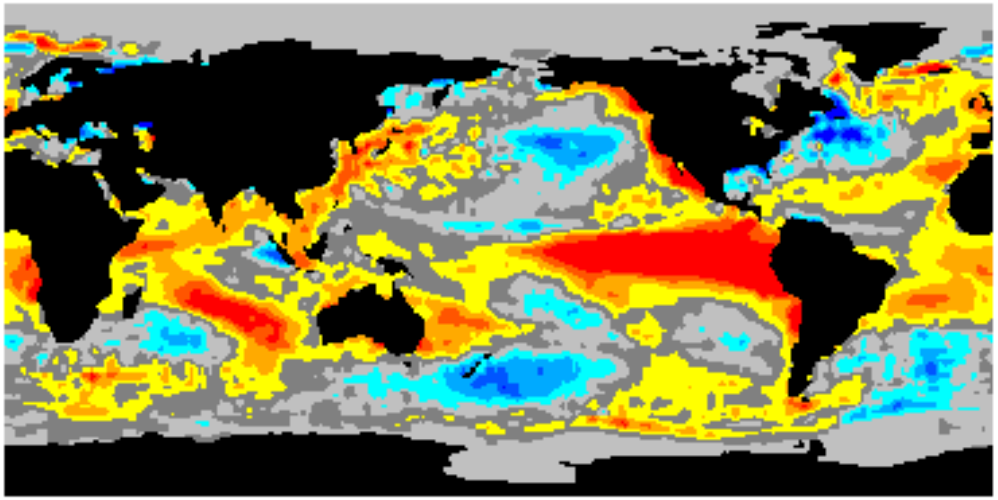
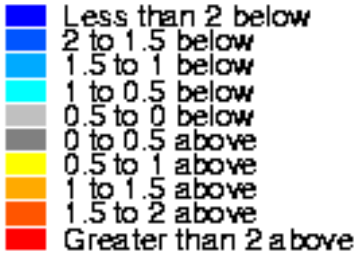
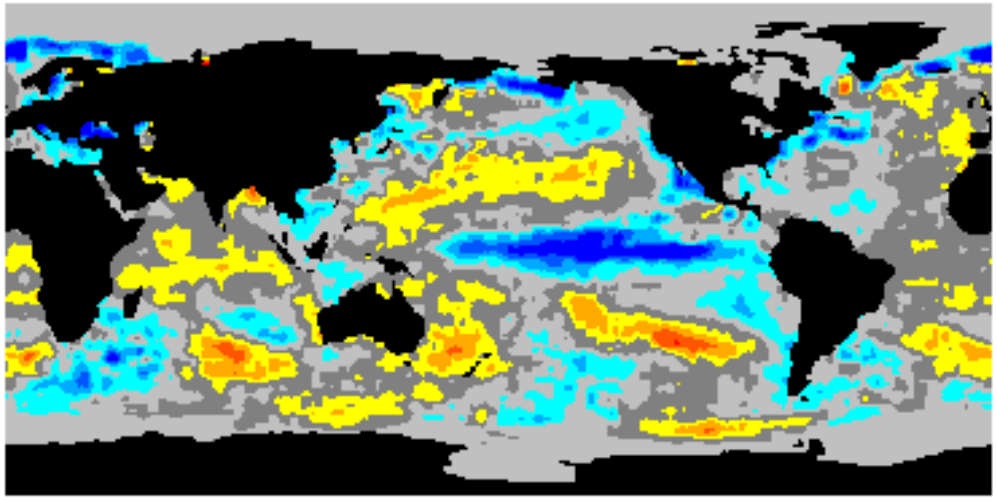
"EL NIÑO" Y "LA NIÑA"

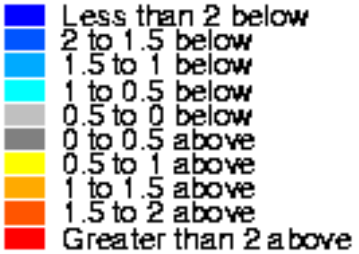
Variation of Sea-surface Temperature from Average
December 1997



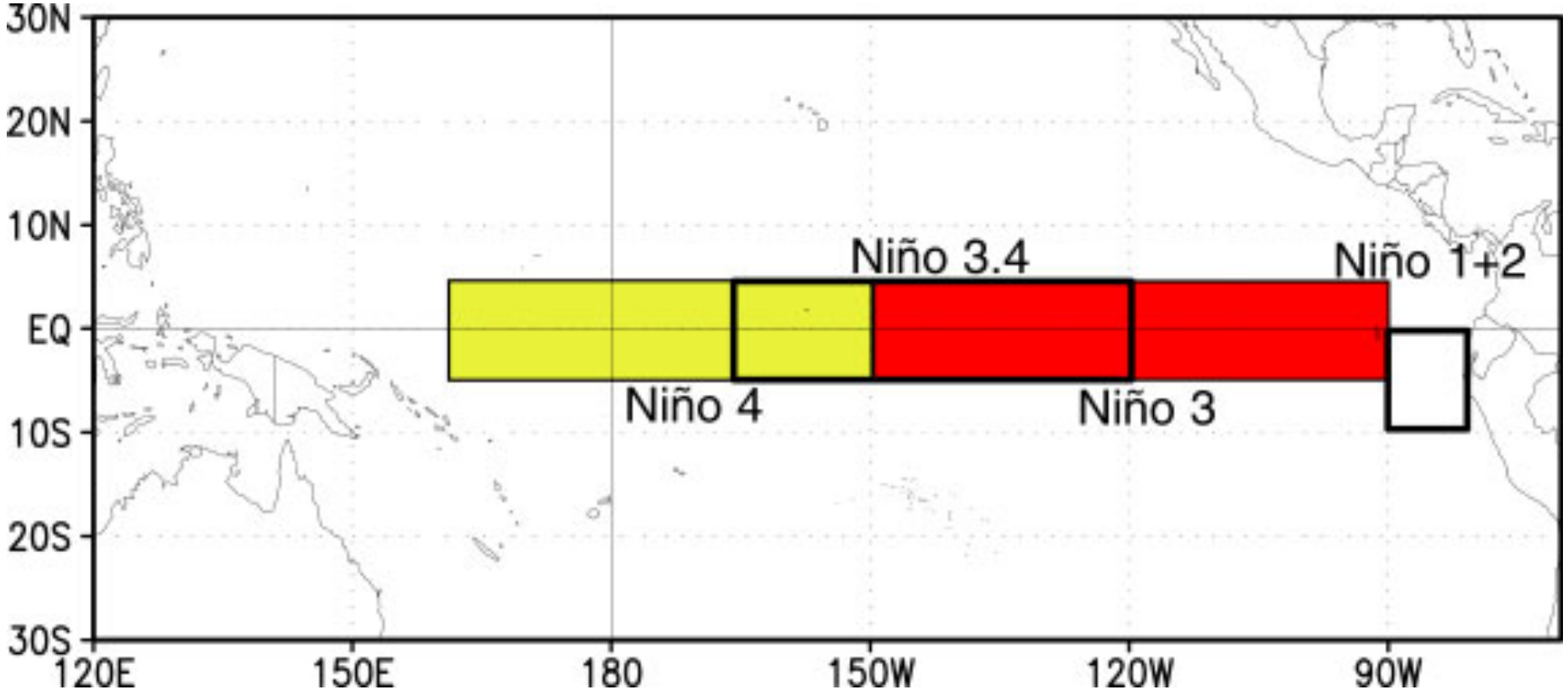


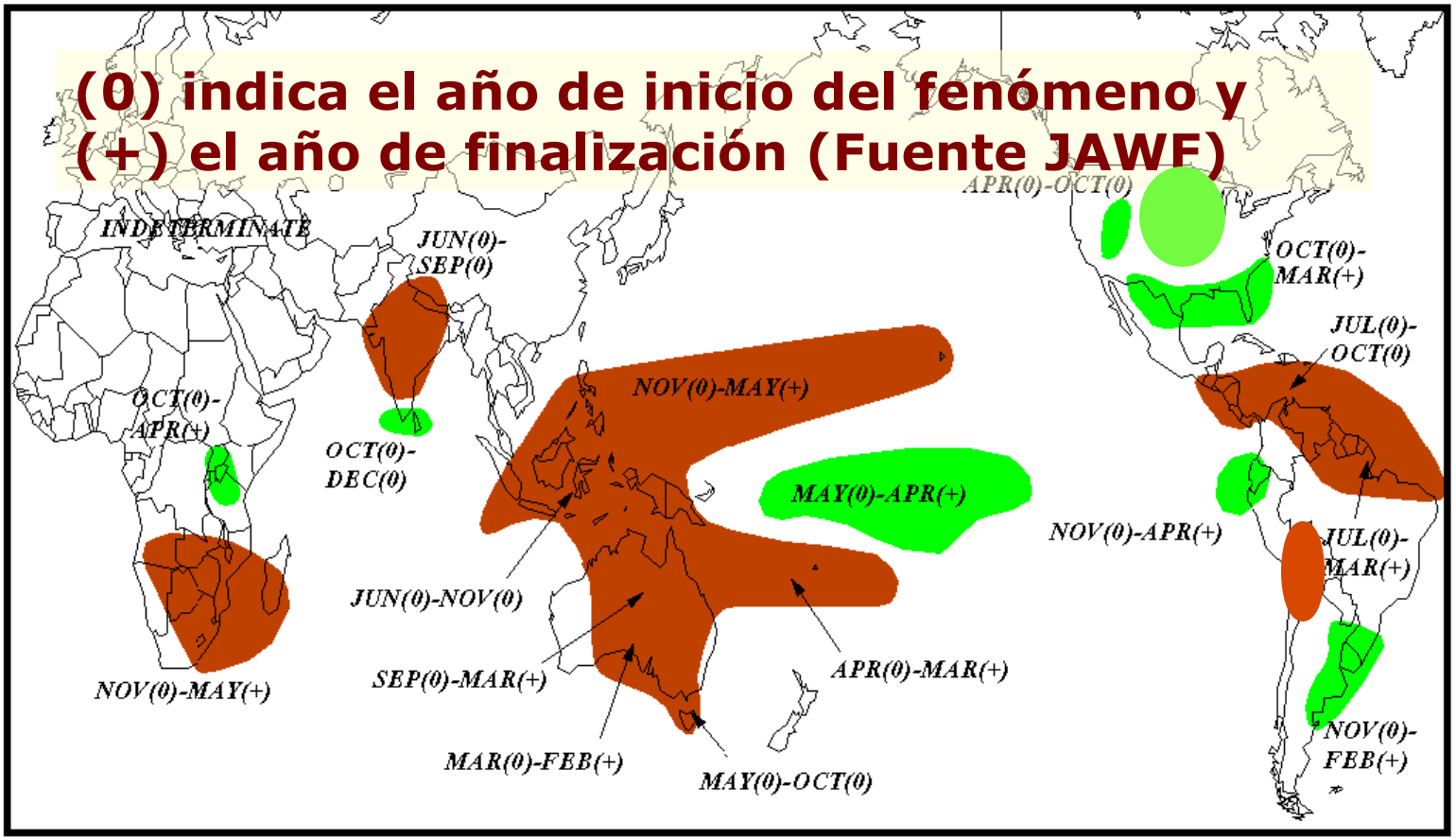
Variation of Sea-surface Temperature from Average
December 1988





www.LongPaddock.qld.gov.au

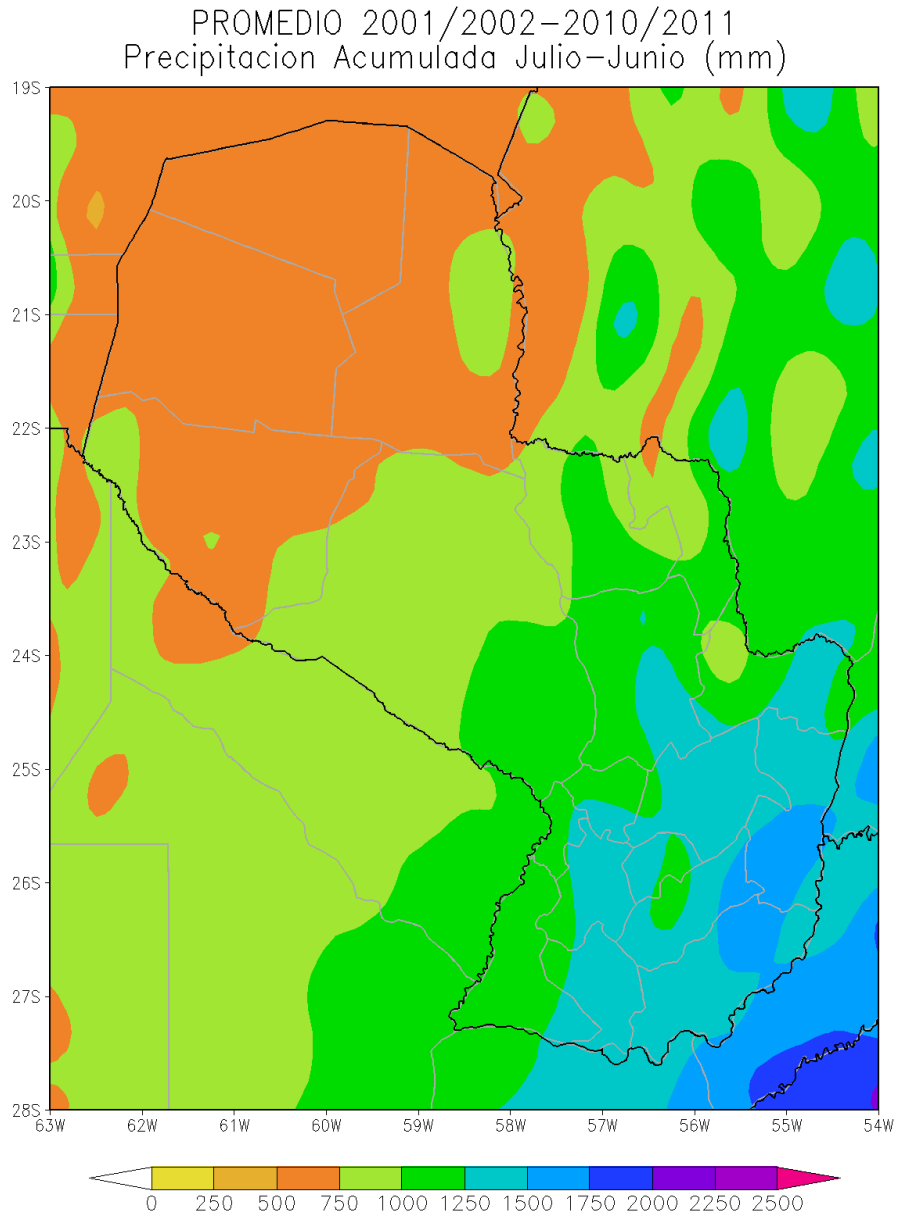

30N
20N
10N
EQ
10S
20S
30S
120E
150E
180
150W
120W
90W
Niño 3.4
Niño 1+2
Niño 4
Niño 3

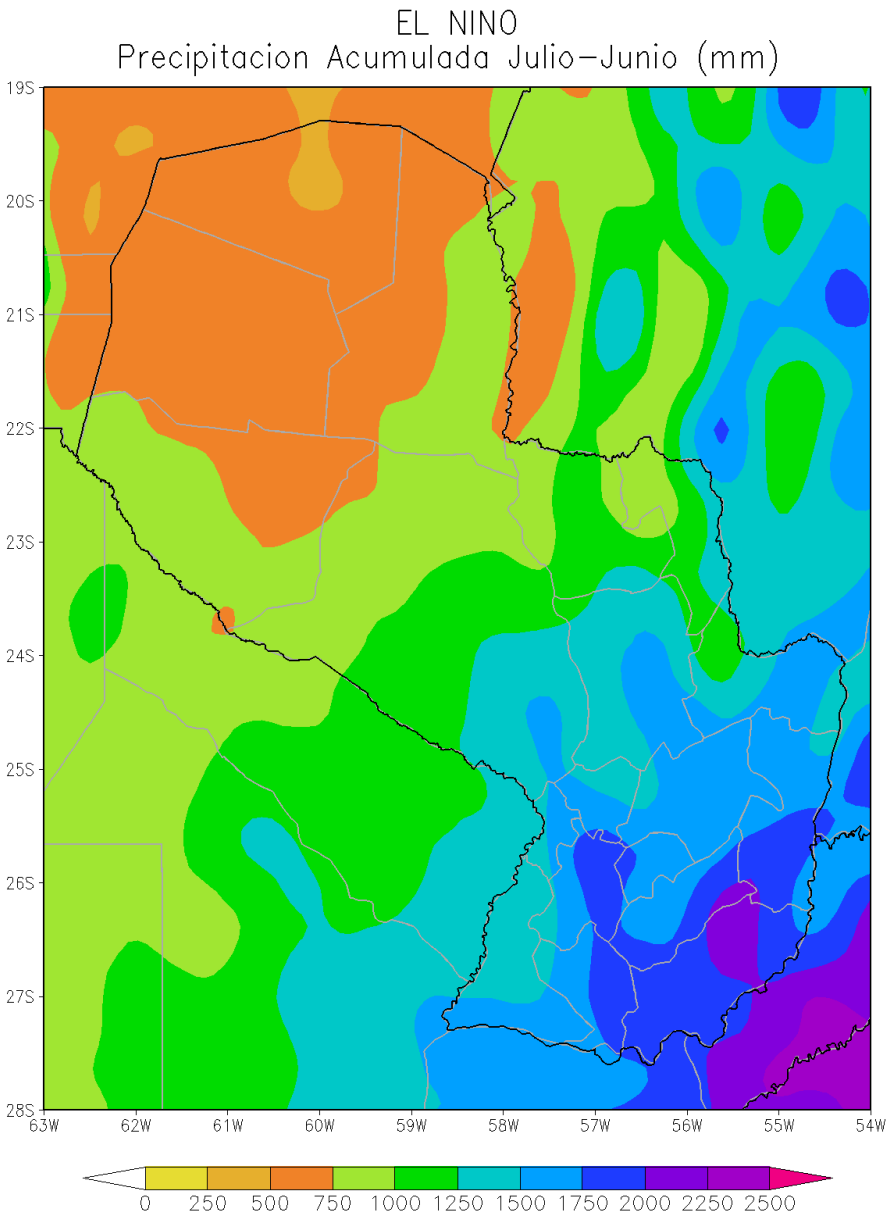


Anomalías de precipitaciones causadas "El Niño"

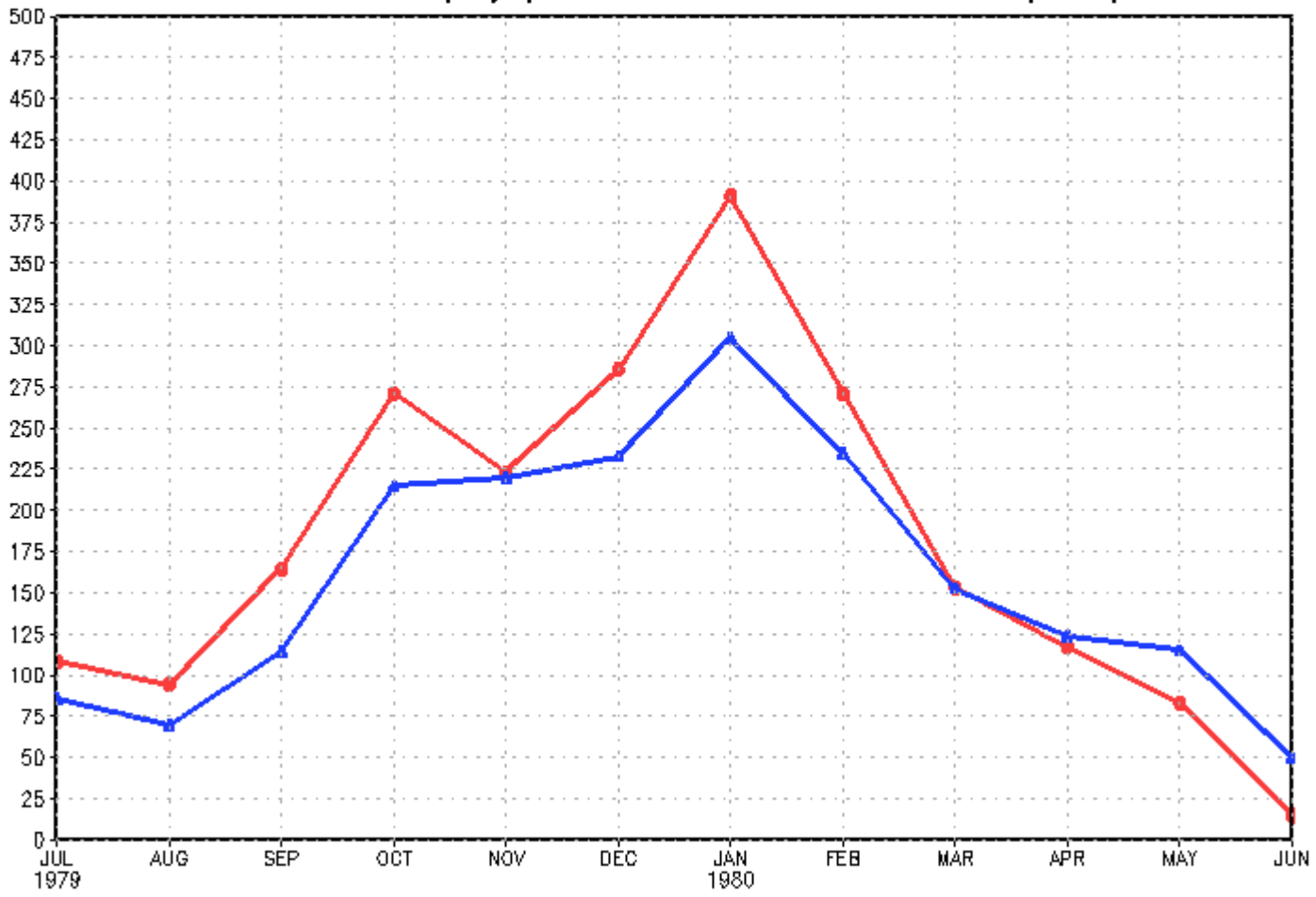
PROMEDIO

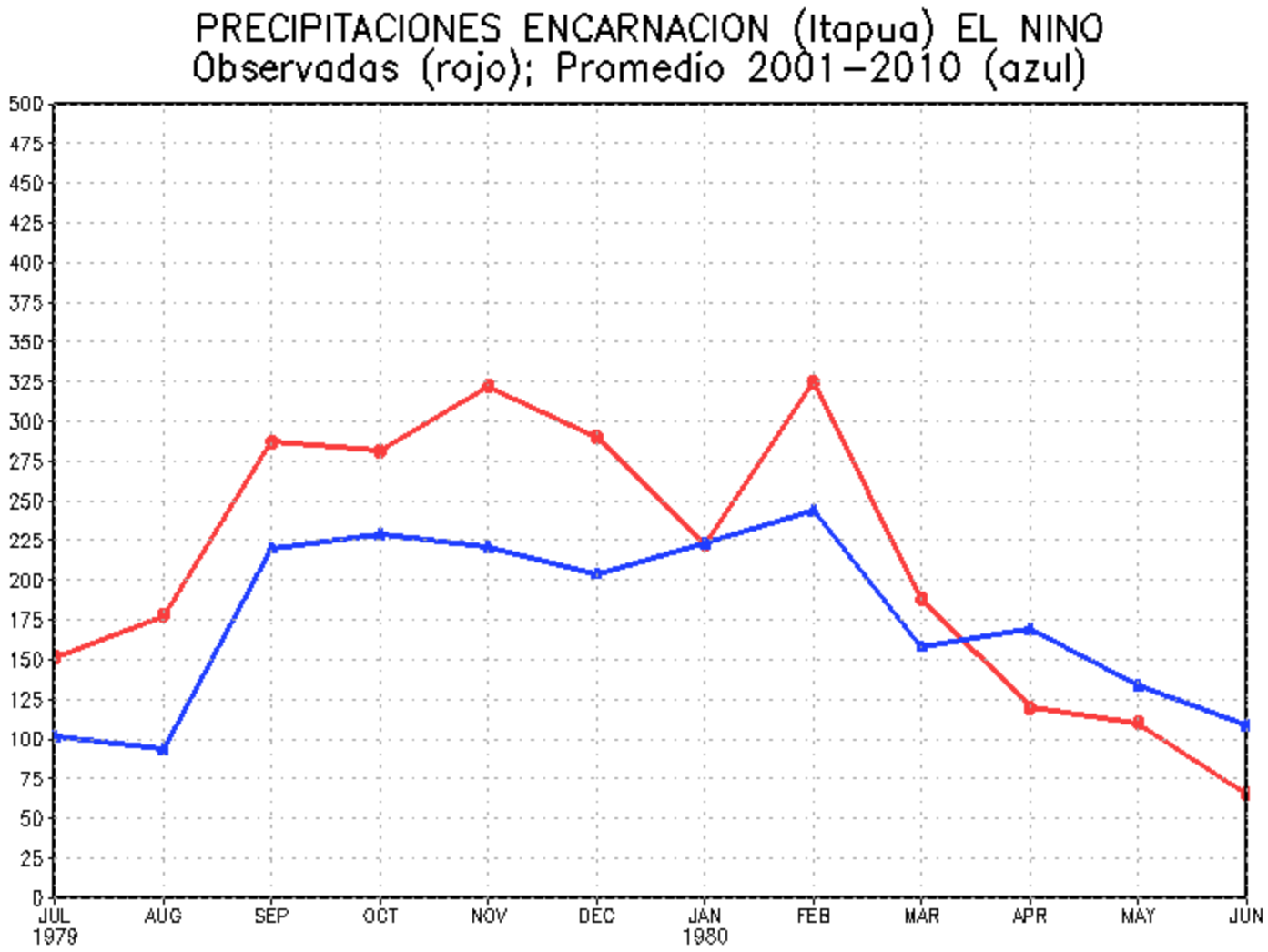
“EL NIÑO”





PRECIPITACIONES OBSERVADAS NUEVA ESPERANZA (CANINDEYU) EL NINO
Observadas (rojo); Promedio 2001–2010 (azul)




PRECIPITACIONES ENCARNACION (Itapua) EL NINO
Observadas (rojo); Promedio 2001-2010 (azul)
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
JUL
1979
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NOV
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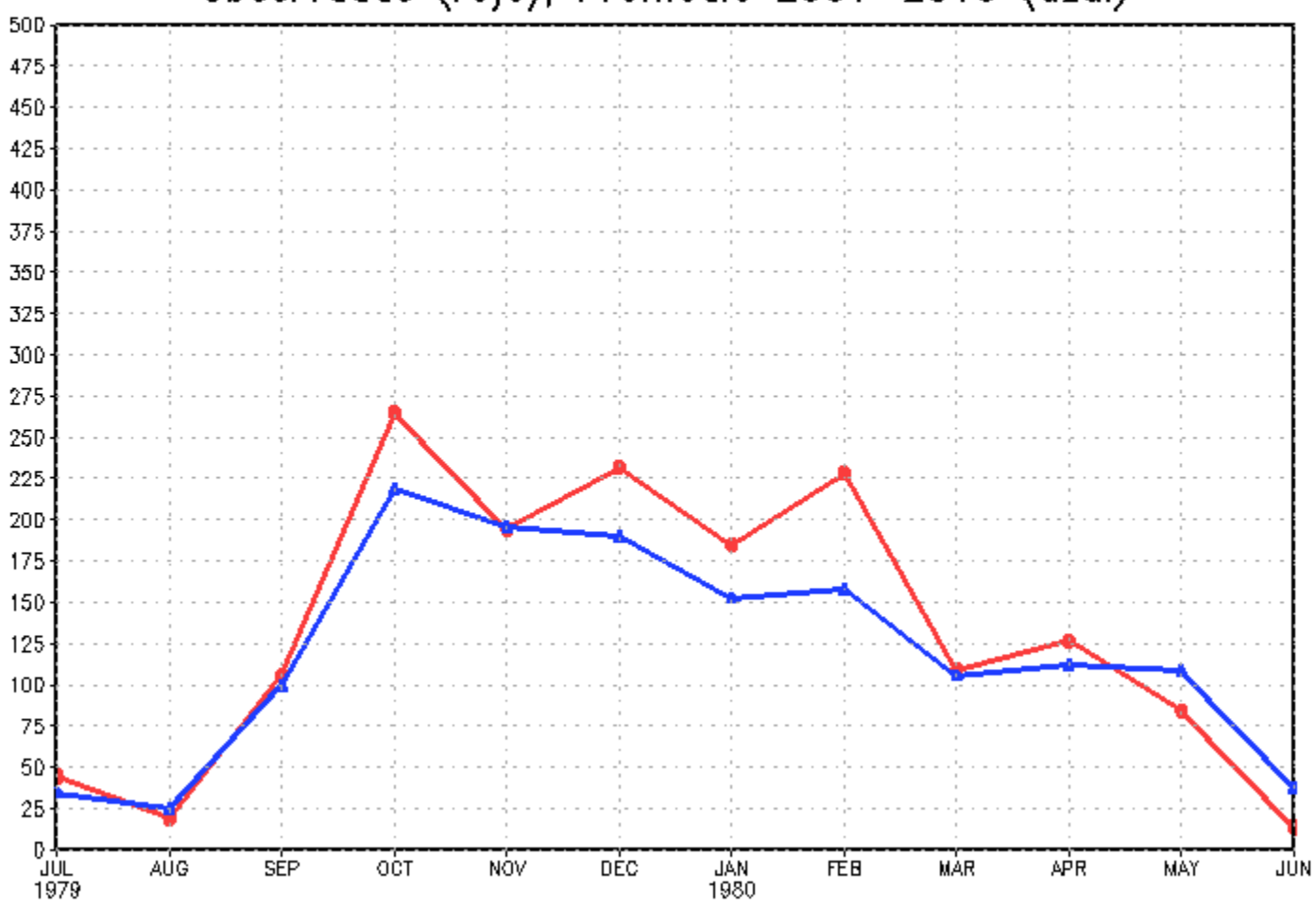
JAN
1980
FEB
MAR
APR
MAY
JUN


PRECIPITACIONES OBSERVADAS BOQUERON (BOQUERON) EL NINO
Observadas (rojo); Promedio 2001-2010 (azul)
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
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JUL
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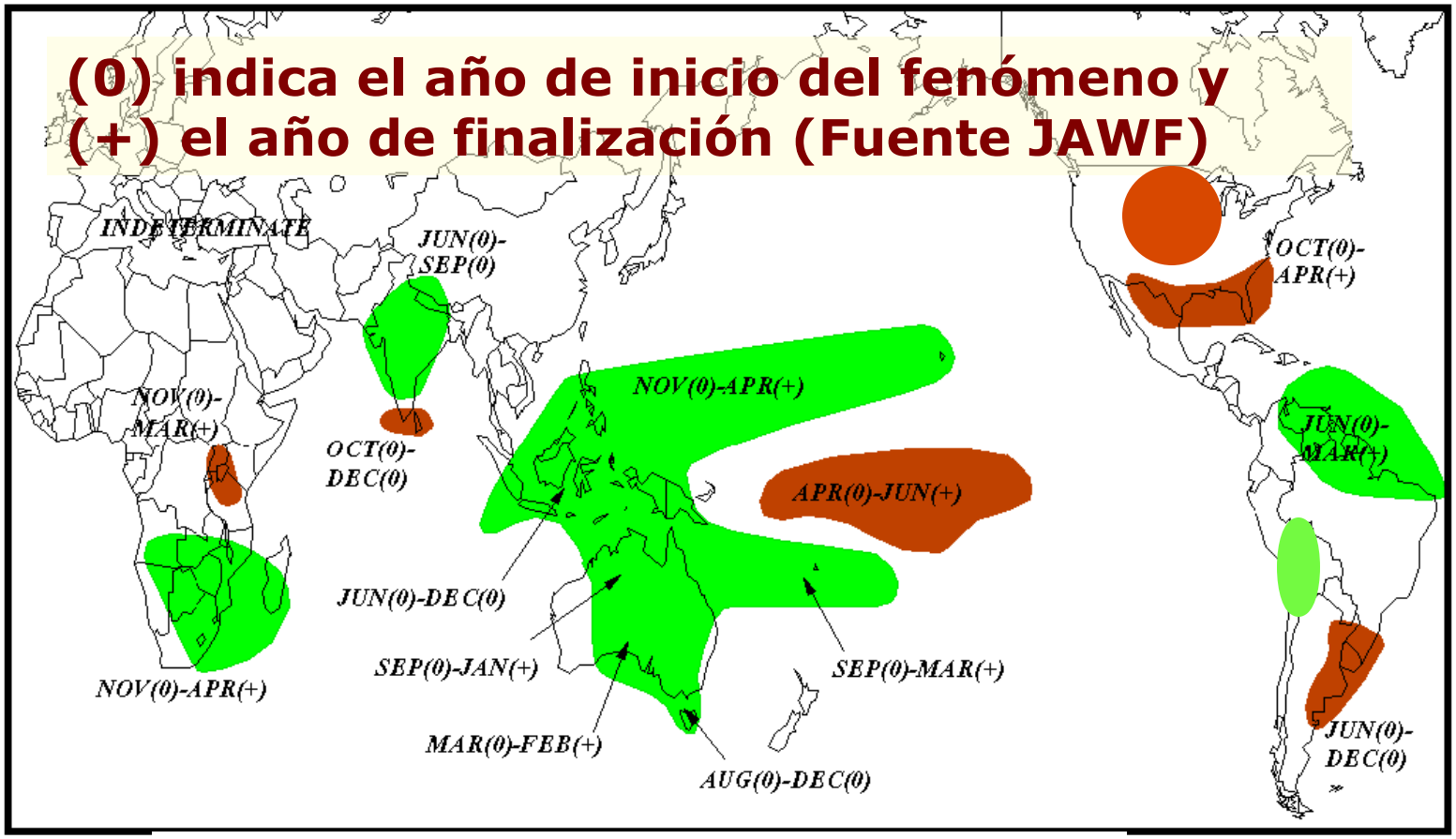
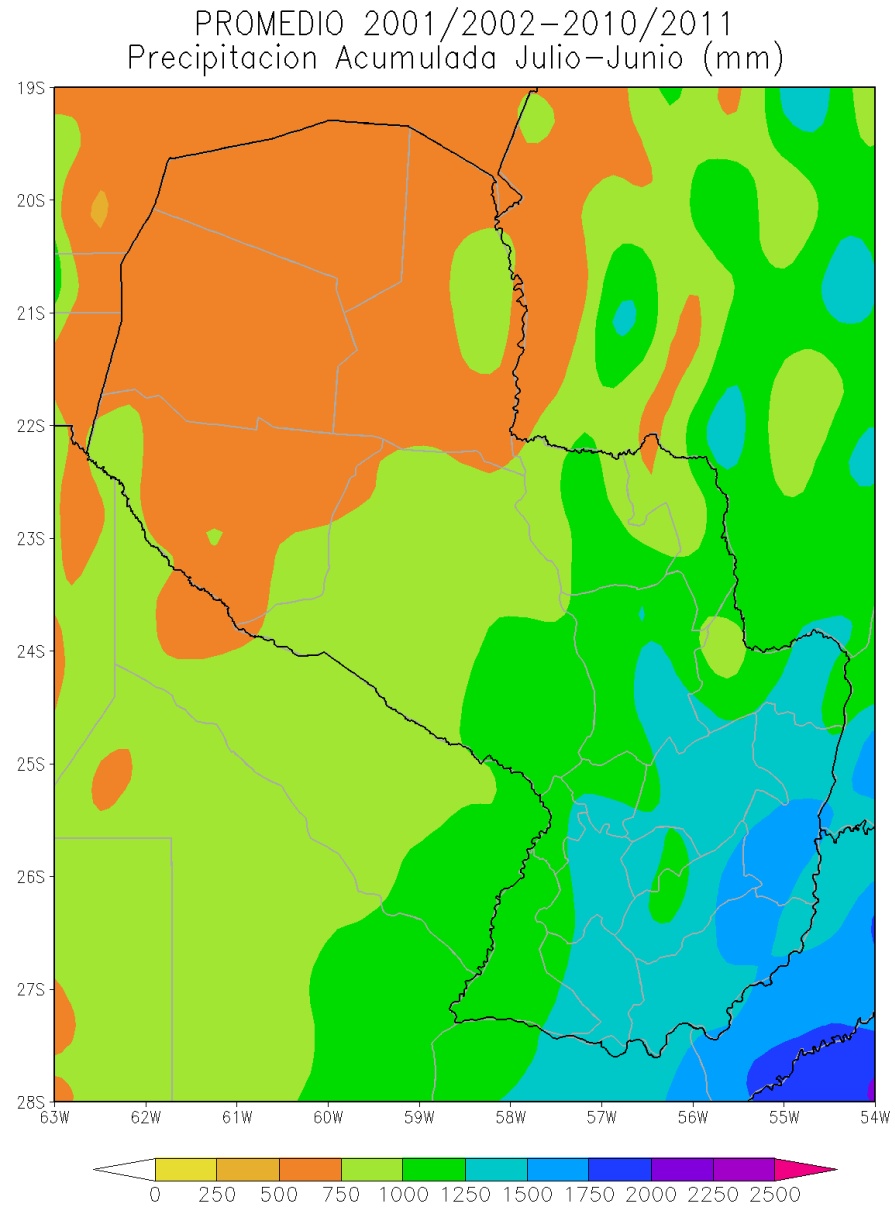
JUN

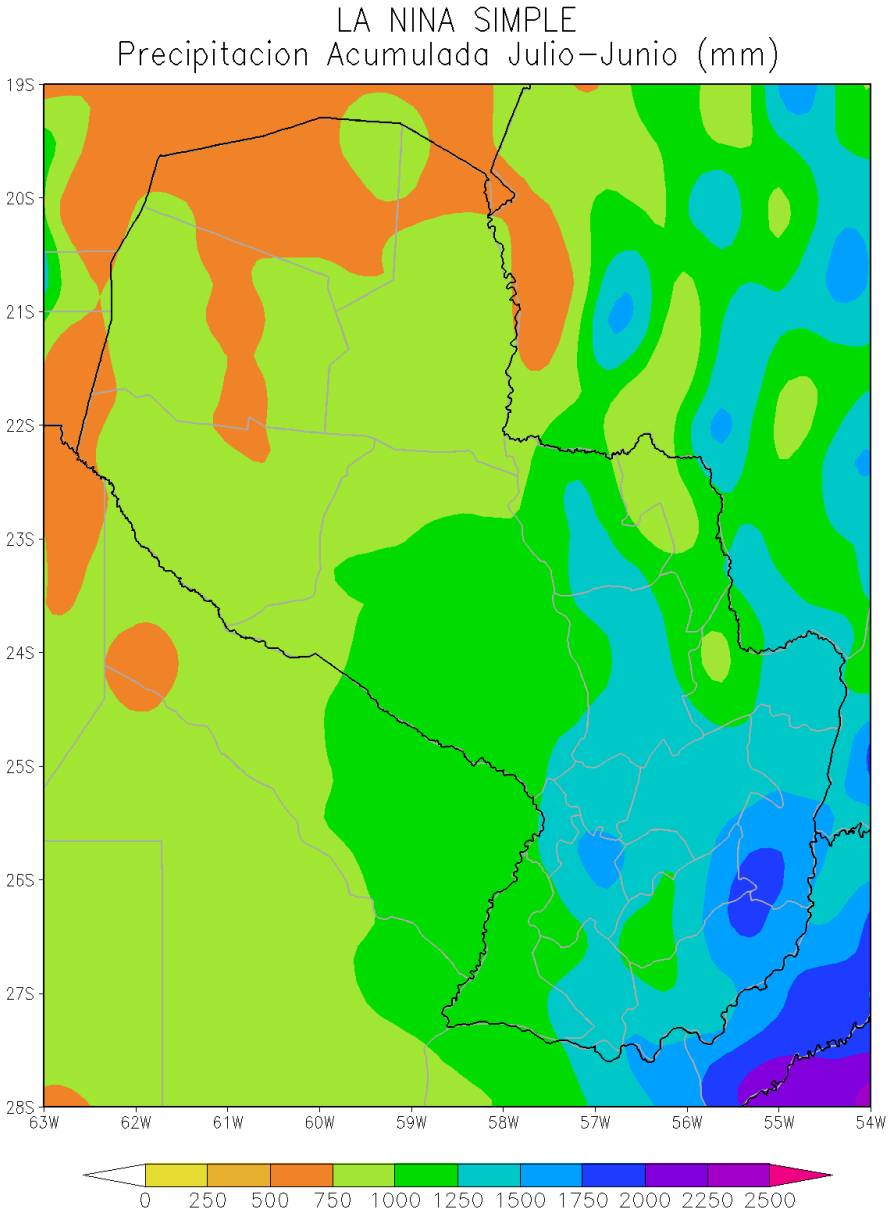


Anomalías de precipitaciones causadas por "La Niña"

