

Climate Briefing

4th February 2020

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Outline



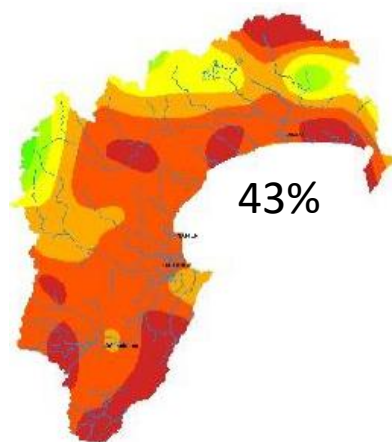
1. Current State – rainfall, PET and soil moisture
2. Status and outlook of climate modes
3. Forecasts



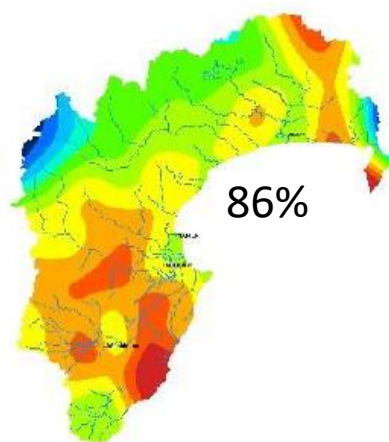
Current State – rainfall, PET and soil moisture

Current State - rainfall

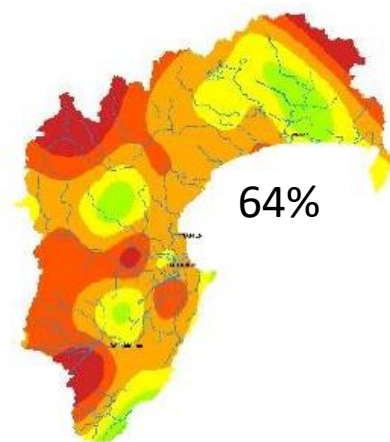
Area	October (%) 184%	November (%) 43%	December (%) 86%	January (%) 64%
Waikaremoana	121	69	115	78
Northern HB	131	43	103	85
Tangoio	234	38	88	77
Kaweka	179	62	99	57
Ruahine	141	34	72	36
Heretaunga Plains	265	35	69	57
Ruataniwha Plains	191	37	61	57
Southern HB	212	29	78	65



