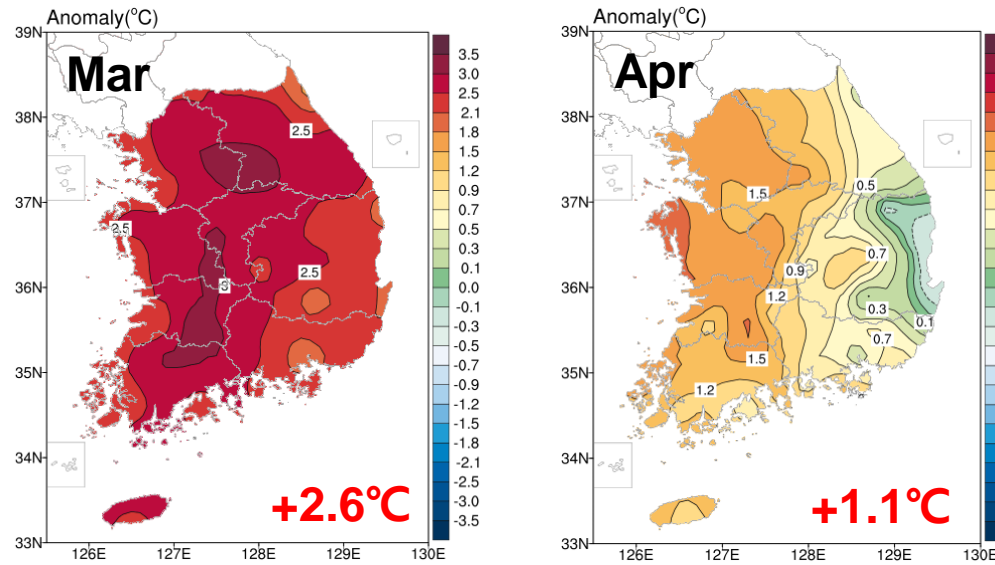


New Climate Normals (1991-2020) in Korea

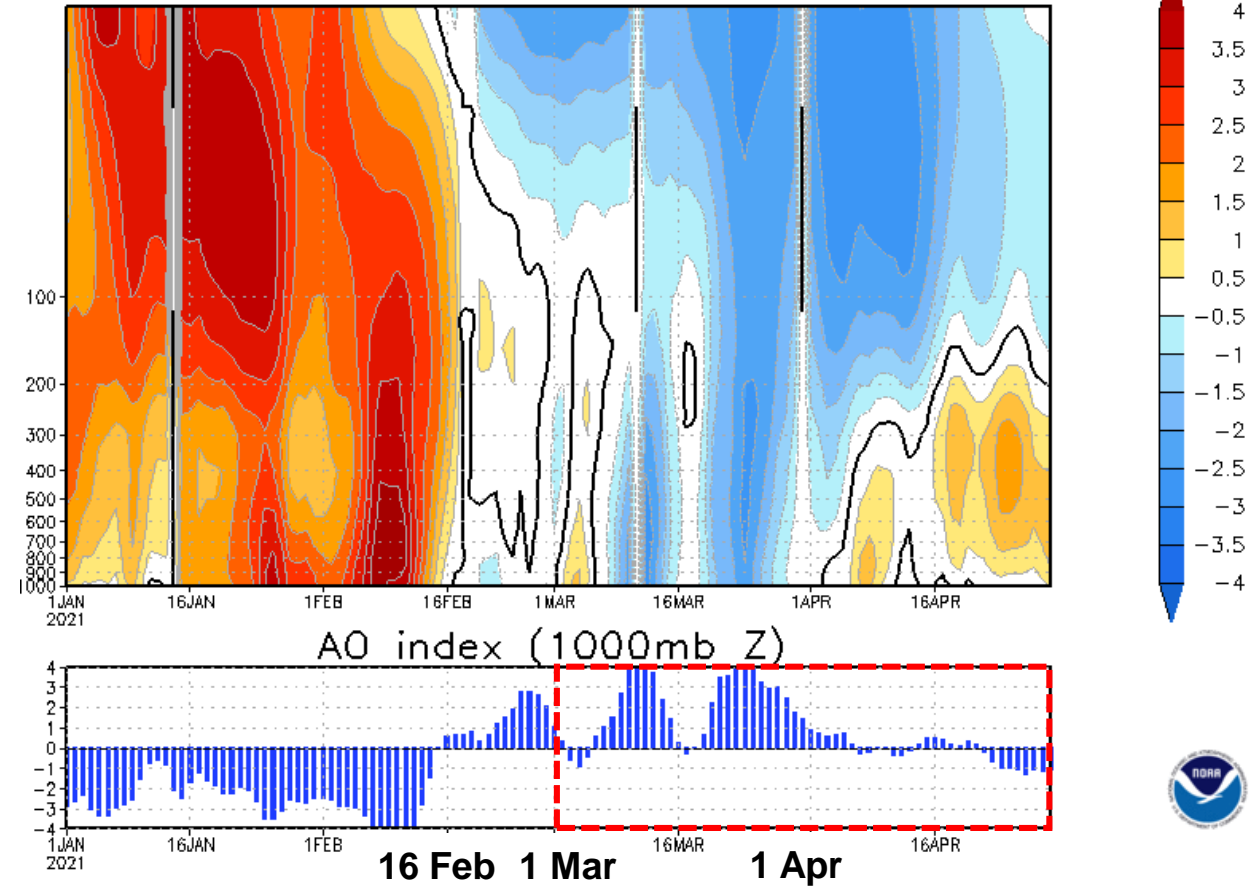


Recent Conditions

