



WMO RA VI
RCC Network

Deutscher Wetterdienst
Wetter und Klima aus einer Hand



Climate monitoring information on the Mediterranean

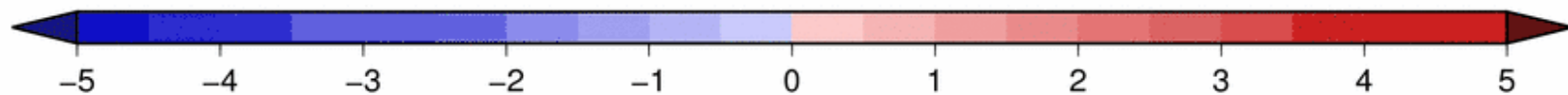
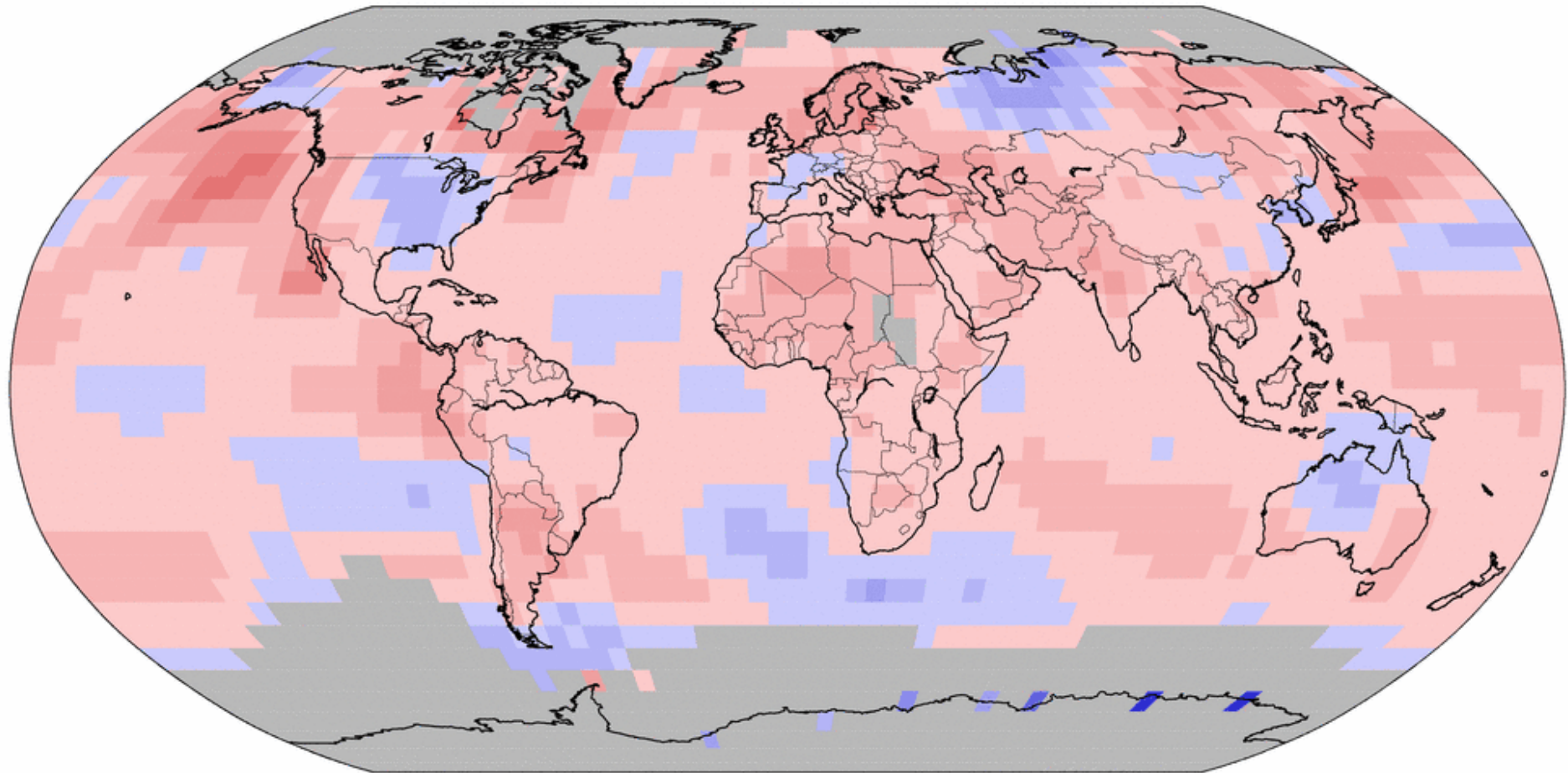
MedCOF 3 Summer / Autumn 2014