November 2019

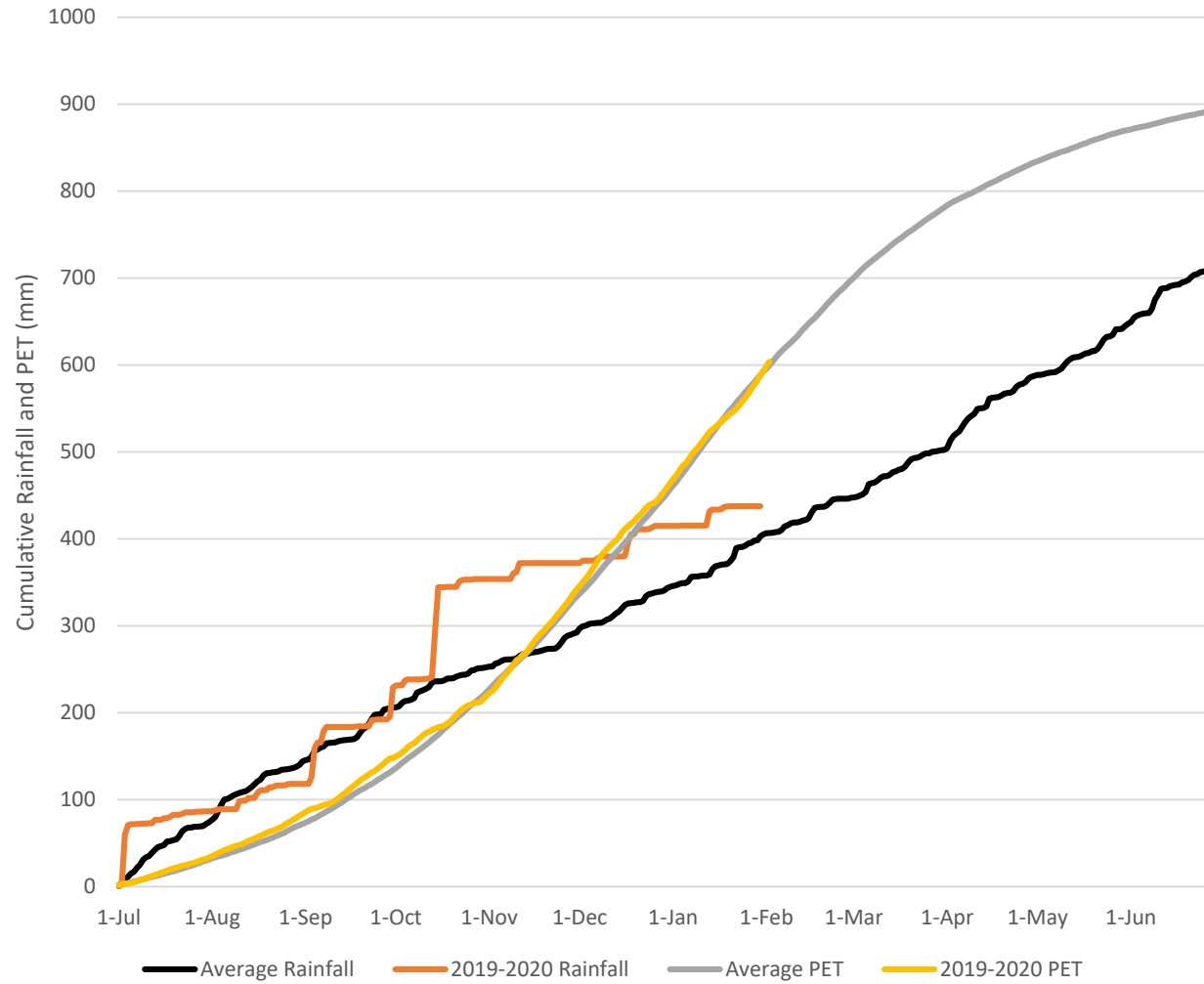


December 2019



January 2020

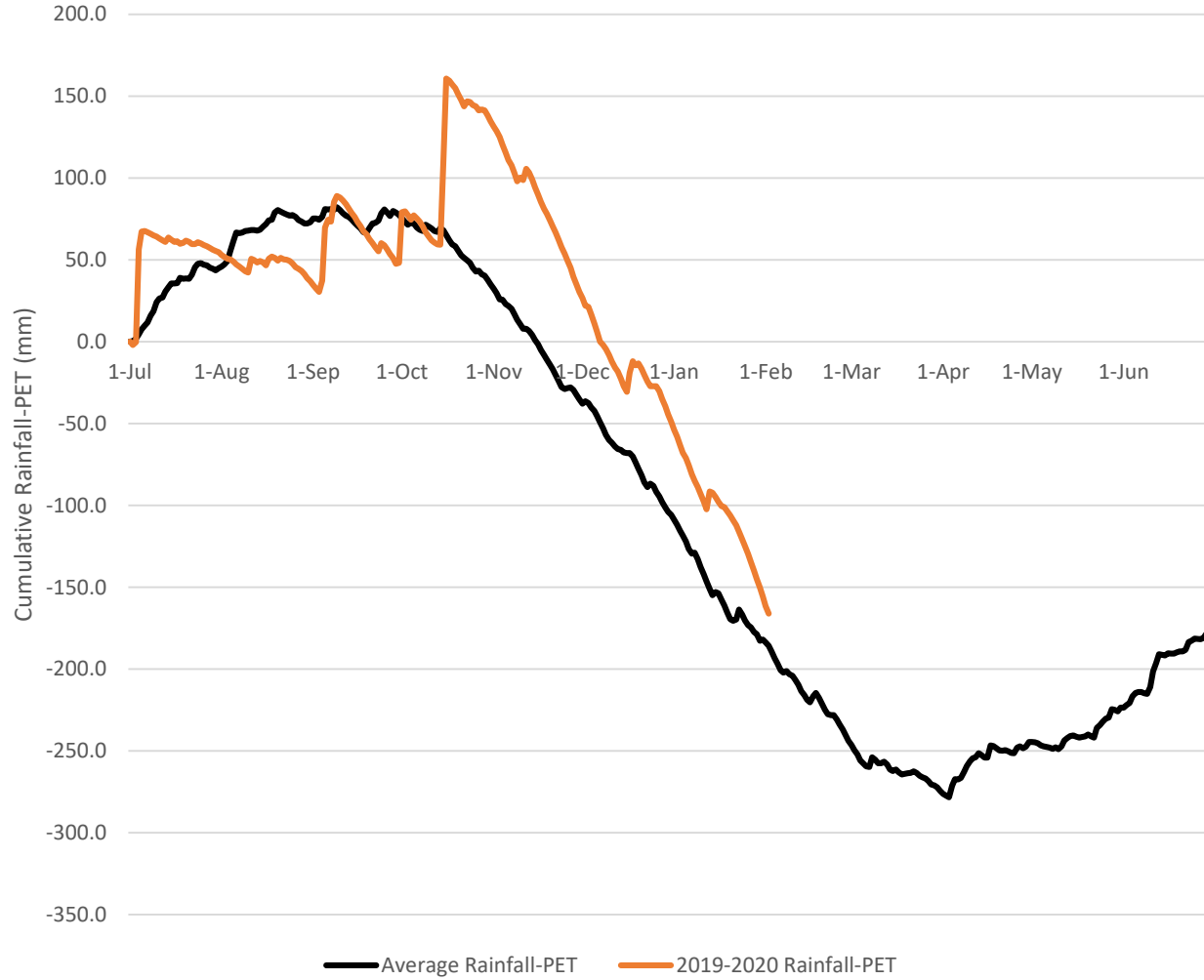
Bridge Pa Cumulative Rainfall and PET



Cumulative Rainfall & Potential Evapotranspiration (PET)

Average cumulative rainfall and average cumulative PET are calculated from July 2009 to July 2018.