Temperature

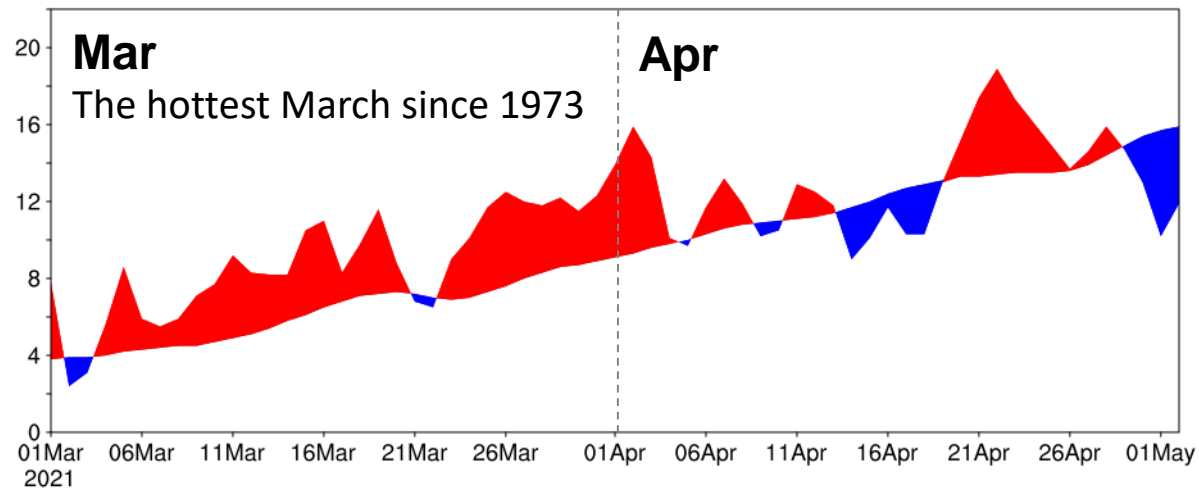
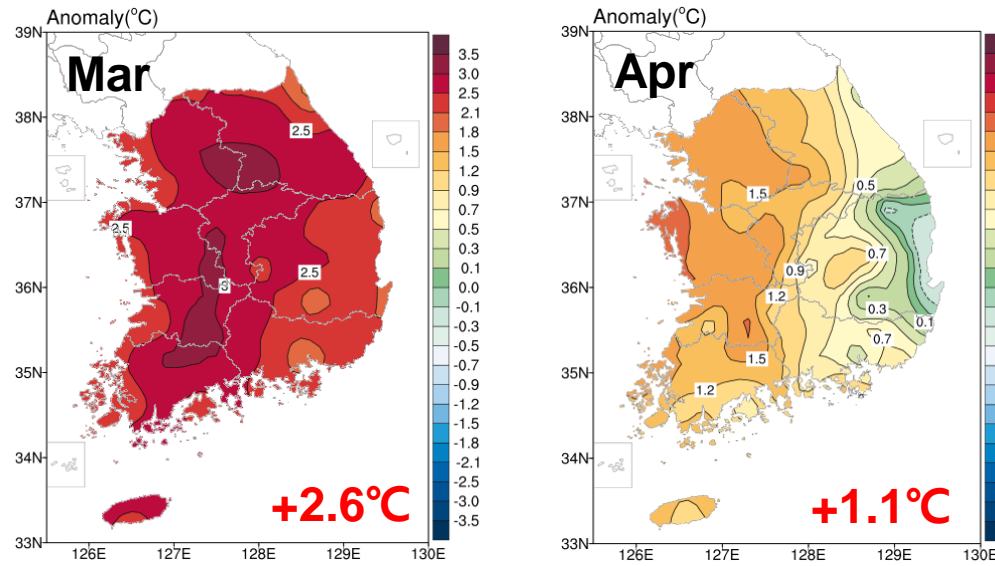


Normalized GPH anomaly (65°N–90°N) (01Jan2021 – 30Apr2021)