Peter Bissolli

**Deutscher Wetterdienst (DWD, Germany), Dep. Climate Monitoring
WMO RA VI Regional Climate Centre on Climate Monitoring**

Land & Ocean Temperature Departure from Average Jun 2014–Aug 2014 (with respect to a 1981–2010 base period)

Data Source: GHCN–M version 3.2.2 & ERSST version 3b



Degrees Celsius

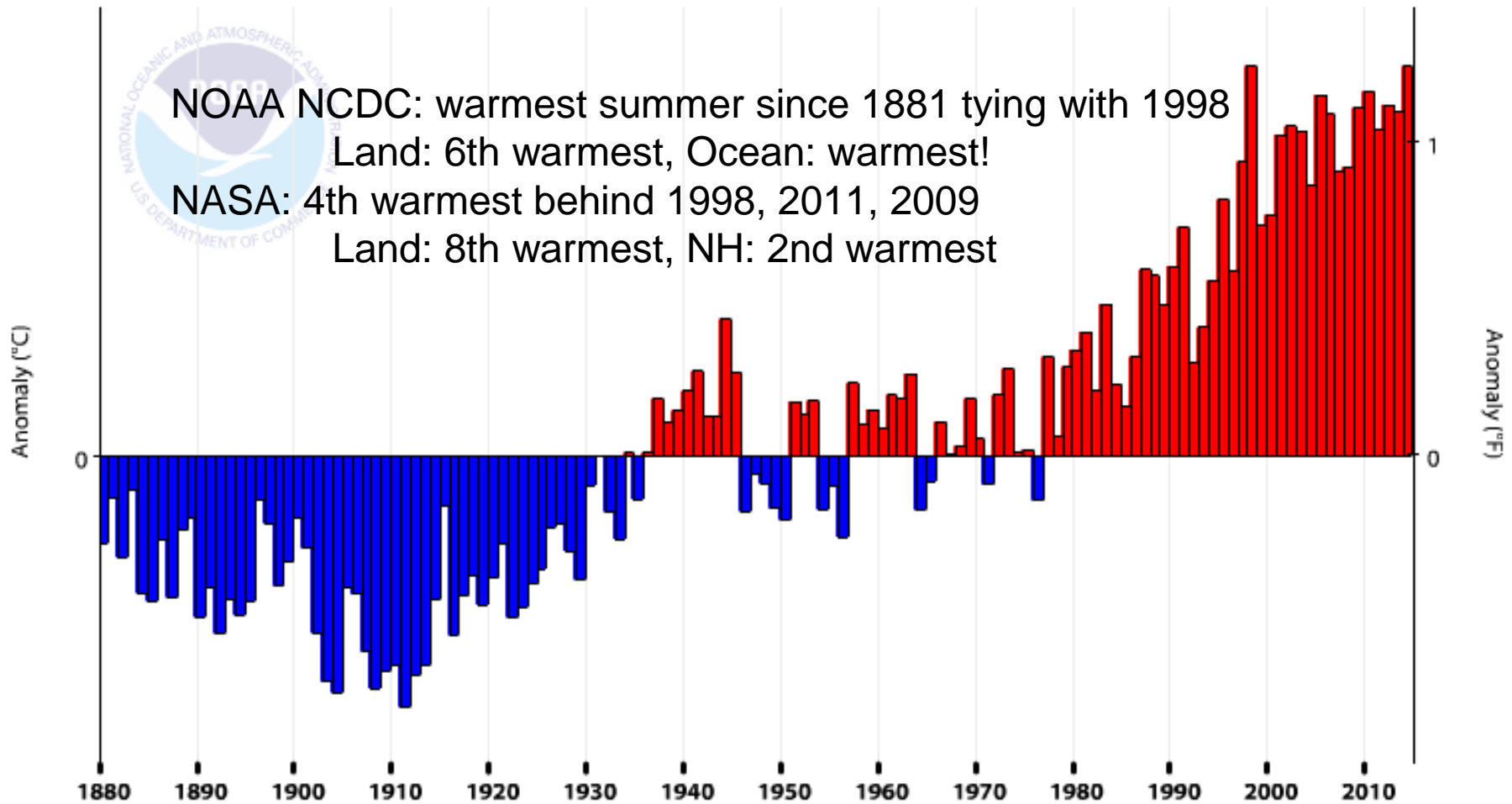


NOAA's National Climatic Data Center