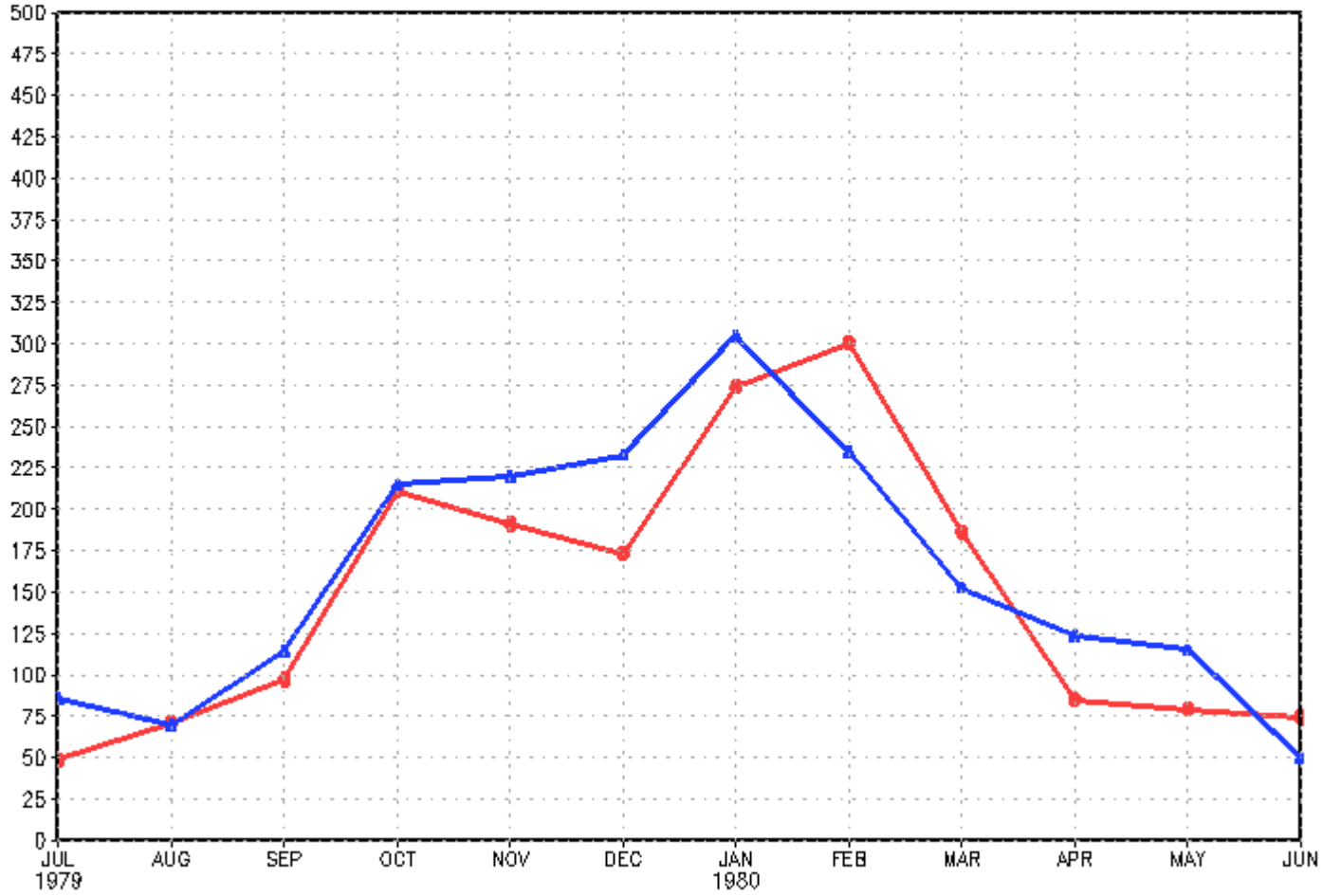
PROMEDIO

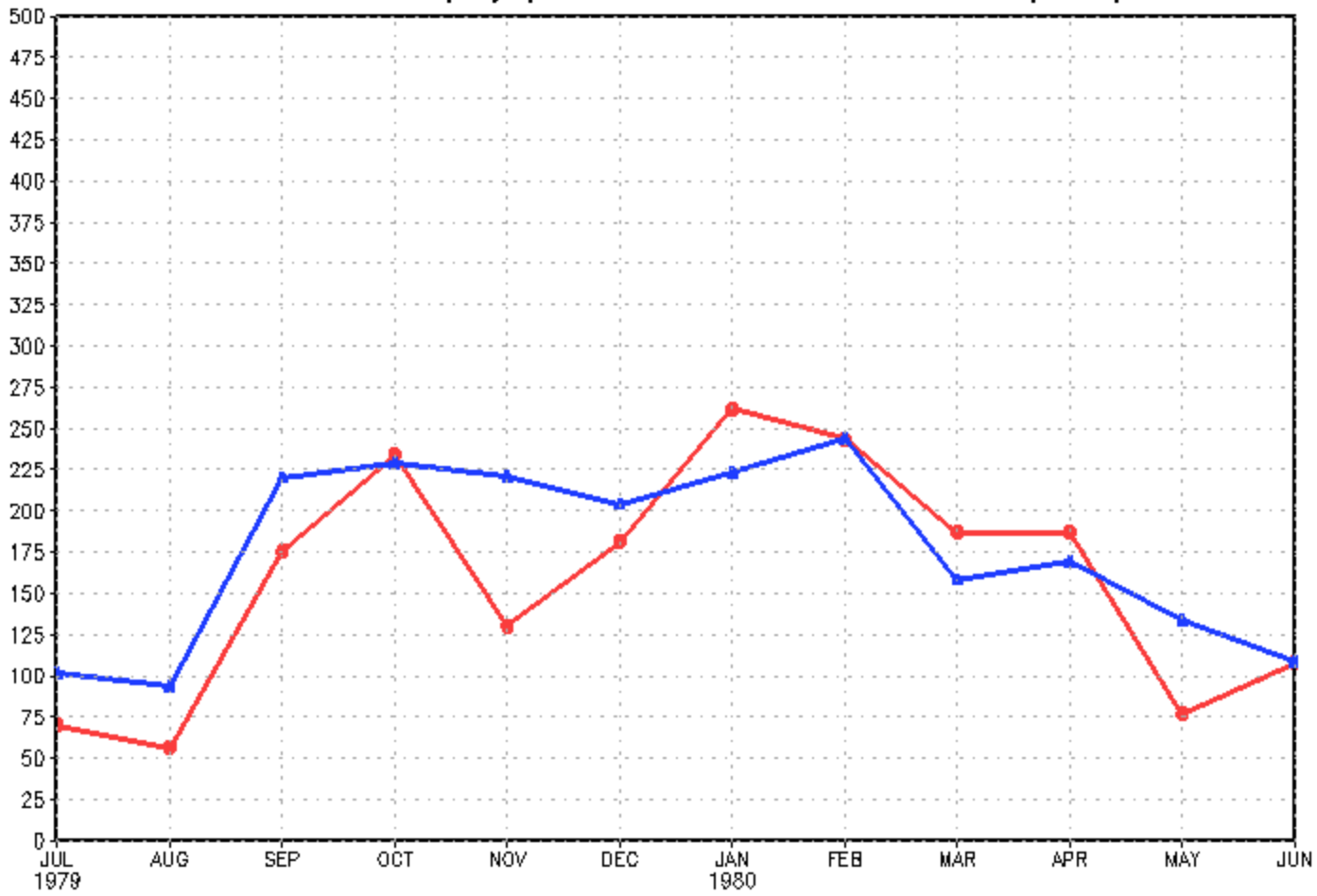
"LA NIÑA SIMPLE"





PRECIPITACIONES OBSERVADAS NUEVA ESPERANZA (CANINDEYU) LA NINA
Observadas (rojo); Promedio 2001–2010 (azul)




PRECIPITACIONES ENCARNACION (Itapua) LA NINA SIMPLE
Observadas (rojo); Promedio 2001-2010 (azul)
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
JUL
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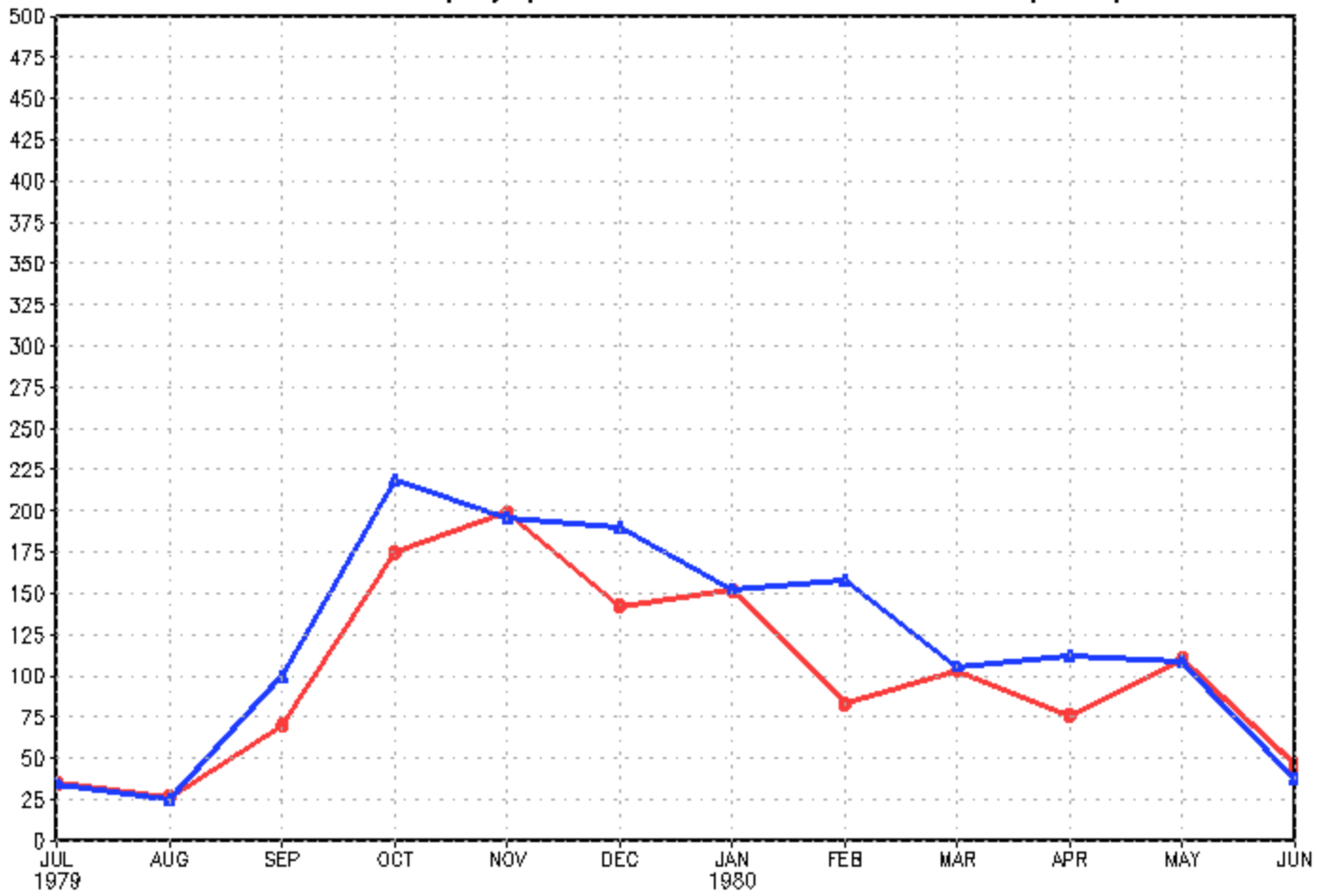
PRECIPITACIONES OBSERVADAS BOQUERON (BOQUERON) LA NINA
Observadas (rojo); Promedio 2001-2010 (azul)
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
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25
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JUL
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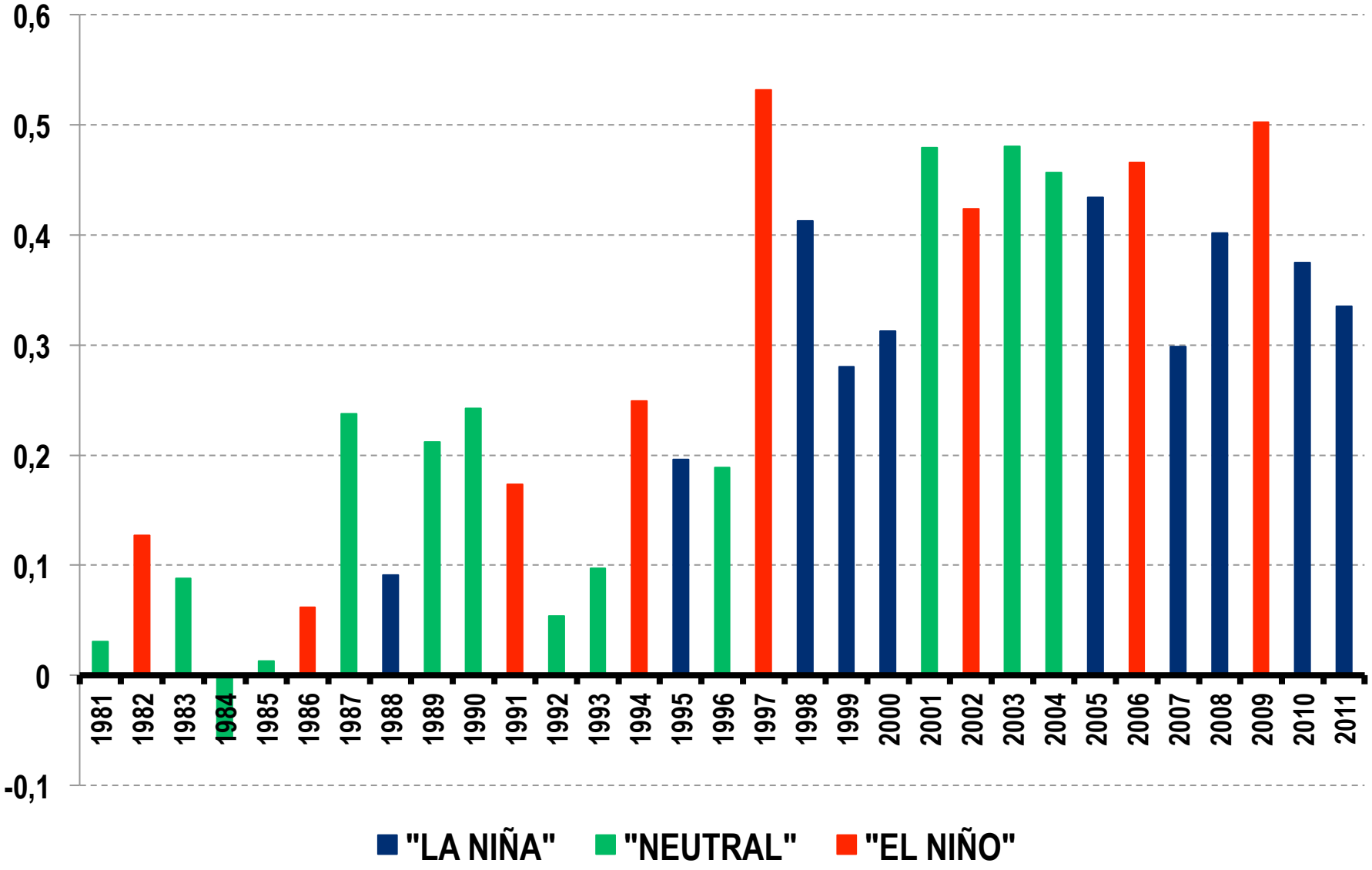
JUN

ANOMALIA GLOBAL DE TEMPERATURA ABRIL-MARZO (°C)
SEGÚN FASE DE "EL NIÑO OSCILACIÓN DEL SUR"



PROPORCIÓN DE FASES DEL ENSO DURANTE EL SIGLO XX
(Total 100 Campañas)

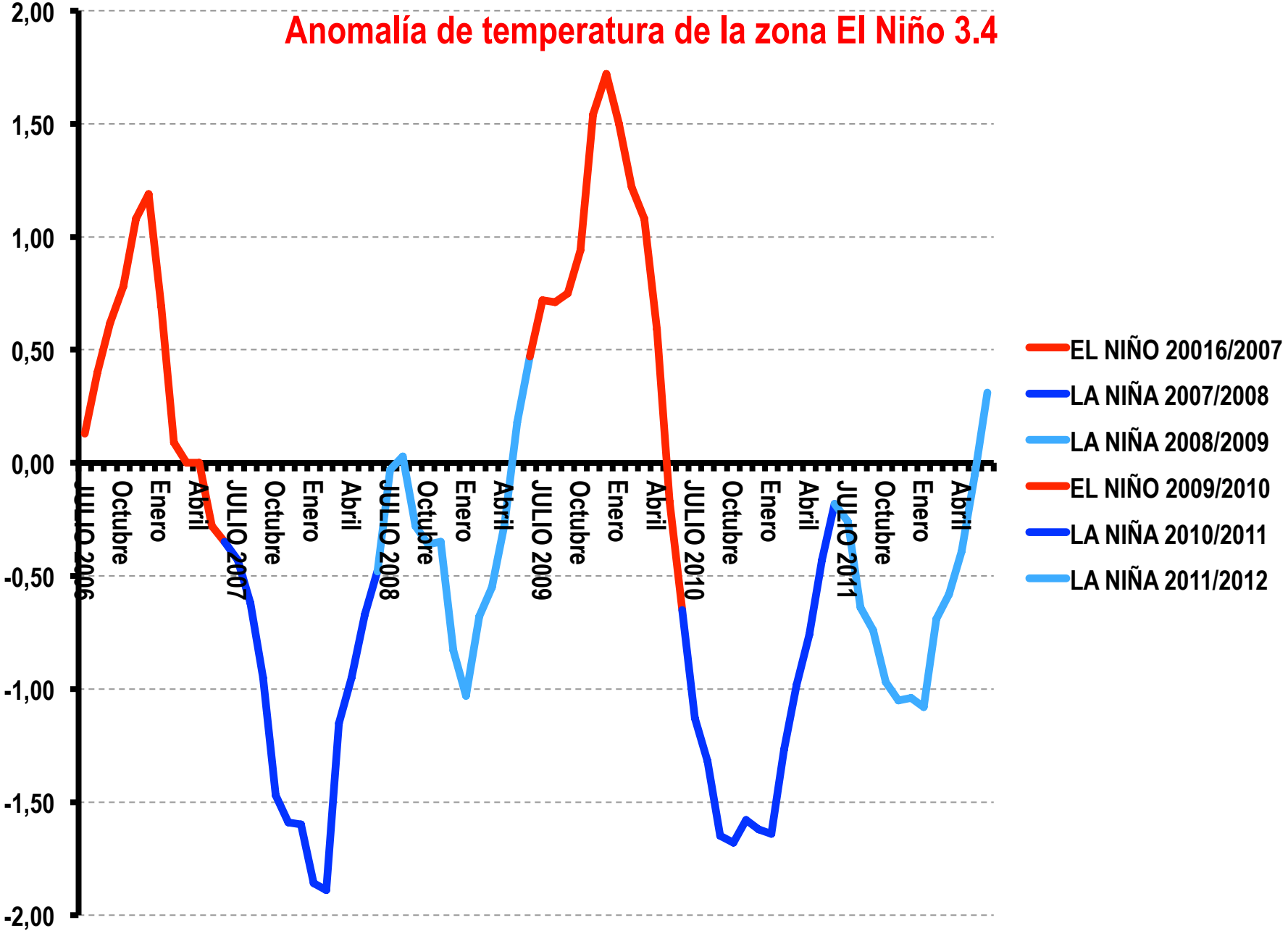
"El Niño": 20 Episodios = 20 %.
"Neutral": 66 Episodios = 66 %.
"La Niña": 14 Episodios = 14 %.

PROPORCIÓN DE FASES DEL ENSO DESDE LA CAMPAÑA 2000/2001 HASTA LA CAMPAÑA 2011/2012
(Total 12 Campañas)

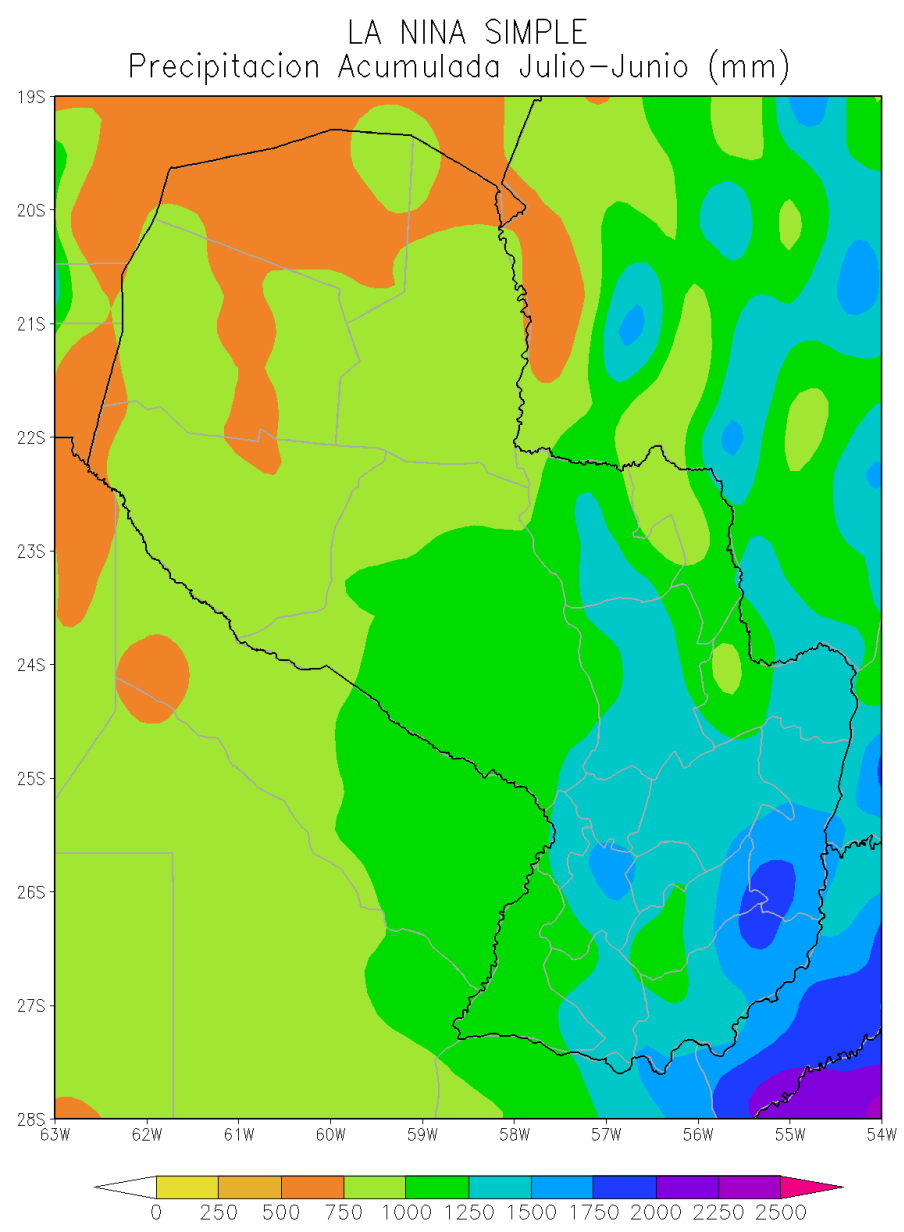
"El Niño": 3 Episodios = 25 %.
"Neutral": 3 Episodios = 25 %.
"La Niña": 6 Episodios = 50 %.

SECUENCIA CLIMÁTICA EL NIÑO- LA NIÑA - LA NIÑA

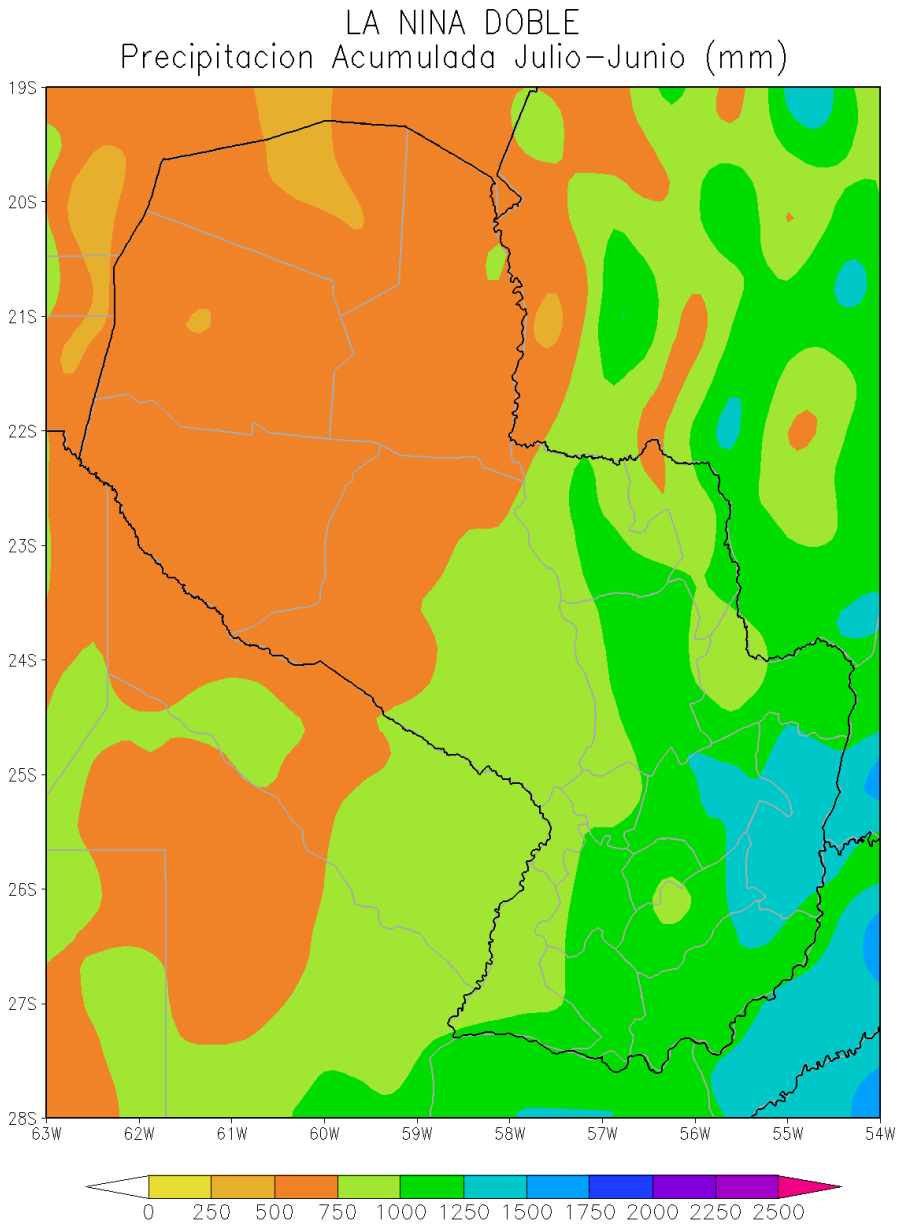
Anomalía de temperatura de la zona El Niño 3.4



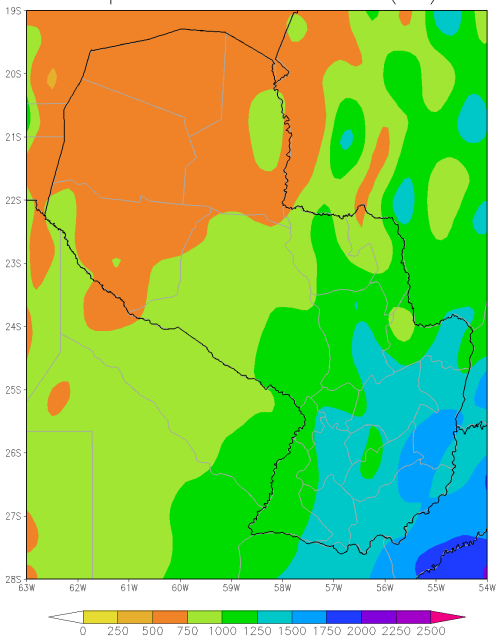
“LA NIÑA SIMPLE”



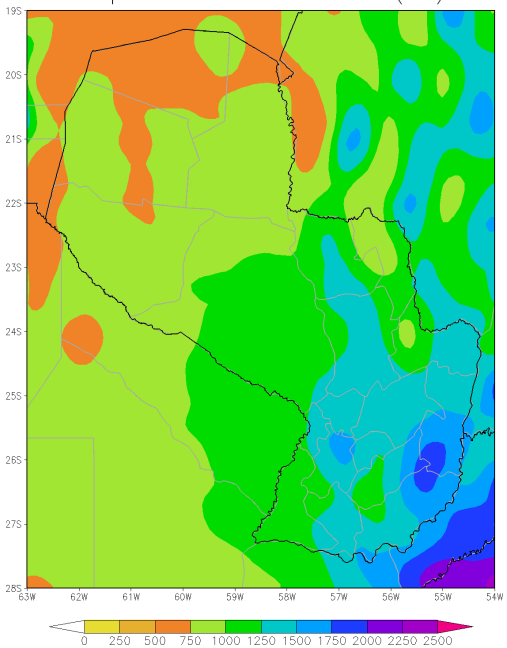
“LA NIÑA DOBLE”



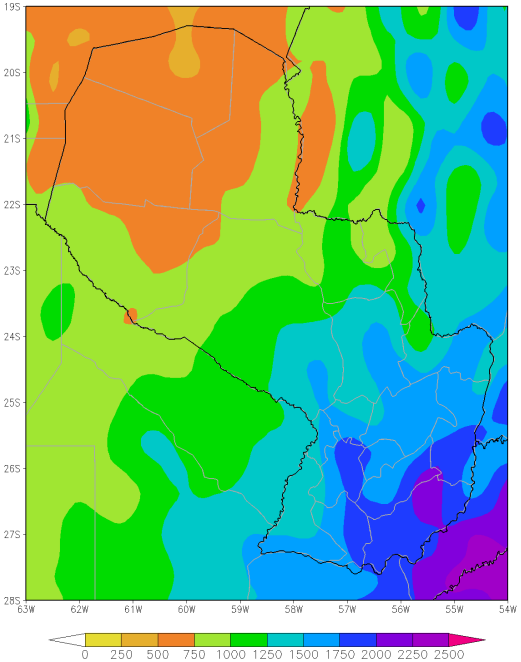
PROMEDIO 2001/2002-2010/2011
Precipitacion Acumulada Julio-Junio (mm)



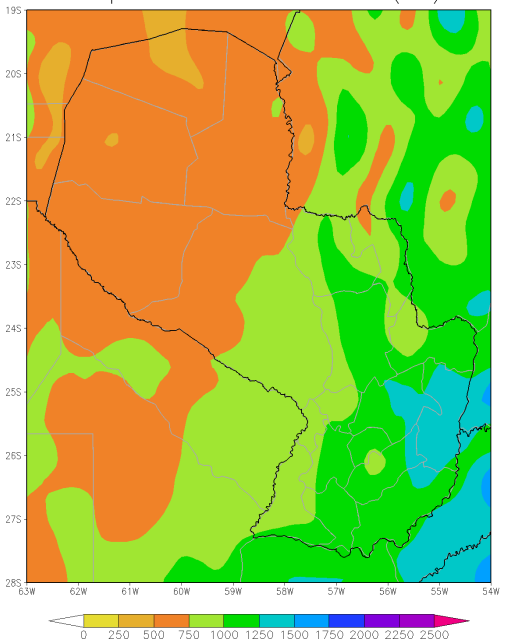
LA NINA SIMPLE
Precipitacion Acumulada Julio-Junio (mm)



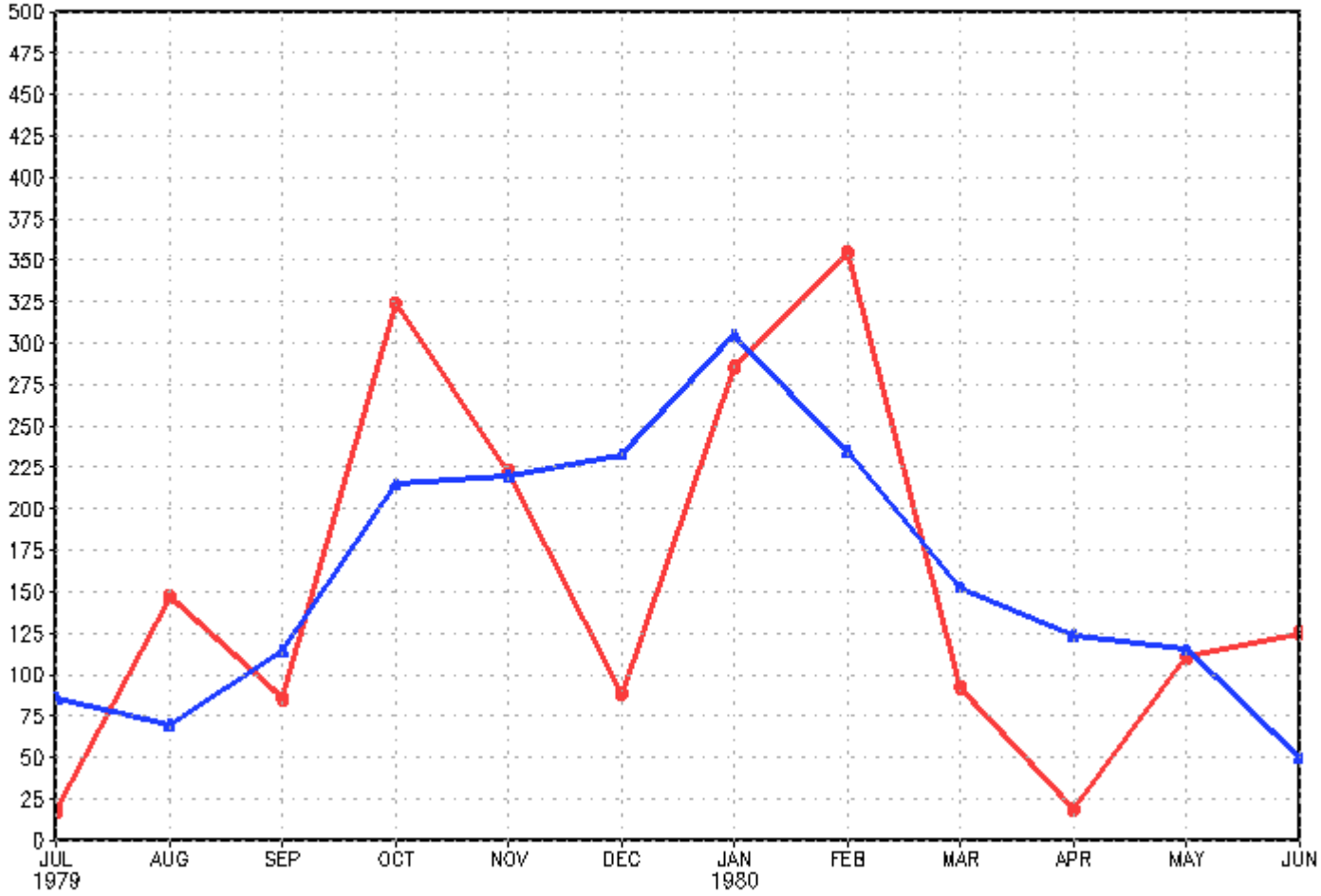
EL NINO
Precipitacion Acumulada Julio-Junio (mm)

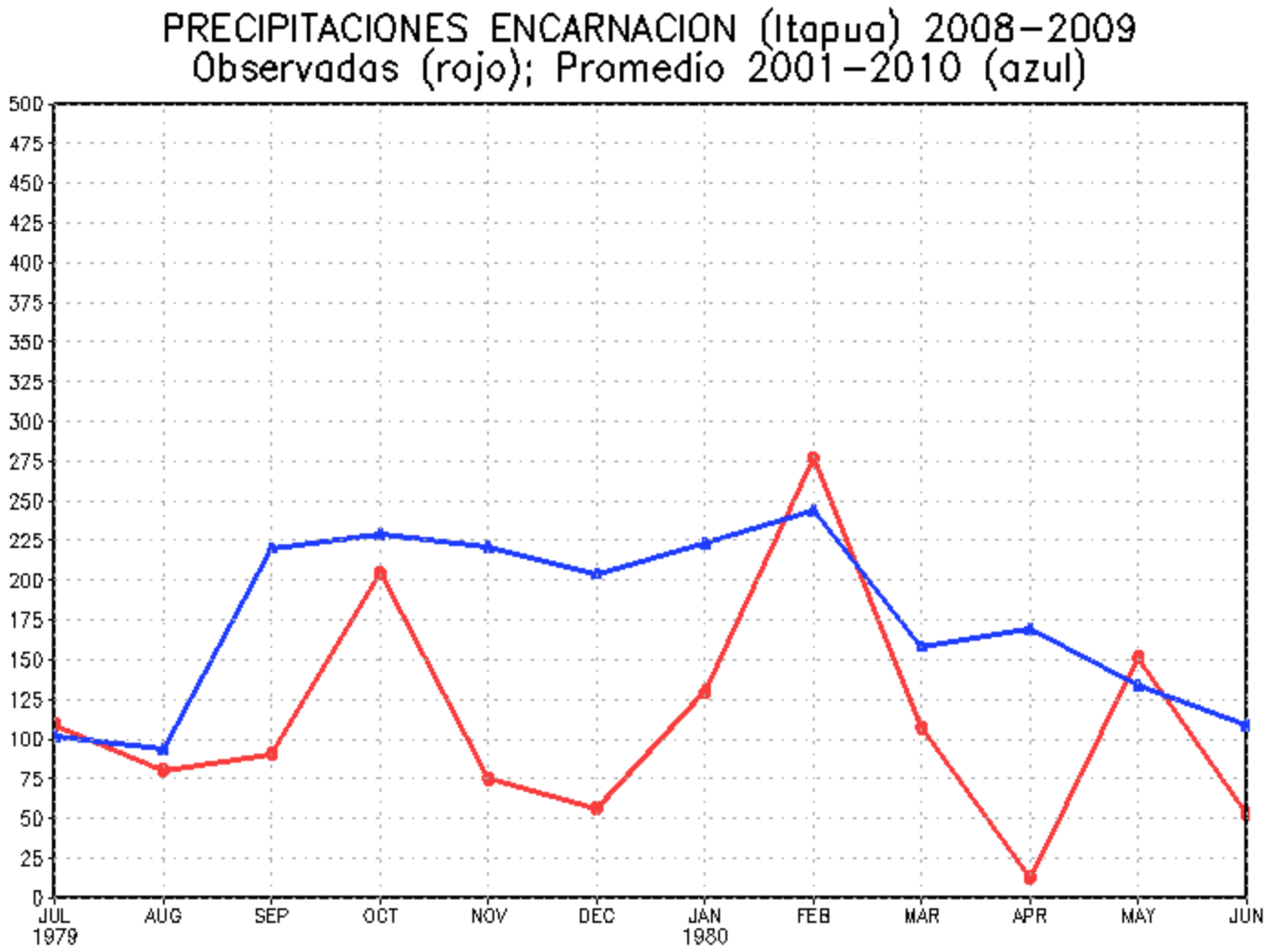


LA NINA DOBLE
Precipitacion Acumulada Julio-Junio (mm)