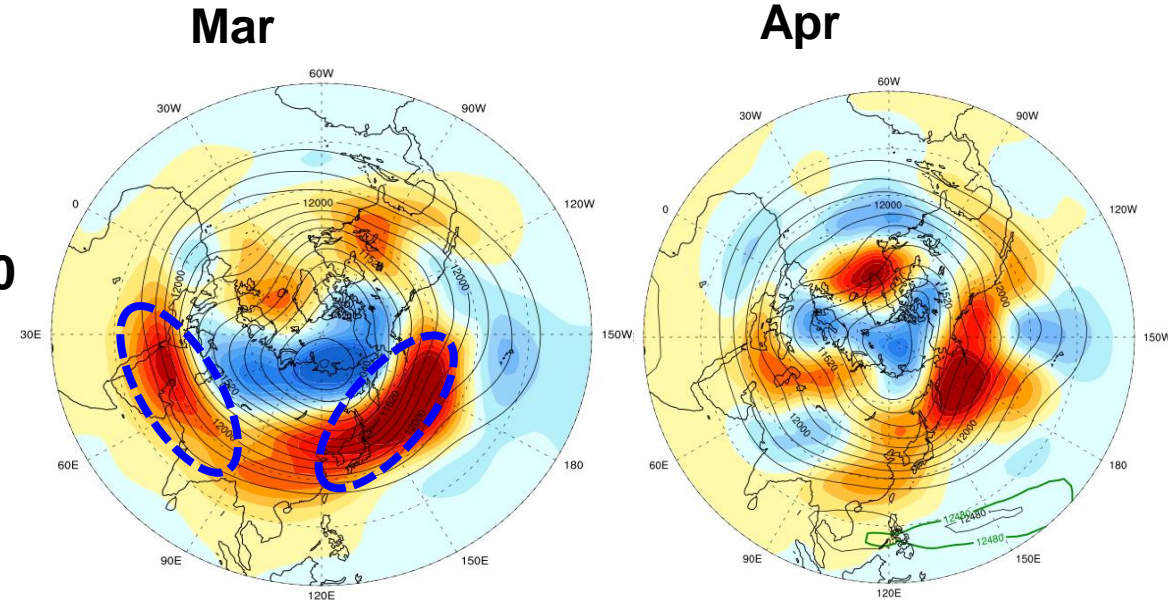


Recent Conditions

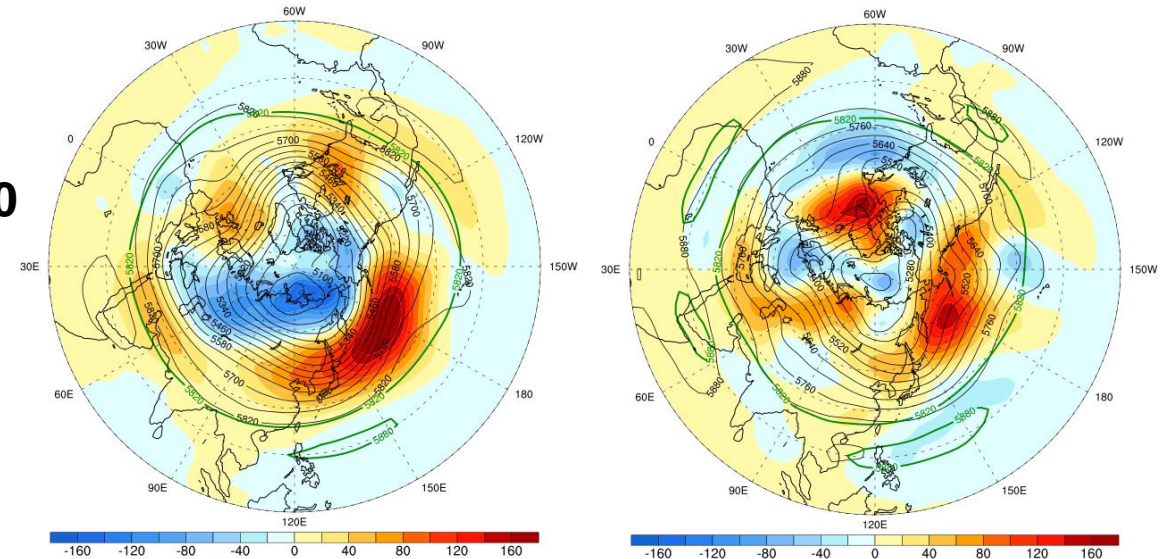
Temperature



Z200

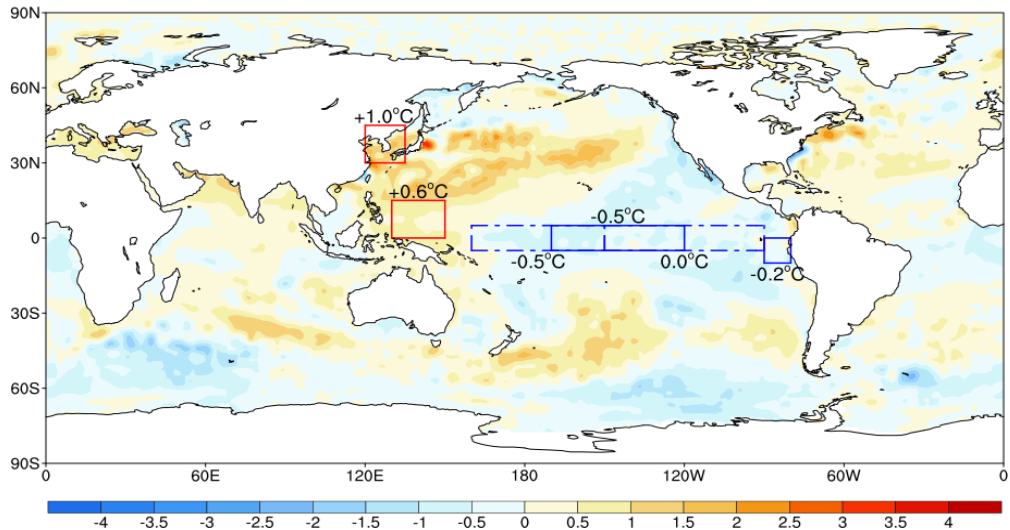