Sun Sep 14 08:24:29 EDT 2014

Please Note: Gray areas represent missing data
Map Projection: Robinson

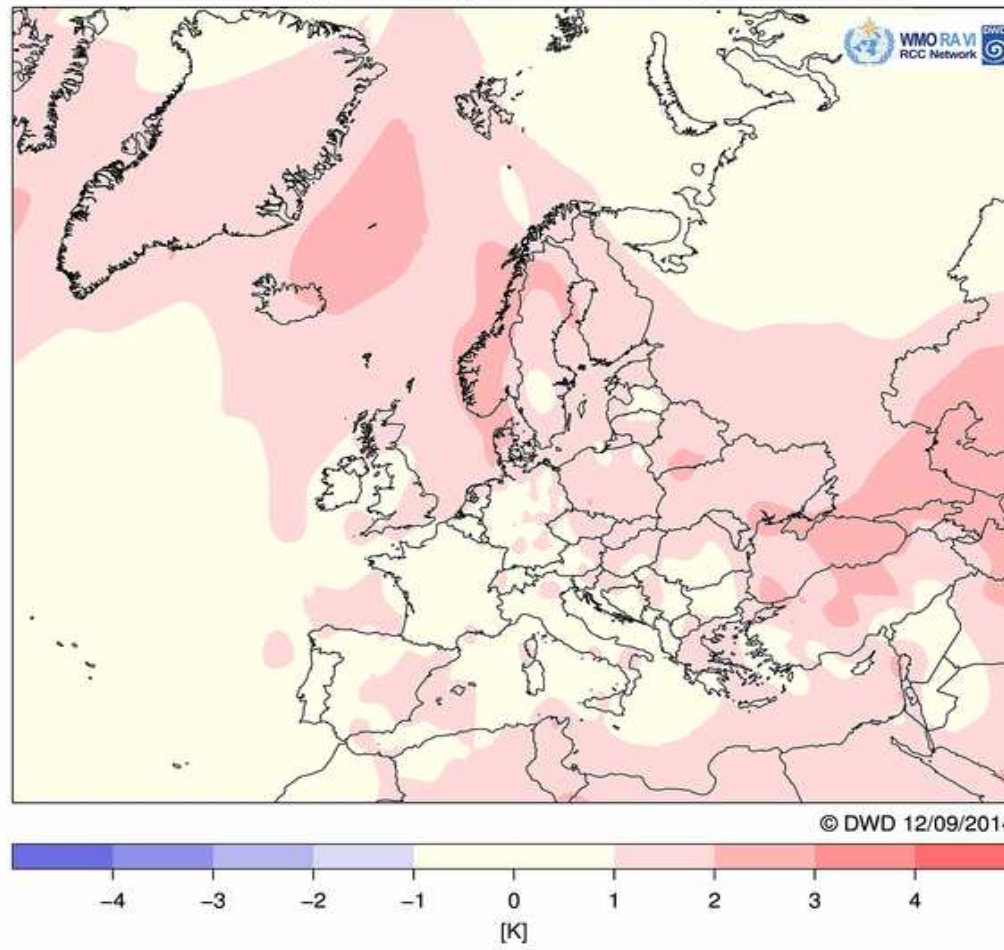


Global Land and Ocean Temperature Anomalies, June-August



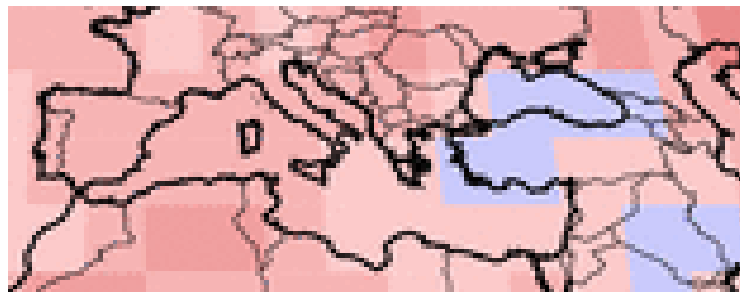


Temperature Anomaly Summer 2014
(reference period 1961–1990)

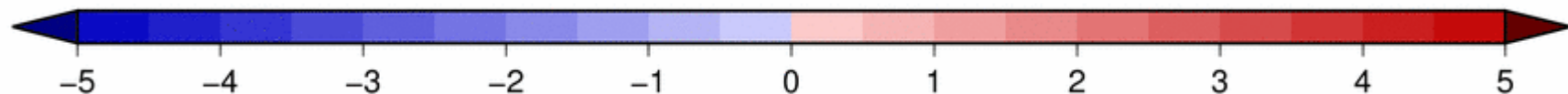
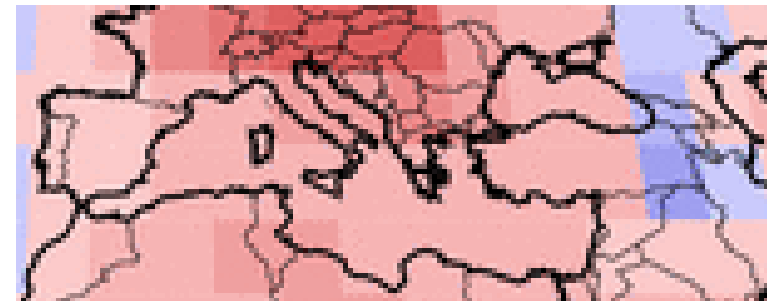