PRECIPITACIONES OBSERVADAS NUEVA ESPERANZA (CANINDEYU) 2008-2009
Observadas (rojo); Promedio 2001-2010 (azul)




PRECIPITACIONES ENCARNACION (Itapua) 2008-2009
Observadas (rojo); Promedio 2001-2010 (azul)
500
475
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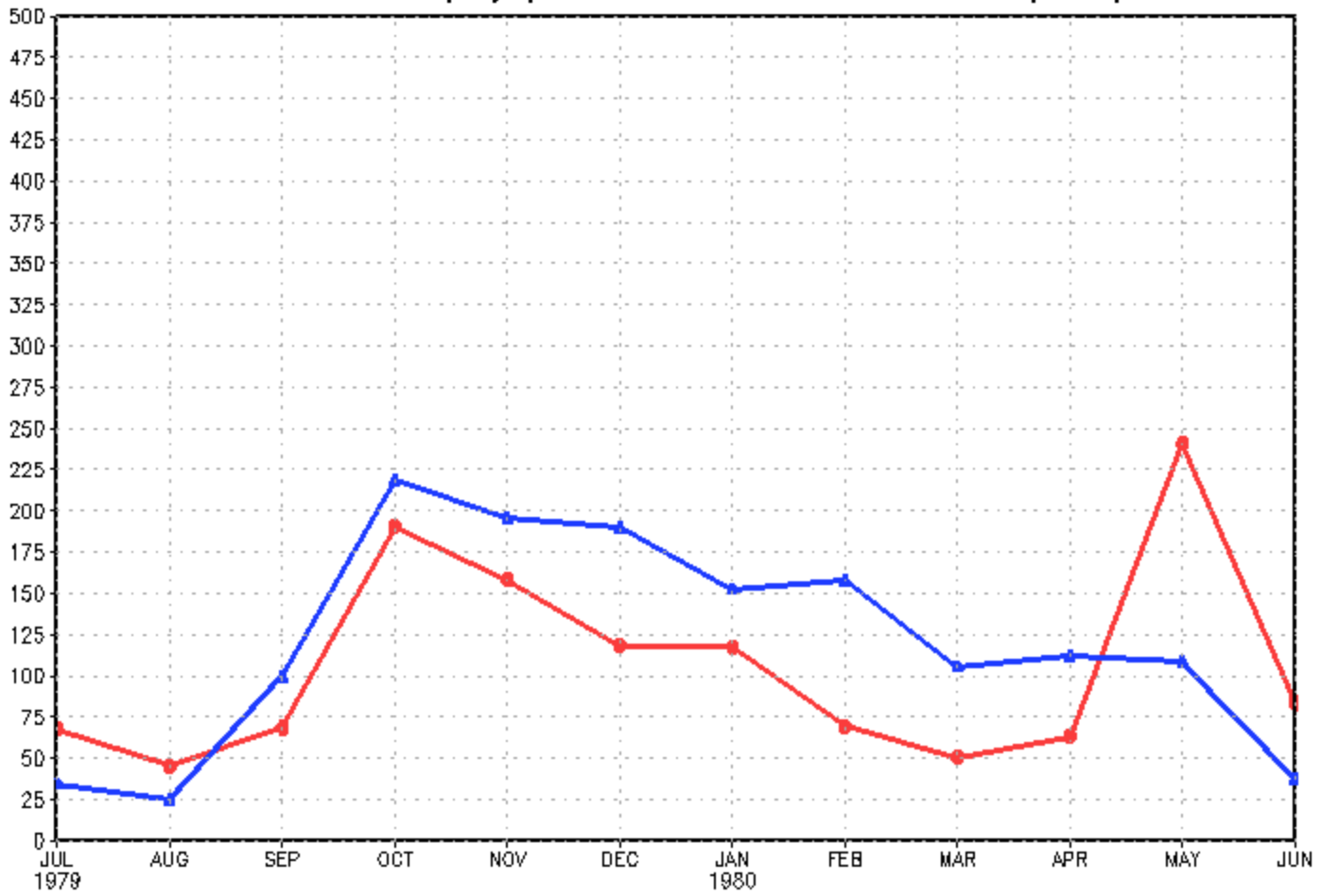
PRECIPITACIONES OBSERVADAS BOQUERON (BOQUERON) 2008-2009
Observadas (rojo); Promedio 2001-2010 (azul)
500
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375
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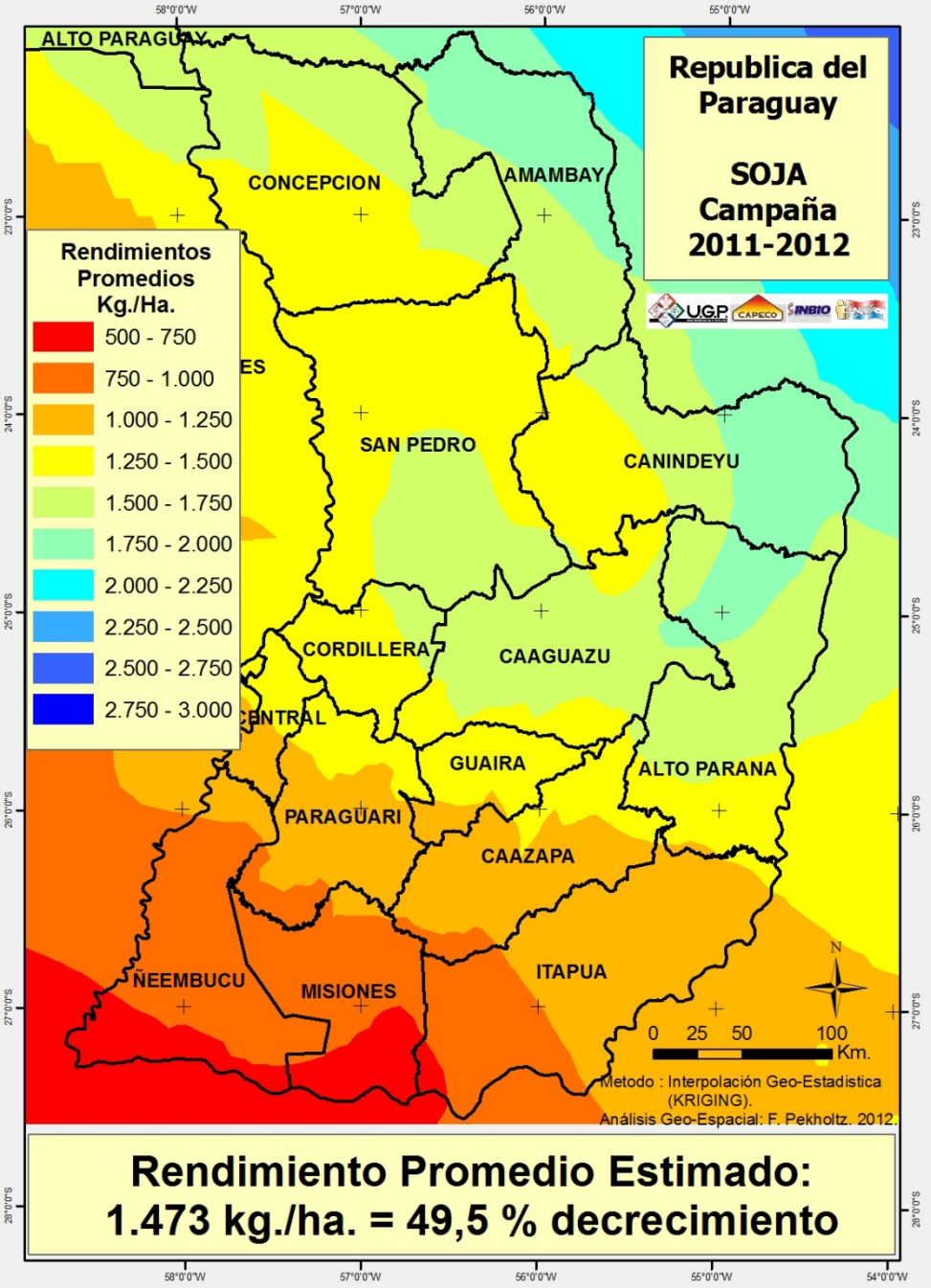
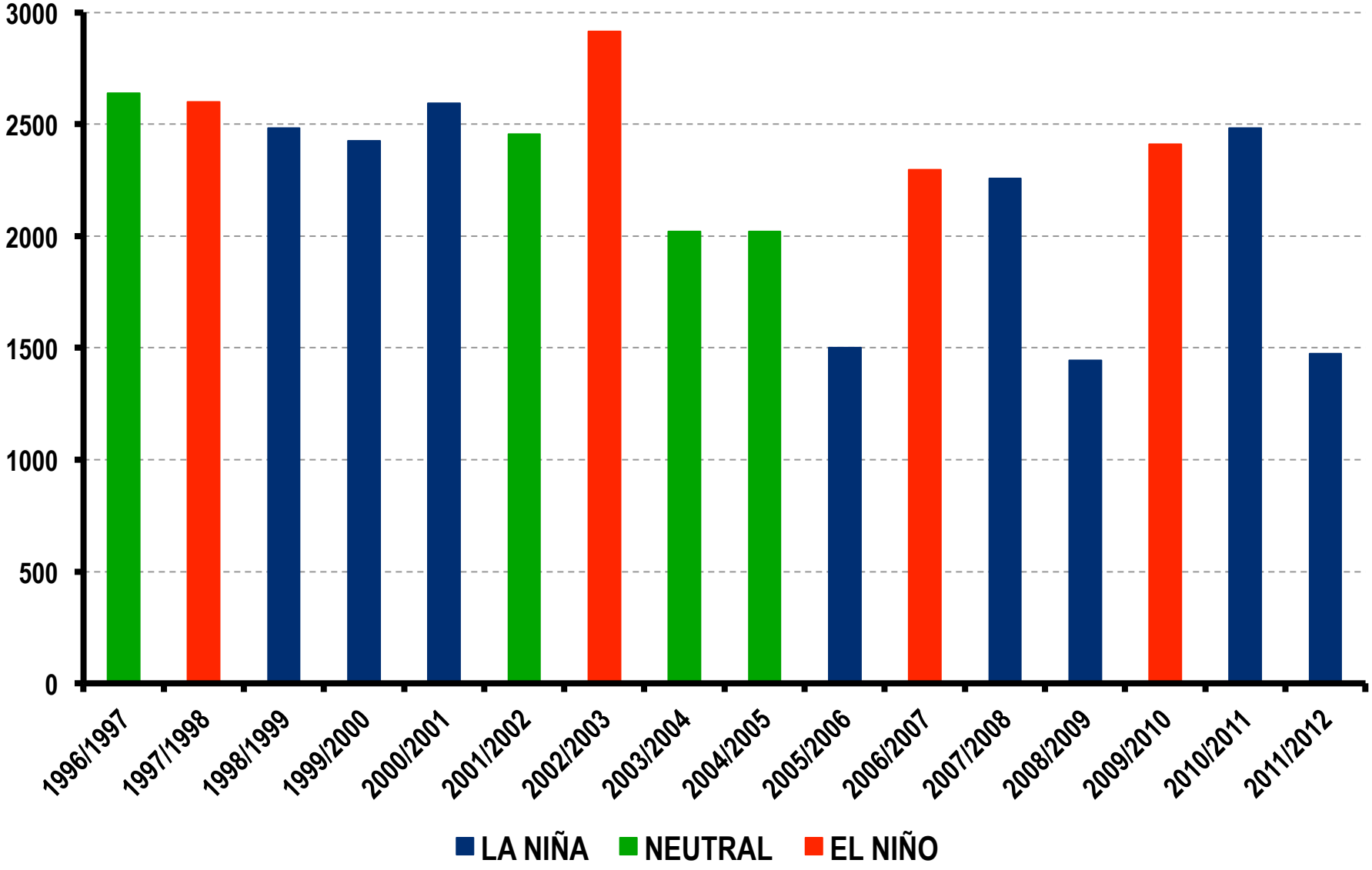
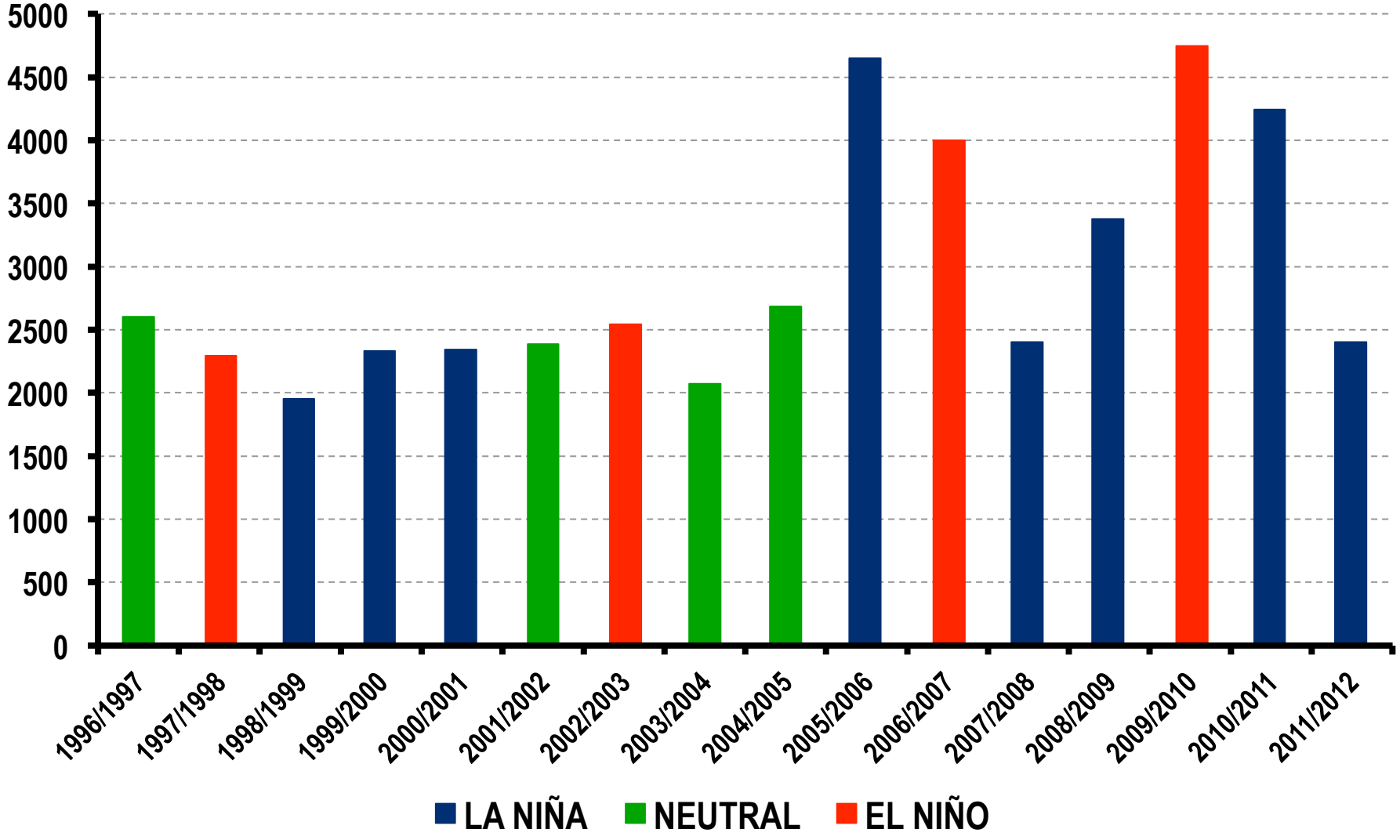
JUN


Republica del Paraguay
SOJA
Campaña
2011-2012
Rendimientos Promedios Kg./Ha.
500 - 750
750 - 1.000
1.000 - 1.250
1.250 - 1.500
1.500 - 1.750
1.750 - 2.000
2.000 - 2.250
2.250 - 2.500
2.500 - 2.750
2.750 - 3.000
ALTO PARAGUAY
CONCEPCION
AMAMBAY
SAN PEDRO
CANINDEYU
CORDILLERA
CAAGUAZU
GUAIRA
ALTO PARANA
PARAGUARI
CAAZAPA
ITAPUA
ÑEEMBUCU
MISIONES
N
0 25 50 100
Km.
Metodo : Interpolación Geo-Estadistica (KRIGING).
Análisis Geo-Espacial: F. Pekholtz. 2012.
Rendimiento Promedio Estimado:
1.473 kg./ha. = 49,5 % decrecimiento

RENDIMIENTO DE LA SOJA EN FUNCION DE FASE DEL ENOS
(Kg/Ha)



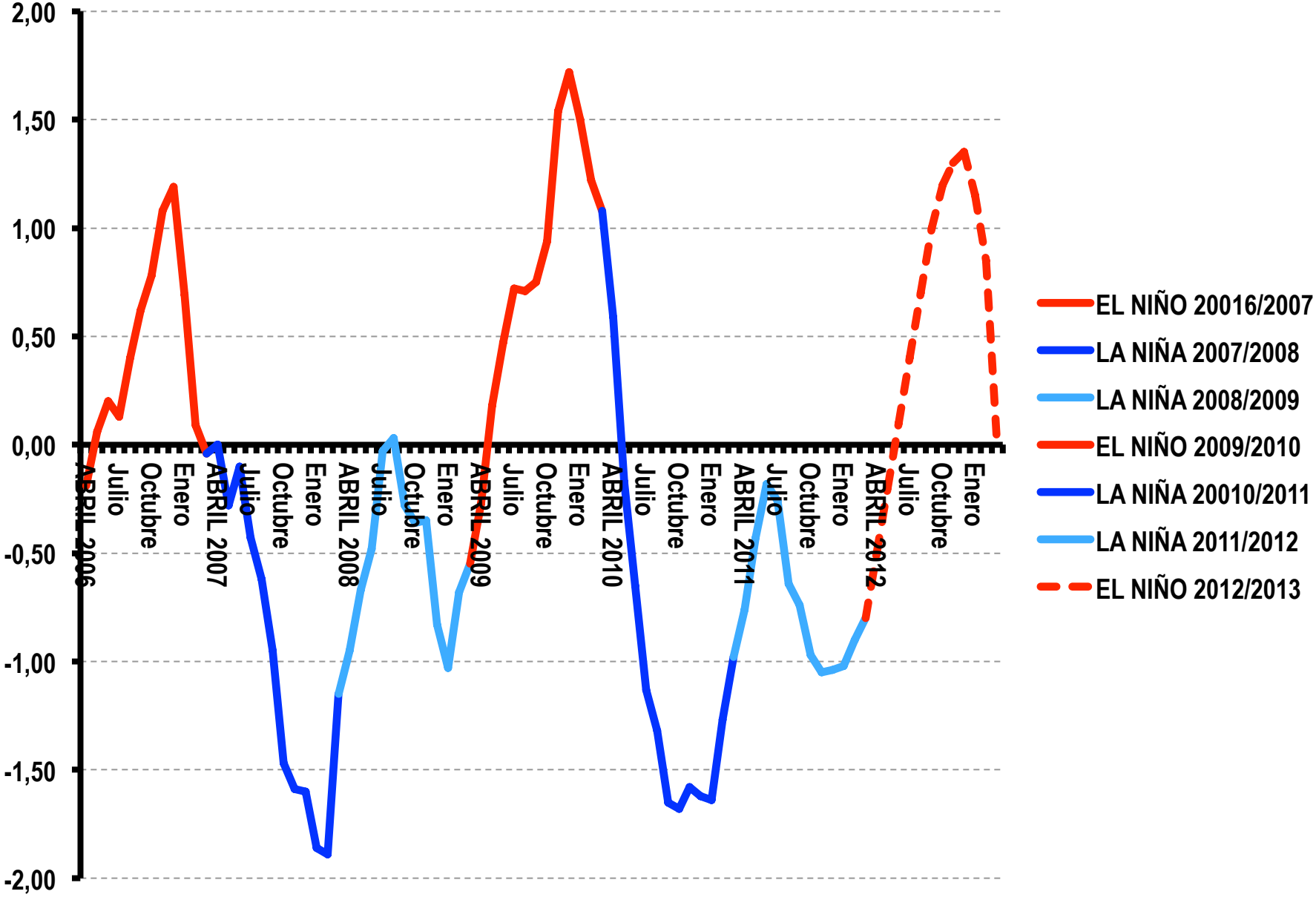
RENDIMIENTOS DEL MAIZ EN FUNCION DE LA FASE DEL ENSO
(Kg/Ha)



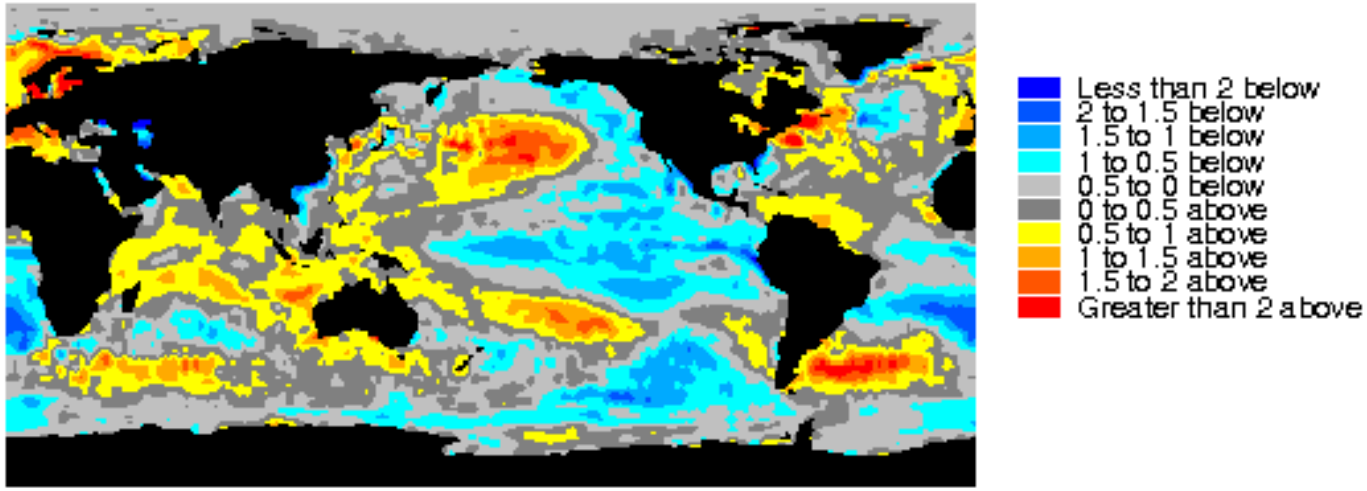
CÓMO SE PRESENTA EL ESCENARIO CLIMÁTICO DE LA CAMPAÑA AGRÍCOLA 2012/2013

SECUENCIA CLIMÁTICA EL NIÑO- LA NIÑA - LA NIÑA

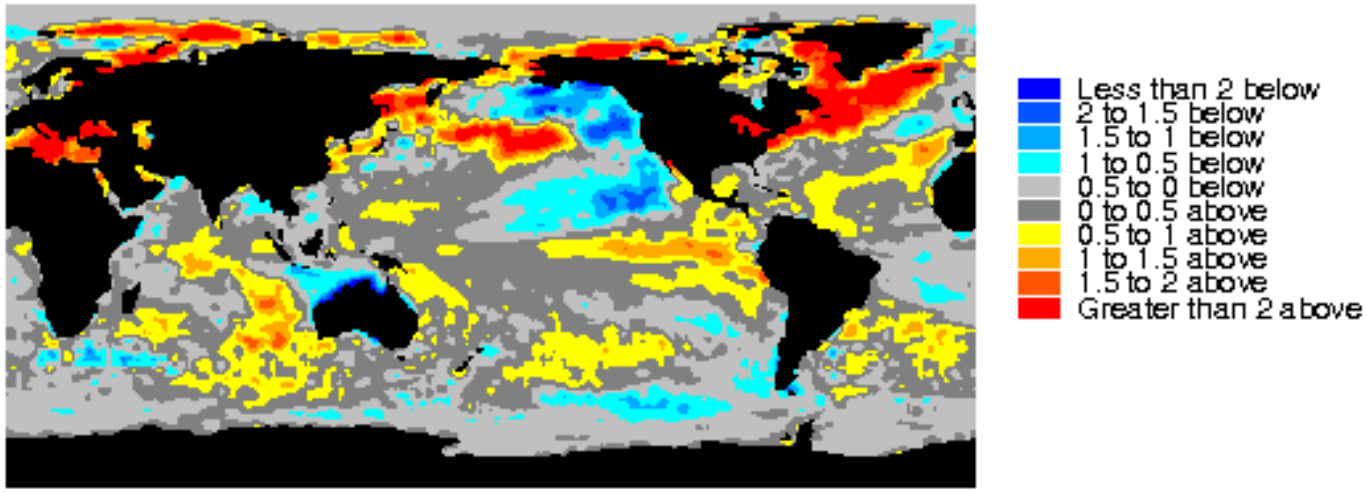
Anomalía de temperatura de la zona El Niño 3.4



Variation of Sea-surface Temperature from Average
December 2011



Variation of Sea-surface Temperature from Average
July 2012



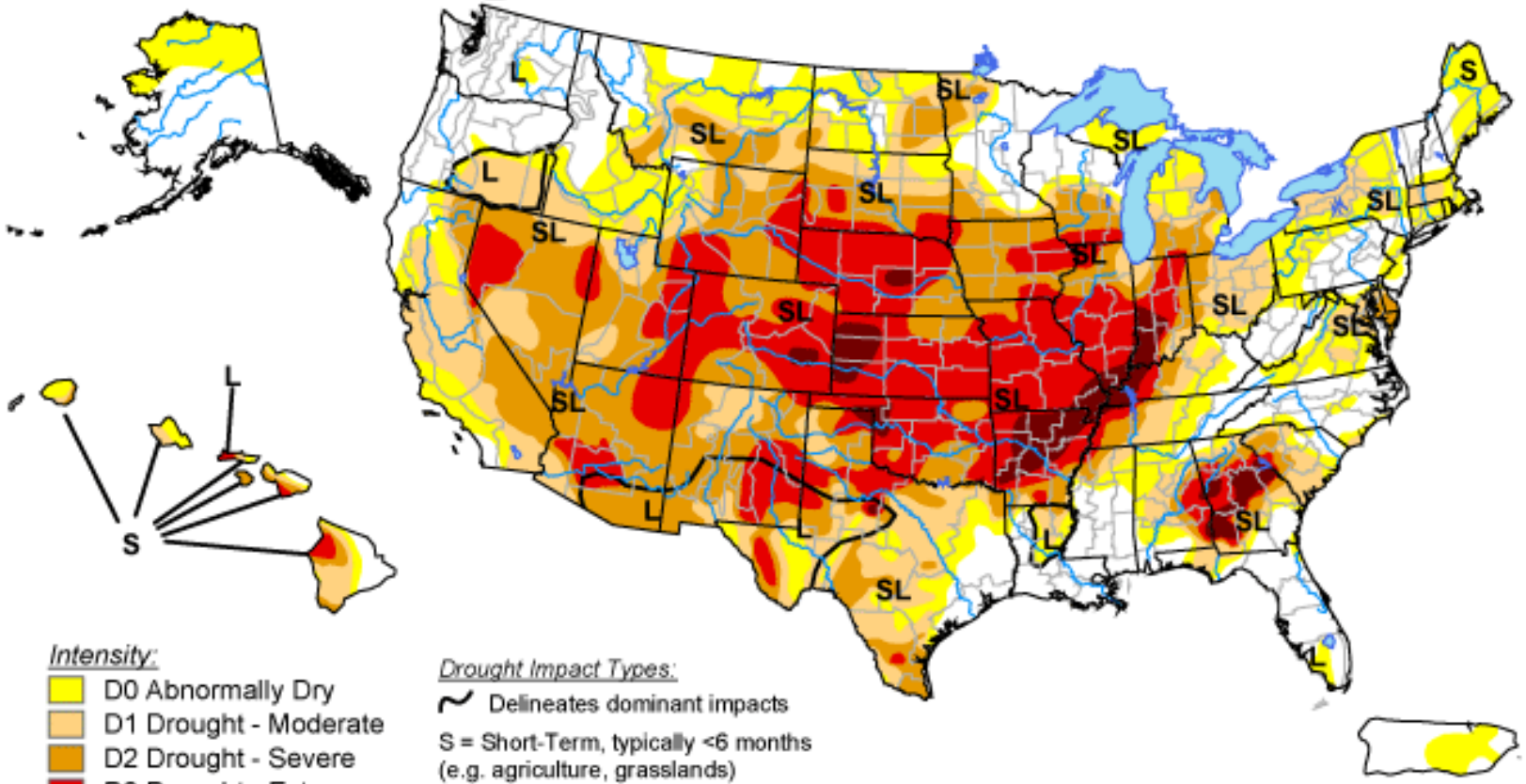
www.LongPaddock.qld.gov.au

COMPULSA DE PRONÓSTICOS CLIMÁTICOS EFECTUADA POR EL SERVICIO METEOROLÓGICO AUSTRALIANO			
PAIS	**ORGANISMO**	**MODELO**	**PRONÓSTICO**
Australia	Australian Bureau of Meteorology	POAMA	Neutral/“El Niño”
EE.UU.	NCEP	CFS	Neutral/“El Niño”
EE.UU.	NASA Goddard GMAO (US)	GEOS-5	“El Niño”
Unión Europea	ECMWF	System 4	“El Niño”
Japón	Japan Met. Agency	JMA/MRI-CGCM	“El Niño”
Gran Bretaña	UK Met Office	GloSea	“El Niño”
Francia	Meteo France	ARPEGE	Neutral/“El Niño”

USA

U.S. Drought Monitor

July 31, 2012
Valid 7 a.m. EDT



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:

Delineates dominant impacts

S = Short-Term, typically <6 months (e.g. agriculture, grasslands)

L = Long-Term, typically >6 months (e.g. hydrology, ecology)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu/

Released Thursday, August 2, 2012

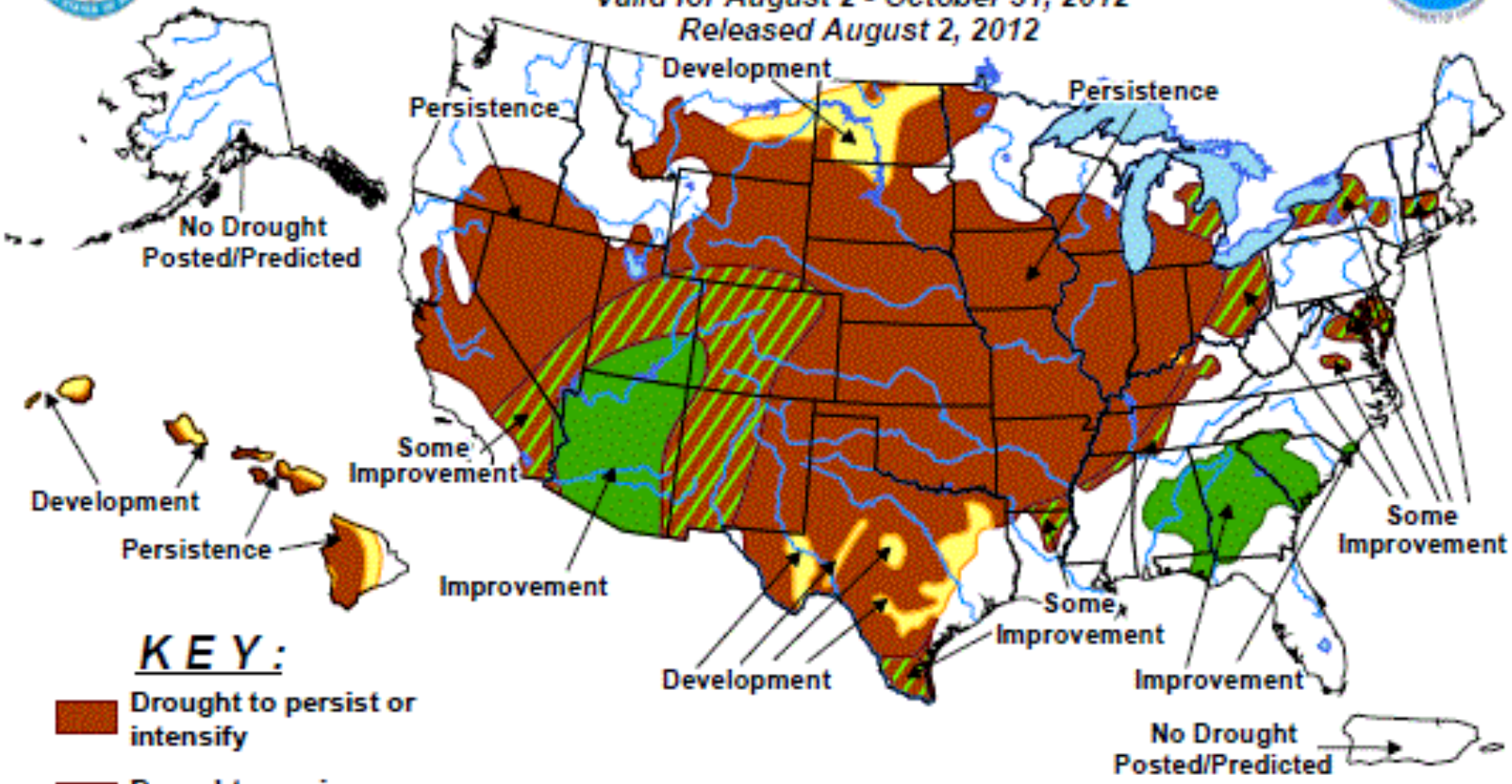
Author: Mark Svoboda, National Drought Mitigation Center

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for August 2 - October 31, 2012