Z500

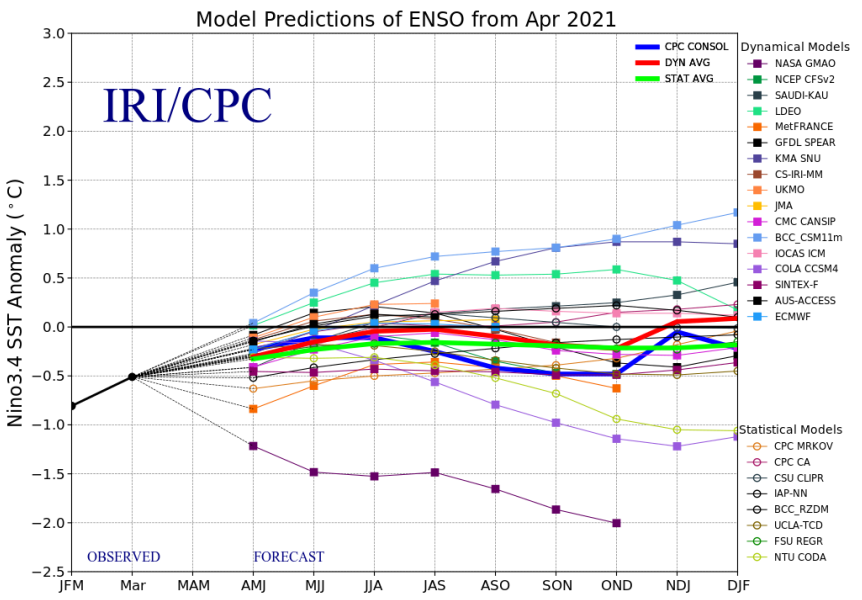
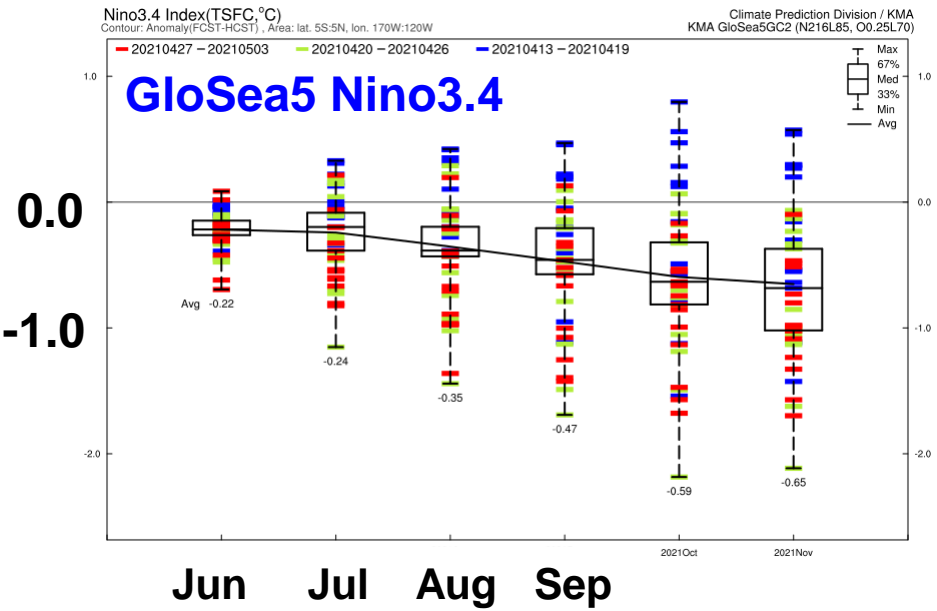
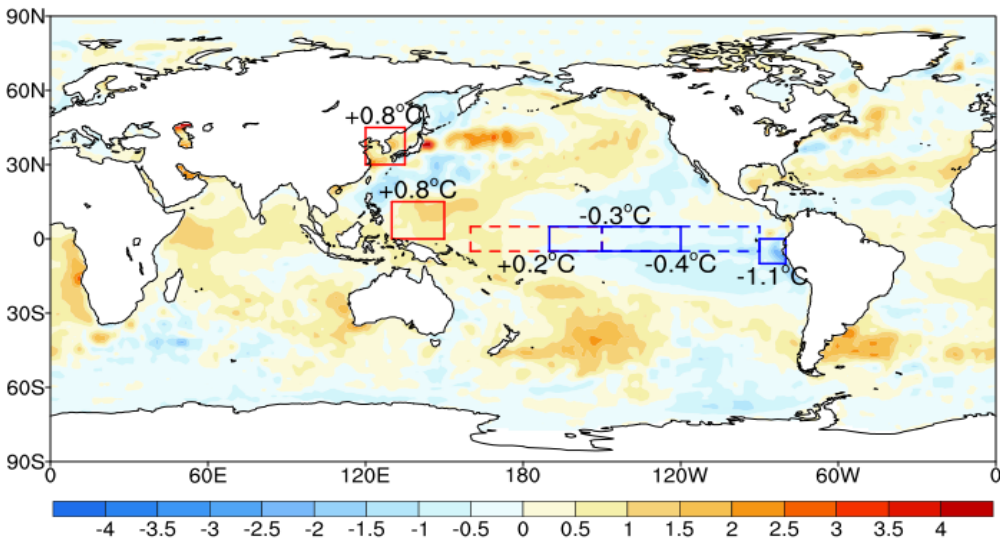