Bridge Pa Cumulative Rainfall-PET

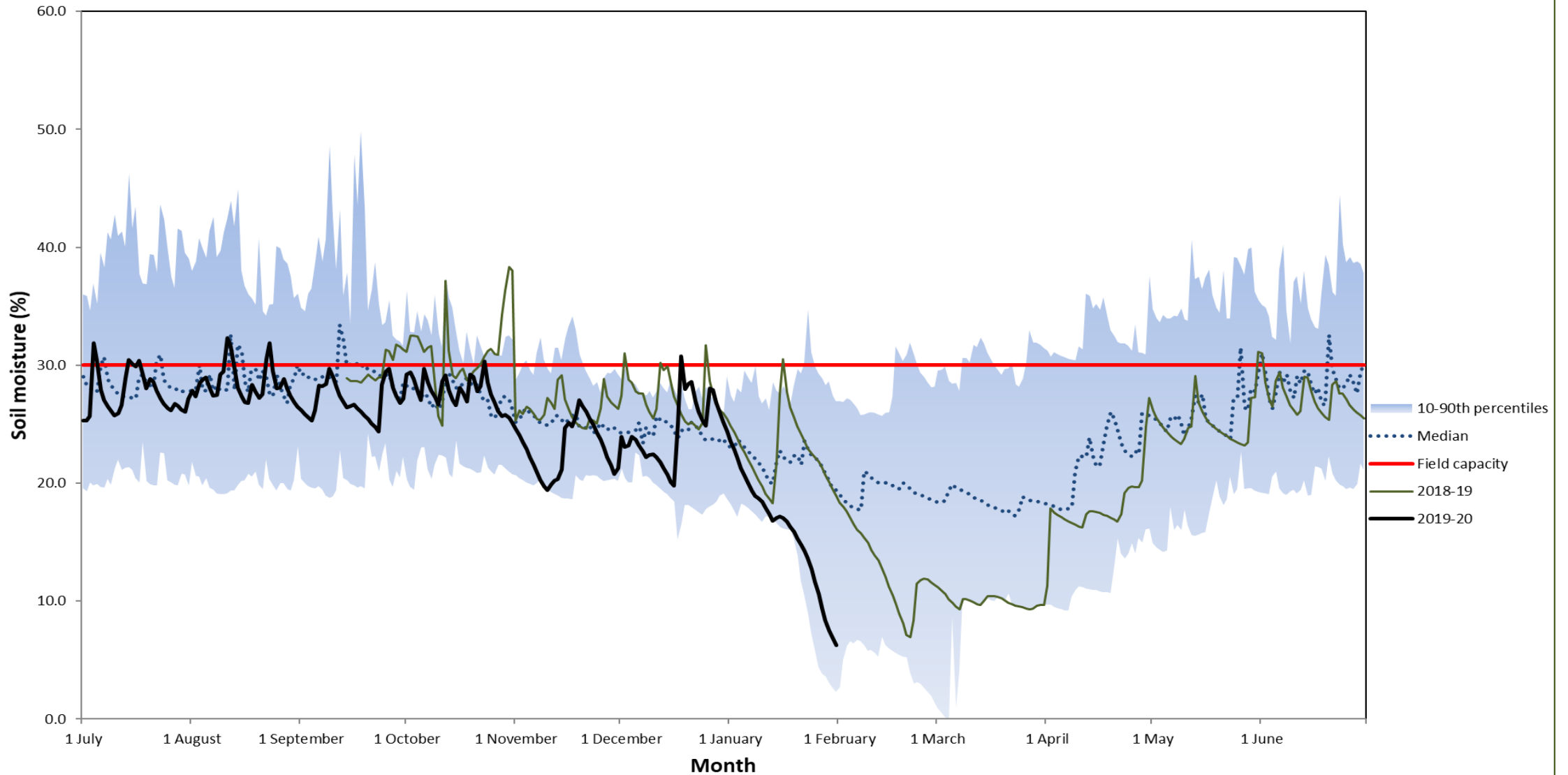


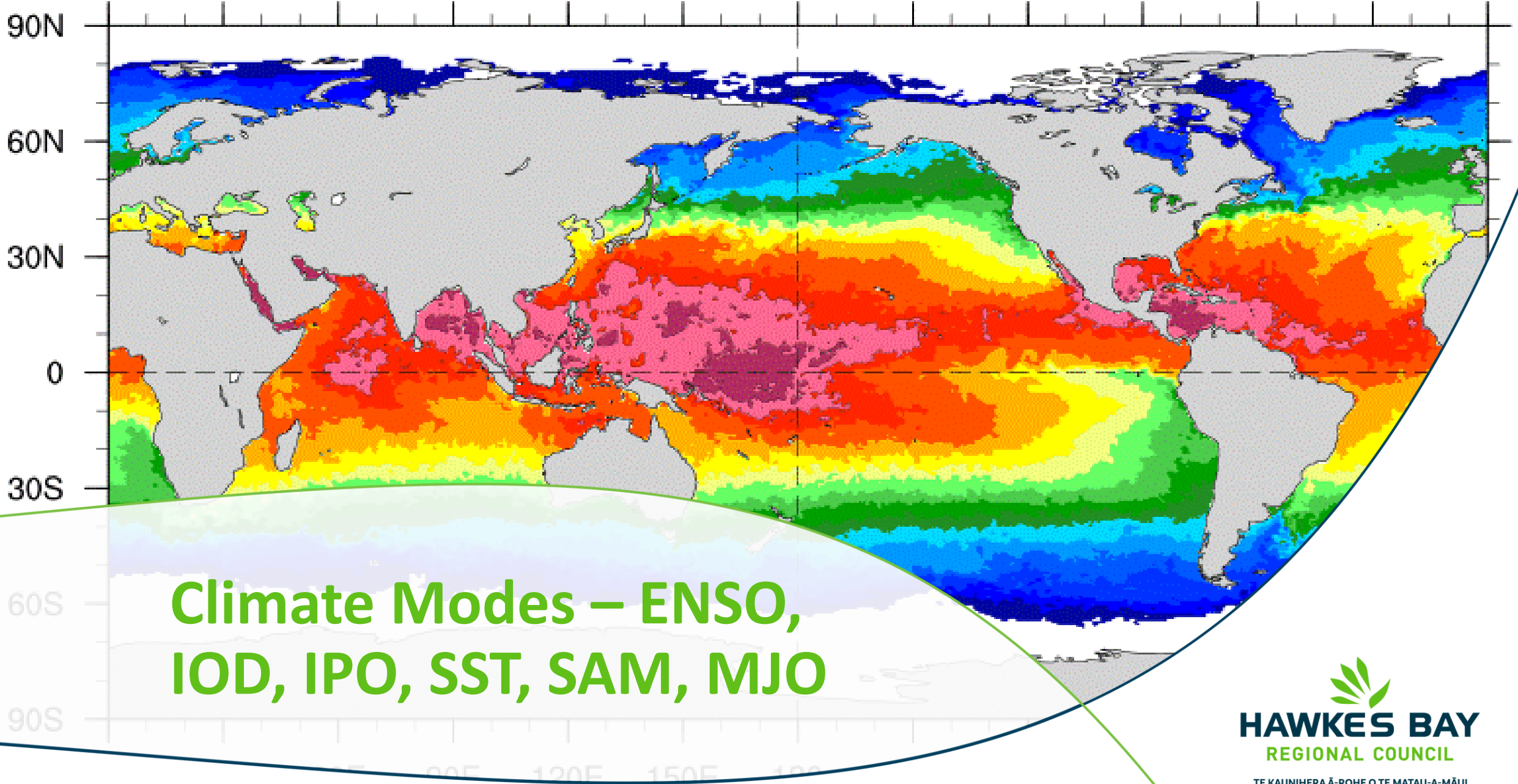
Cumulative Rainfall - Potential Evapotranspiration (PET)

Average cumulative rainfall and average cumulative PET are calculated from July 2009 to July 2018.

Current State – soil moisture

Taharua - Average Daily Soil Moisture (2008-20)