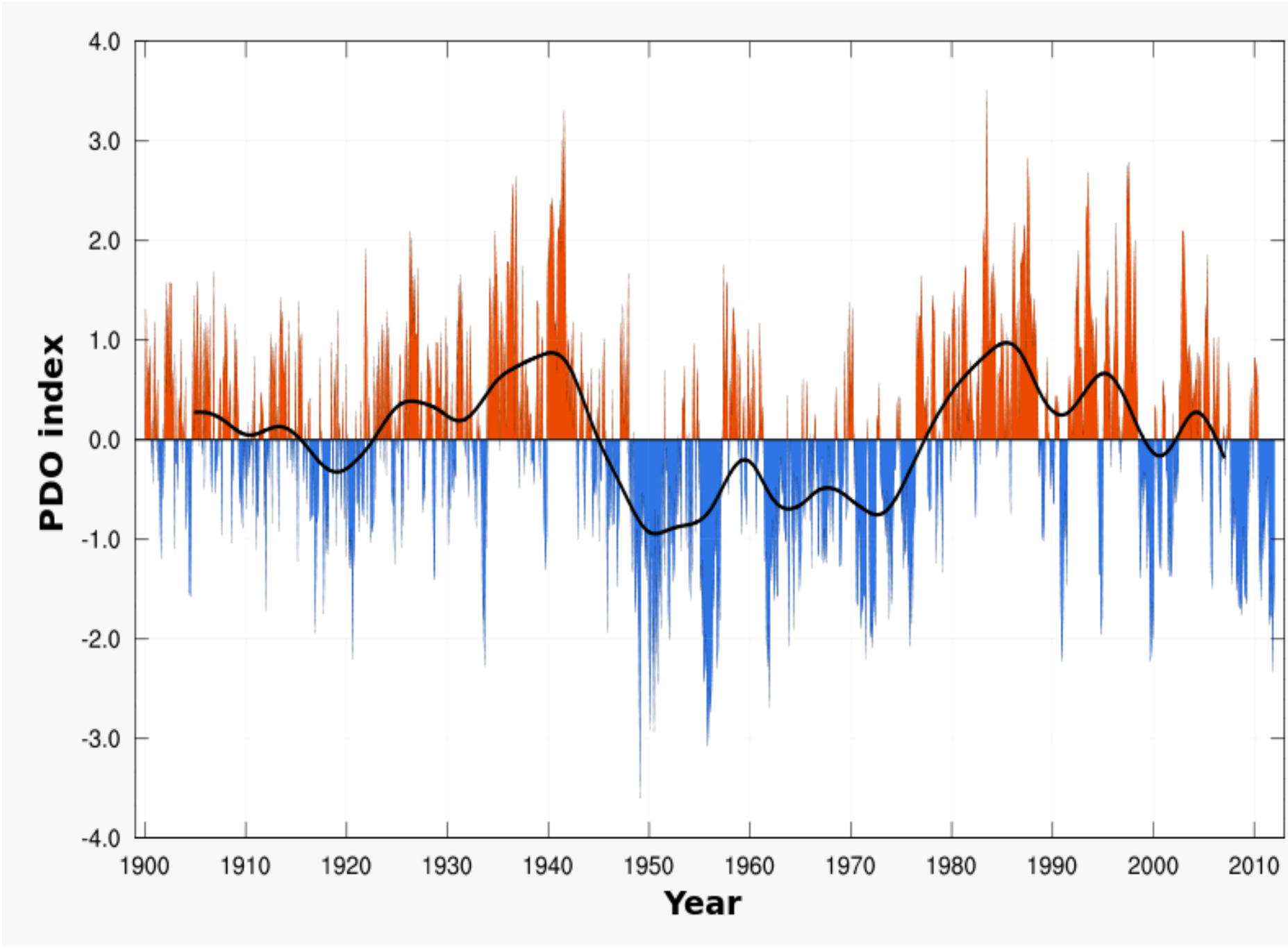
Released August 2, 2012

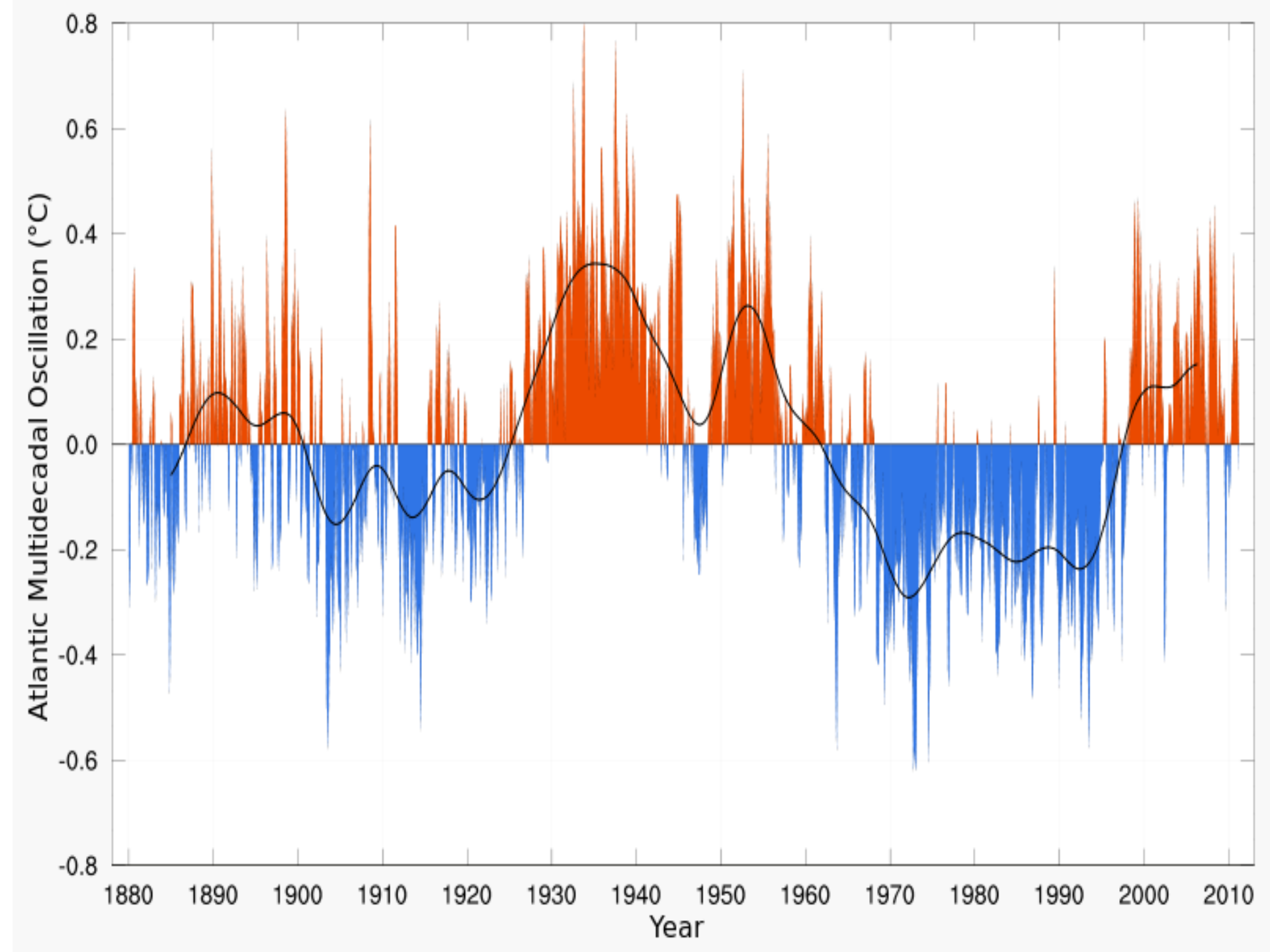


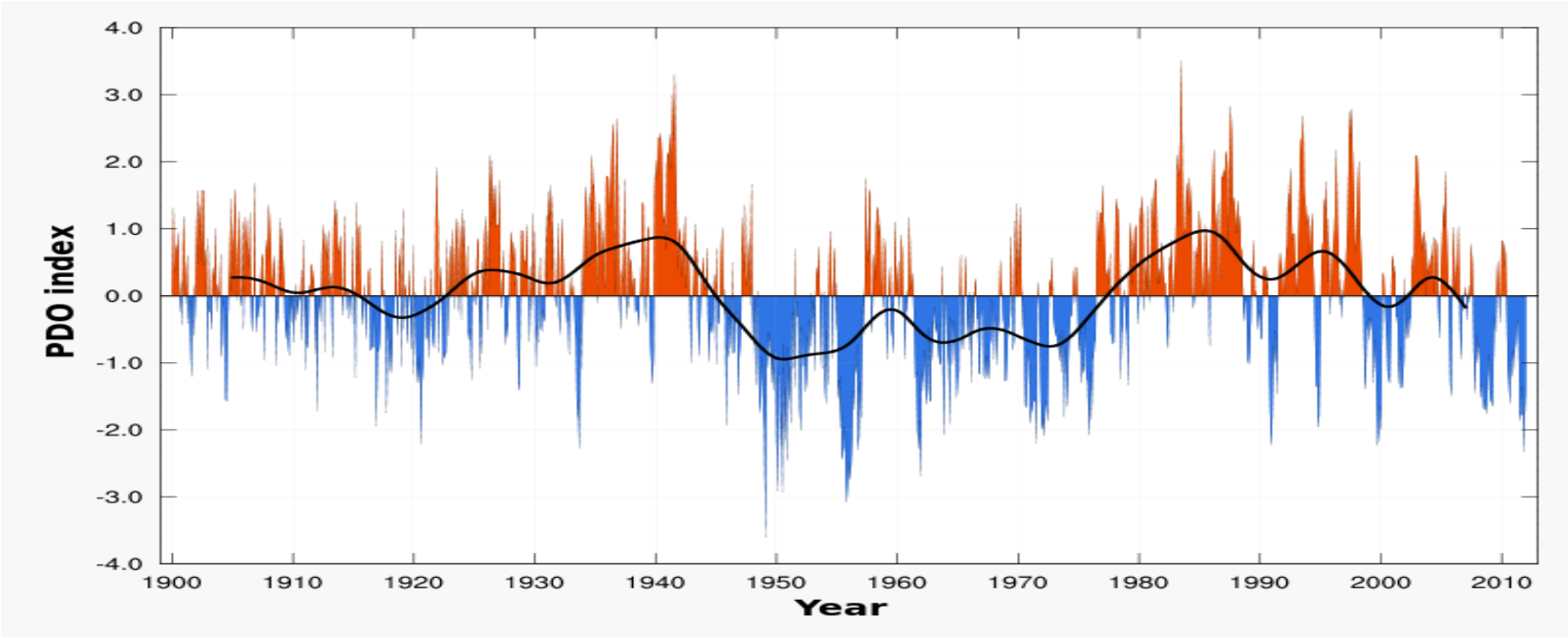
KEY:

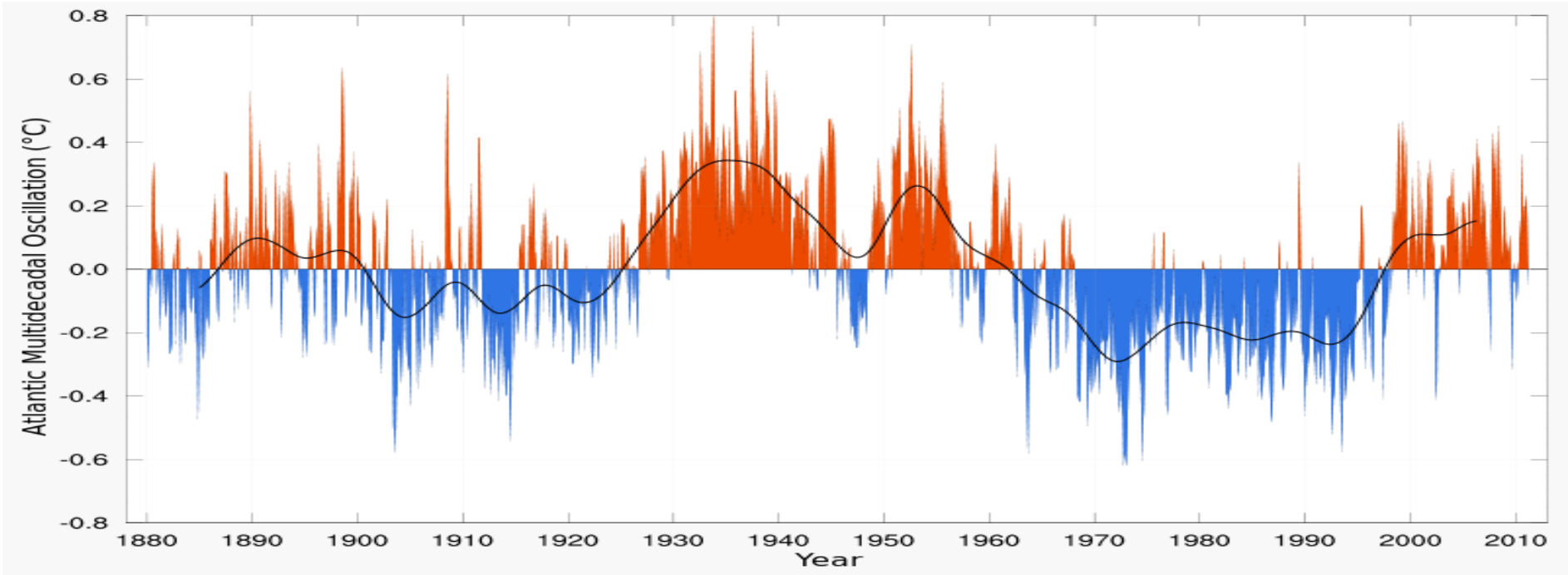
- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.


4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
PDO index
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Year

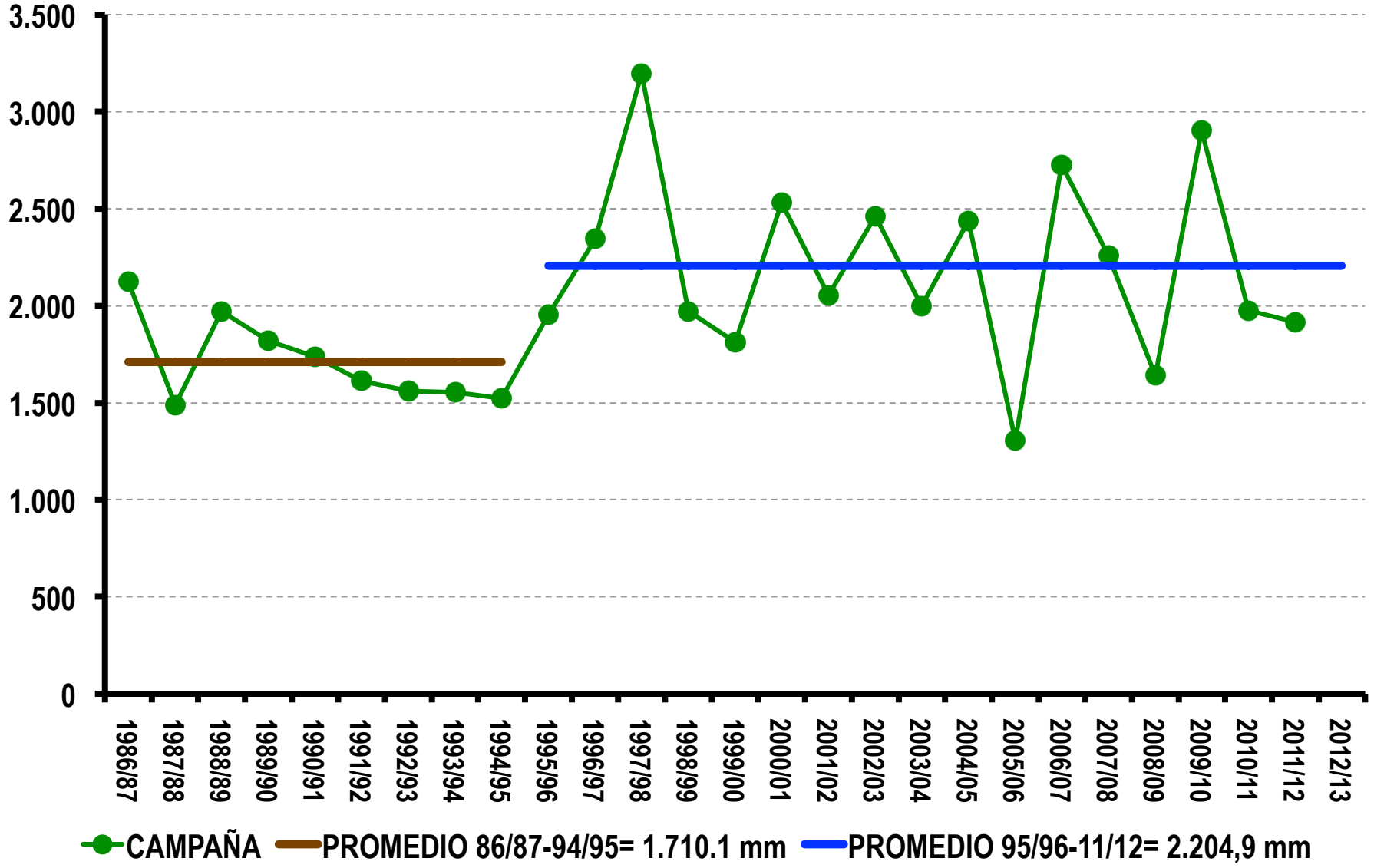

0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
Atlantic Multidecadal Oscillation (°C)
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Year

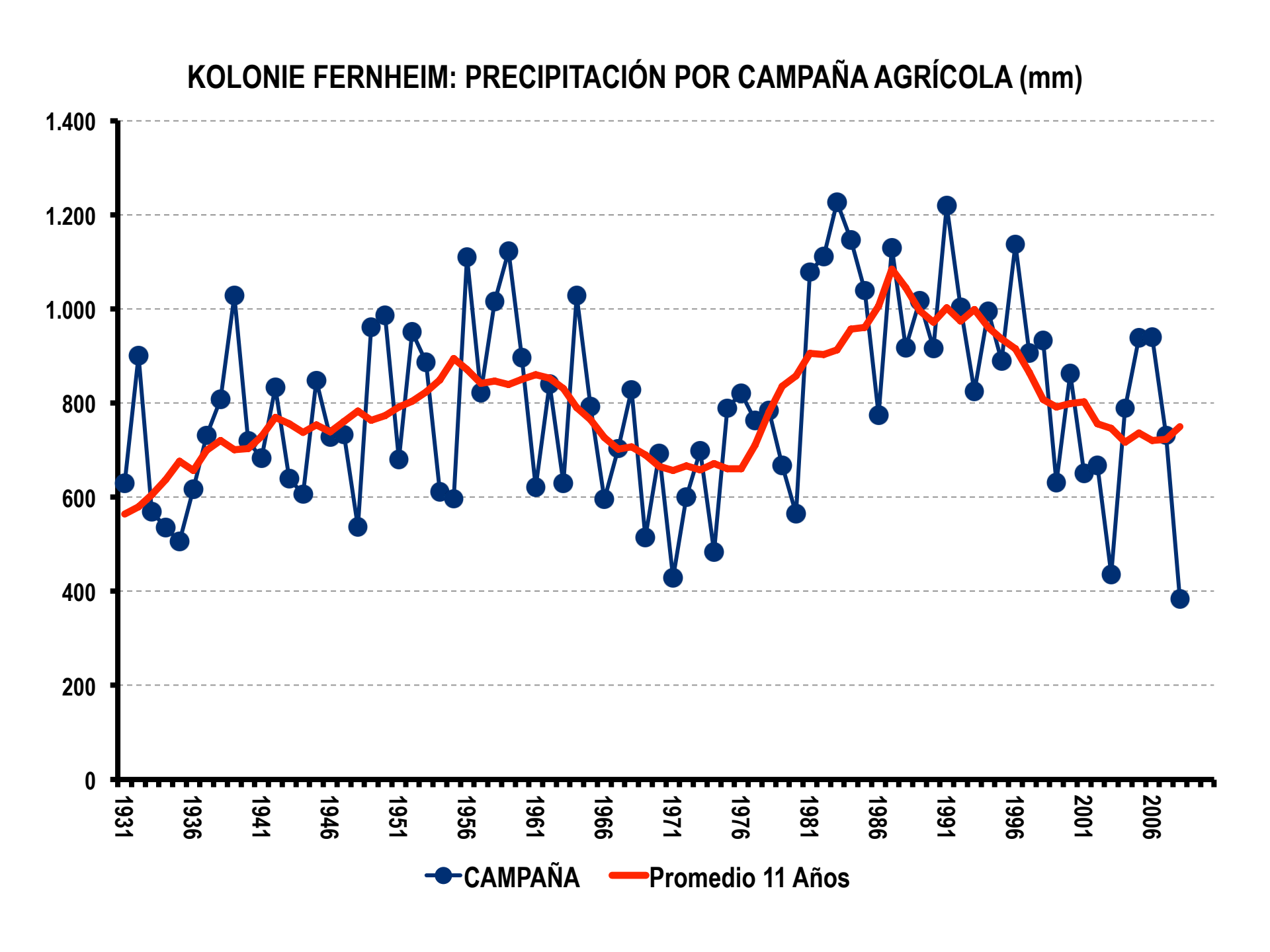

PDO index
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Year

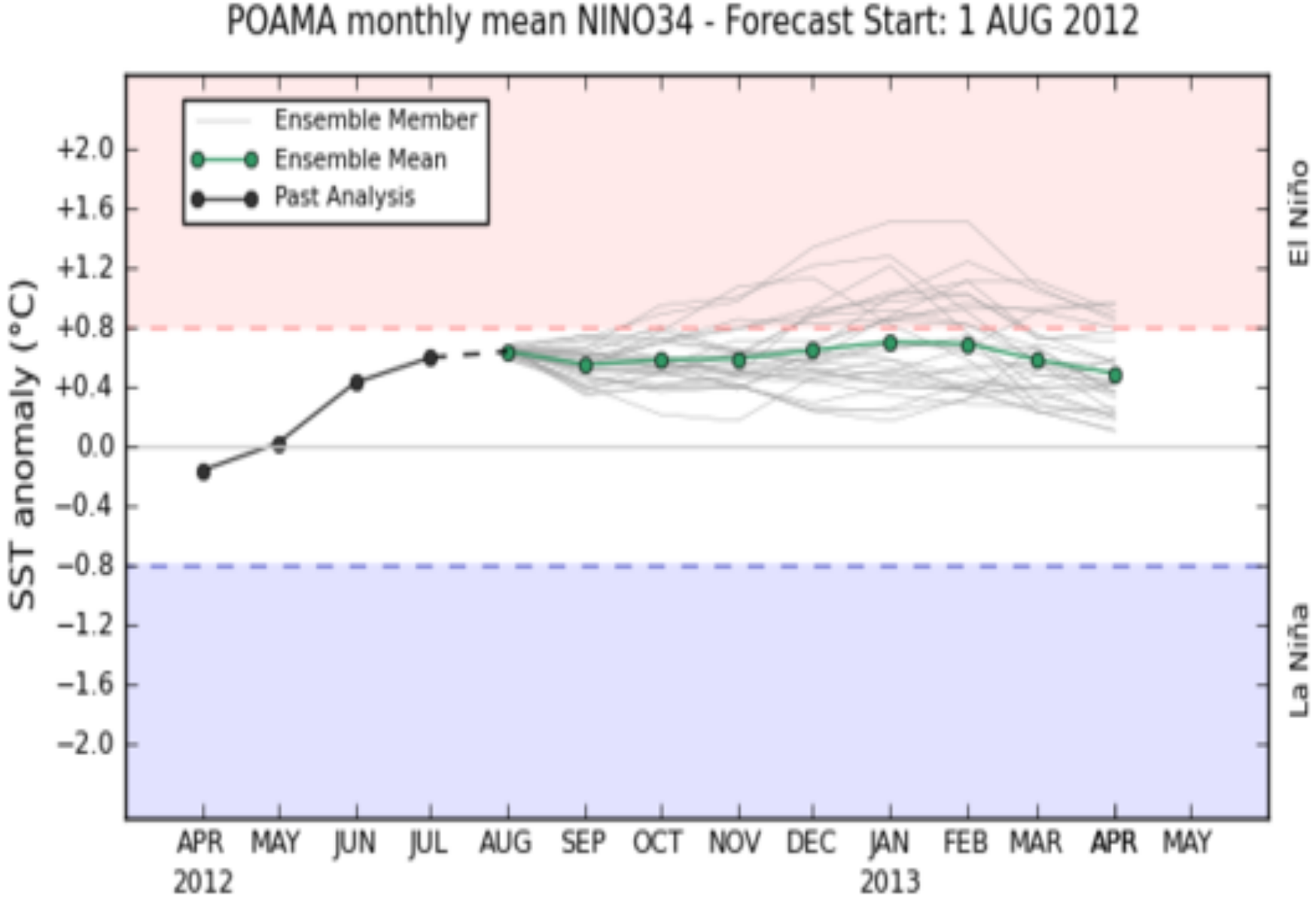

Atlantic Multidecadal Oscillation (°C)
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Year

Black Sunday, April 14, 1935

OBLIGADO (ITAPÚA): PRECIPITACIONES POR CAMPAÑA AGRÍCOLA (mm)

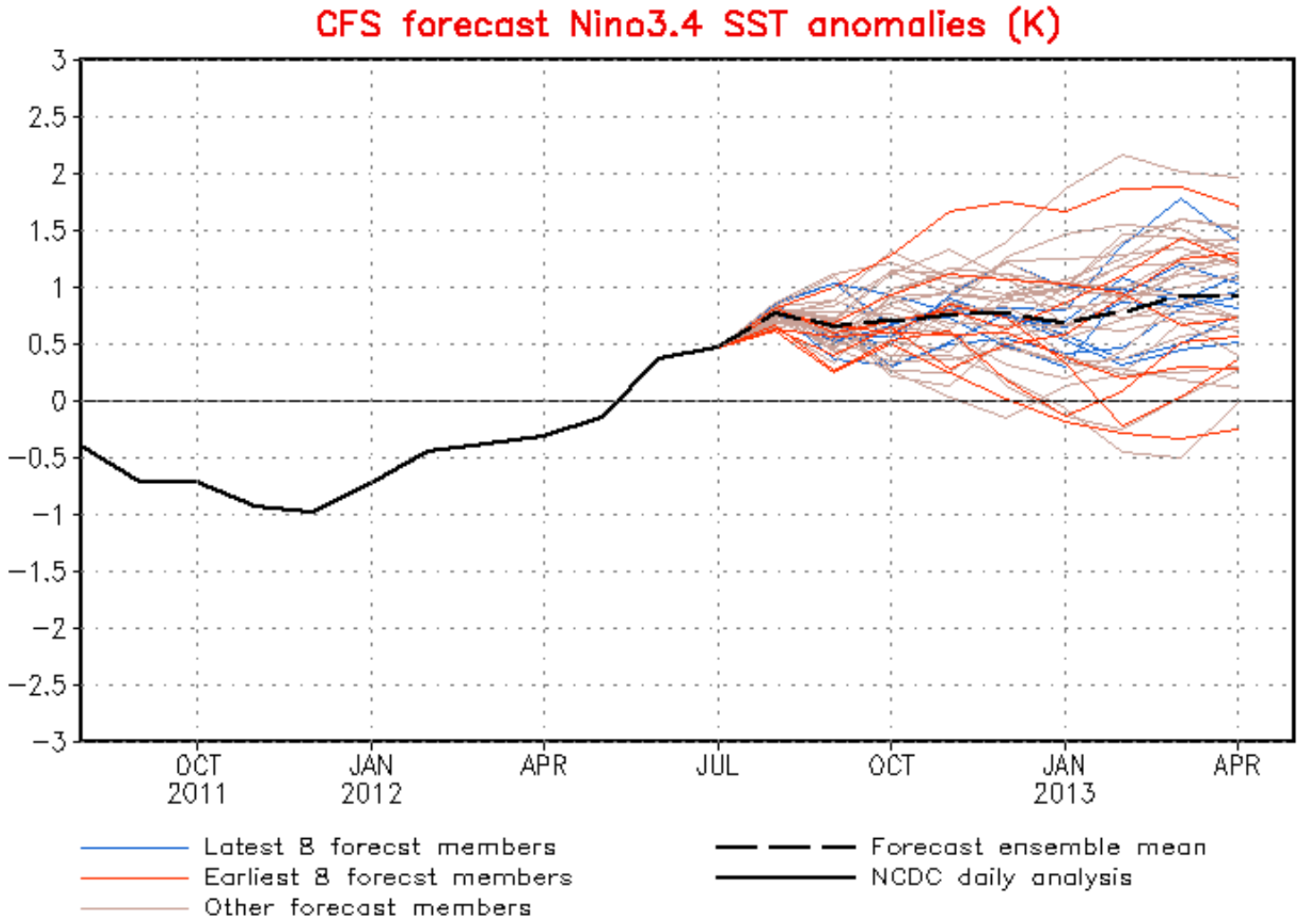



KOLONIE FERNHEIM: PRECIPITACIÓN POR CAMPAÑA AGRÍCOLA (mm)
1.400
1.200
1.000
800
600
400
200
0
1931
1936
1941
1946
1951
1956
1961
1966
1971
1976
1981
1986
1991
1996
2001
2006
CAMPAÑA
Promedio 11 Años



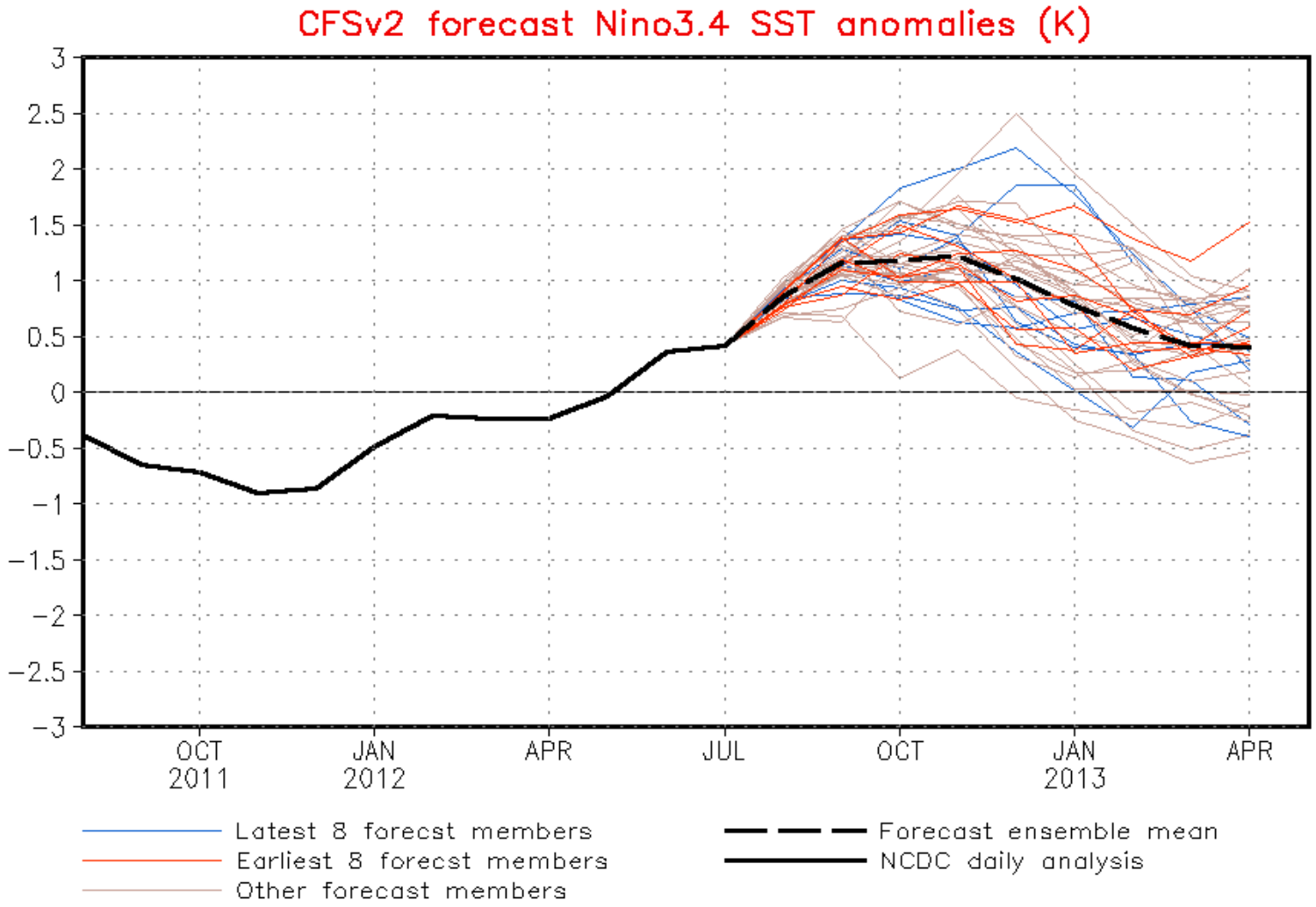
NWS/NCEP/CPC

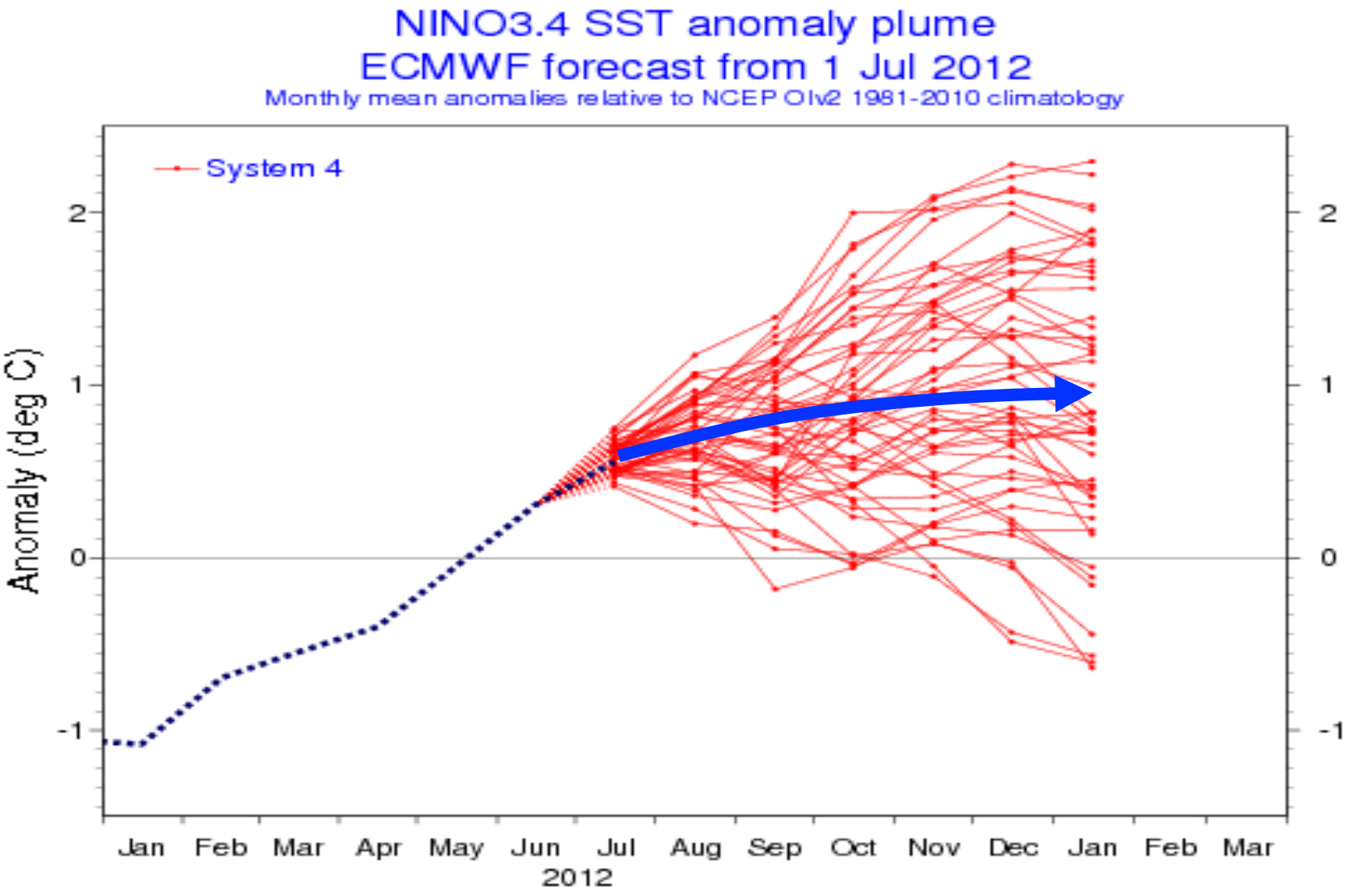
Last update: Mon Aug 6 2012
Initial conditions: 27Jul2012–5Aug2012



NWS/NCEP/CPC

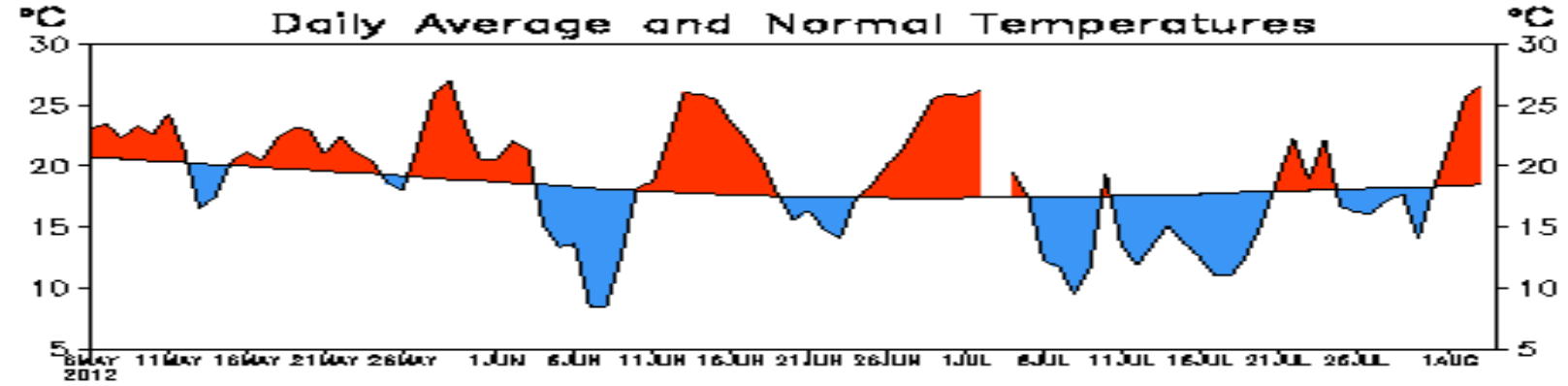
Last update: Tue Aug 7 2012
Initial conditions: 27Jul2012–5Aug2012

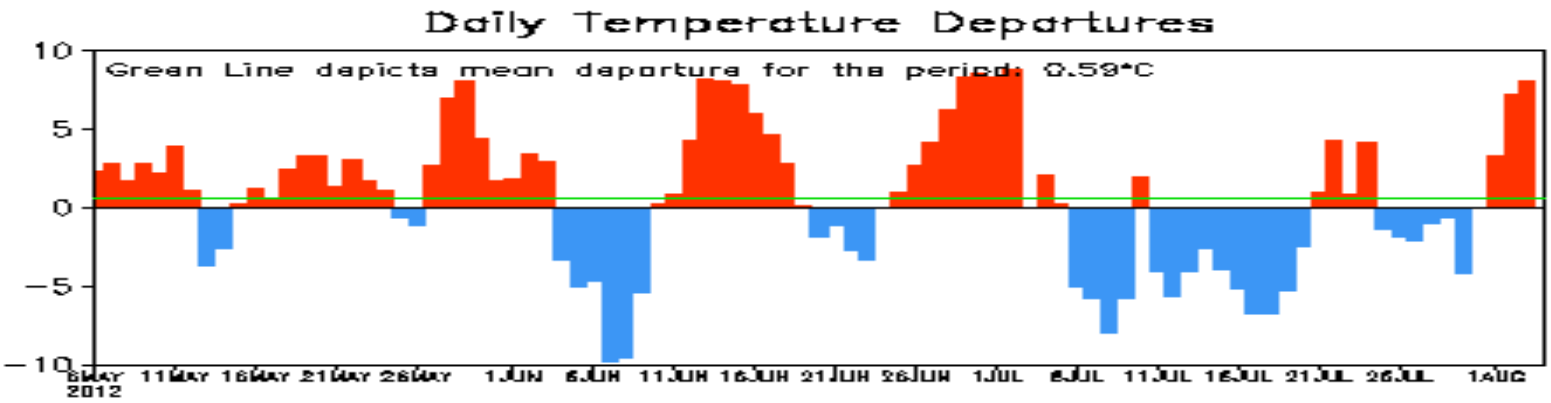


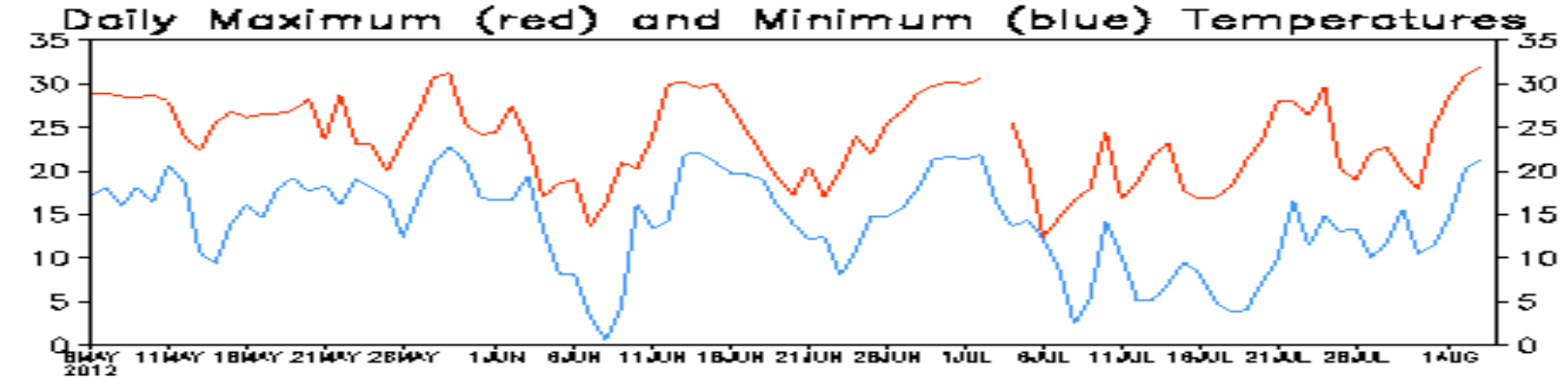

NINO3.4 SST anomaly plume
ECMWF forecast from 1 Jul 2012
Monthly mean anomalies relative to NCEP OIv2 1981-2010 climatology
System 4
Anomaly (deg C)
2
1
0
-1
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
2012
ECMWF