Climate Monitoring Factors: SST

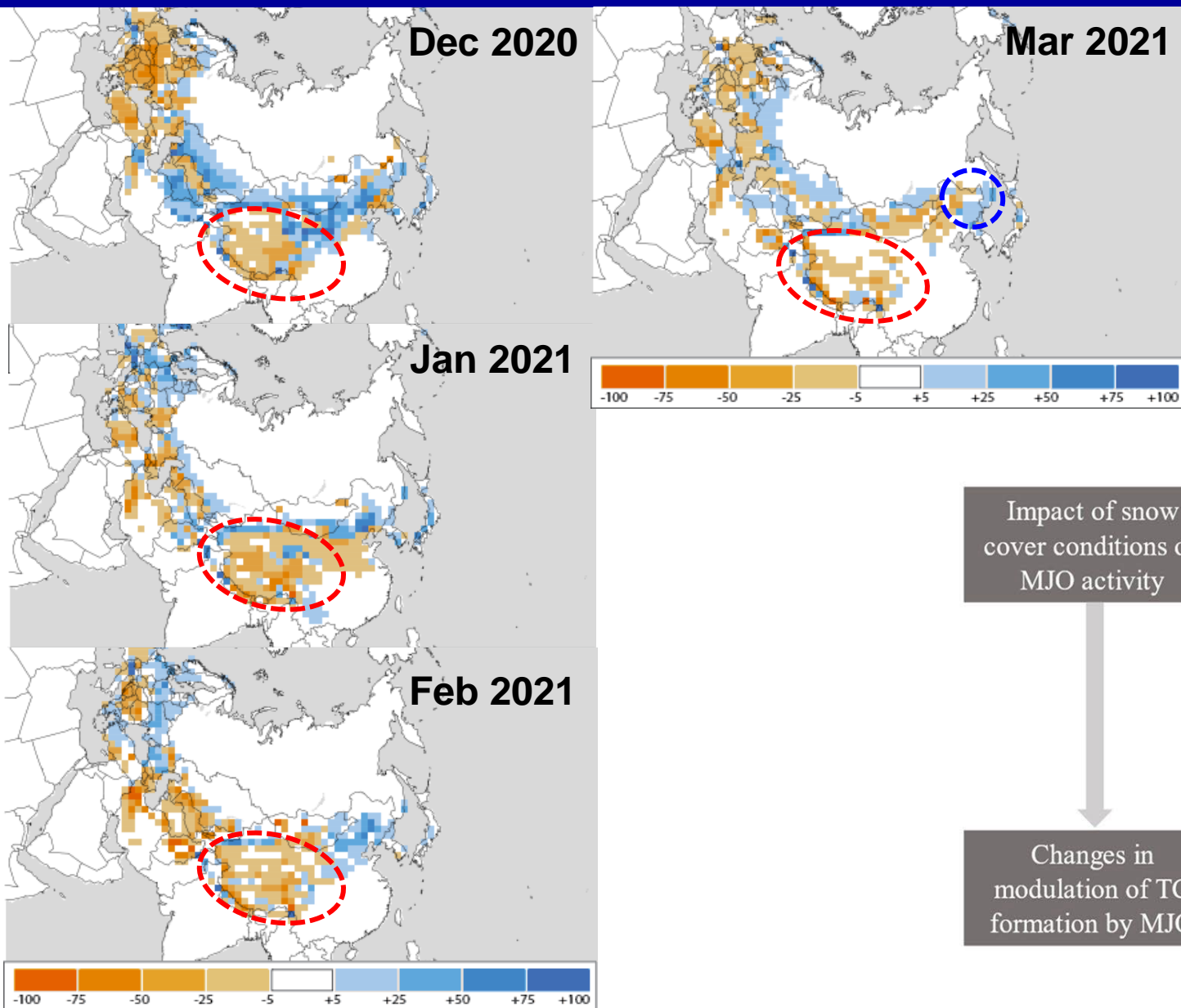
SST Monthly Anomaly (OISSTv2)
Mar2021



SST Weekly Anomaly (OISSTv2)
25Apr2021 ~ 01May2021

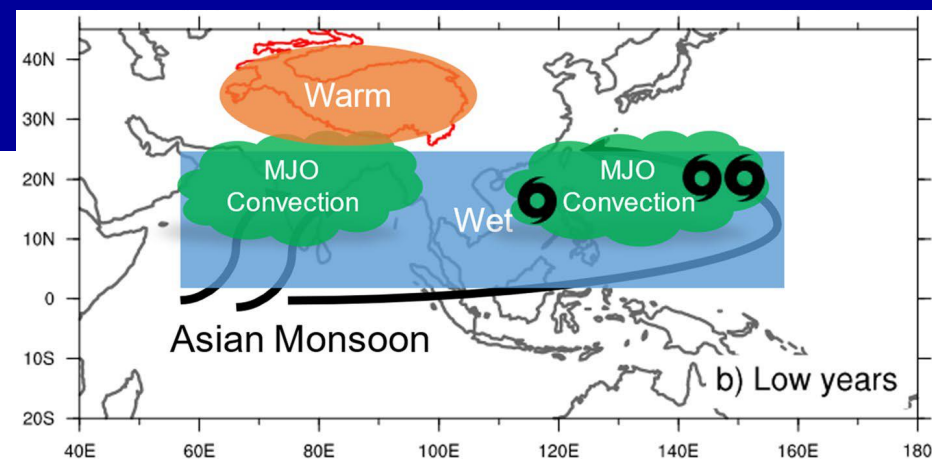


Snow Cover



Impact of snow cover conditions on MJO activity

Changes in modulation of TC formation by MJO



Snow cover conditions over the Tibetan Plateau

High snow cover

Weak Asian summer monsoon and dry tropics

MJO-associated convection is largely confined to the west of 140°E

TC formation is confined to the west of 140°E during the convectively-enhanced phase

Low snow cover

Strong Asian summer monsoon and wet tropics

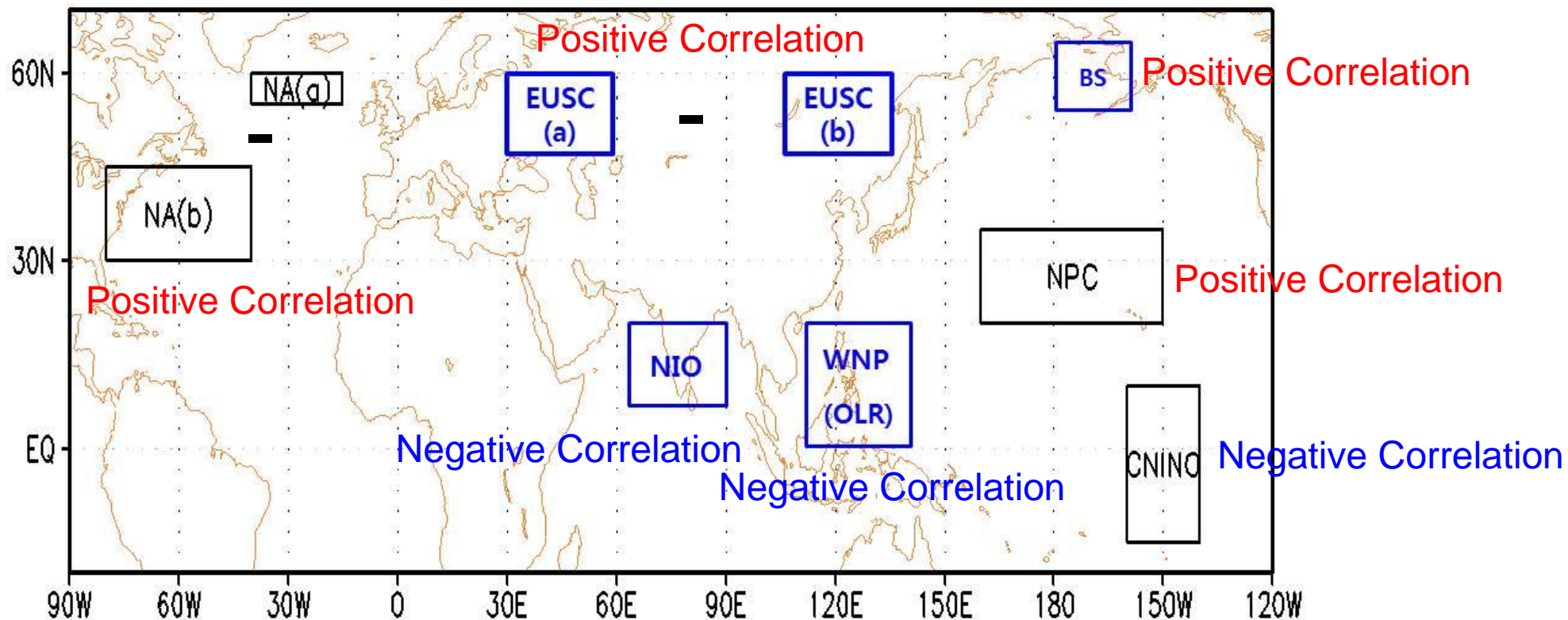
MJO-associated convection strengthens around 140°E and extends to the east of 140°E.