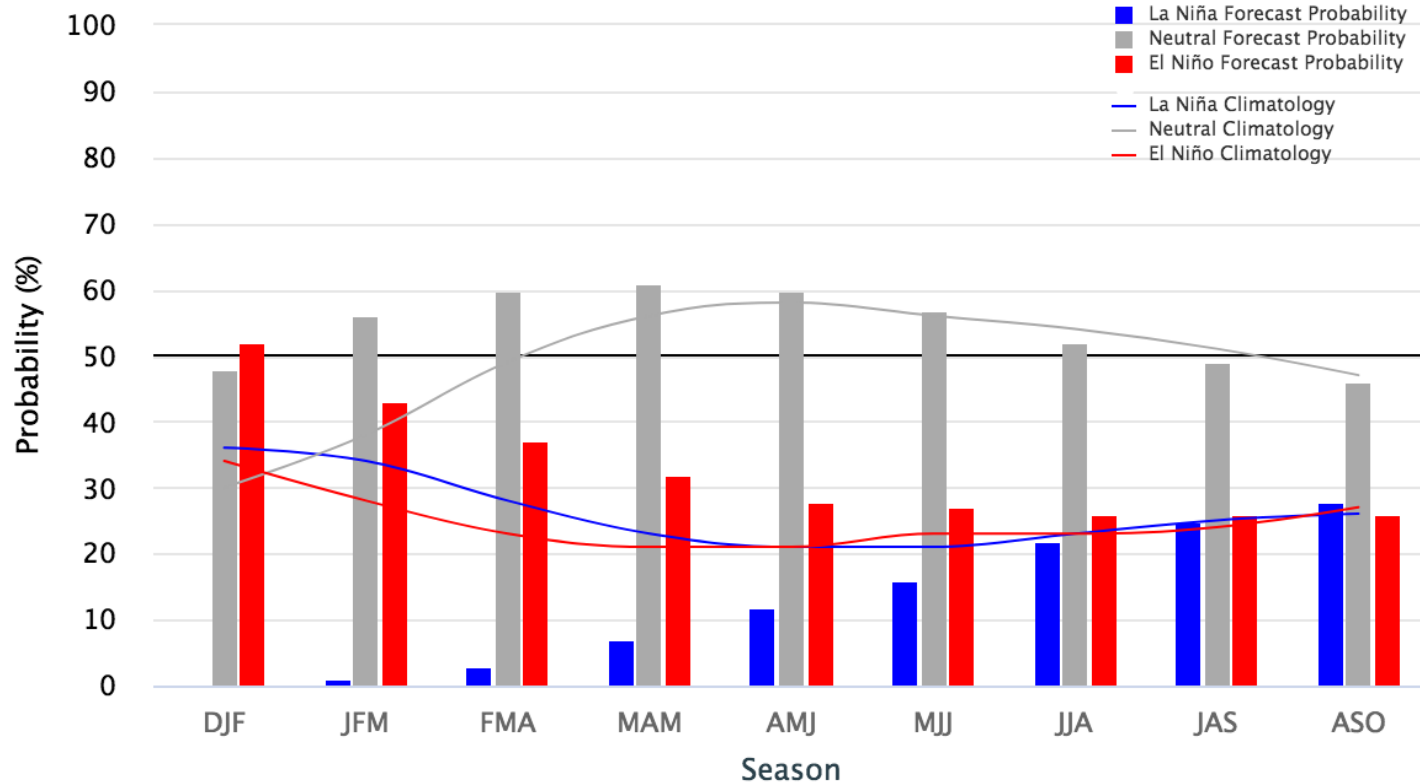




Climate Modes – ENSO, IOD, IPO, SST, SAM, MJO

Early-January 2020 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C

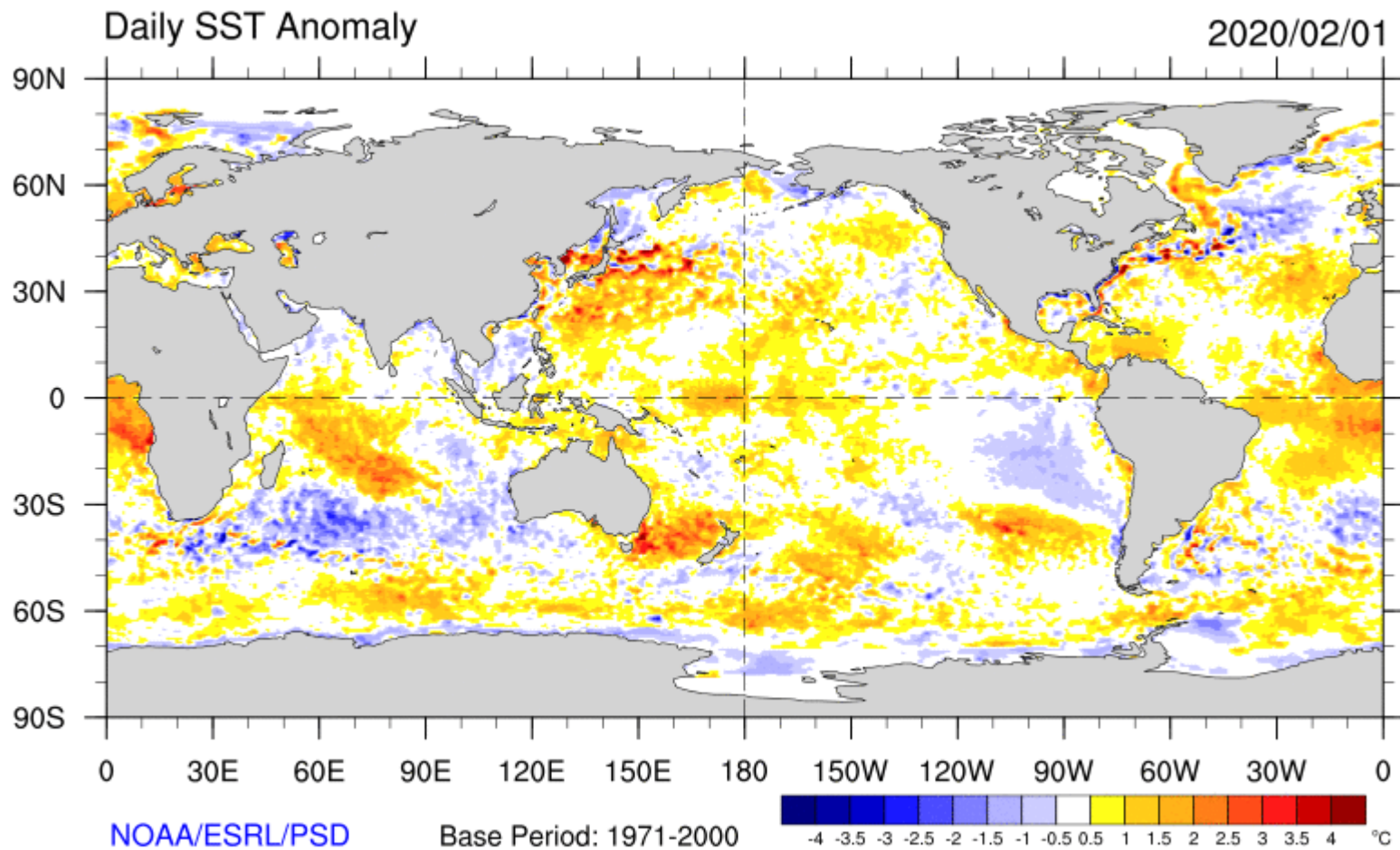


EL NIÑO – SOUTHERN OSCILLATION (ENSO)

NEUTRAL

Source:

https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf



**INTERDECADAL PACIFIC
OSCILLATION**

POSITIVE

INDIAN OCEAN DIPOLE

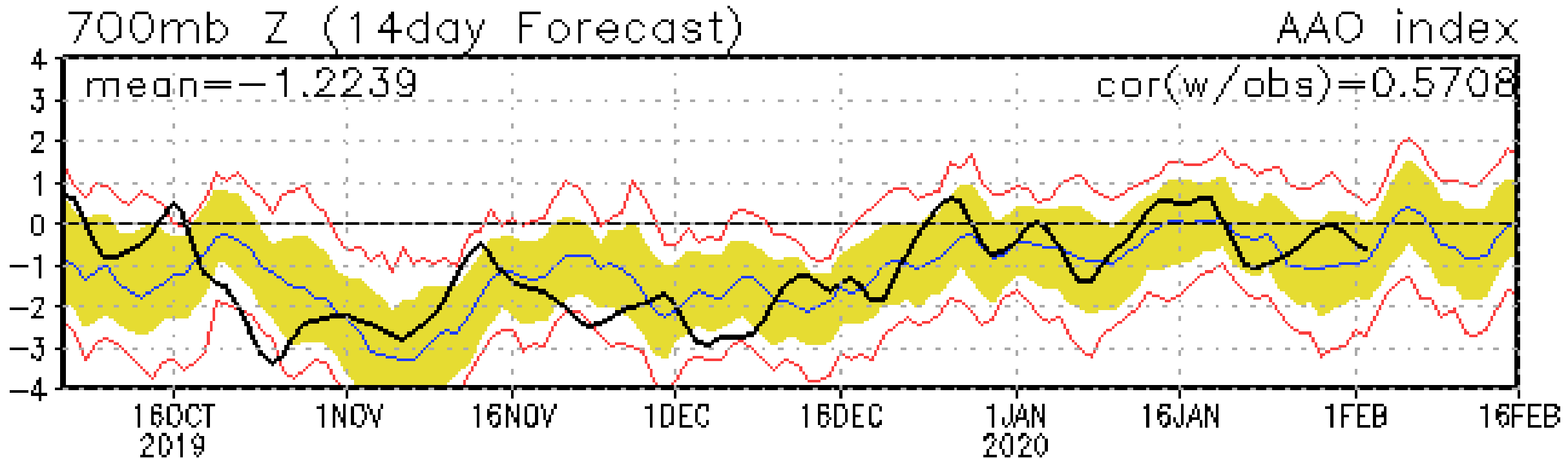
NEUTRAL

<https://www.esrl.noaa.gov/psd/map/clim/sst.shtml>

SEA SURFACE TEMPERATURES

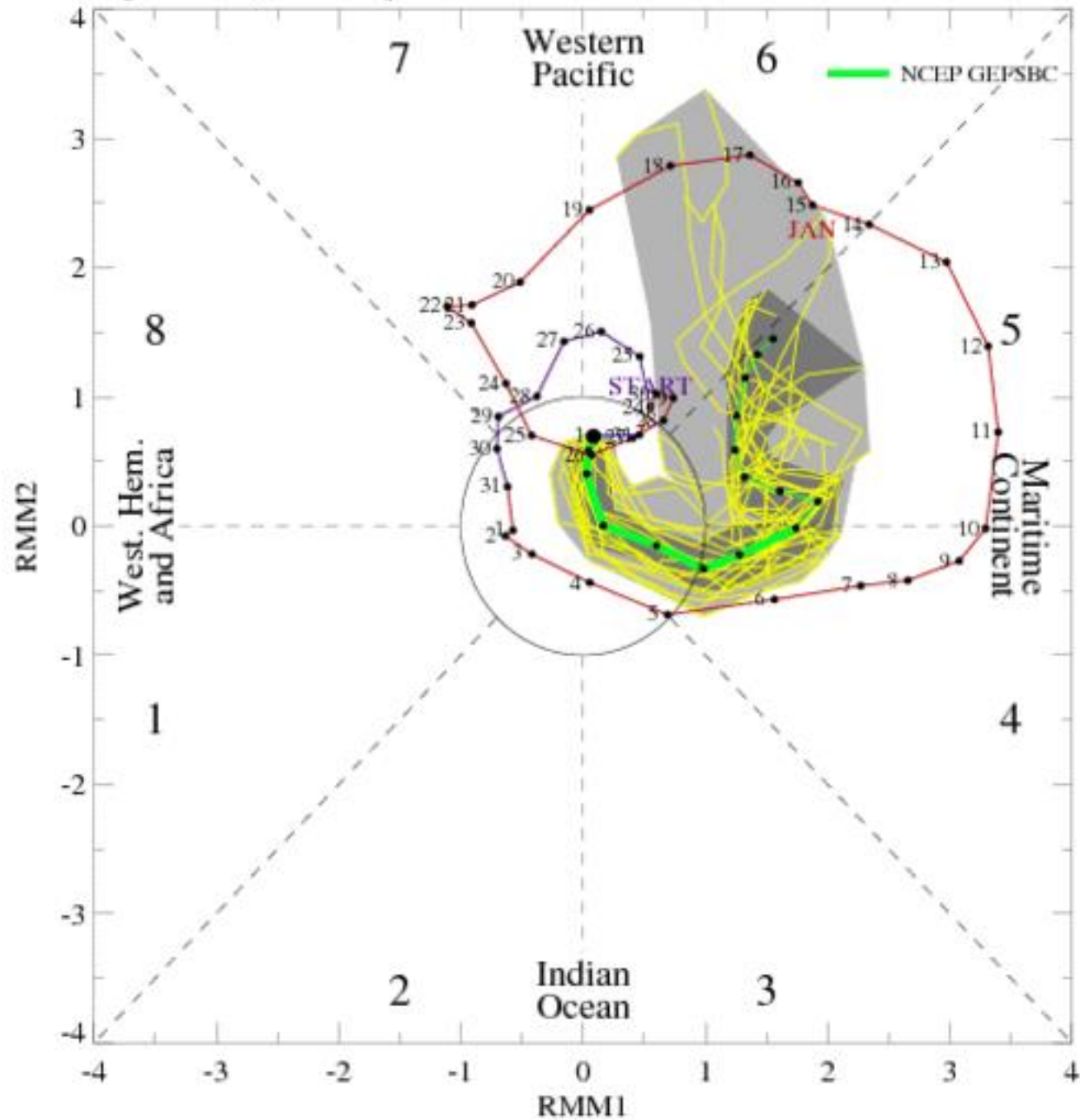
ABOVE AVERAGE

SOUTHERN ANNULAR MODE (SAM)



https://www.cpc.ncep.noaa.gov/products/precip/CWlink/daily_ao_index/aao/aao.sprd2.gif