EVOLUCIÓN CLIMÁTICA RECIENTE

ASUNCION

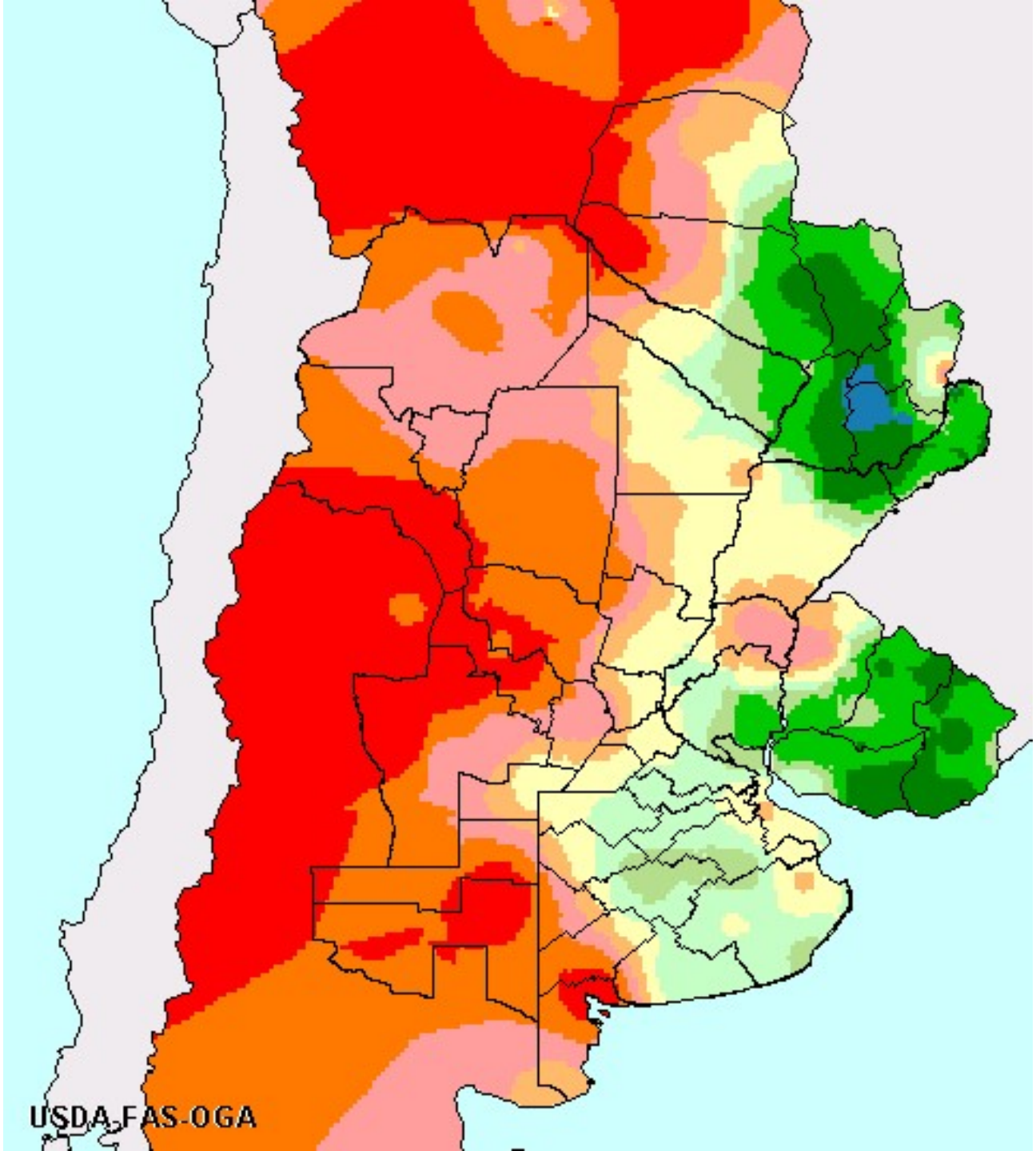






Data updated through 03 AUG 2012

CLIMATE PREDICTION CENTER/NCEP



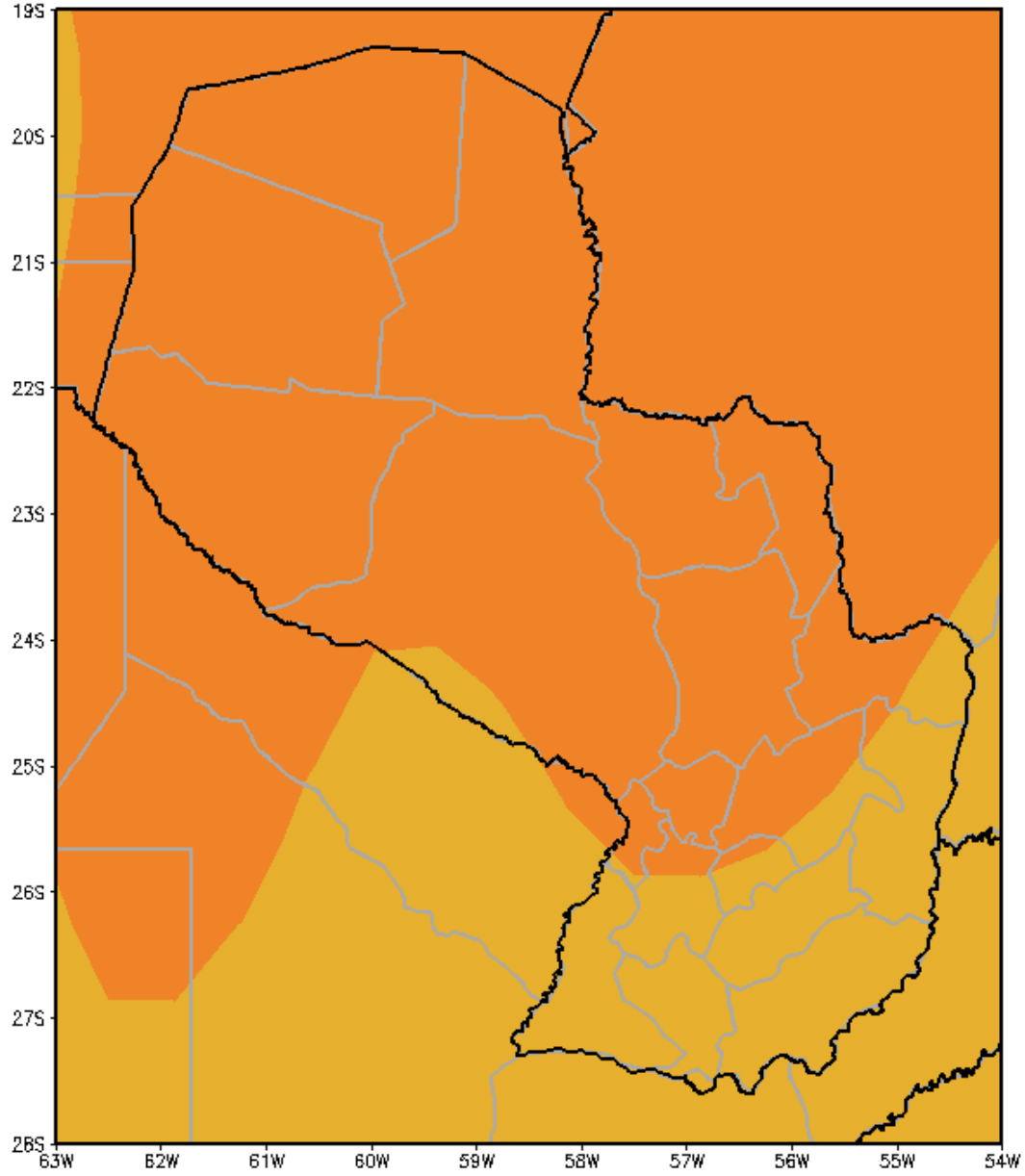
31/07/2012

Percent Soil Moisture (%)

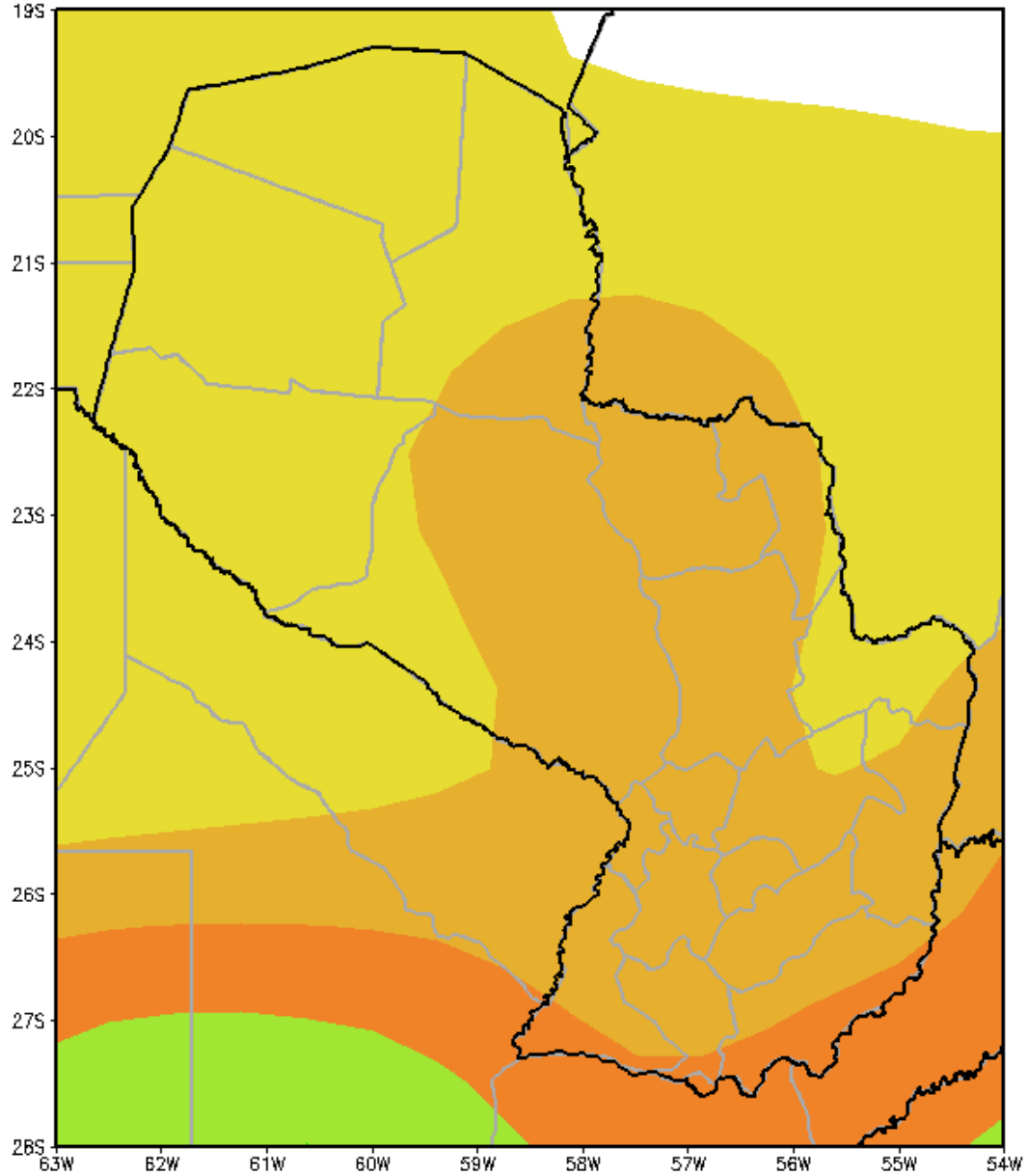
- 90 - 100
- 80 - 90
- 70 - 80
- 60 - 70
- 50 - 60
- 40 - 50
- 30 - 40
- 20 - 30
- 10 - 20
- 0 - 10
- No Data

PERSPECTIVA MENSUAL 2012/2013

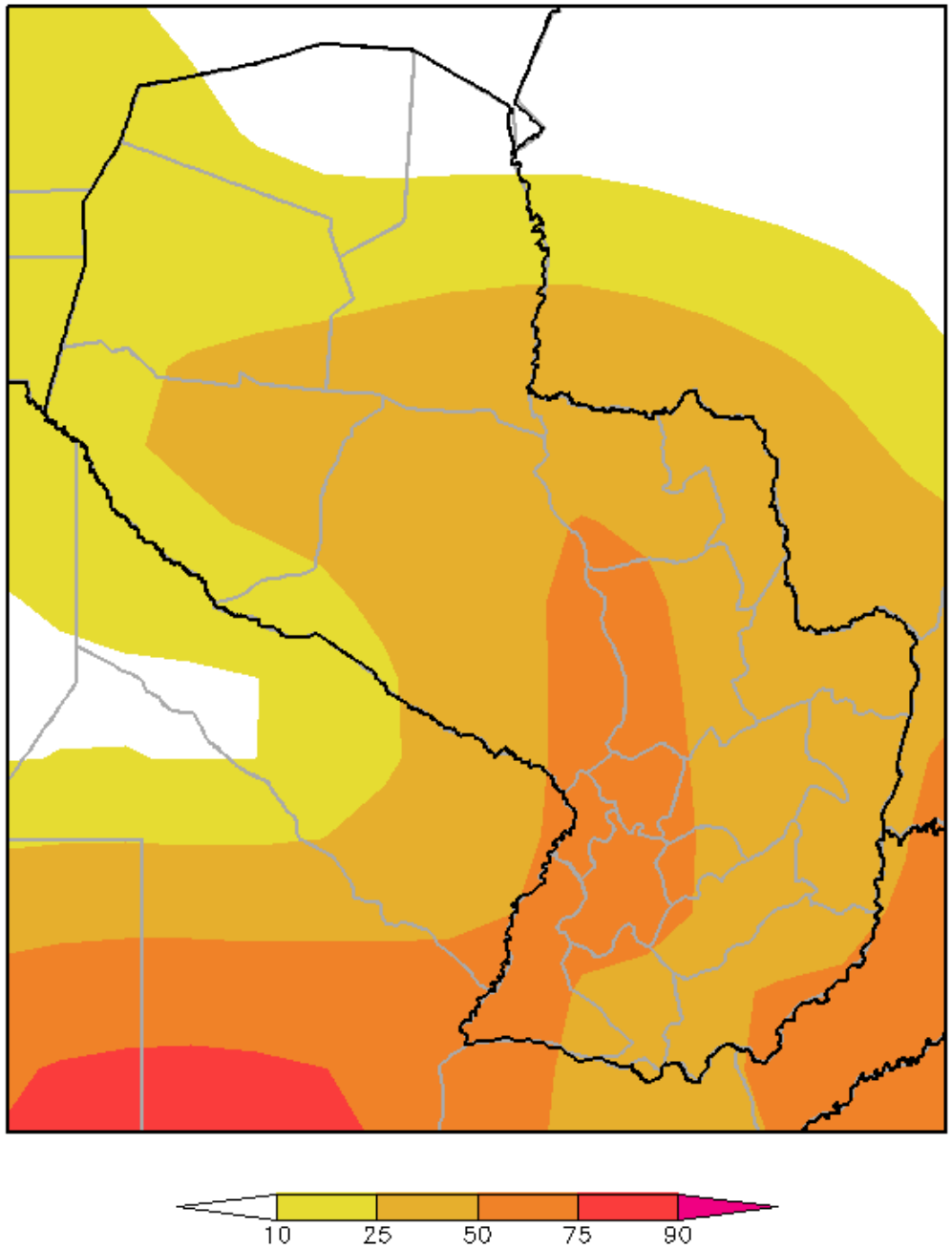
PERSPECTIVA CLIMATICA AGOSTO 2012
Temperatura Maxima Media (Grados Centigrados)

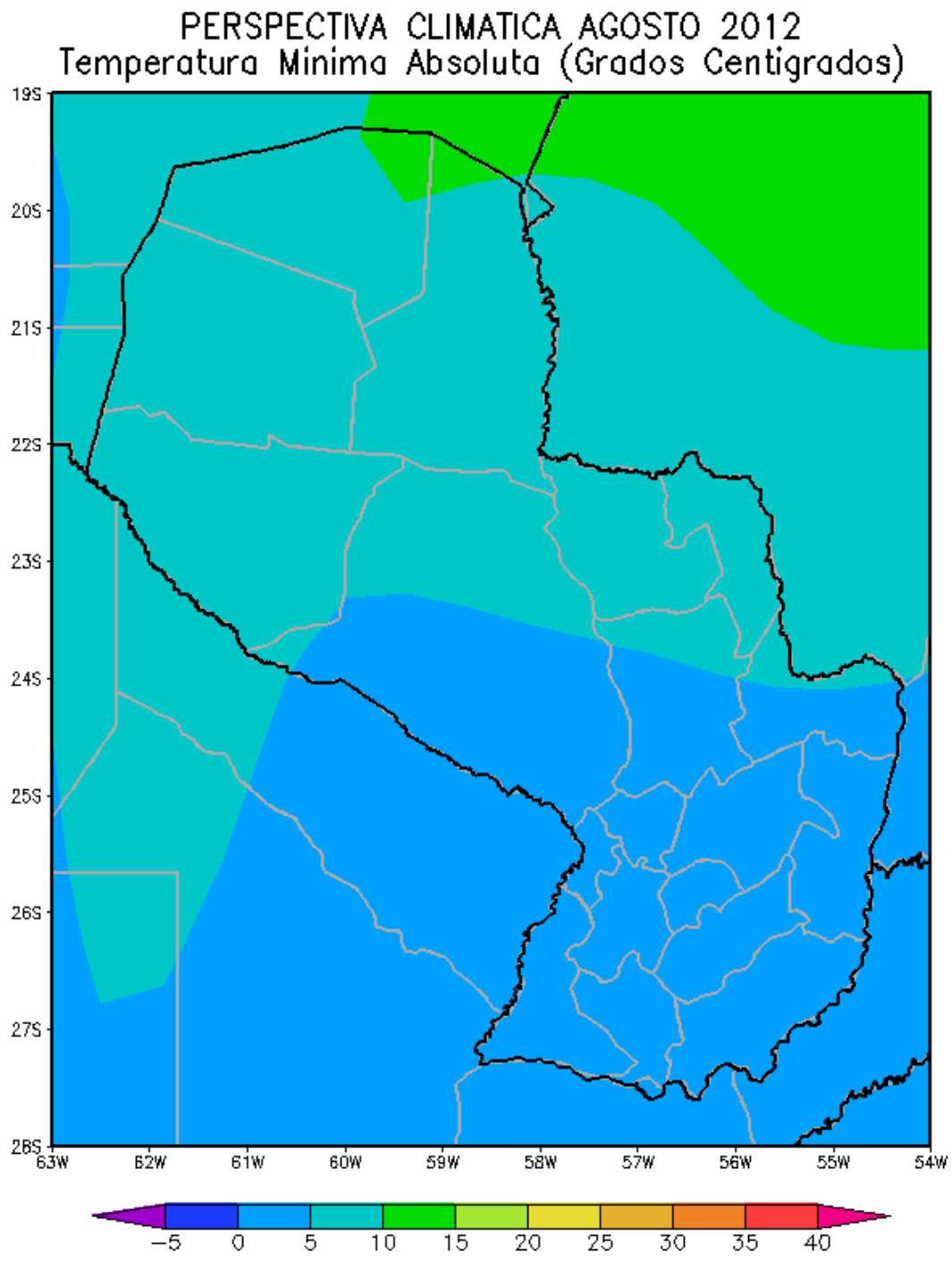


PERSPECTIVA CLIMATICA AGOSTO 2012
Precipitacion Acumulada (mm)

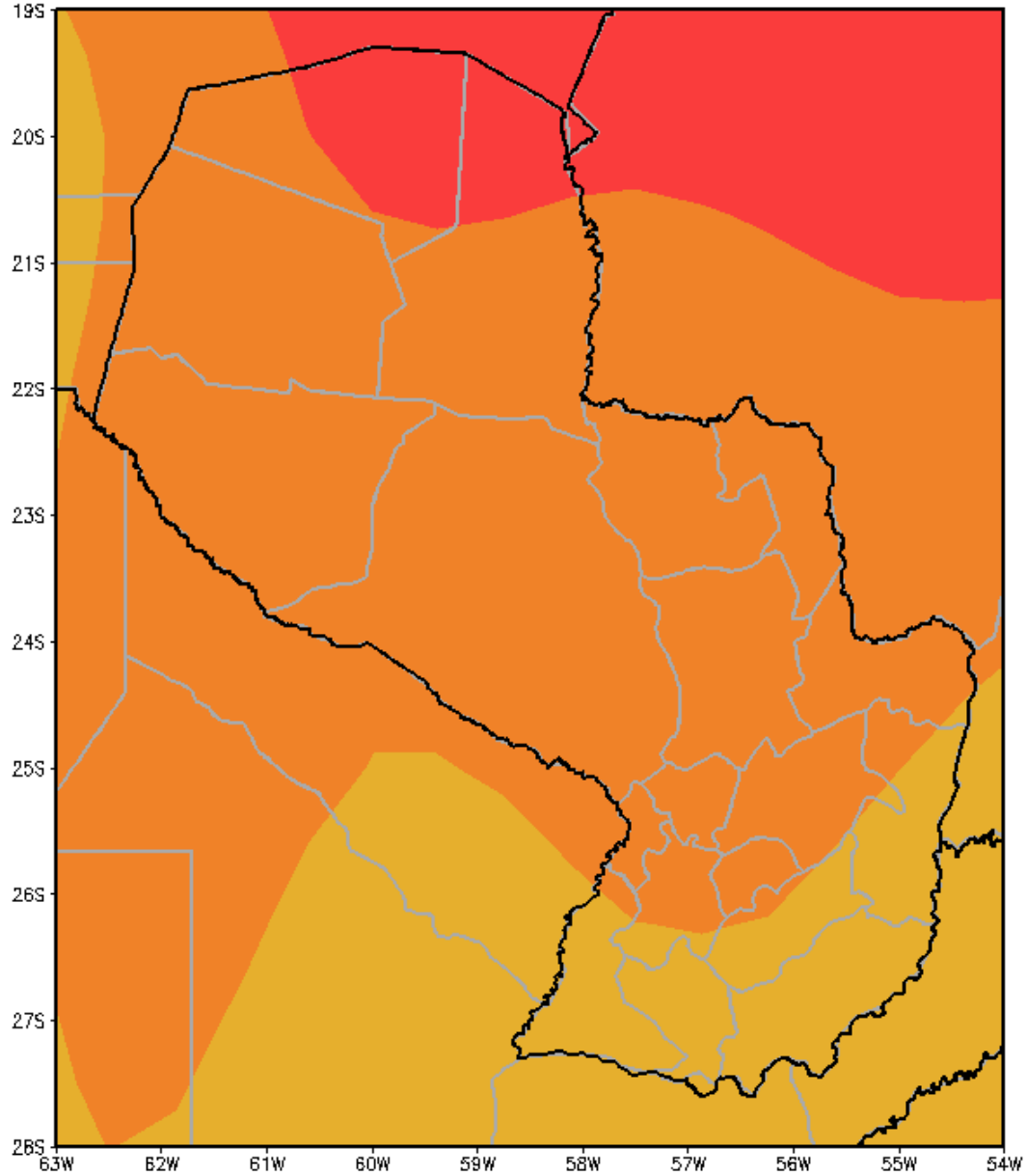


PERSPECTIVA CLIMATICA AGOSTO 2012
Probabilidad de Tormentas Severas (%)

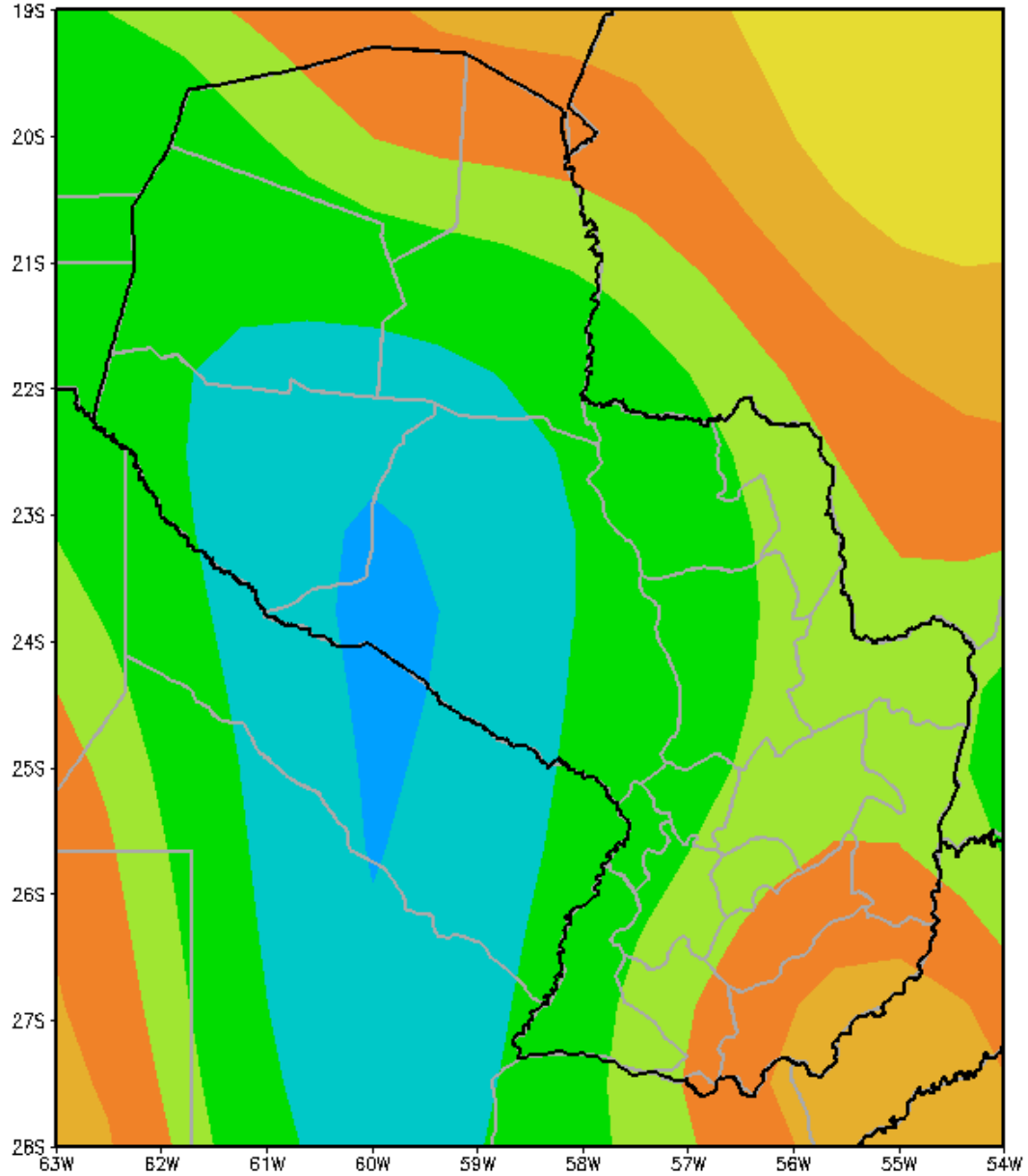



PERSPECTIVA CLIMATICA AGOSTO 2012
Temperatura Minima Absoluta (Grados Centigrados)
19S
20S
21S
22S
23S
24S
25S
26S
27S
28S
63W
62W
61W
60W
59W
58W
57W
56W
55W
54W
−5
0
5
10
15
20
25
30
35
40

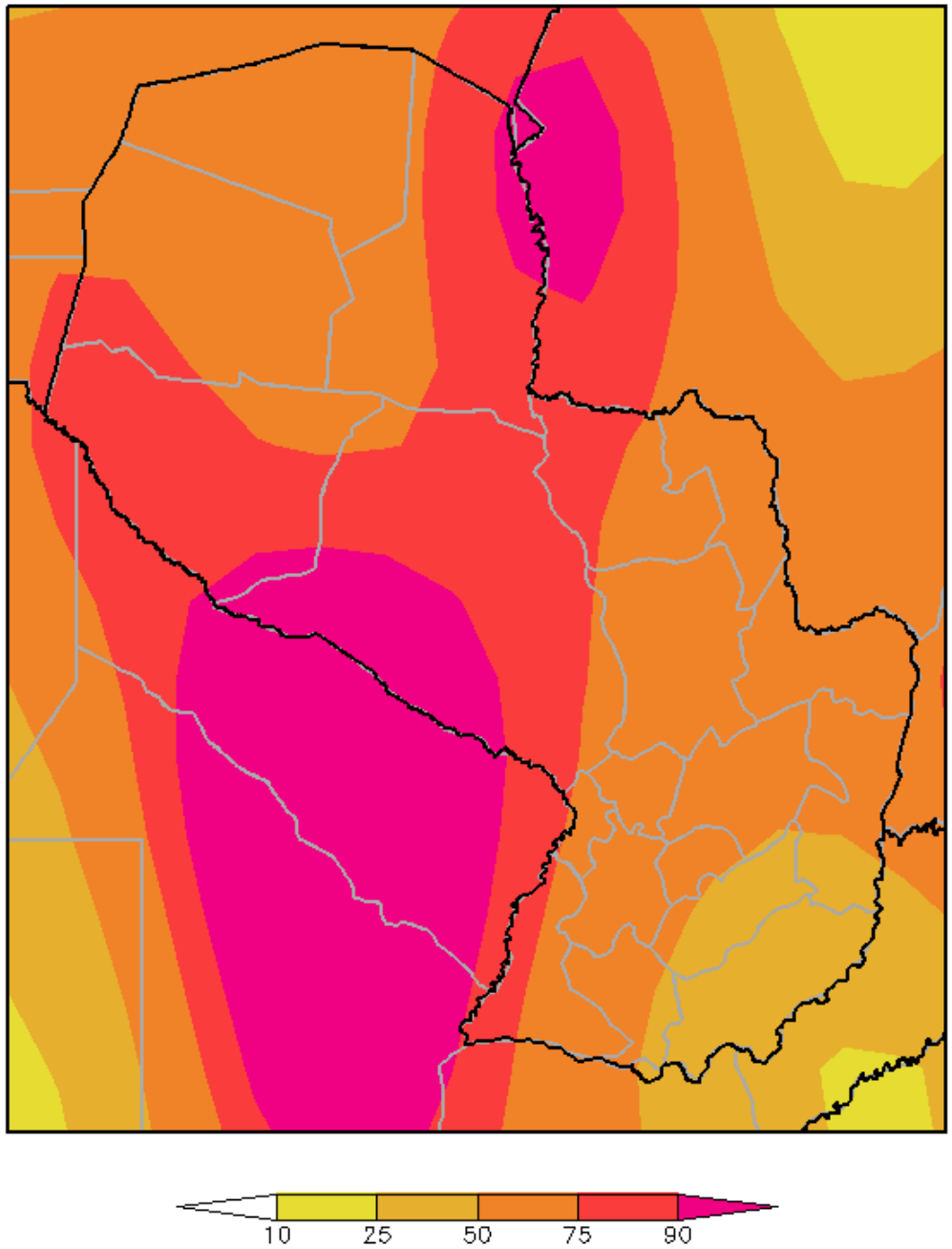
PERSPECTIVA CLIMATICA SEPTIEMBRE 2012
Temperatura Maxima Media (Grados Centigrados)



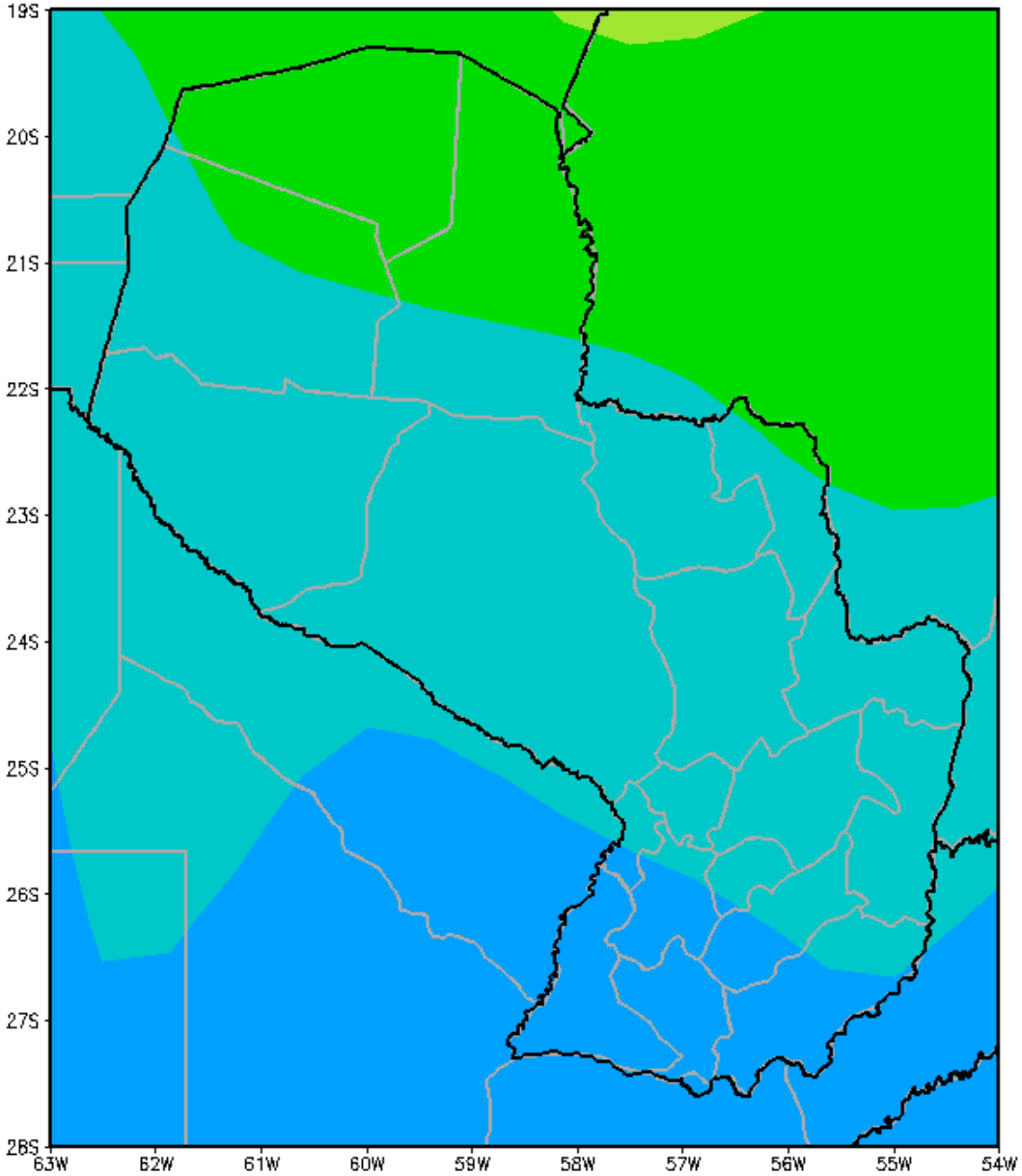
PERSPECTIVA CLIMATICA SEPTIEMBRE 2012
Precipitacion Acumulada (mm)

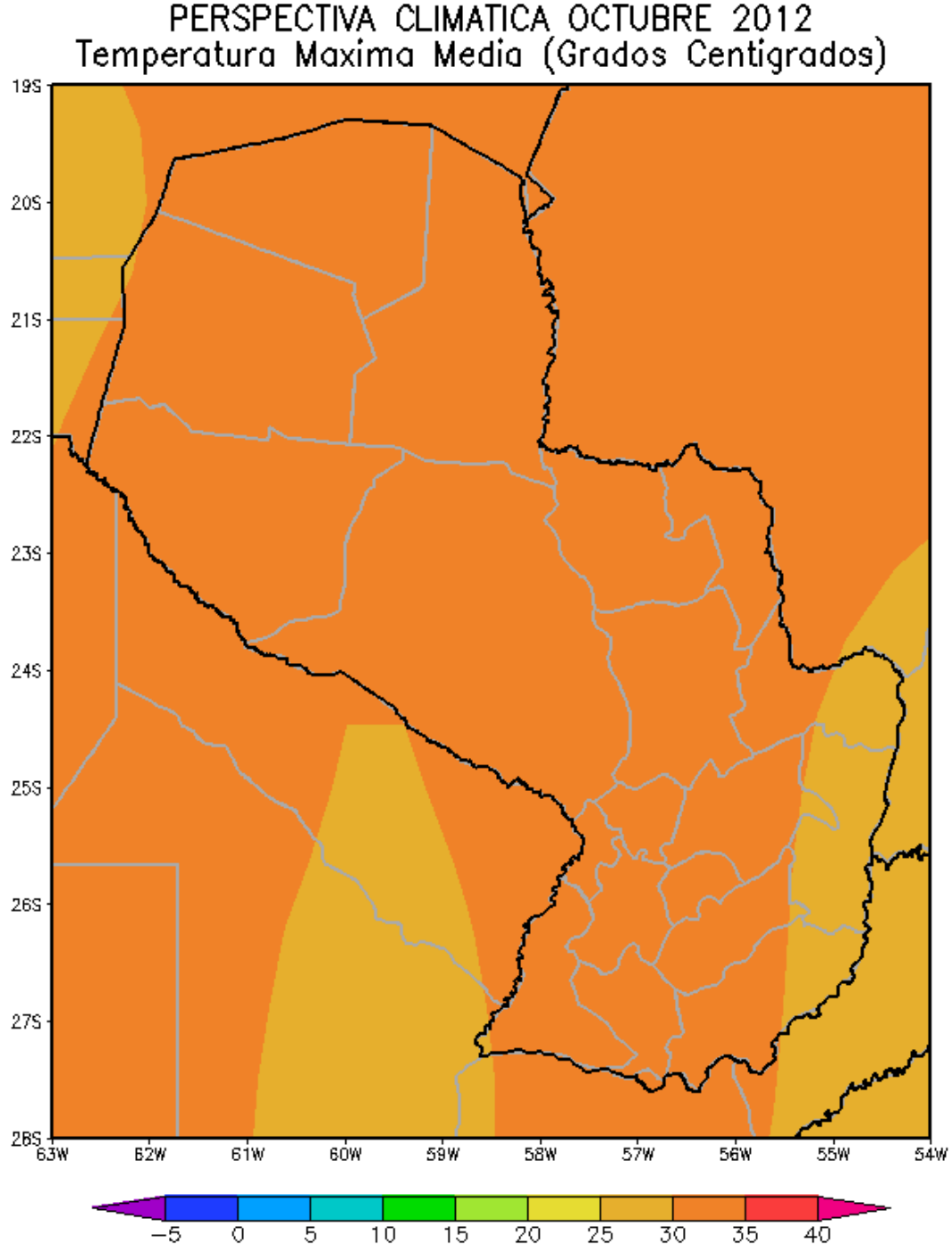


PERSPECTIVA CLIMATICA SEPTIEMBRE 2012
Probabilidad de Tormentas Severas (%)