TC formation is enhanced around and east of 140°E during the convectively-enhanced phase

From Han et al. (2021, Climate Dynamics)

Predictors for Changma Precipitation

Box: areas for selected predictors



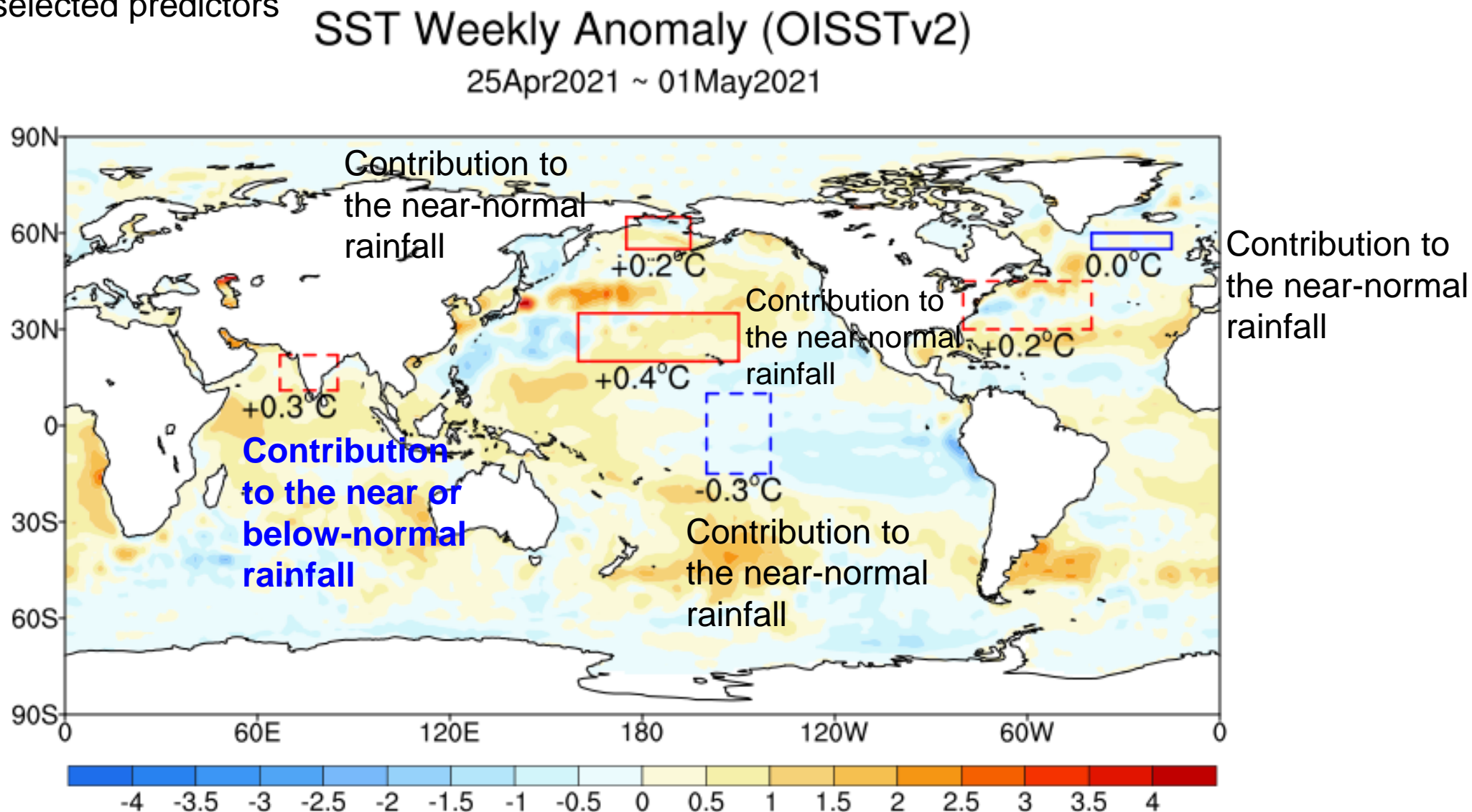
NA: North Atlantic
EUSC: Eurasian Snow Cover
BS: Bering Sea
NIO: Northern Indian Ocean

WNP: Western North Pacific
CNINO: Central Pacific NINO
NPC: Northern Pacific Change

More details in Lee and Seo (2013)

Diagnosis for Changma Precipitation

Box: areas for selected predictors

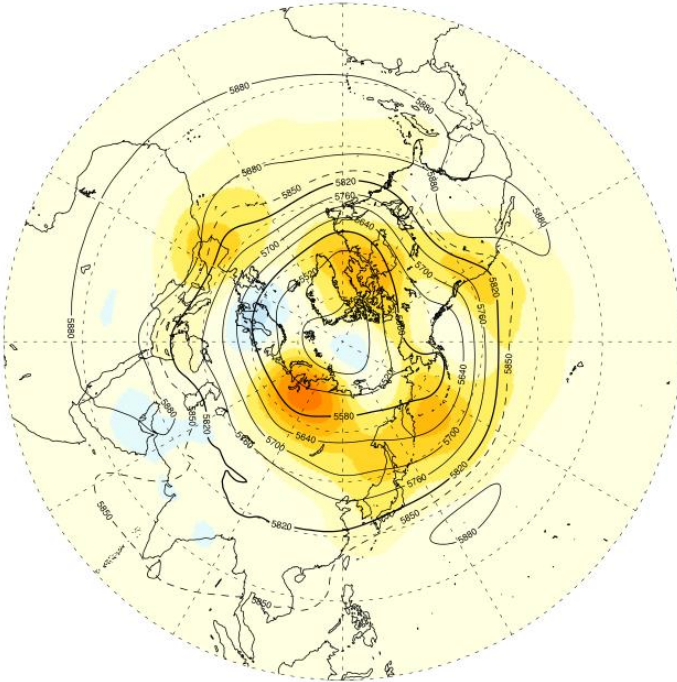


GloSea5 Z500

Jun

500hPa Geopotential Height (gpm) Anomaly
Contour: FCST(int.60), Shading: Anomaly(FCST-HCST)