[RMM1, RMM2] forecast for Feb-02-2020 to Feb-16-2020

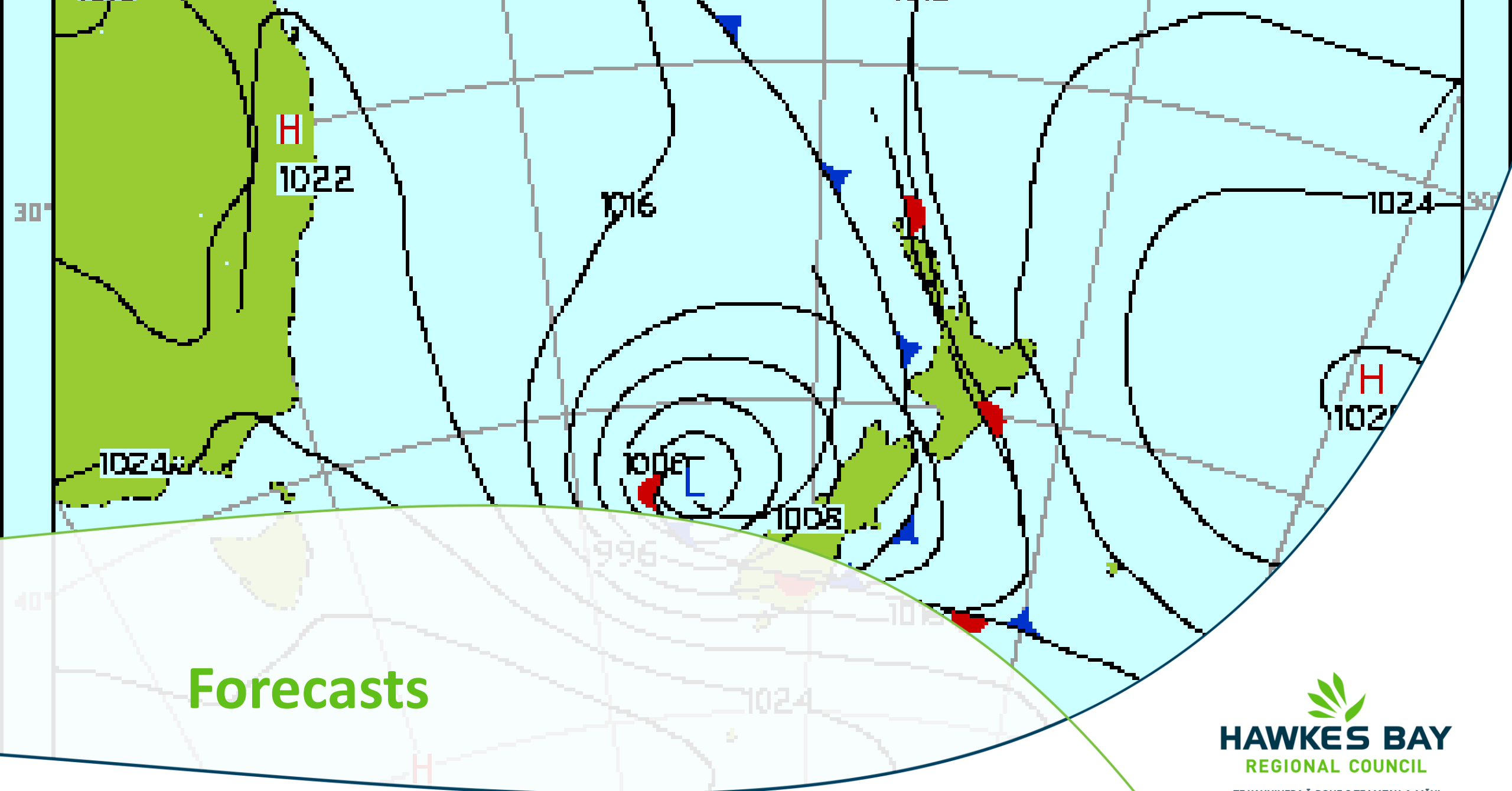


MADDEN-JULIAN OSCILLATION

Sources:

<http://www.bom.gov.au/climate/mjo/>

<https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/foregfs.shtml>



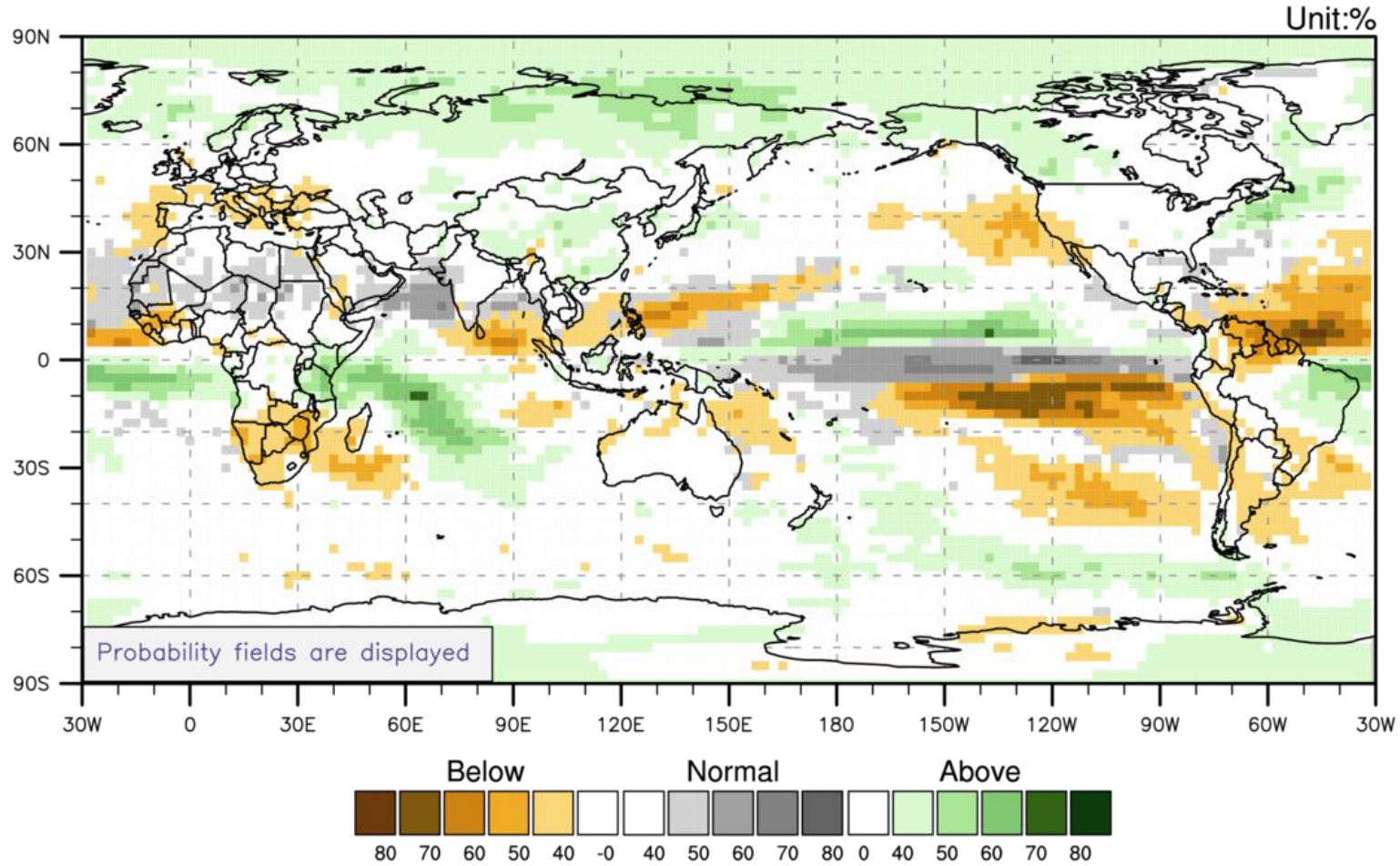
Forecasts

NIWA Seasonal Forecast February to March 2020

- Temperatures are most likely to be near (40%) or above average (45% chance)
- Rainfall totals are most likely to be near normal (45% chance)
- Soil moisture levels are most likely to be near (40%) or below normal (35% chance)