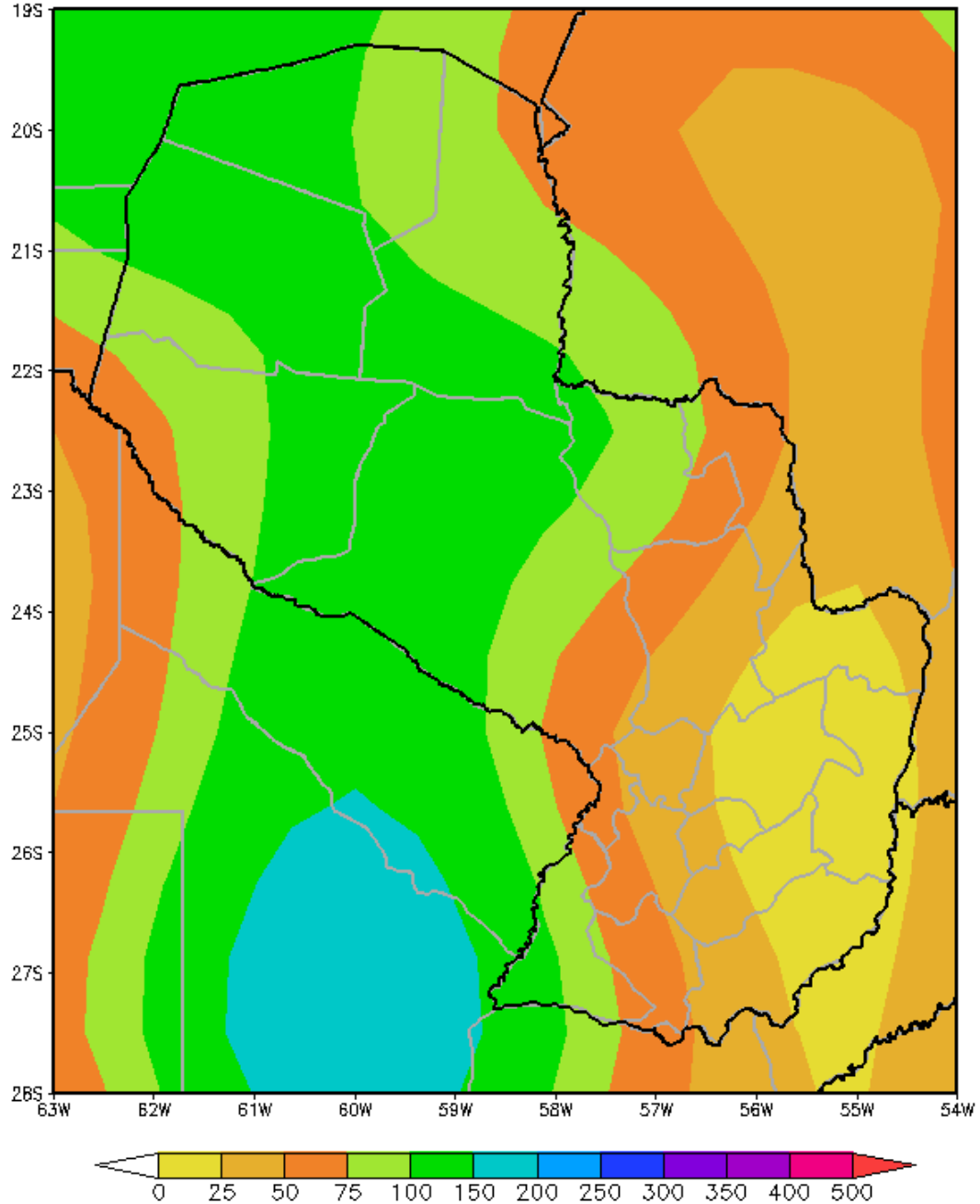


PERSPECTIVA CLIMATICA SEPTIEMBRE 2012
Temperatura Minima Absoluta (Grados Centigrados)

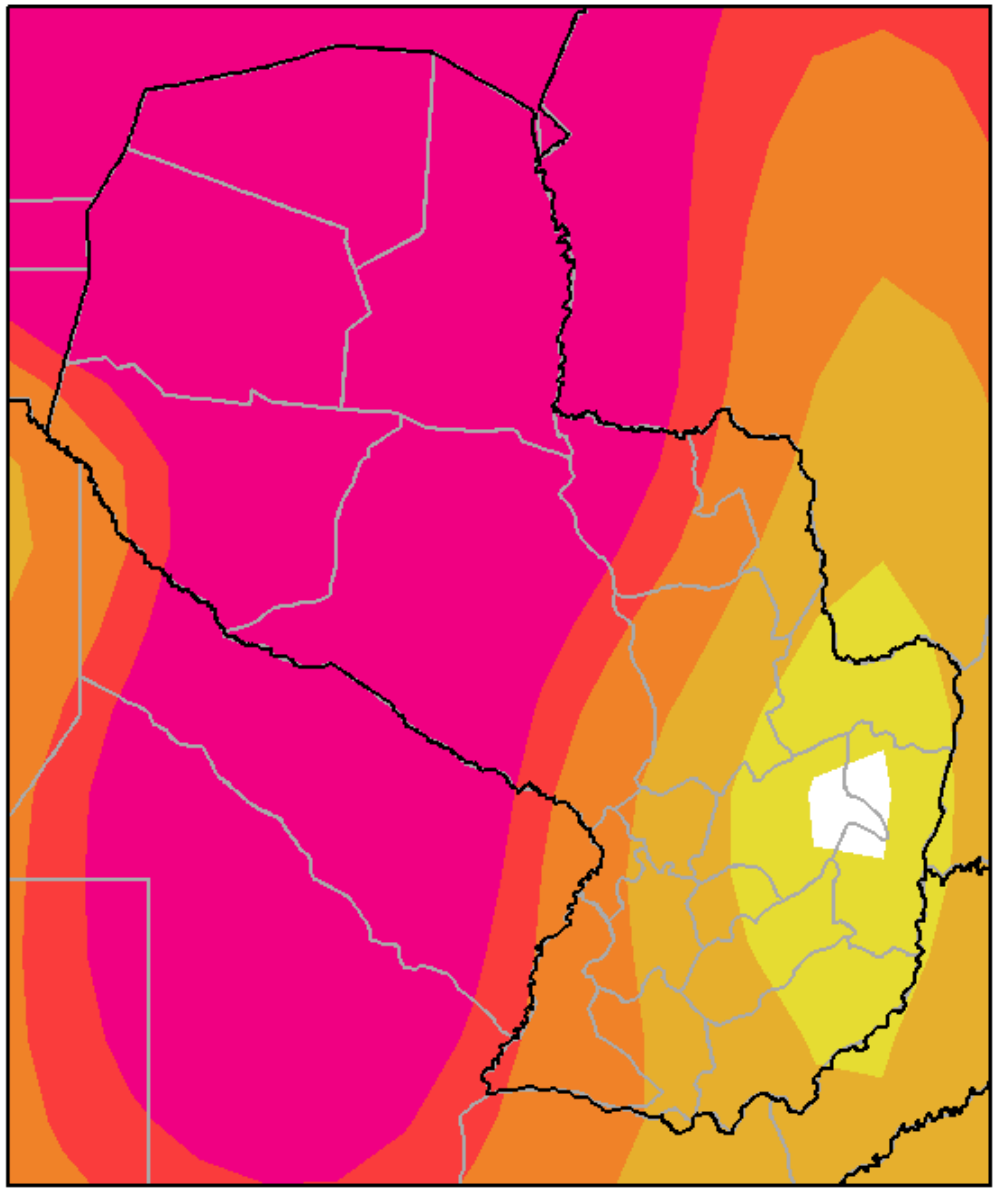



PERSPECTIVA CLIMATICA OCTUBRE 2012
Temperatura Maxima Media (Grados Centigrados)
19S
20S
21S
22S
23S
24S
25S
26S
27S
28S
63W
62W
61W
60W
59W
58W
57W
56W
55W
54W
−5
0
5
10
15
20
25
30
35
40

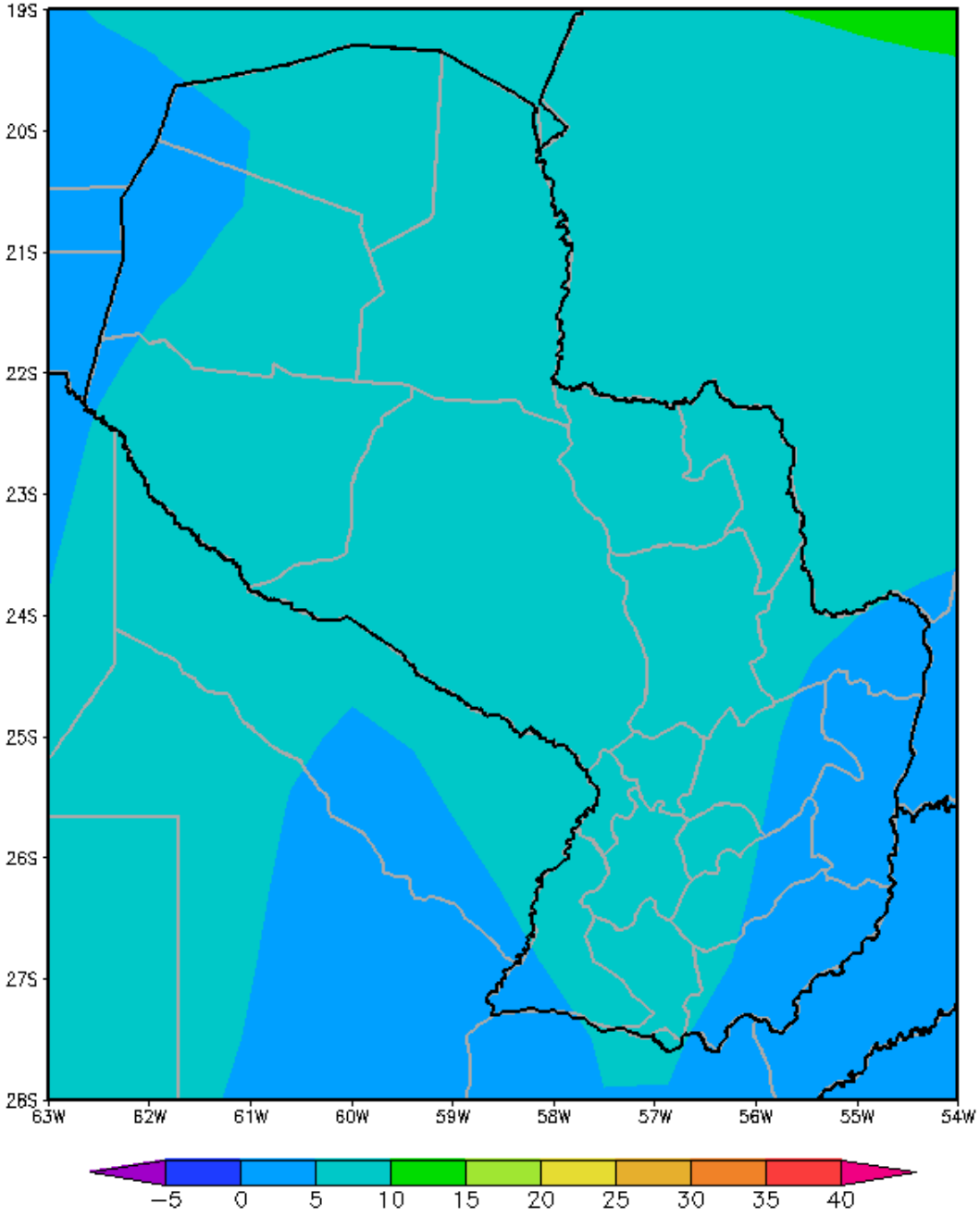
PERSPECTIVA CLIMATICA OCTUBRE 2012
Precipitacion Acumulada (mm)



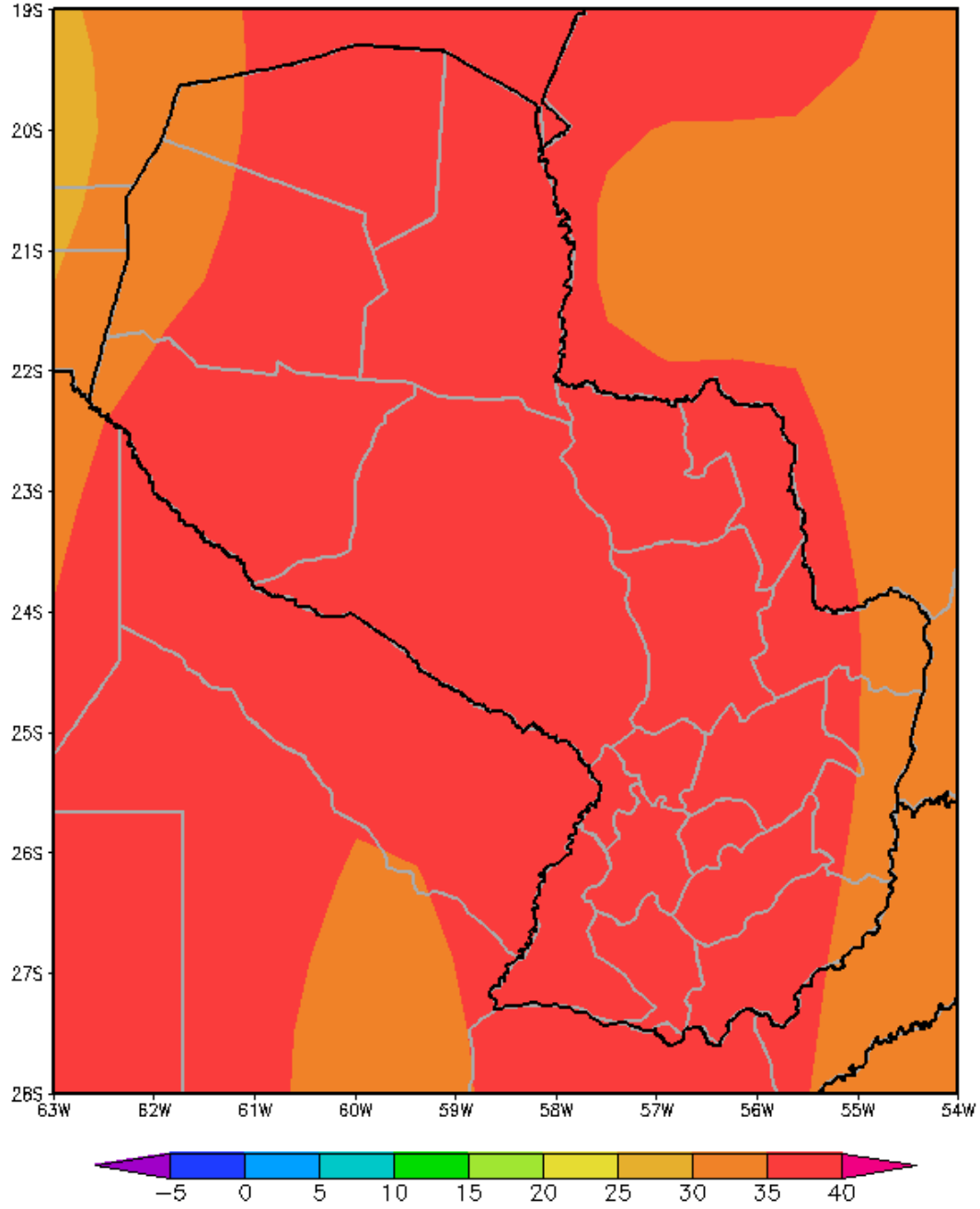
PERSPECTIVA CLIMATICA OCTUBRE 2012
Probabilidad de Tormentas Severas (%)



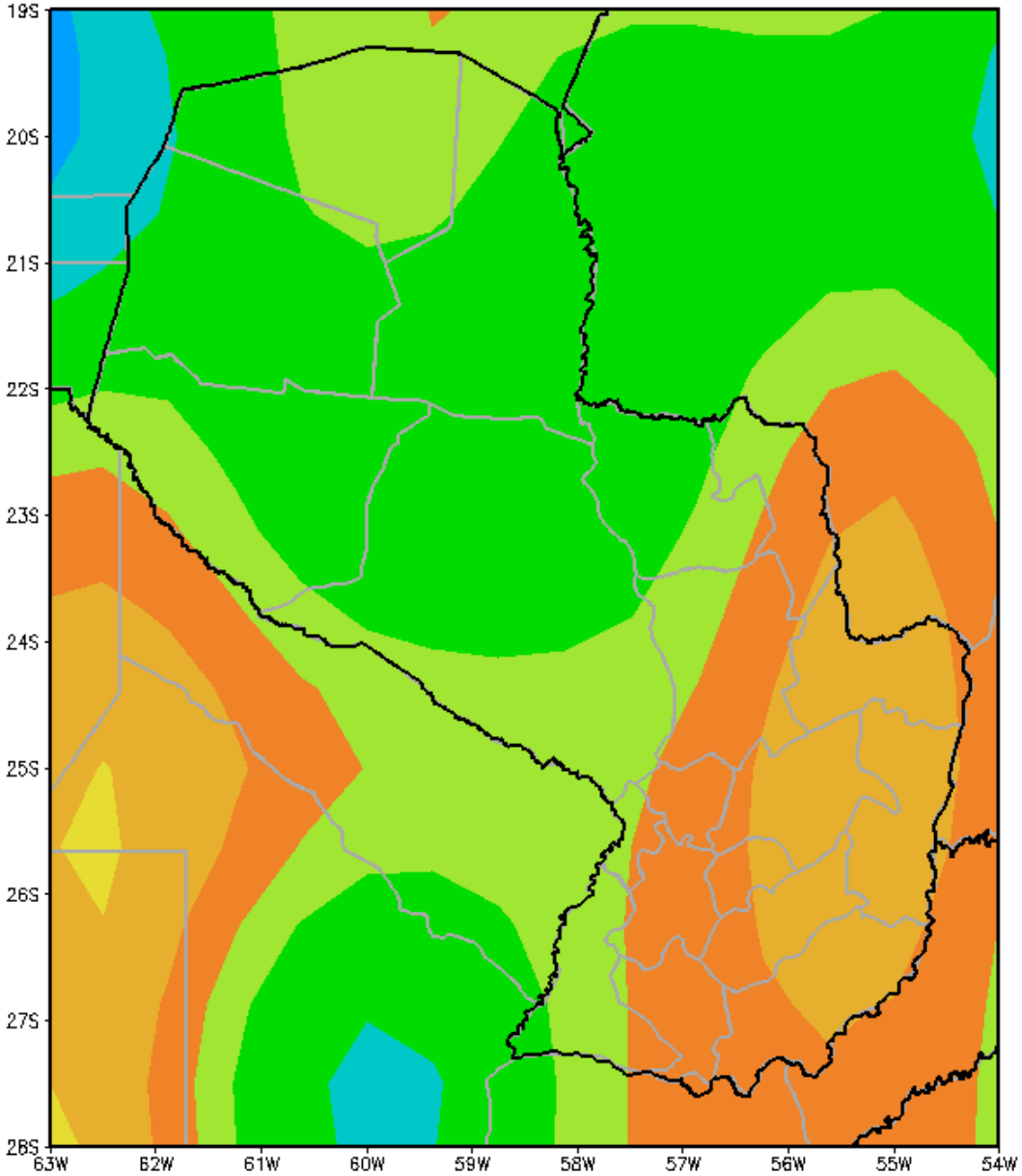
PERSPECTIVA CLIMATICA OCTUBRE 2012
Temperatura Minima Absoluta (Grados Centigrados)



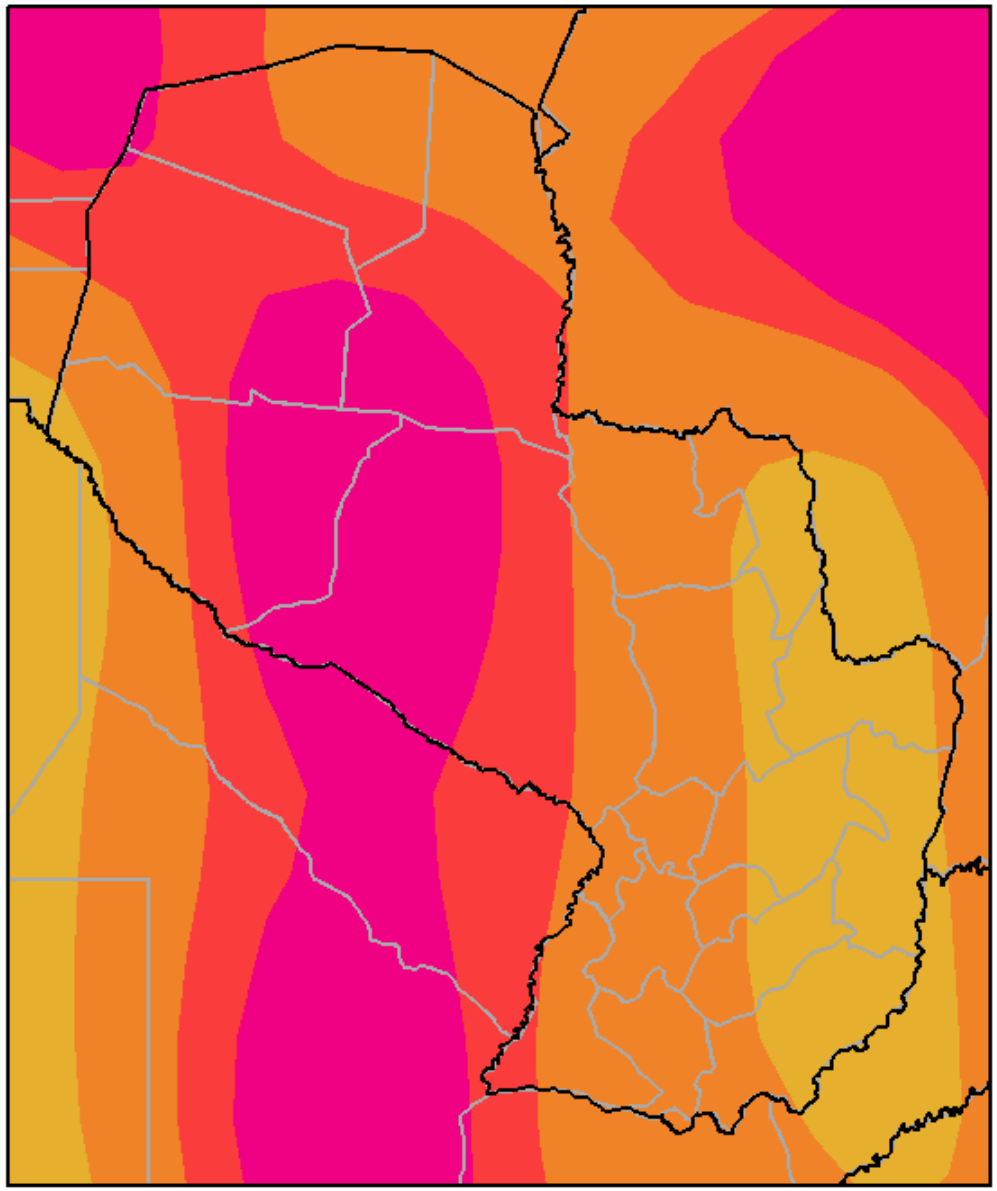
PERSPECTIVA CLIMATICA NOVIEMBRE 2012
Temperatura Maxima Media (Grados Centigrados)



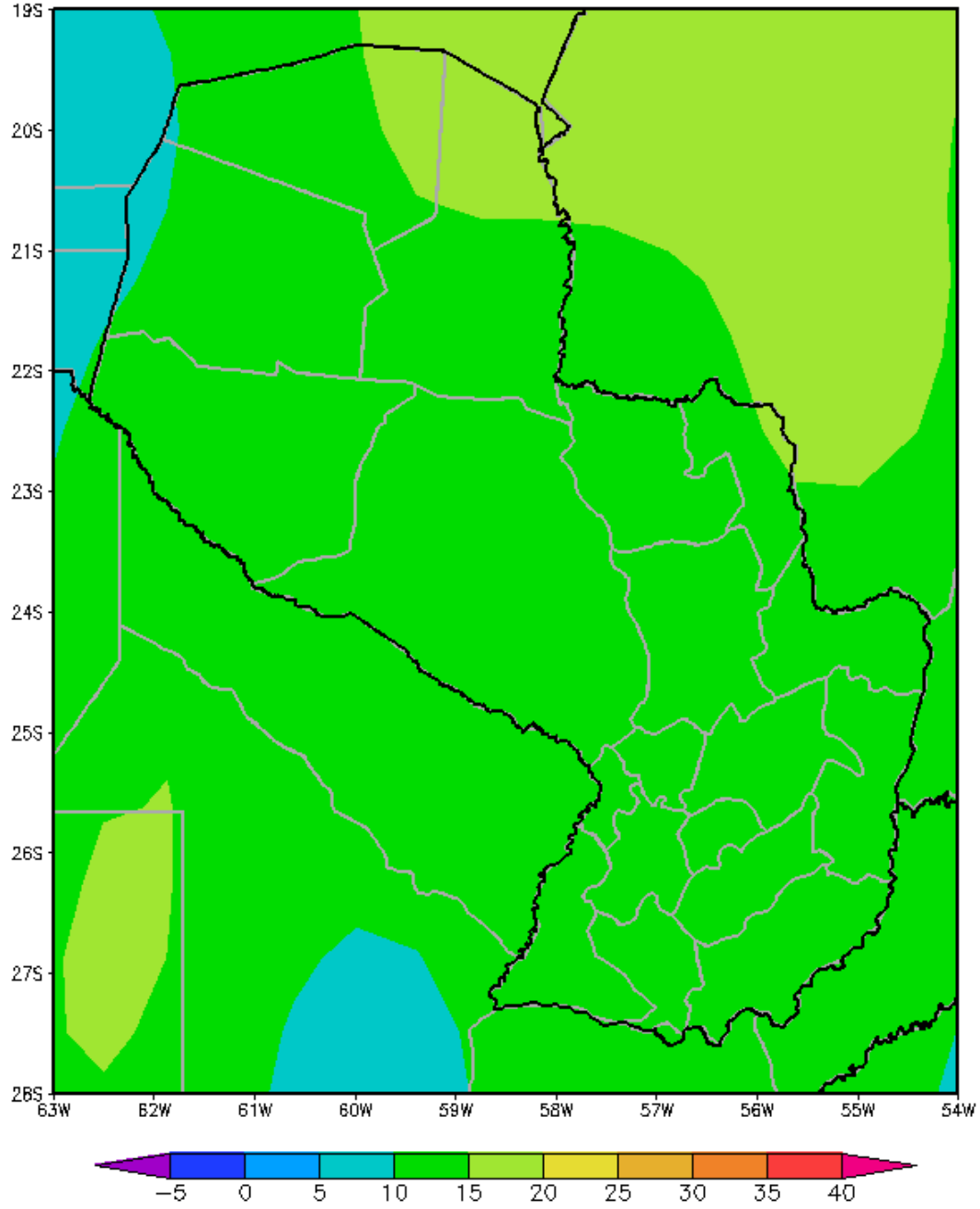
PERSPECTIVA CLIMATICA NOVIEMBRE 2012
Precipitacion Acumulada (mm)



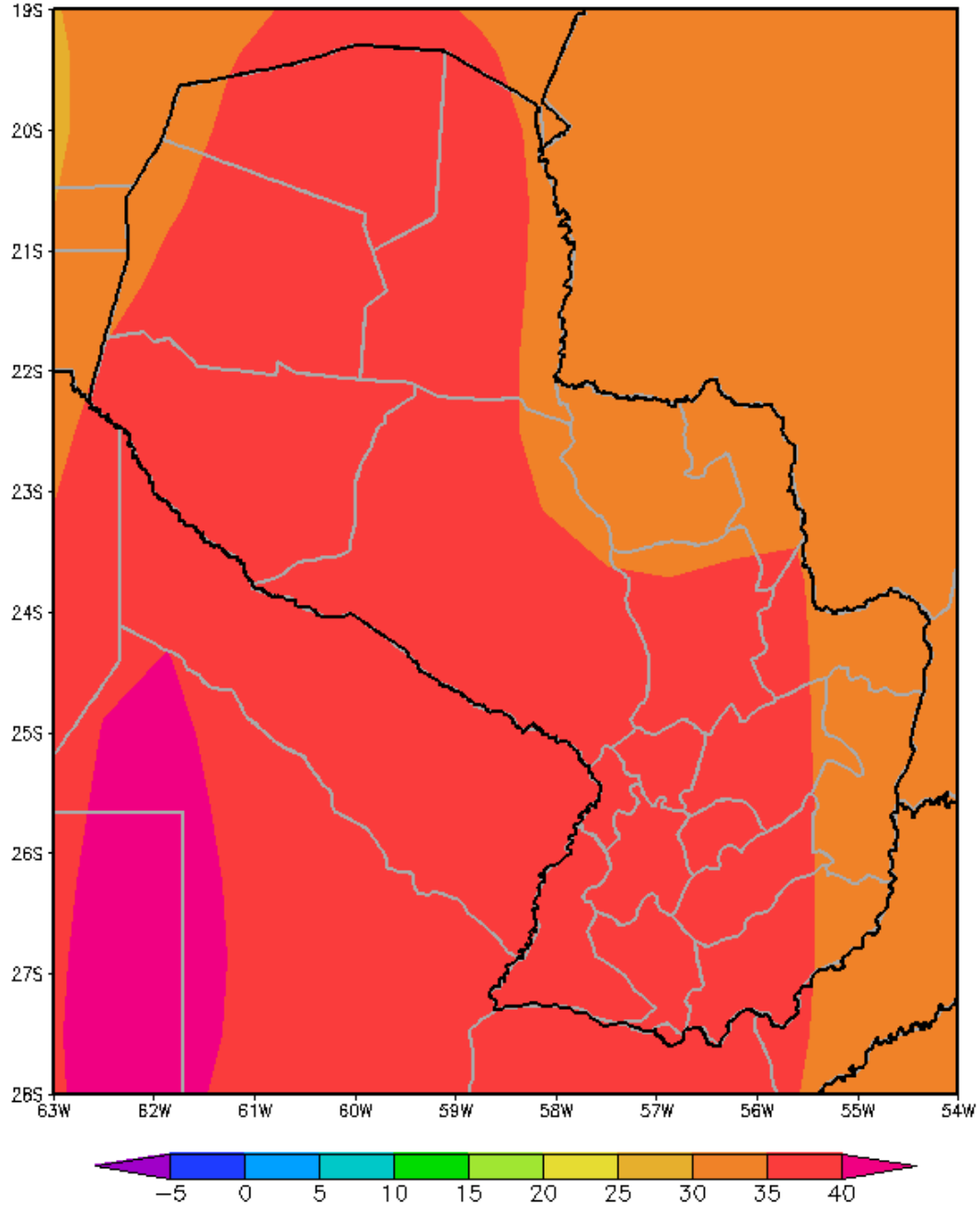
PERSPECTIVA CLIMATICA NOVIEMBRE 2012
Probabilidad de Tormentas Severas (%)



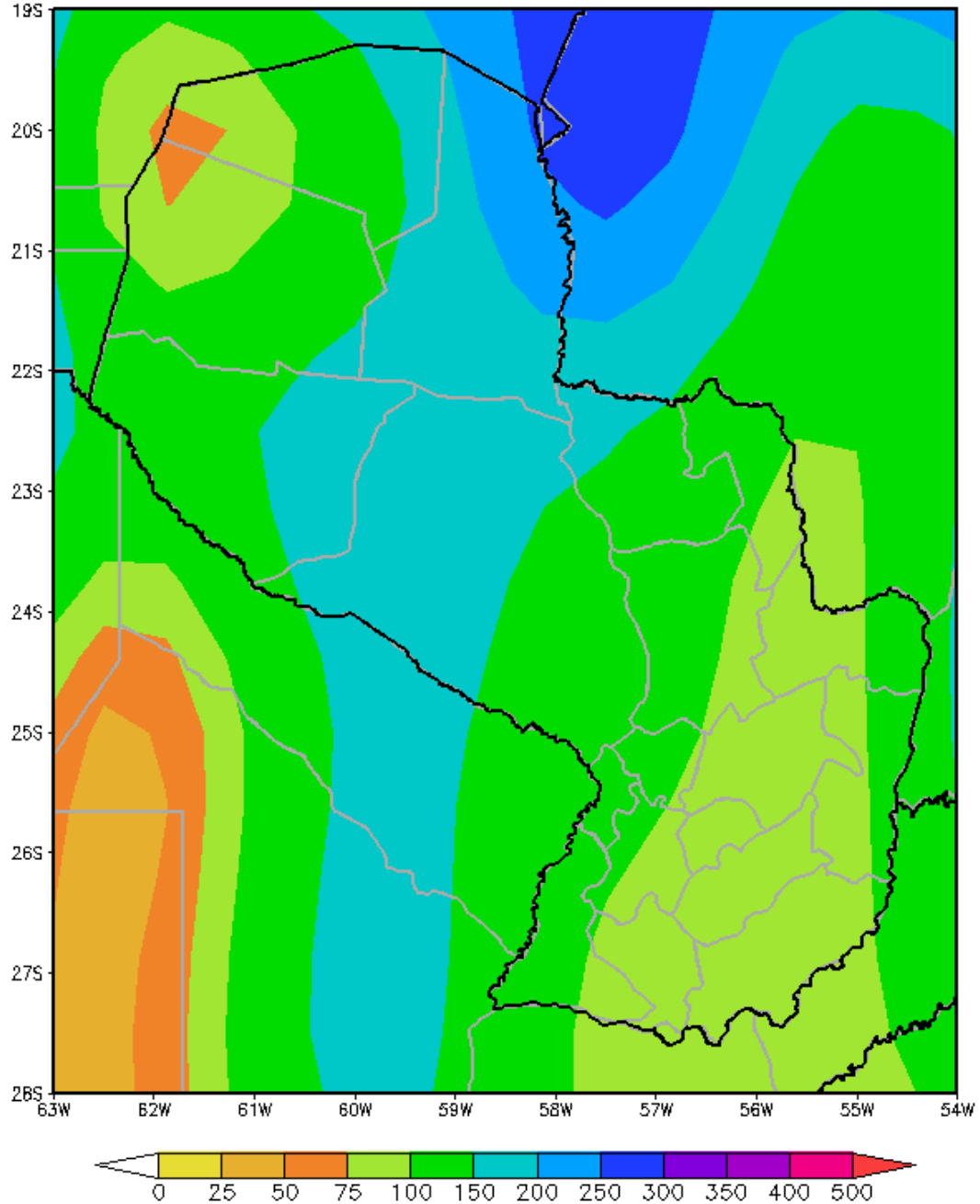
PERSPECTIVA CLIMATICA NOVIEMBRE 2012
Temperatura Minima Absoluta (Grados Centigrados)



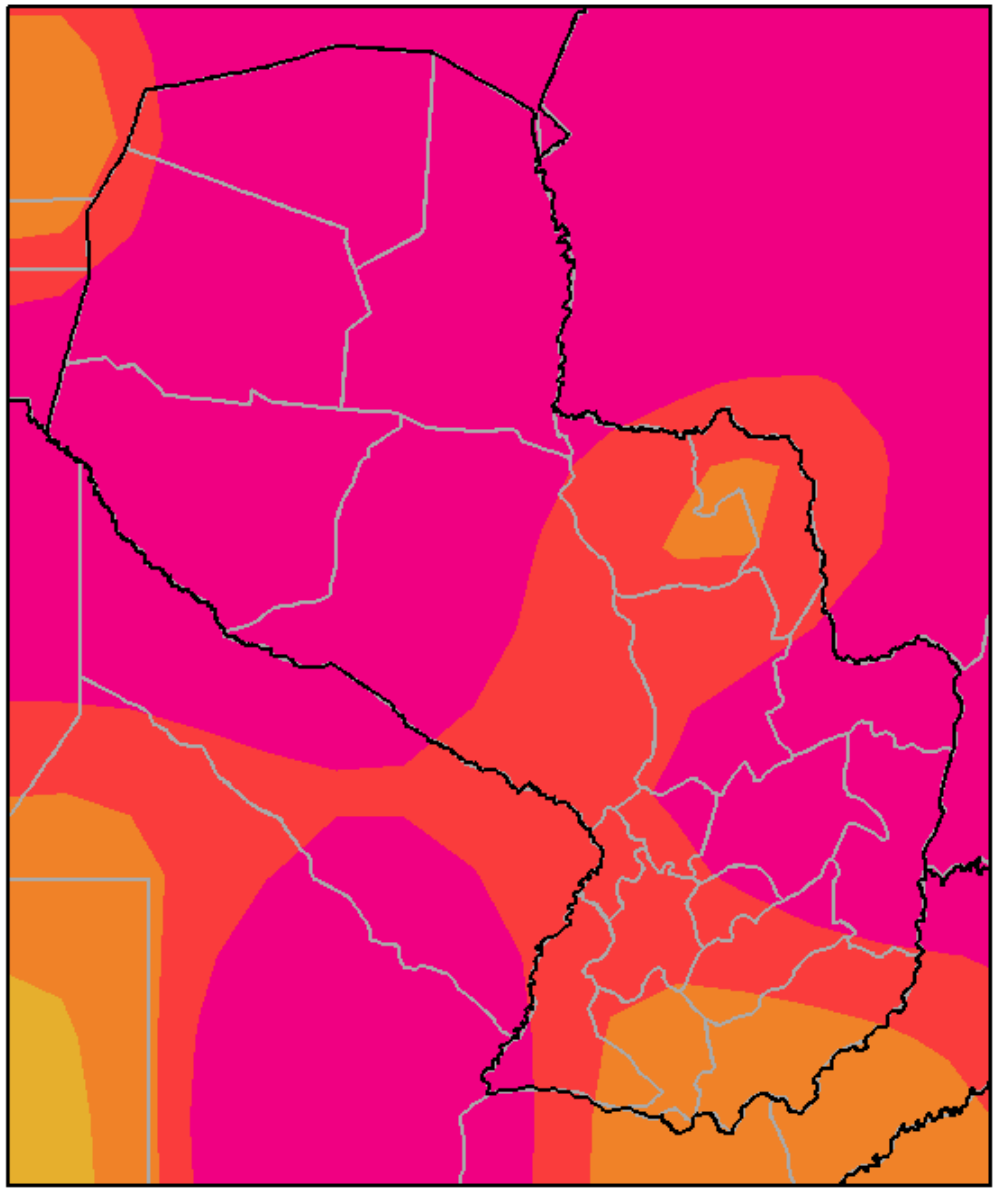
PERSPECTIVA CLIMATICA DICIEMBRE 2012
Temperatura Maxima Media (Grados Centigrados)