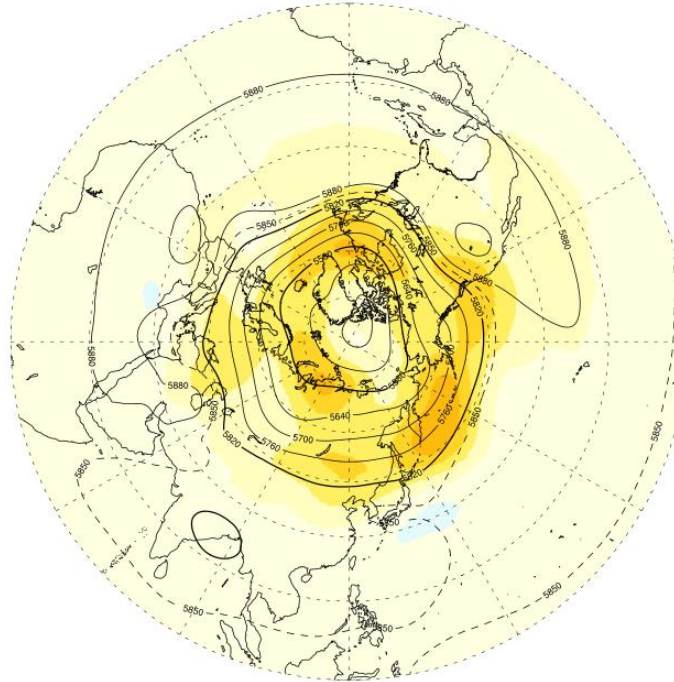
Climate Prediction Division / KMA
KMA GloSea5GC2 (N216L85, O0.25L70)



Jul

500hPa Geopotential Height (gpm) Anomaly
Contour: FCST(int.60), Shading: Anomaly(FCST-HCST)

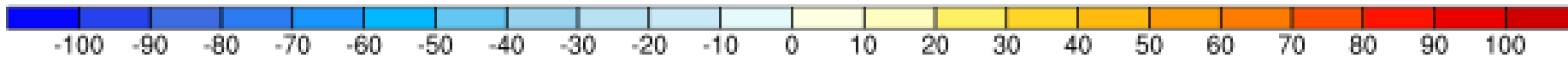
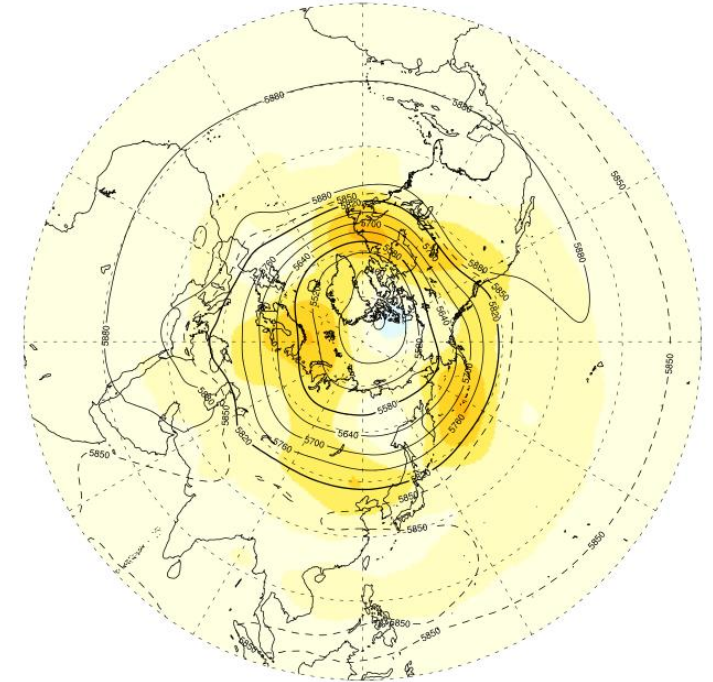
Climate Prediction Division / KMA
KMA GloSea5GC2 (N216L85, O0.25L70)



Aug

500hPa Geopotential Height (gpm) Anomaly
Contour: FCST(int.60), Shading: Anomaly(FCST-HCST)

Climate Prediction Division / KMA
KMA GloSea5GC2 (N216L85, O0.25L70)

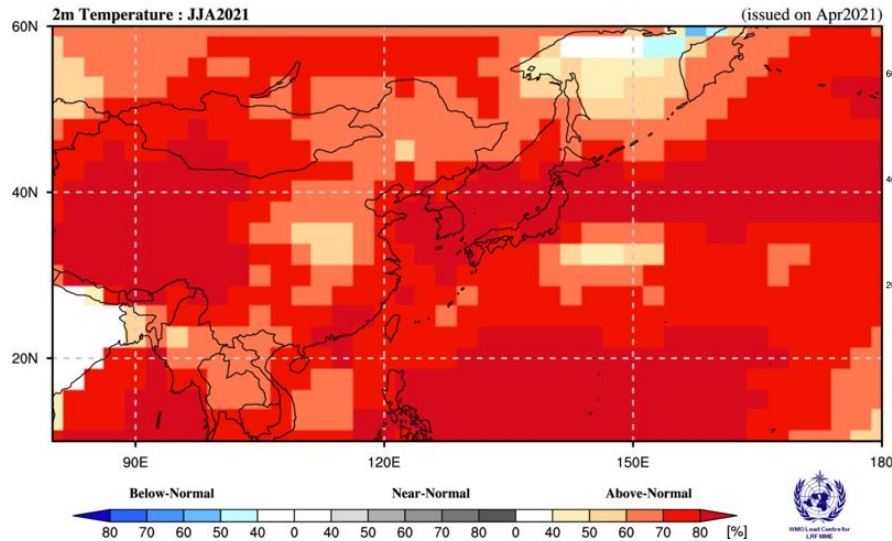


The Western North Pacific Subtropical High shows slightly expansion toward Korea.