<https://www.niwa.co.nz/climate/seasonal-climate-outlook>

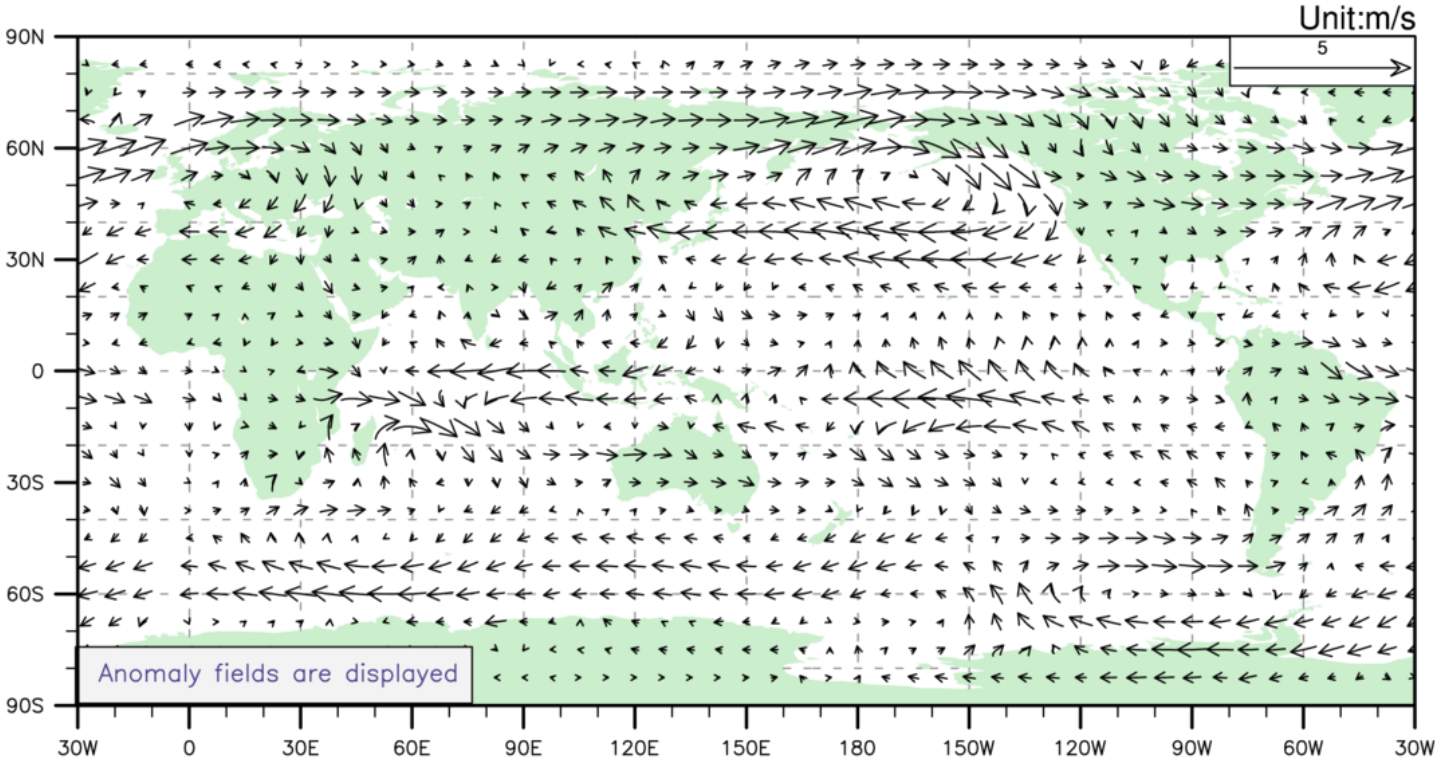
Precipitation for February-April 2020



Issued: 20 Jan, 2020

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Wind at 850hPa for February-April 2020