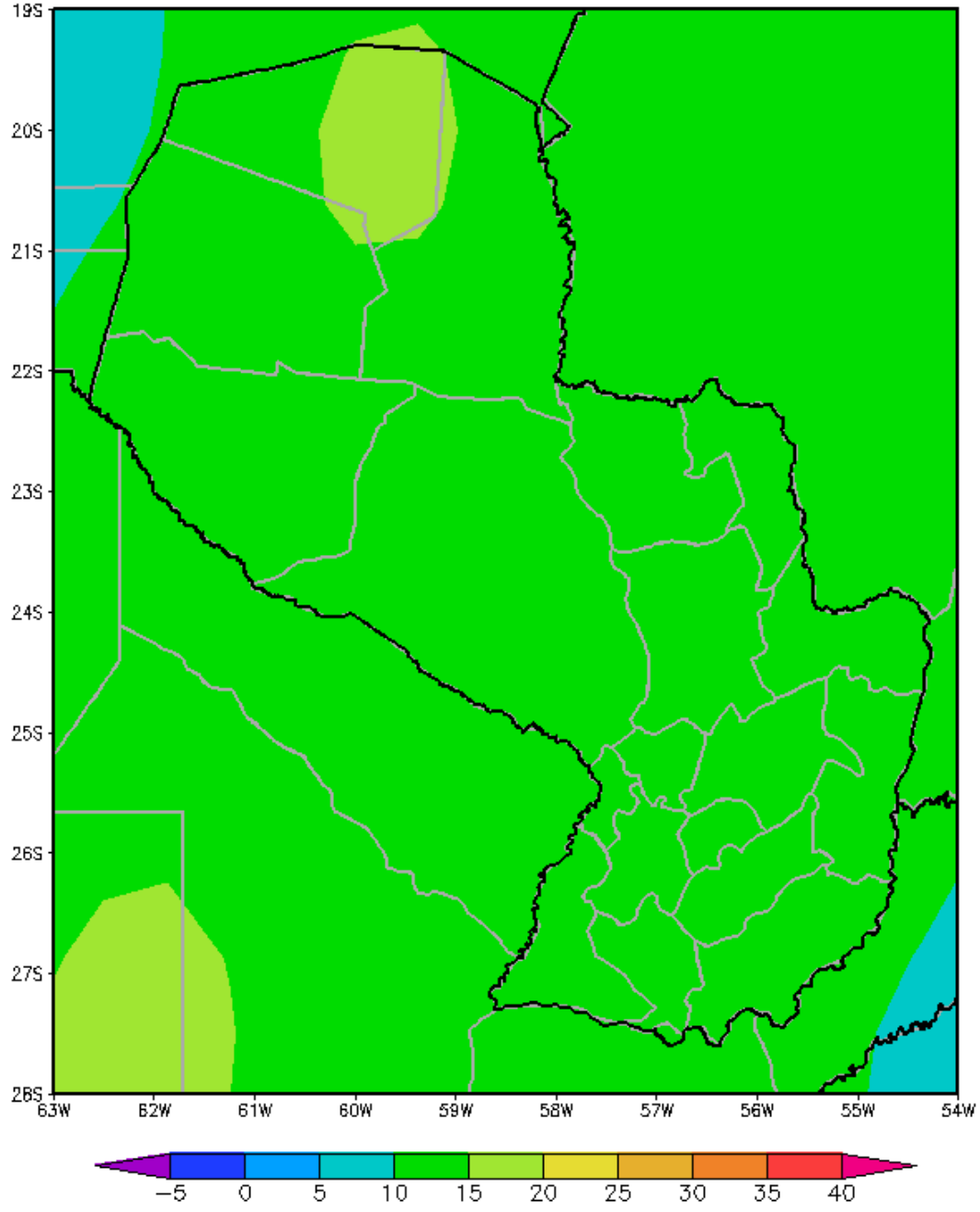
PERSPECTIVA CLIMATICA DICIEMBRE 2012
Precipitacion Acumulada (mm)

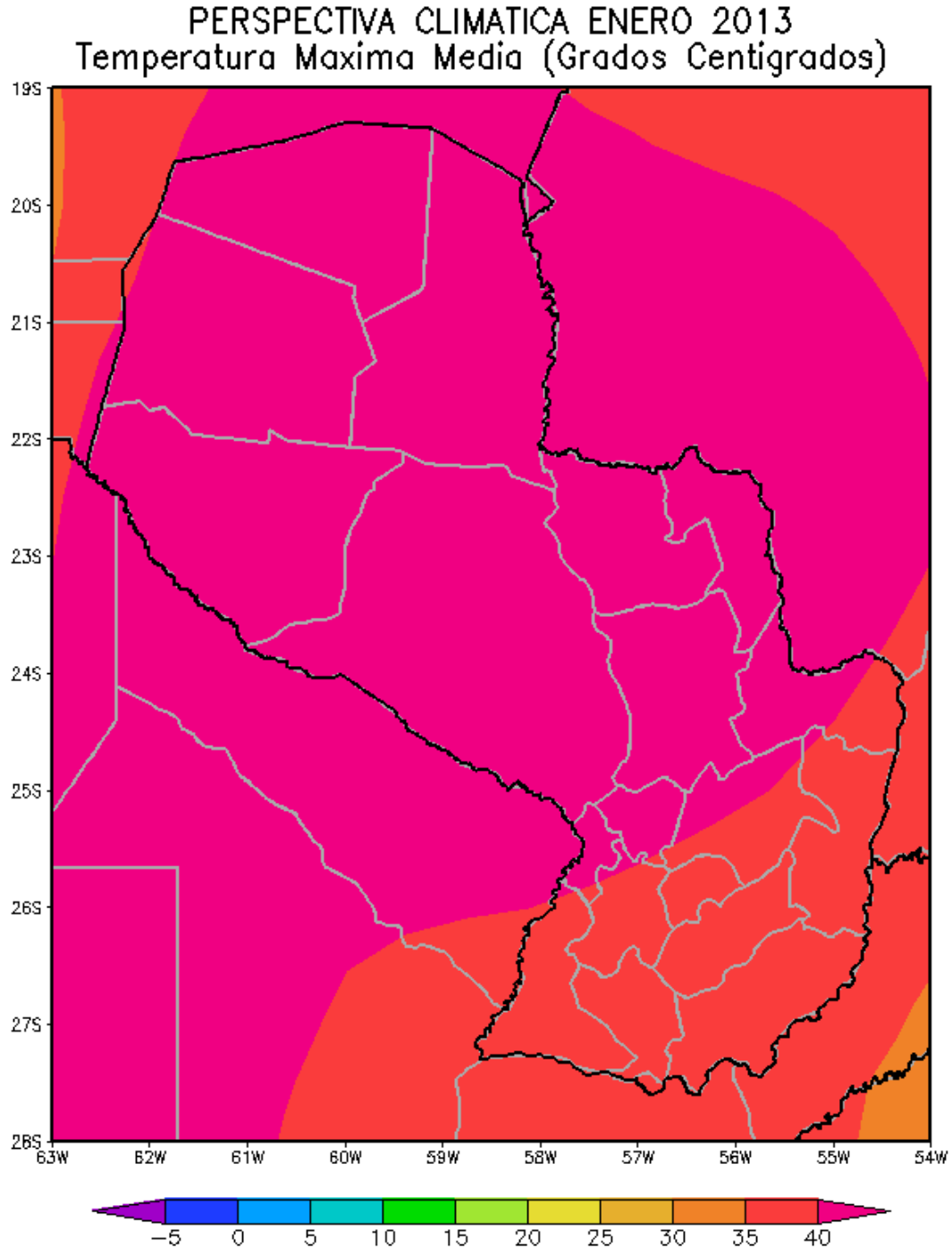


PERSPECTIVA CLIMATICA DICIEMBRE 2012
Probabilidad de Tormentas Severas (%)

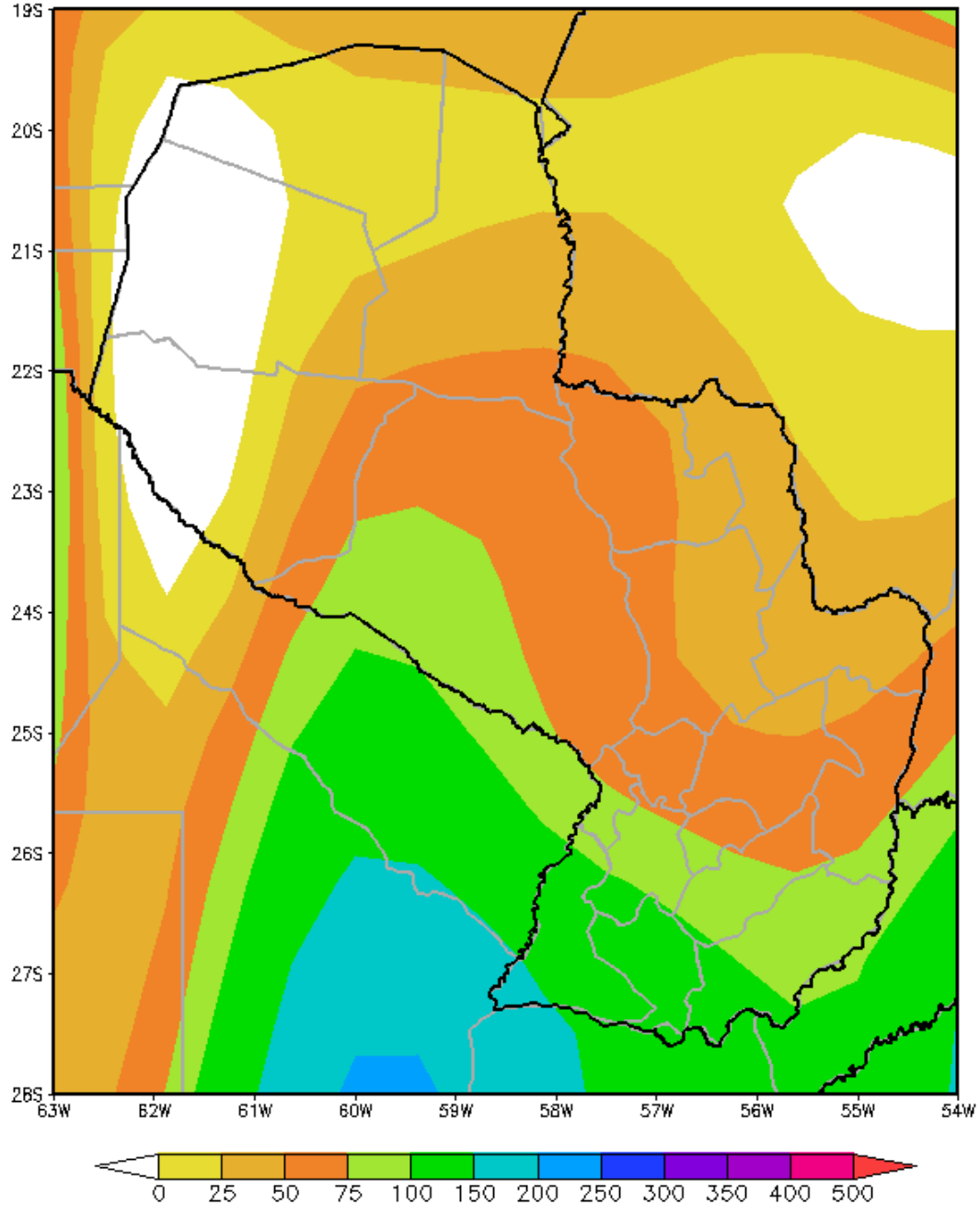


PERSPECTIVA CLIMATICA DICIEMBRE 2012
Temperatura Minima Absoluta (Grados Centigrados)

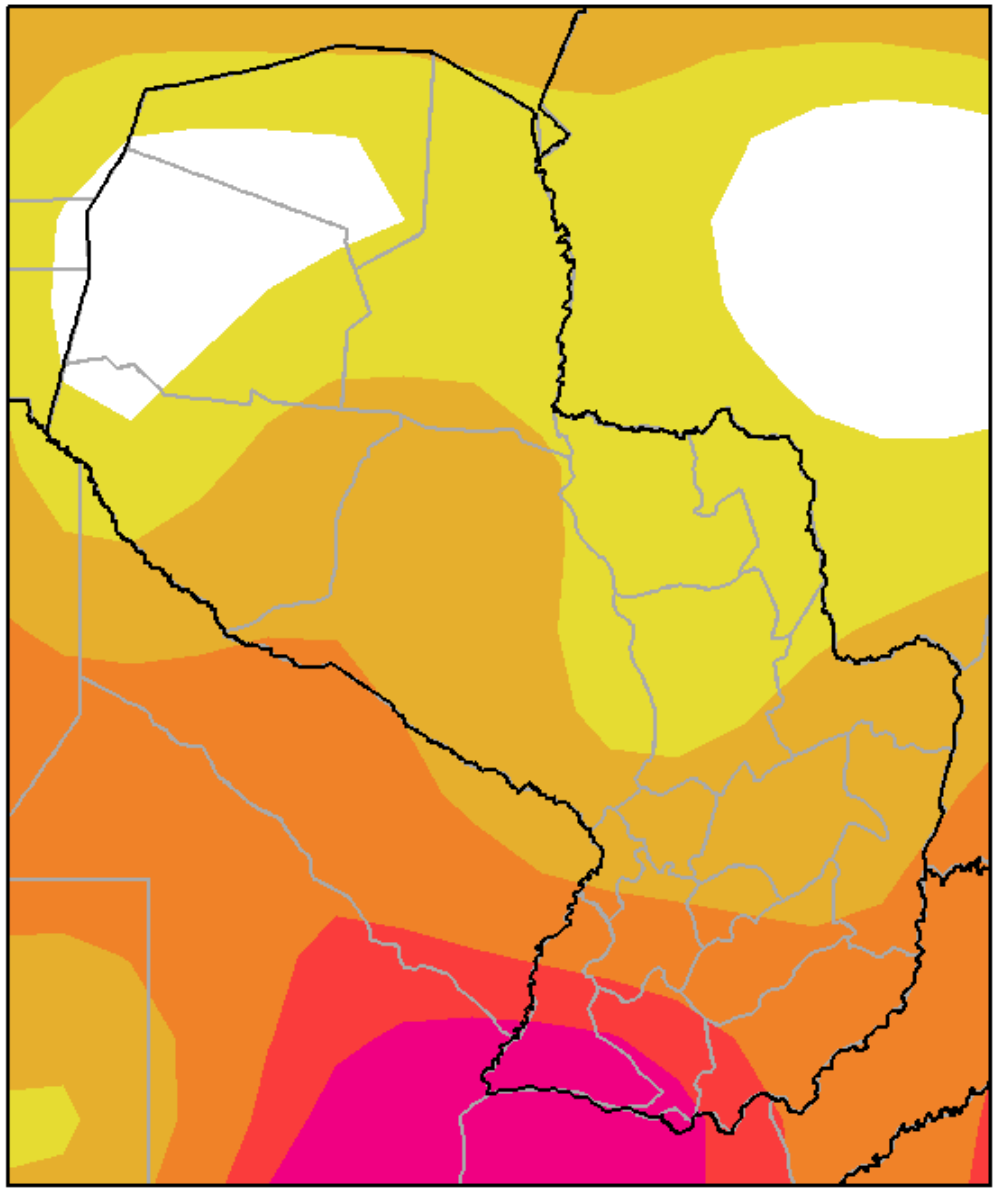



PERSPECTIVA CLIMATICA ENERO 2013
Temperatura Maxima Media (Grados Centigrados)
19S
20S
21S
22S
23S
24S
25S
26S
27S
28S
63W
62W
61W
60W
59W
58W
57W
56W
55W
54W
−5
0
5
10
15
20
25
30
35
40

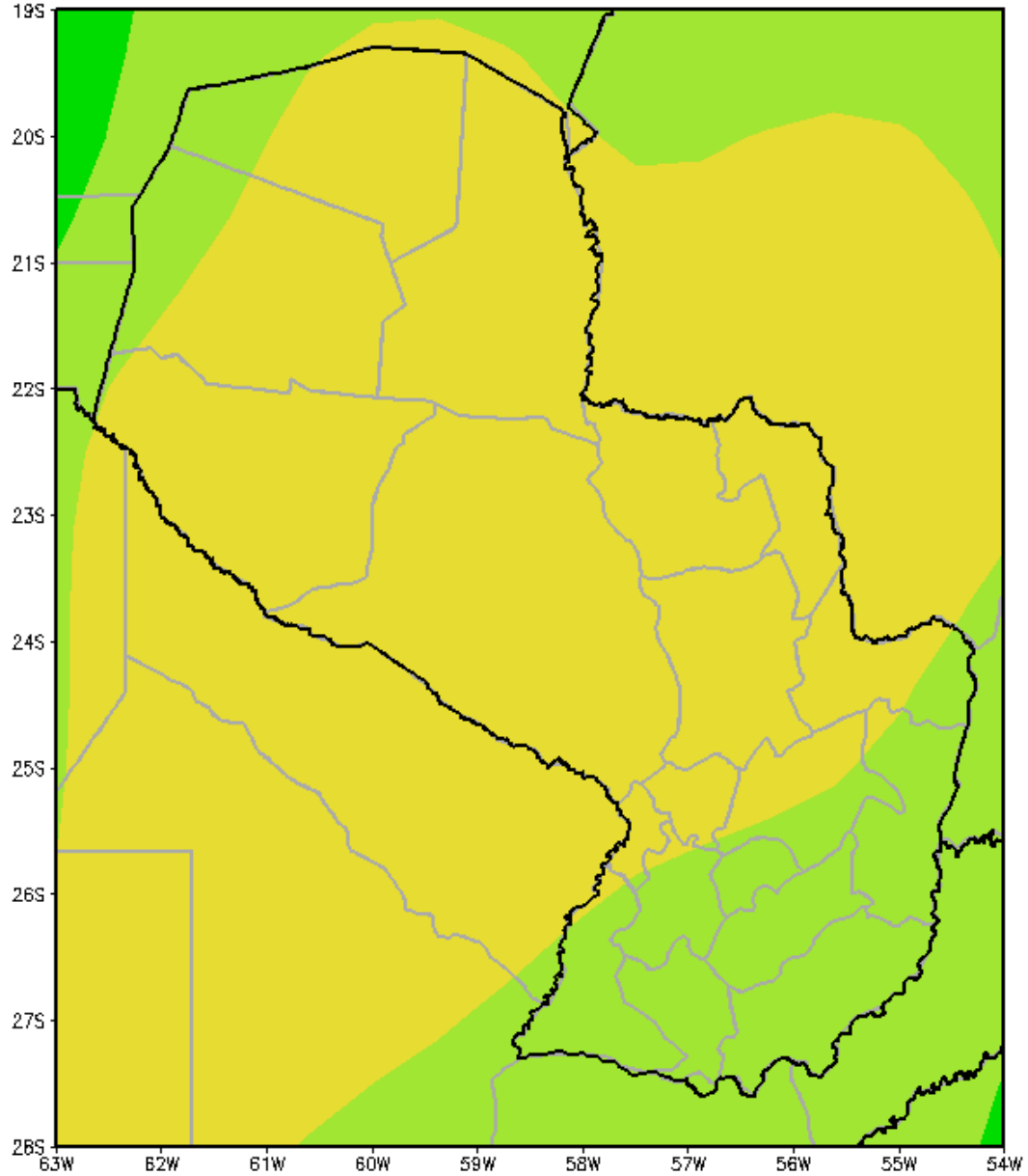
PERSPECTIVA CLIMATICA ENERO 2013
Precipitacion Acumulada (mm)



PERSPECTIVA CLIMATICA ENERO 2013
Probabilidad de Tormentas Severas (%)

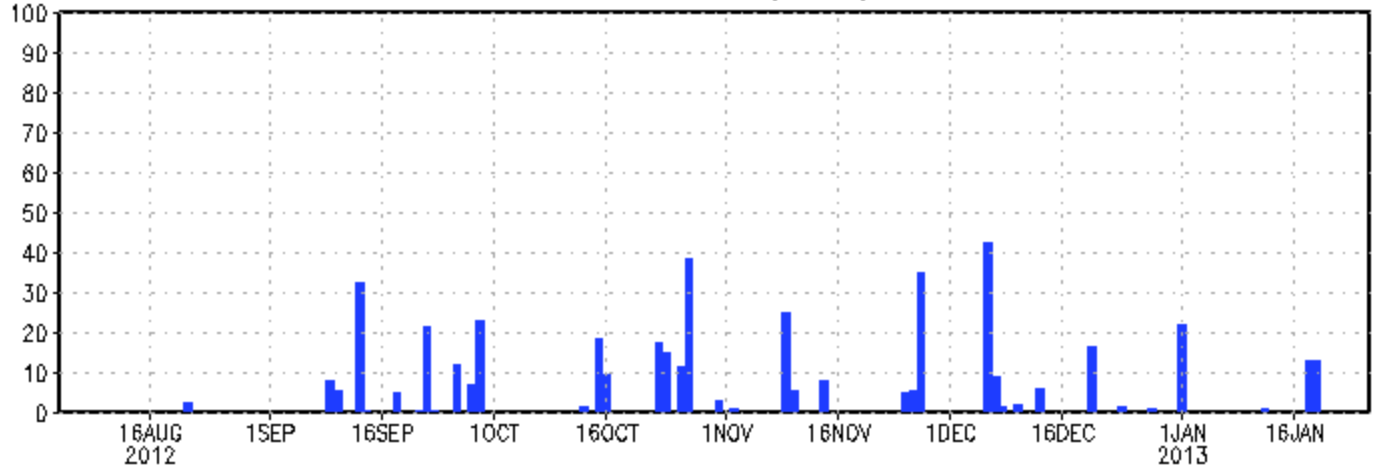


PERSPECTIVA CLIMATICA ENERO 2013
Temperatura Minima Absoluta (Grados Centigrados)

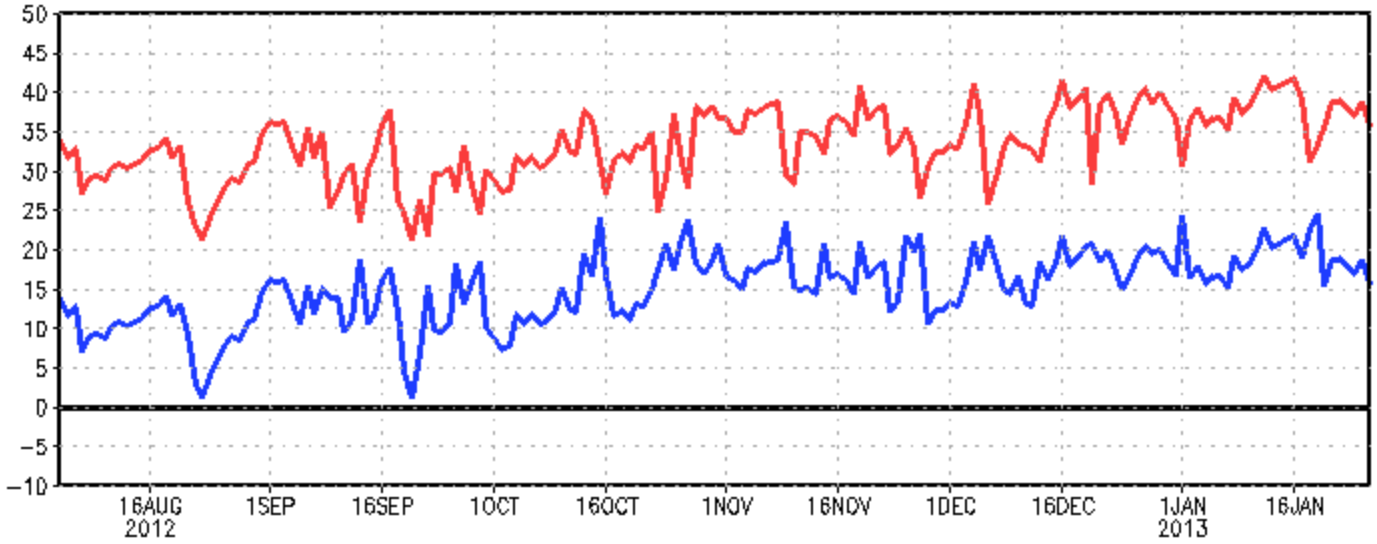


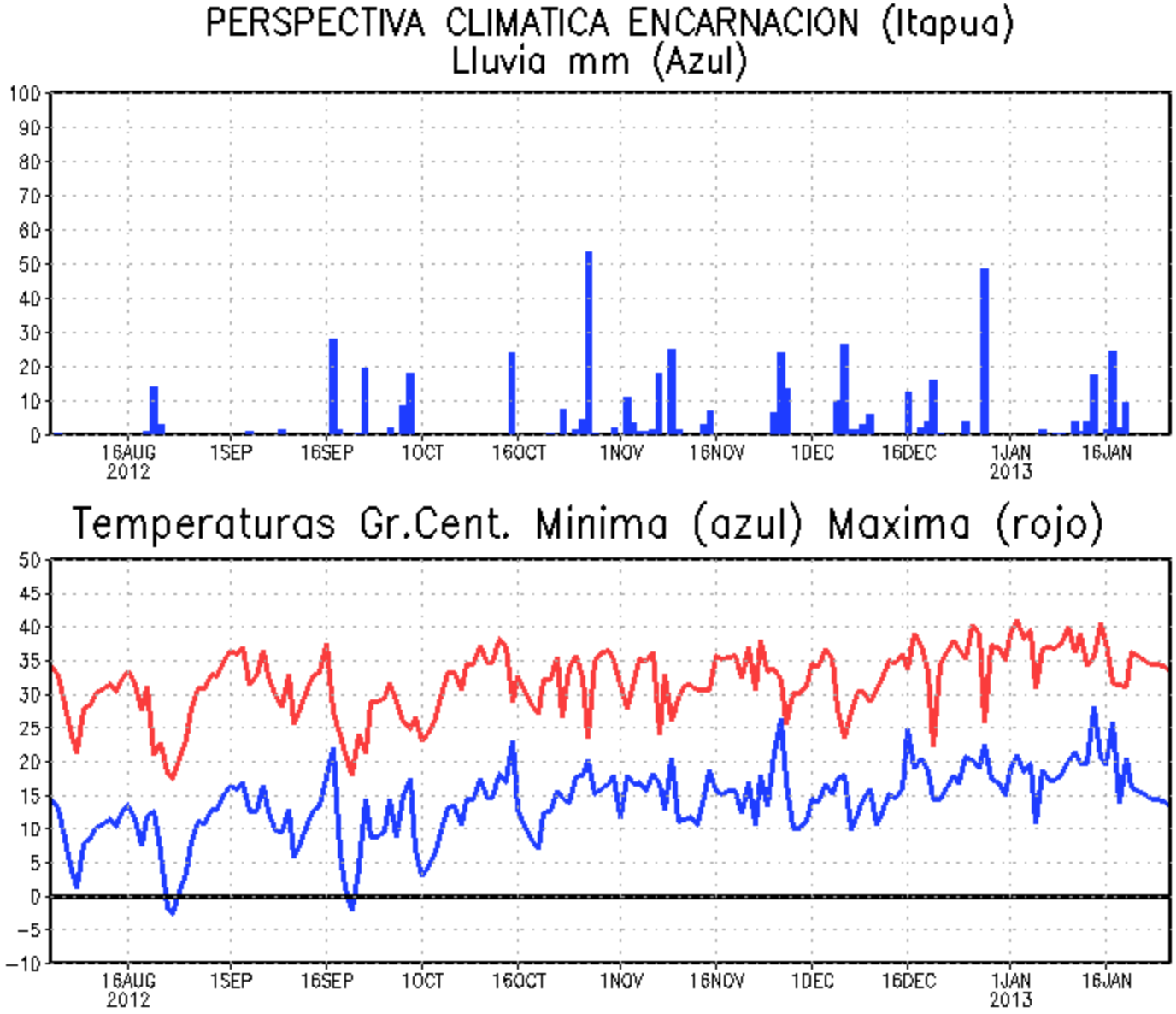
PERSPECTIVA CLIMATICA NUEVA ESPERANZA (Canindeyu)

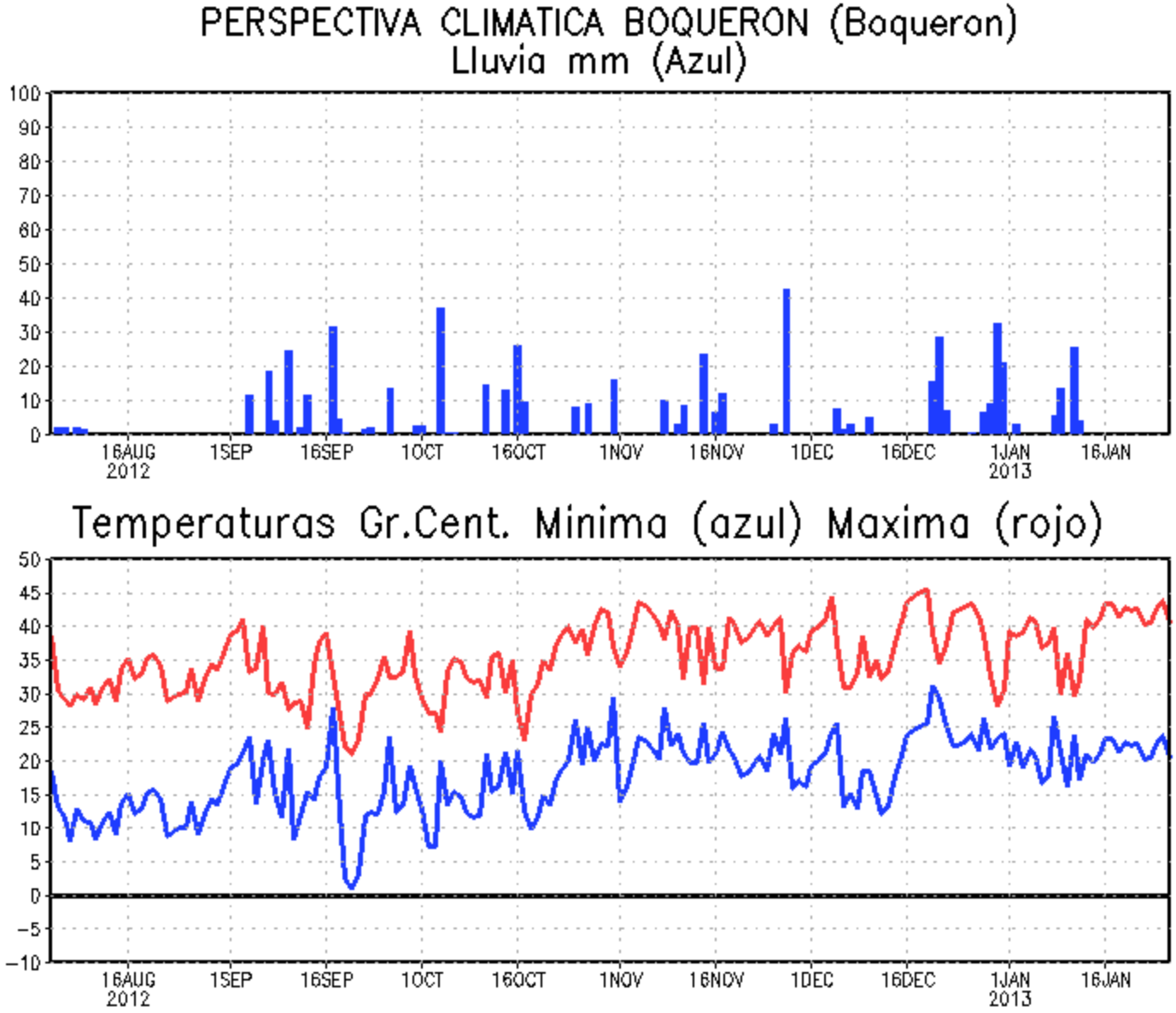
Lluvia mm (Azul)



Temperaturas Gr.Cent. Minima (azul) Maxima (rojo)



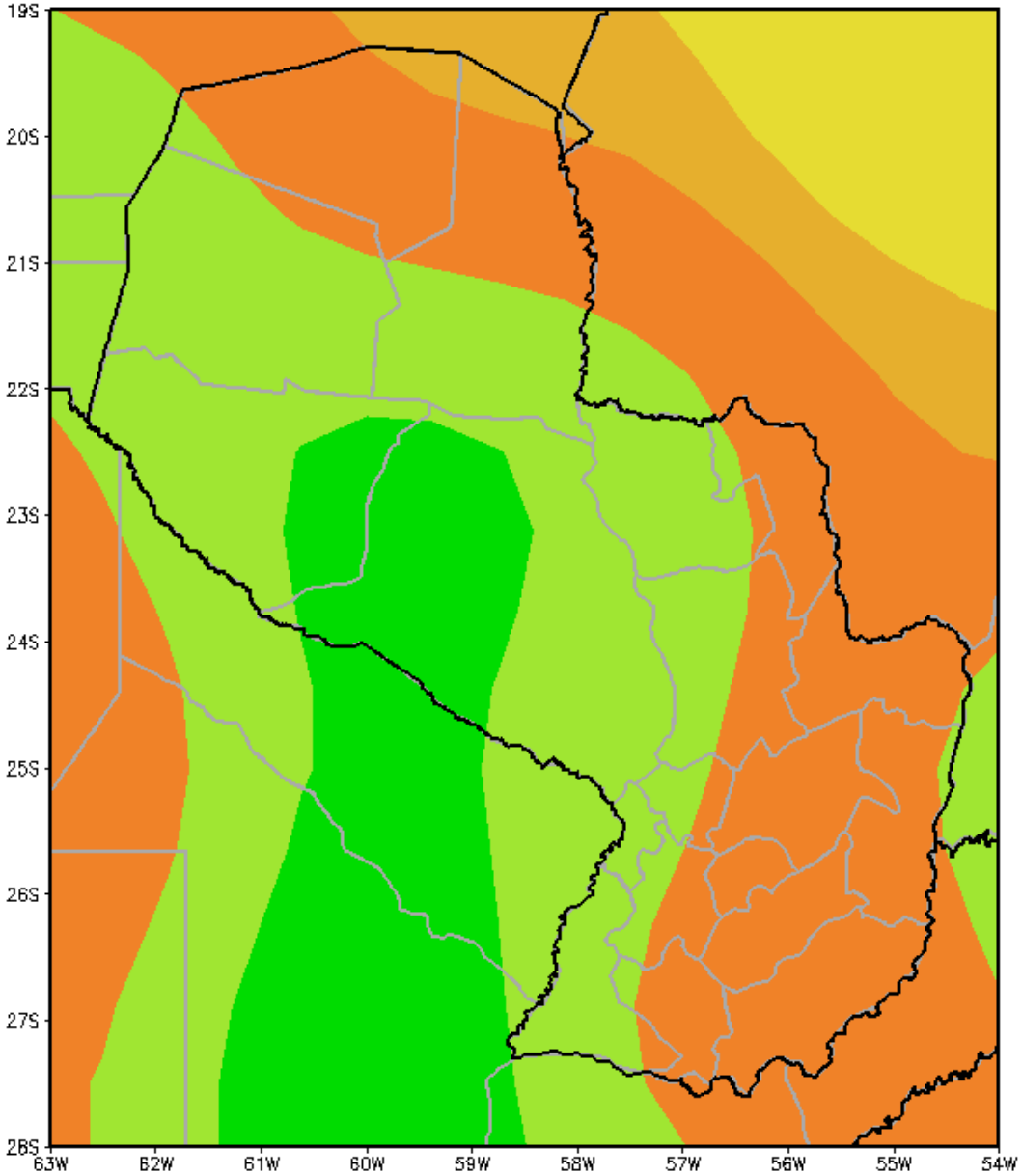

PERSPECTIVA CLIMATICA ENCARNACION (Itapua)
Lluvia mm (Azul)
100
90
80
70
60
50
40
30
20
10
0
16AUG
2012
1SEP
16SEP
1OCT
16OCT
1NOV
16NOV
1DEC
16DEC
1JAN
2013
16JAN
Temperaturas Gr.Cent. Minima (azul) Maxima (rojo)
50
45
40
35
30
25
20
15
10
5
0
−5
−10
16AUG
2012
1SEP
16SEP
1OCT
16OCT
1NOV
16NOV
1DEC
16DEC
1JAN
2013
16JAN


PERSPECTIVA CLIMATICA BOQUERON (Boqueron)
Lluvia mm (Azul)
100
90
80
70
60
50
40
30
20
10
0
16AUG 2012
1SEP
16SEP
1OCT
16OCT
1NOV
16NOV
1DEC
16DEC
1JAN 2013
16JAN
Temperaturas Gr.Cent. Minima (azul) Maxima (rojo)
50
45
40
35
30
25
20
15
10
5
0
−5
−10
16AUG 2012
1SEP
16SEP
1OCT
16OCT
1NOV
16NOV
1DEC
16DEC
1JAN 2013
16JAN

PERSPECTIVA ESTACIONAL 2012/2013

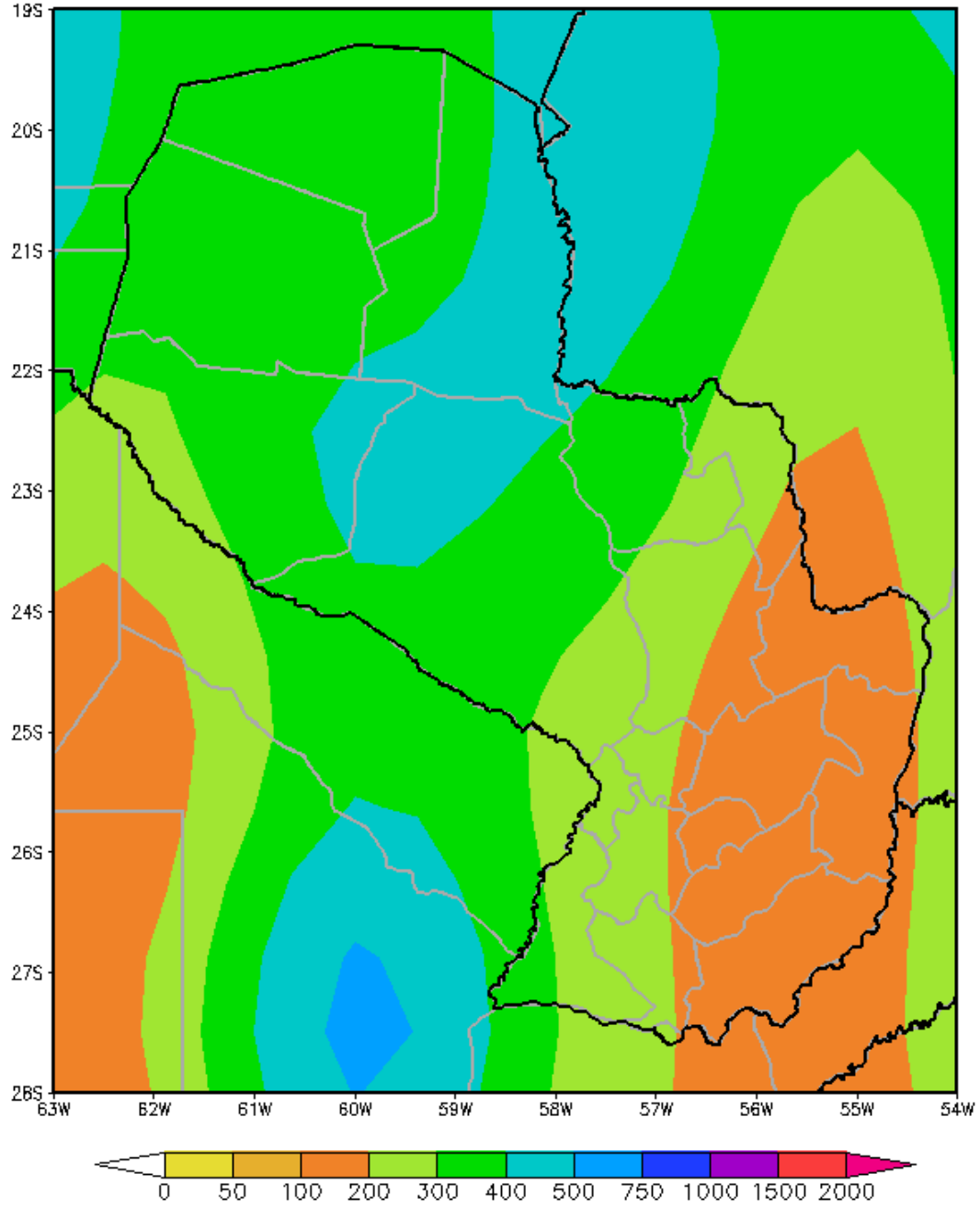
PERSPECTIVA CLIMATICA JULIO–SEPTIEMBRE 2012

Precipitacion Acumulada (mm)