WMOLC-LRFMME Temperature and Precipitation

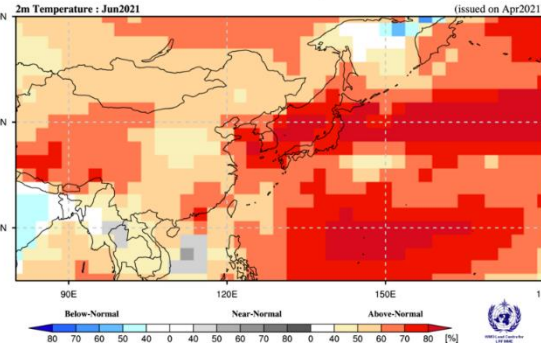
Probabilistic Multi-Model Ensemble Forecast

Beijing, CPTEC, ECMWF, Exeter, Melbourne, Montreal, Offenbach, Seoul, Toulouse, Washington



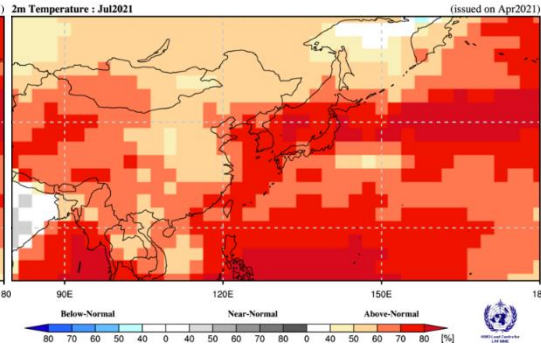
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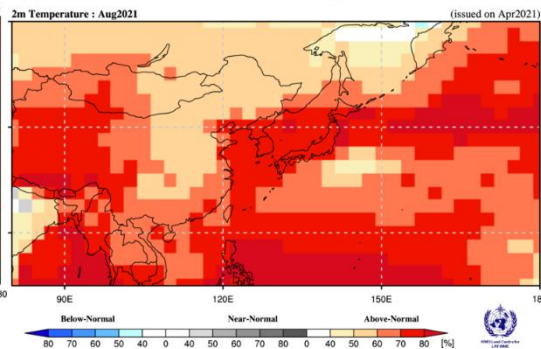
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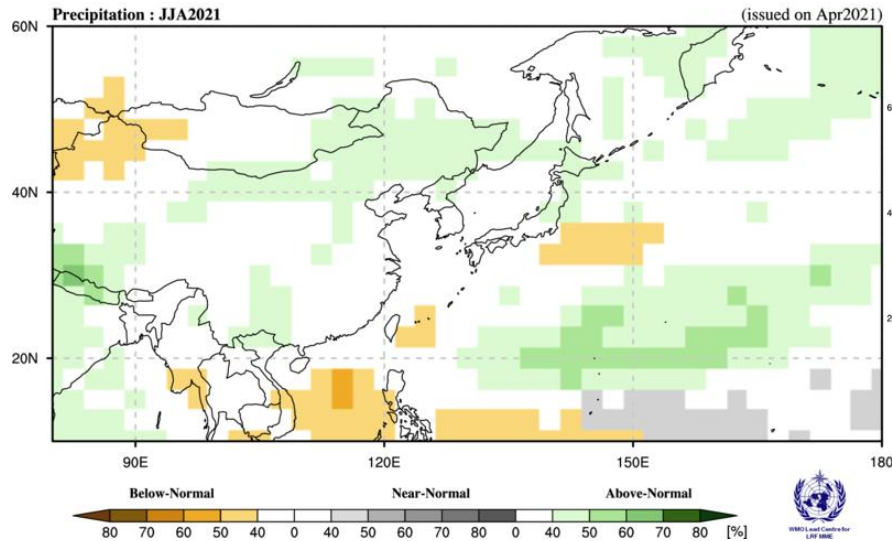
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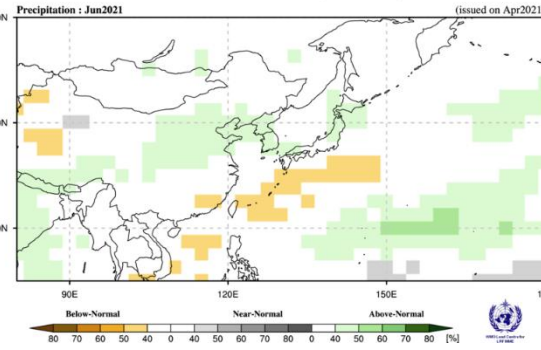
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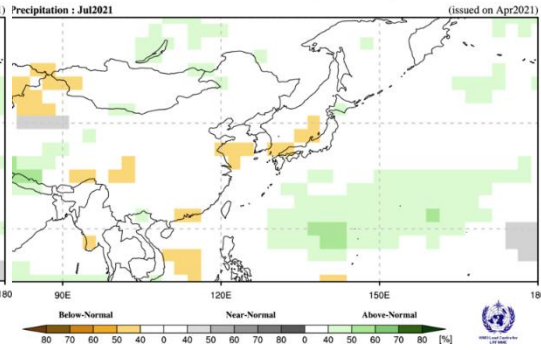
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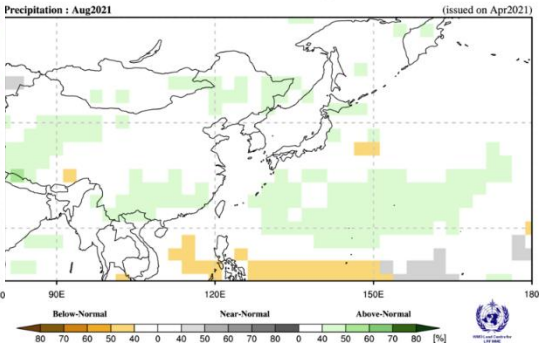
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Summary

- ENSO is expected to be neutral during the coming summer.

- For Korea, temperature will be a higher than normal, and precipitation is likely to be near normal in this summer.
 - Changma period : near normal but it is likely to start a little bit earlier than normal.
 - Rainfall for Changma period : near-normal
 - The WNPSH is likely to be a little shifted northward in JJA 2021.

	Temperature			Precipitation		
	Below Normal	Near normal	Above normal	Below Normal	Near normal	Above normal
Summer	20	30	50	30	50	20

Additional Slides

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Snow Cover and Sea Ice