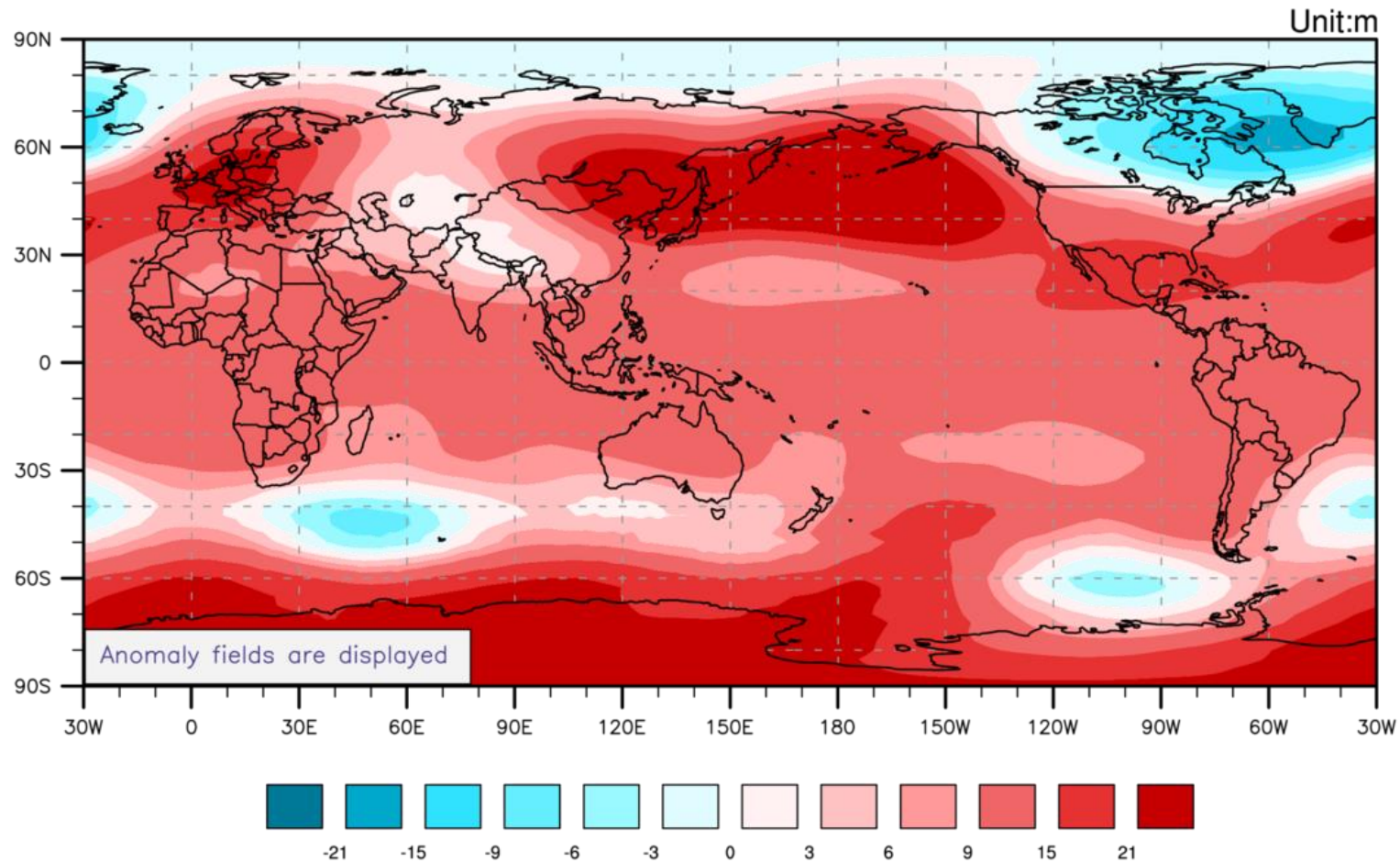
Issued: 20 Jan, 2020

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Geopotential height at 500hPa for February-April 2020



Issued: 20 Jan, 2020

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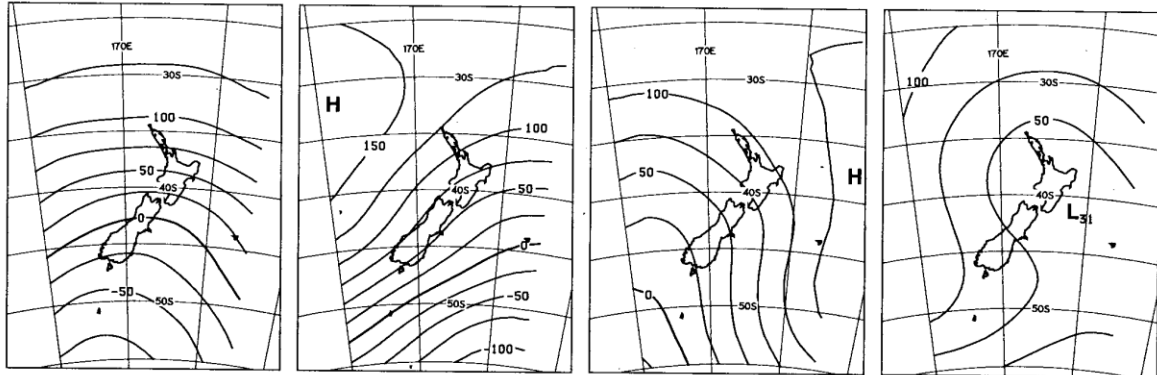
“Trough” group

T - 12.3%

SW - 11.3%

TNW - 7.6%

TSW - 7.3%



Twelve Kidson Weather Types

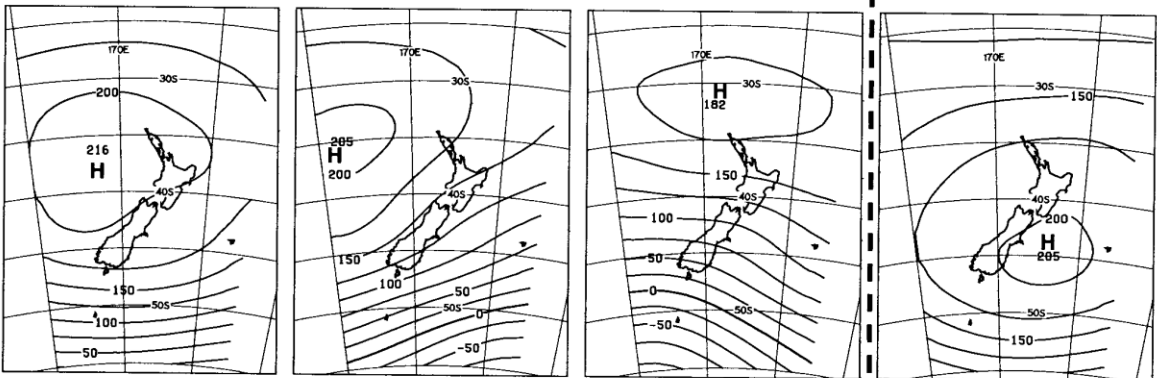
“Zonal” group

H - 12.9%

HNW - 6.9%

W - 4.8%

HSE - 13.7%



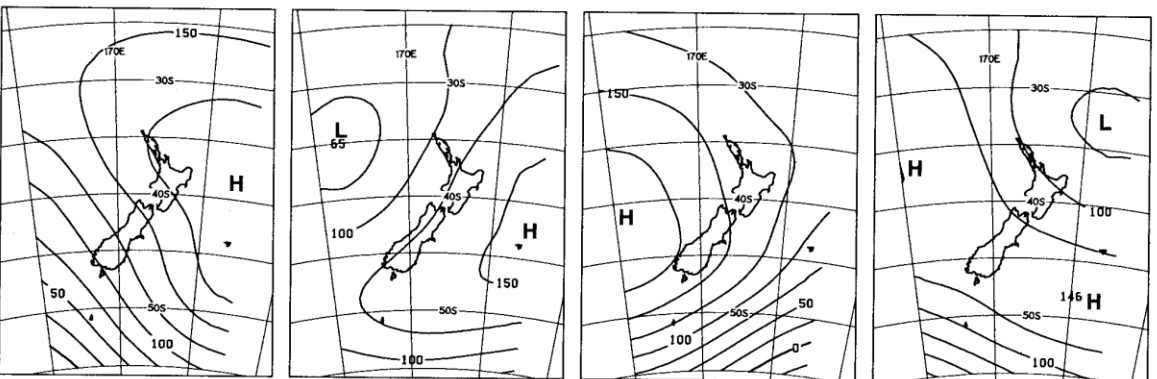
“Blocking” group

HE - 7.1%

NE - 6.3%

HW - 5.4%

R - 4.7%



SPRING	Waikaremoana	Northern HB	Tangoio	Kaweka	Ruahine	Heretuanga Plains	Ruataniwha Plains	Southern HB
T	1	-12	-5	-2	28	-7	-18	-12
SW	-10	-20	-24	-37	-5	-32	-39	-30
TNW	5	26	15	9	5	19	18	15
TSW	36	38	27	27	-8	55	47	41
H	-12	-18	-28	-38	-44	-26	-10	-10
HNW	-1	4	-10	-23	-15	-24	-7	-1
W	-28	-19	-14	-1	34	-19	-14	2
HSE	-14	4	8	19	8	3	4	2
HE	-16	-22	-5	-6	-13	-3	3	-4
NE	2	3	13	34	7	19	19	11
HW	5	26	15	9	5	19	16	15
R	35	37	62	26	55	48	30	44

Correlation (r) between the seasonal frequency of Kidson Weather Types and seasonal rainfall at sites with 30 year records