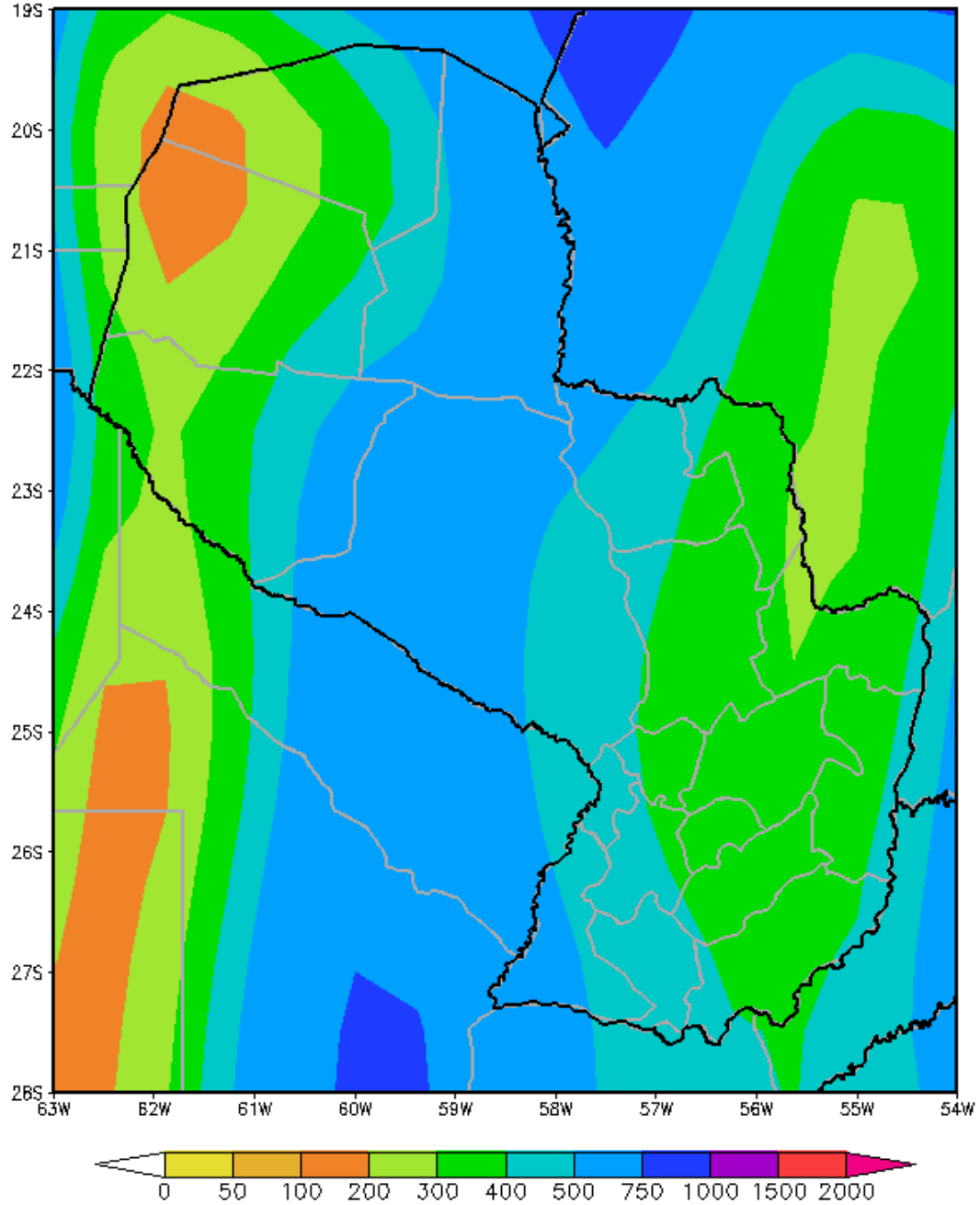


PERSPECTIVA CLIMATICA OCTUBRE–DICIEMBRE 2012

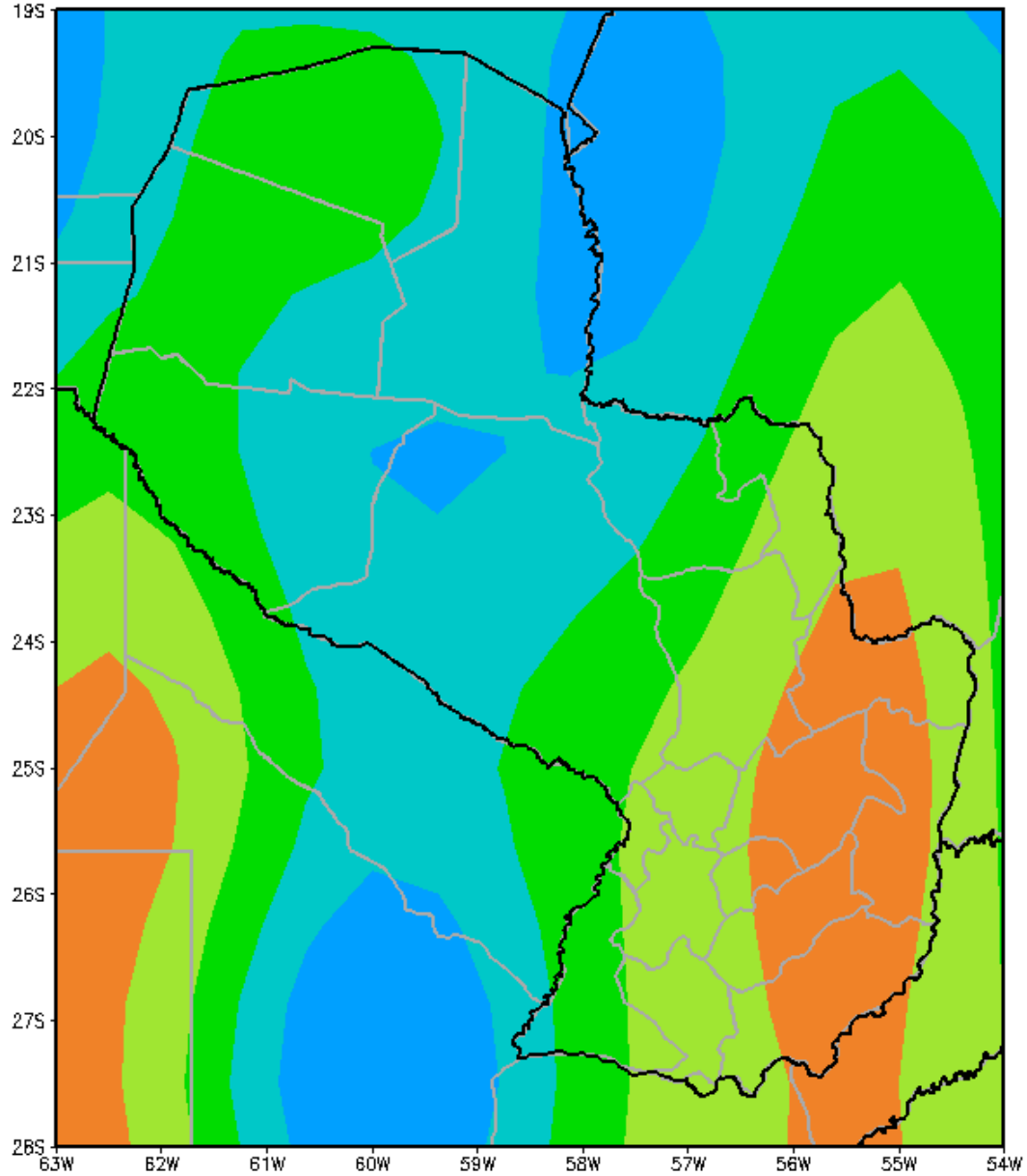
Precipitacion Acumulada (mm)



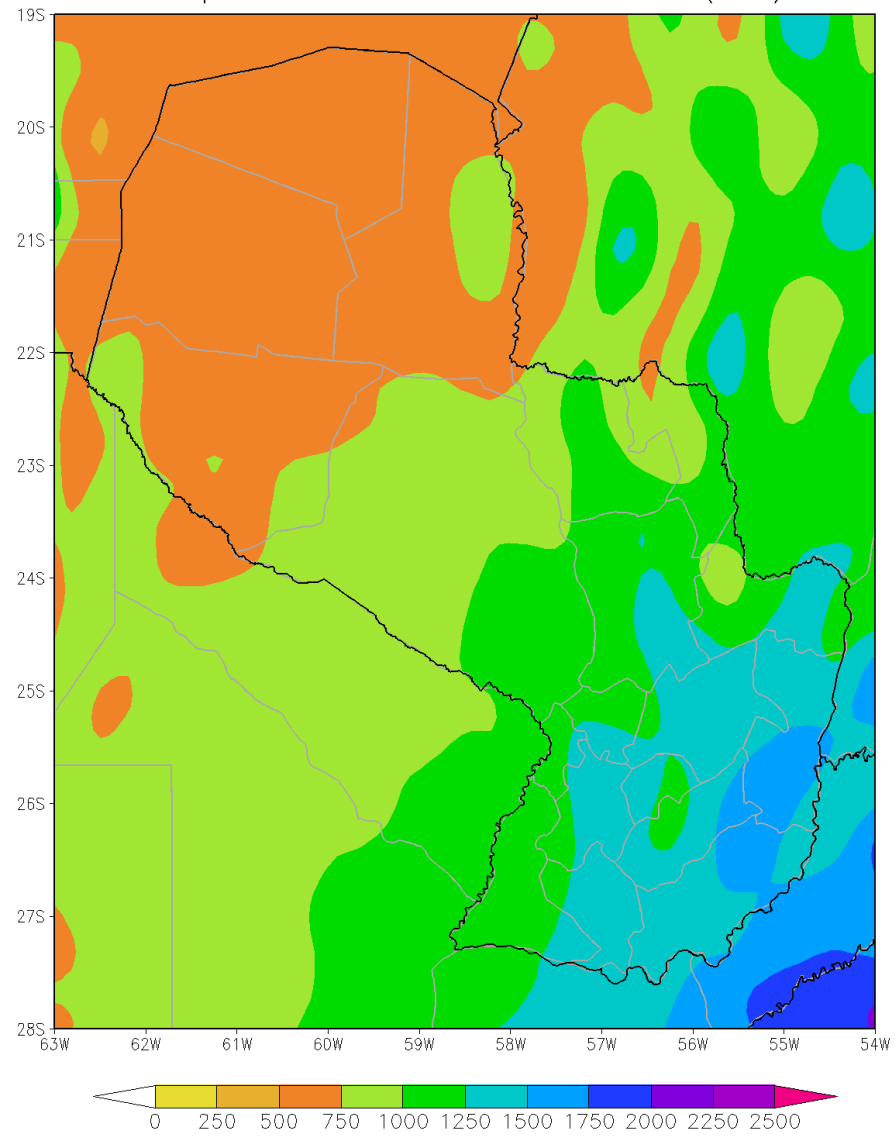
PERSPECTIVA CLIMATICA ENERO–MARZO 2013
Precipitacion Acumulada (mm)



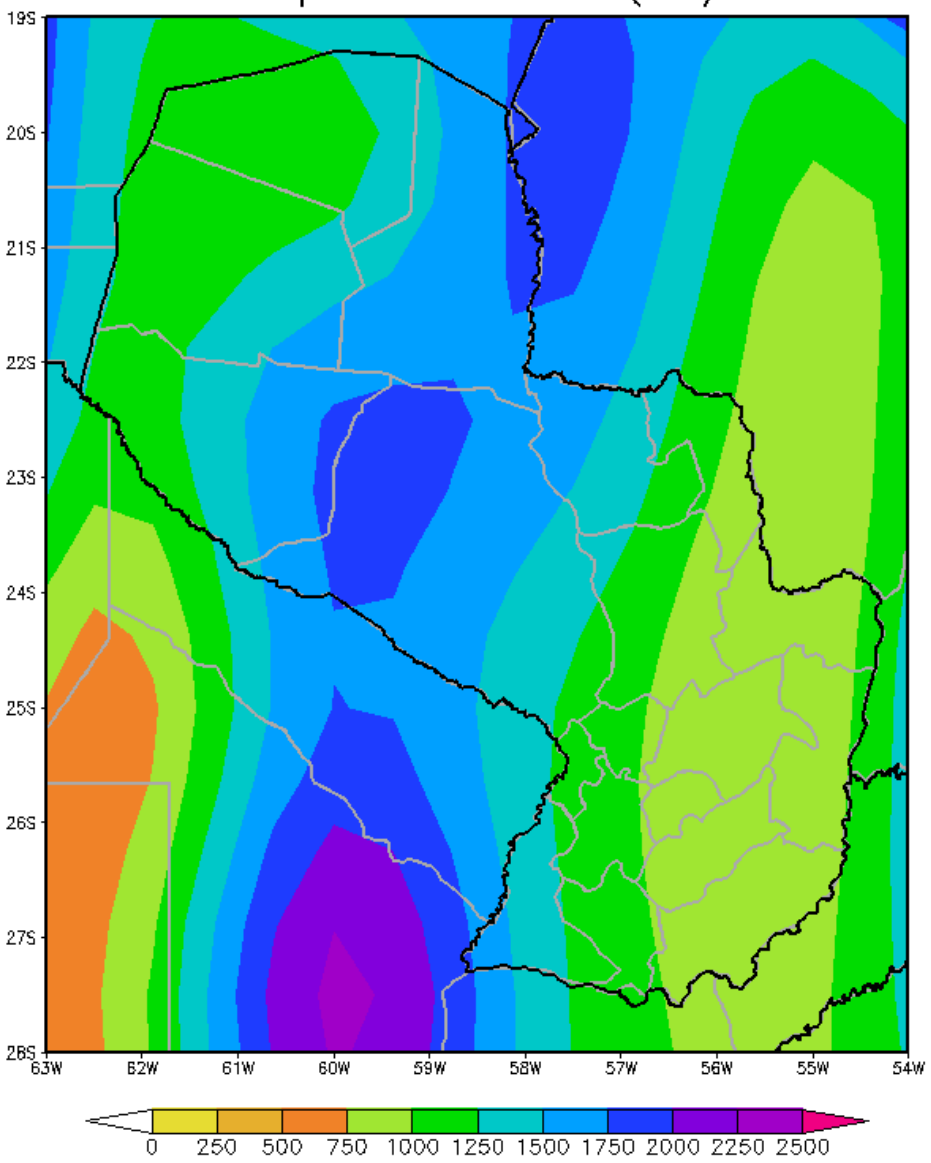
PERSPECTIVA CLIMATICA ABRIL–JUNIO 2013
Precipitacion Acumulada (mm)



PROMEDIO 2001/2002–2010/2011
Precipitacion Acumulada Julio–Junio (mm)



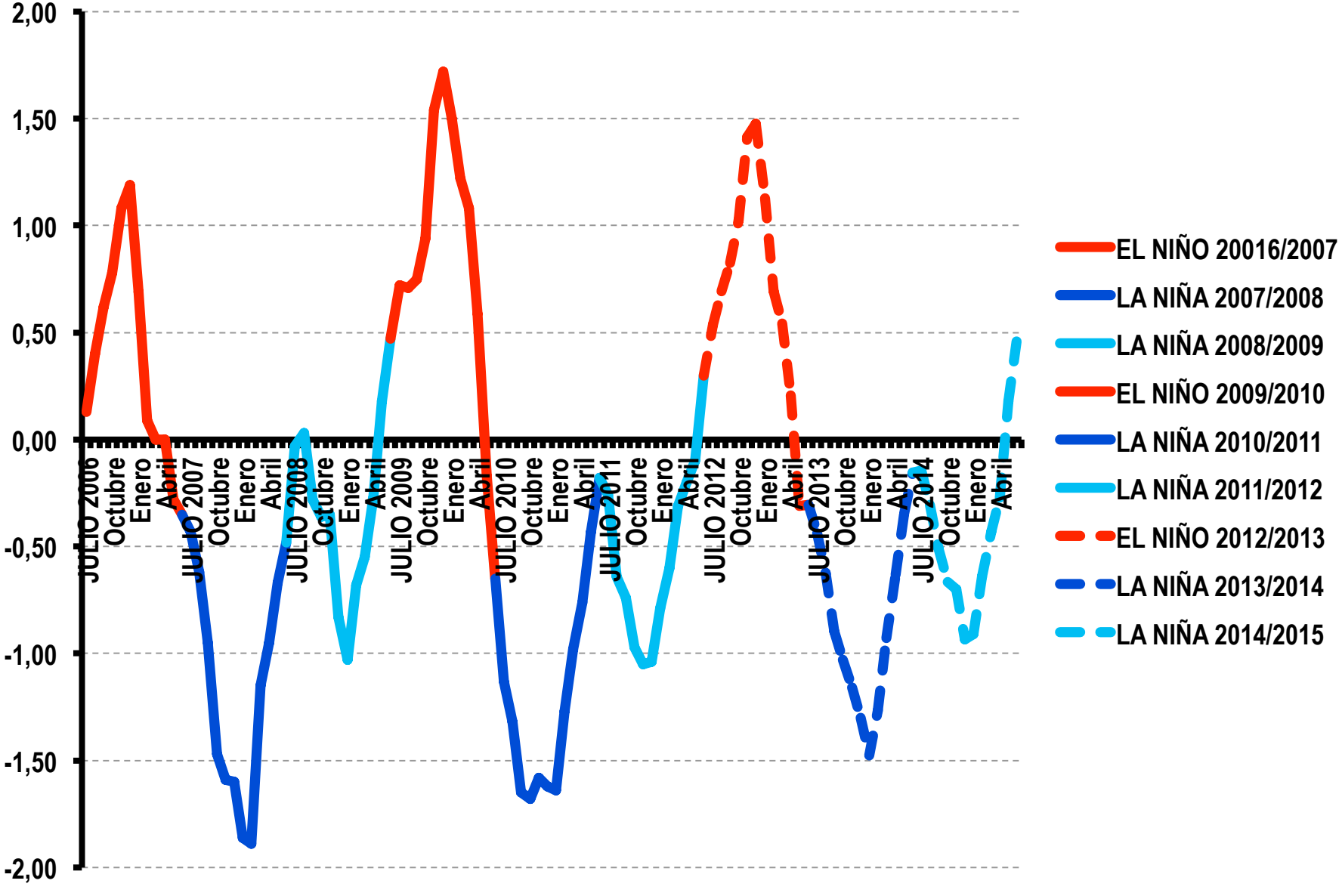
PERSPECTIVA CLIMATICA JULIO 2012–JUNIO 2013
Precipitacion Acumulada (mm)



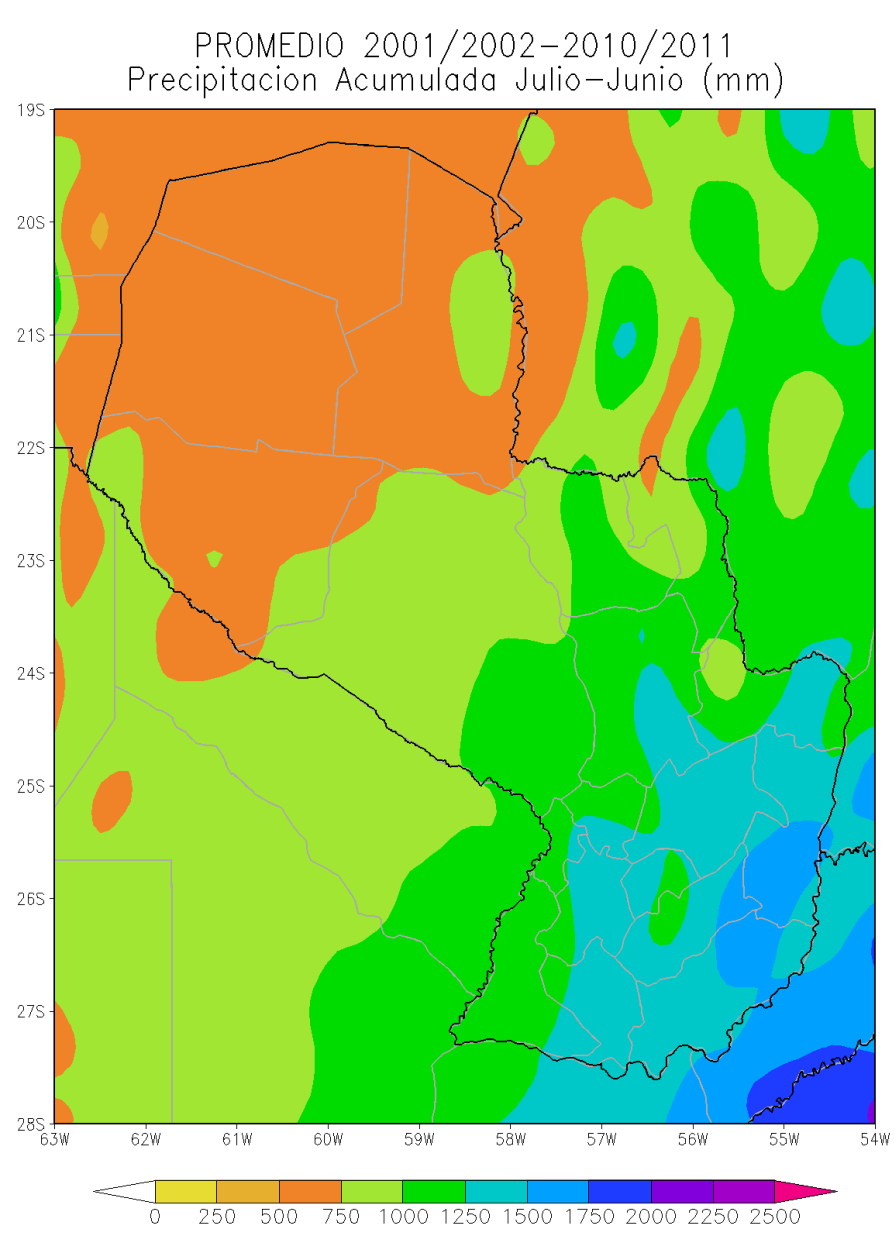
QUÉ PODEMOS PREVER PARA EL SIGUIENTE GRUPO DE TRES CAMPAÑAS AGRÍCOLAS

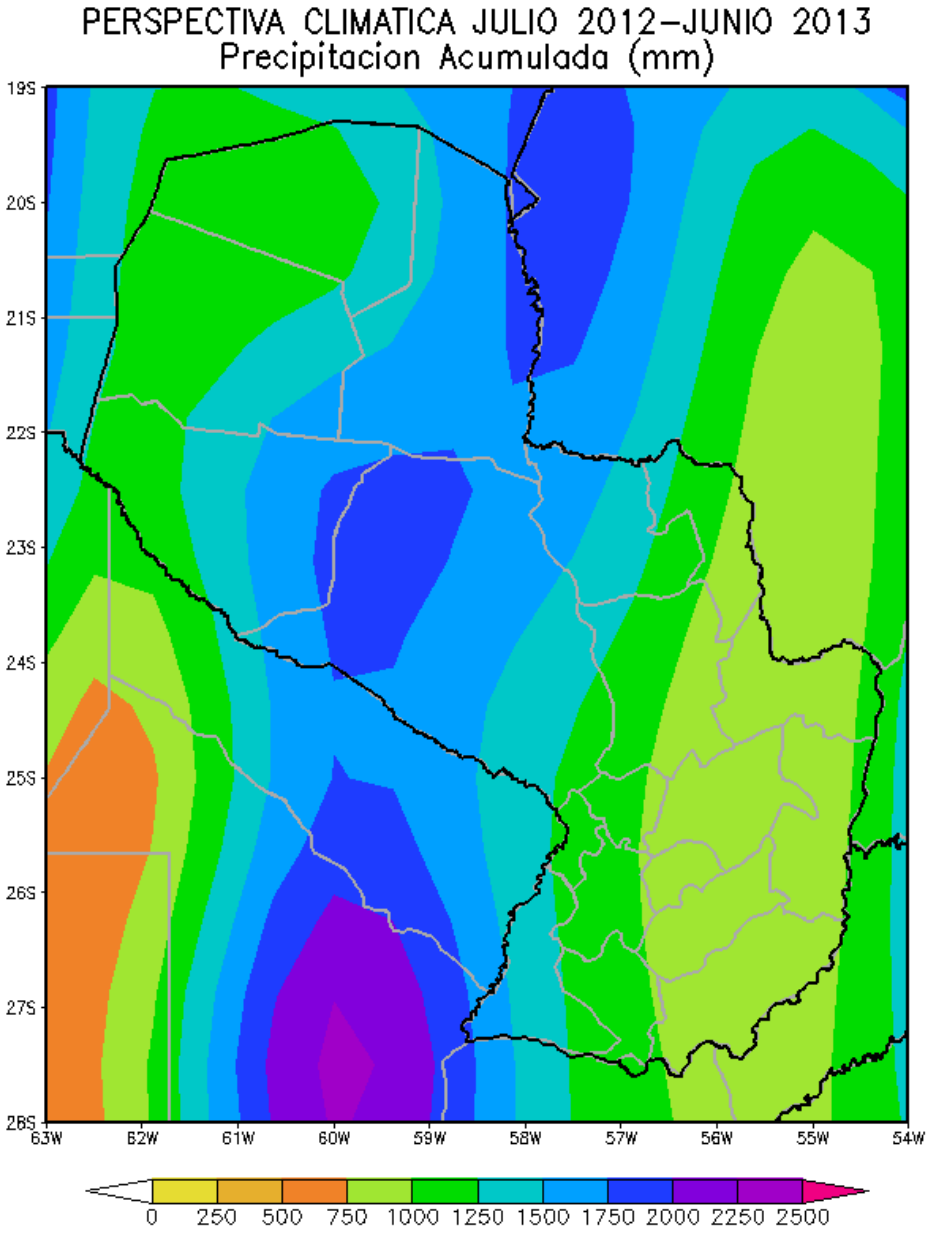
PROYECCIÓN DE LA SECUENCIA CLIMÁTICA EL NIÑO- LA NIÑA - LA NIÑA

Anomalía de temperatura de la zona El Niño 3.4

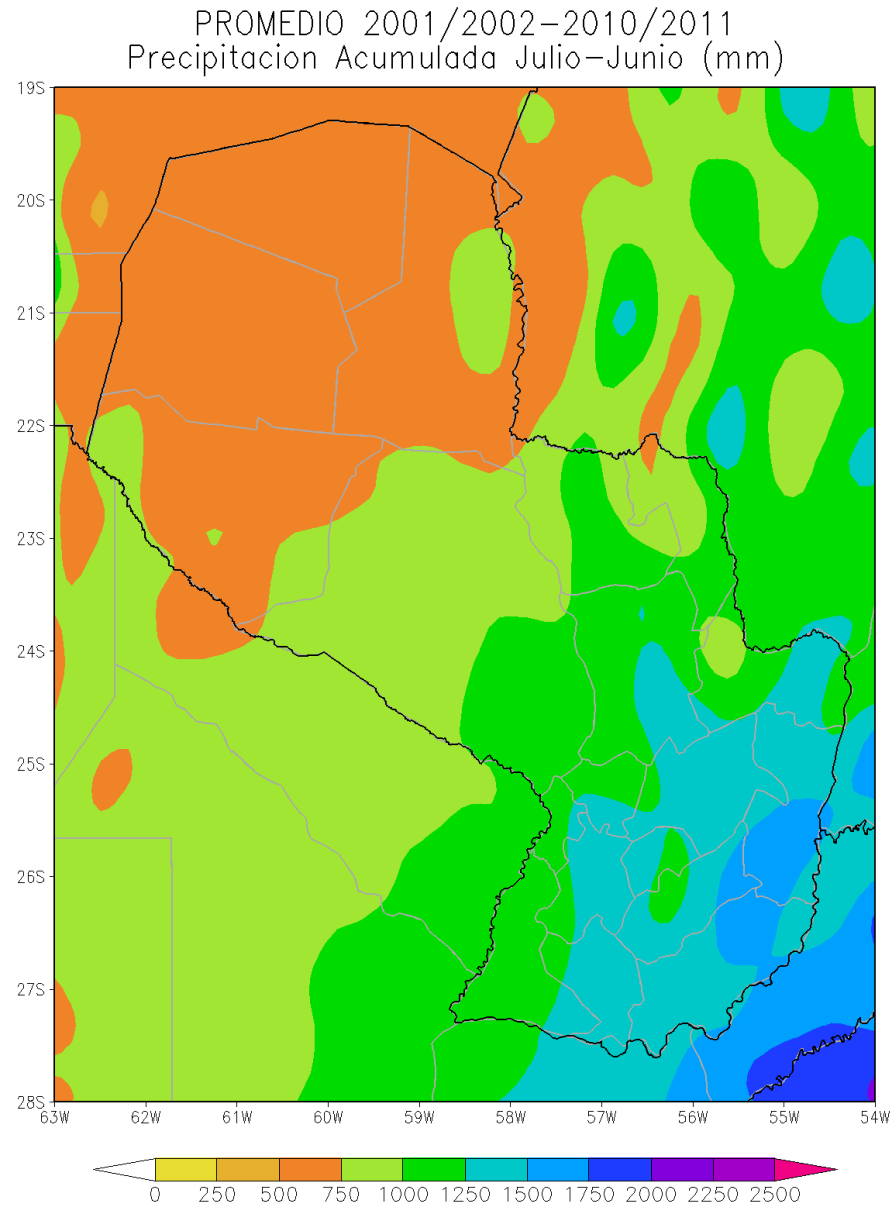


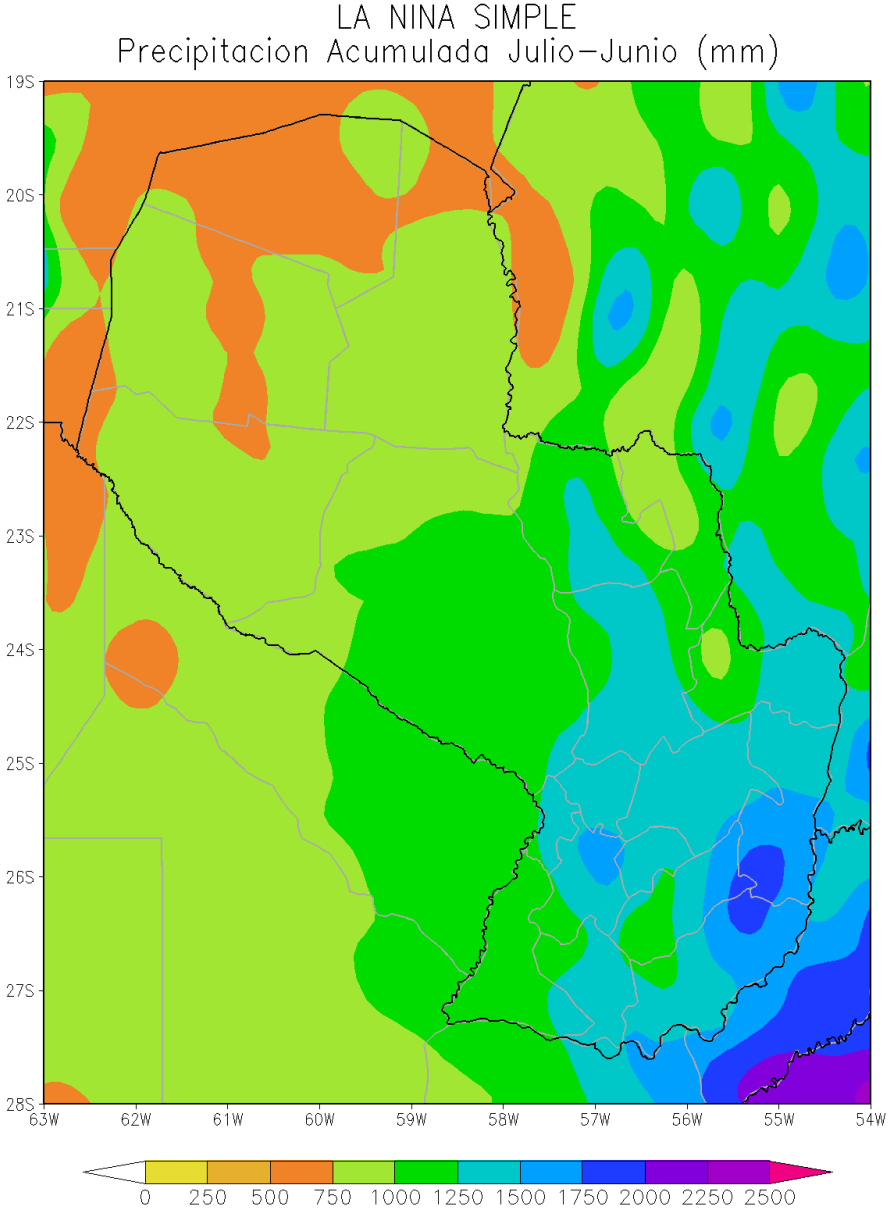
“EL NIÑO” 2012/2013



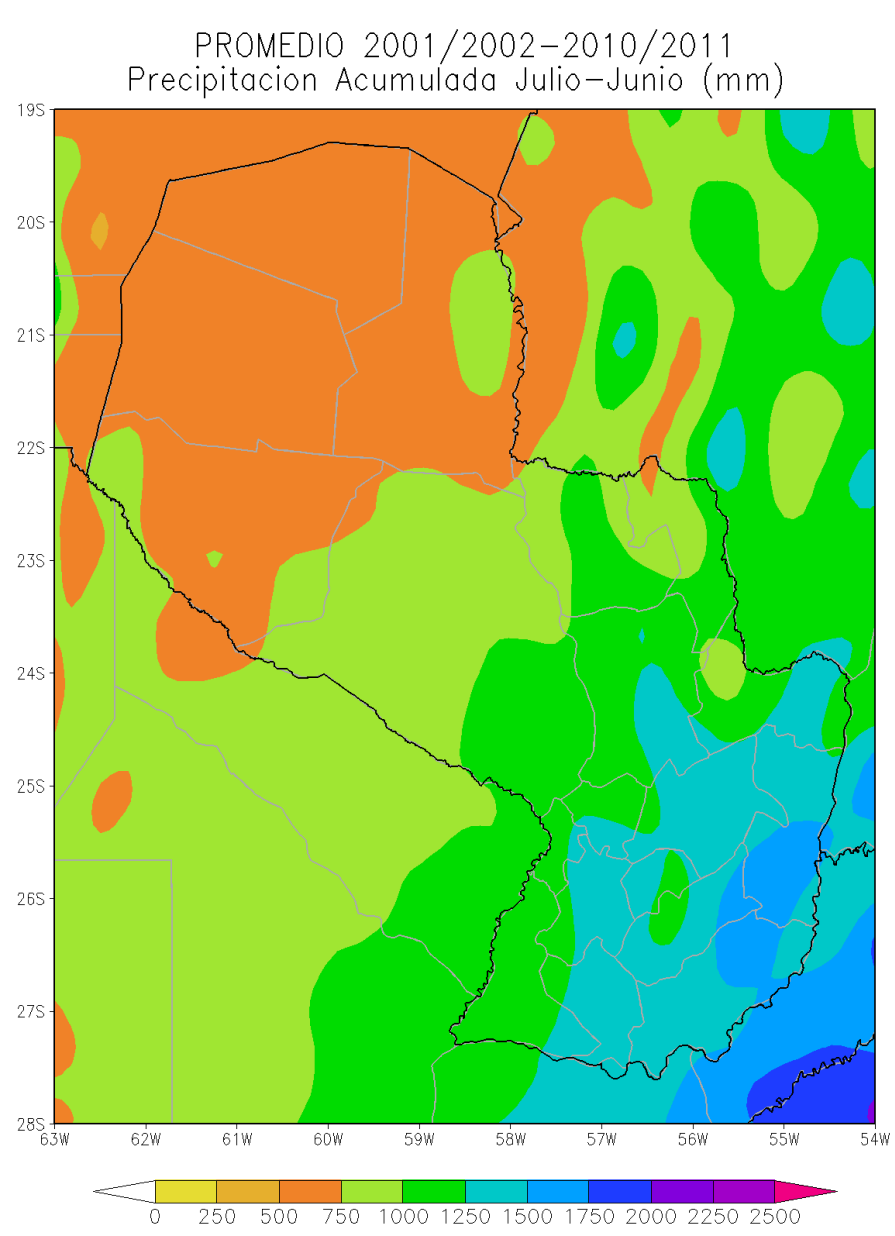


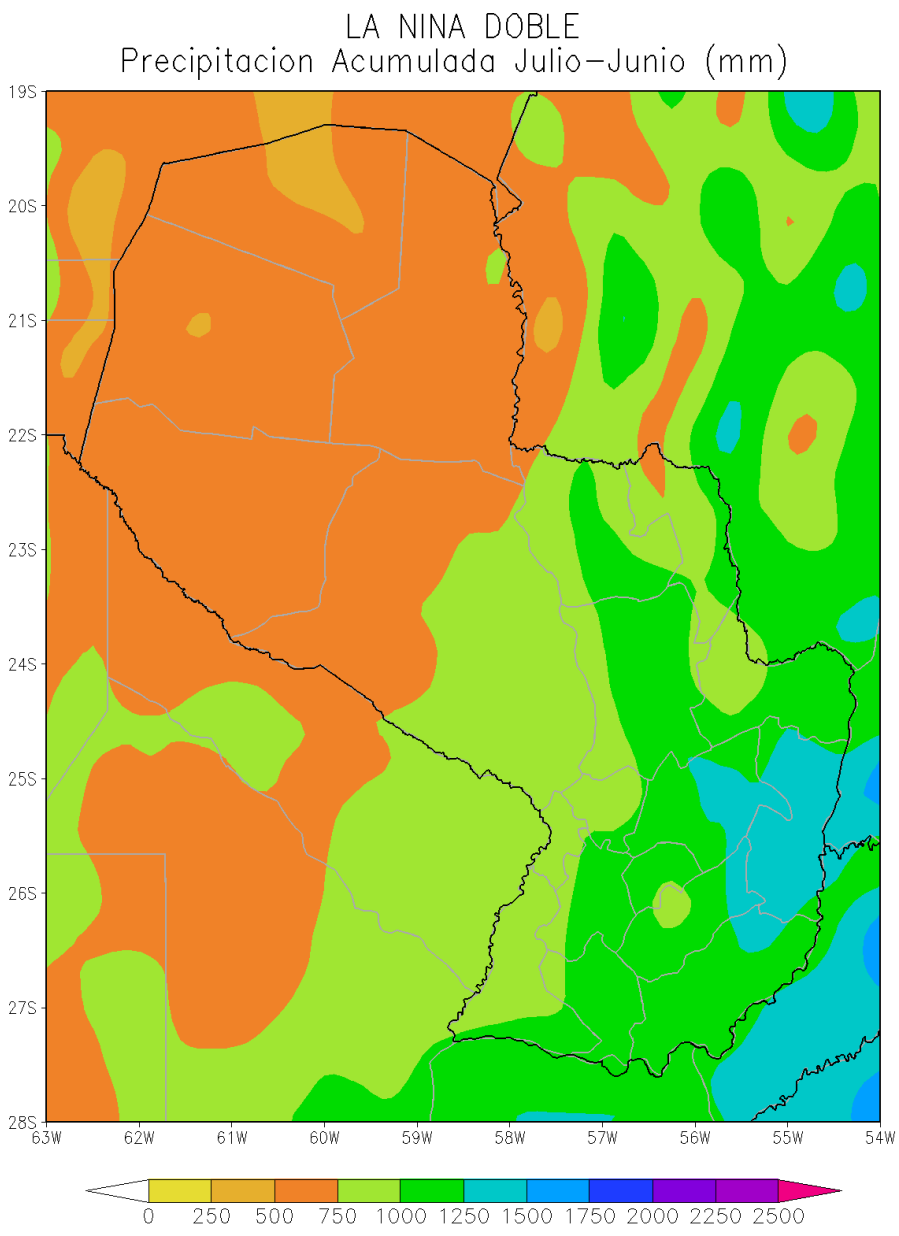
“LA NIÑA SIMPLE” 2013/2014





“LA NIÑA DOBLE” 2014/2015





MUCHAS GRACIAS

POR SU ATENCION

Edgar Mayeregger