Seasonal temperature anomalies: last 4 seasons

Autumn 2013



Winter 2013/14



Spring 2014



Summer 2014





Monthly temperature anomalies: Summer / Autumn 2014



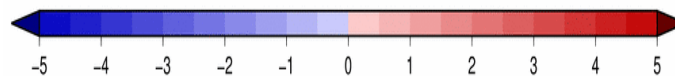
June 2014



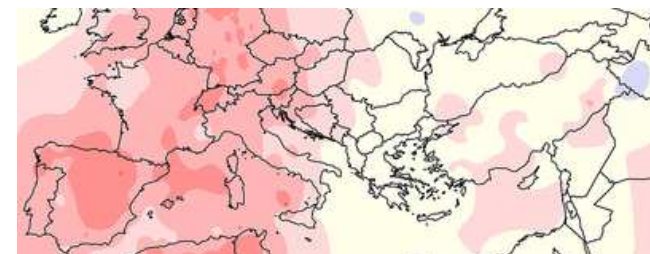
July 2014



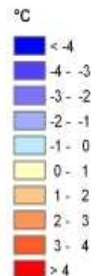
August 2014



September 2014

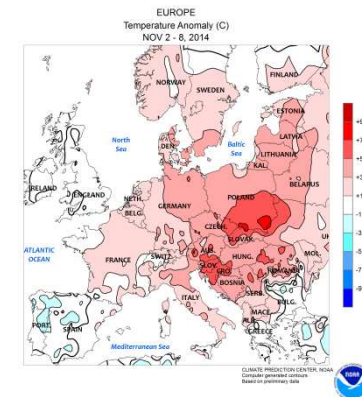


October 2014



First week
Nov. 2014

NOAA CPC
1981-2010



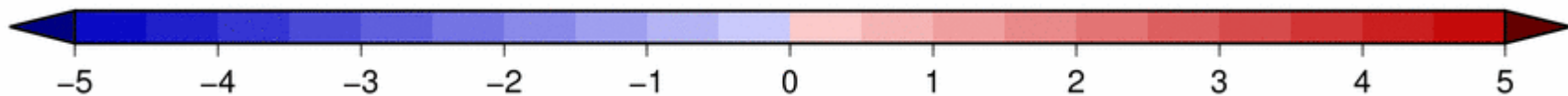


Looking for persistancy: last 2 **summer** and **winter** seasons

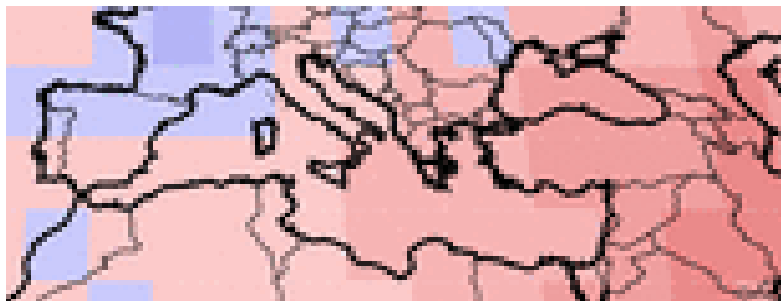
Summer 2013



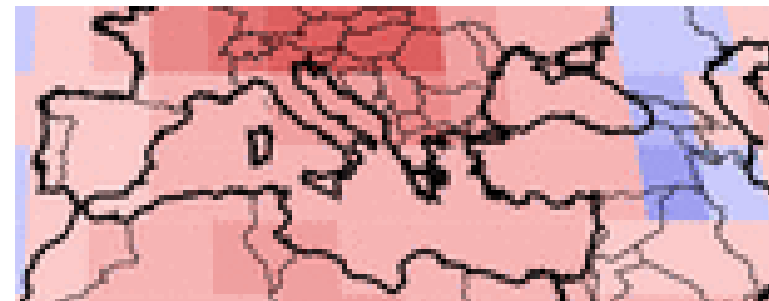
Summer 2014



Winter 2012/13

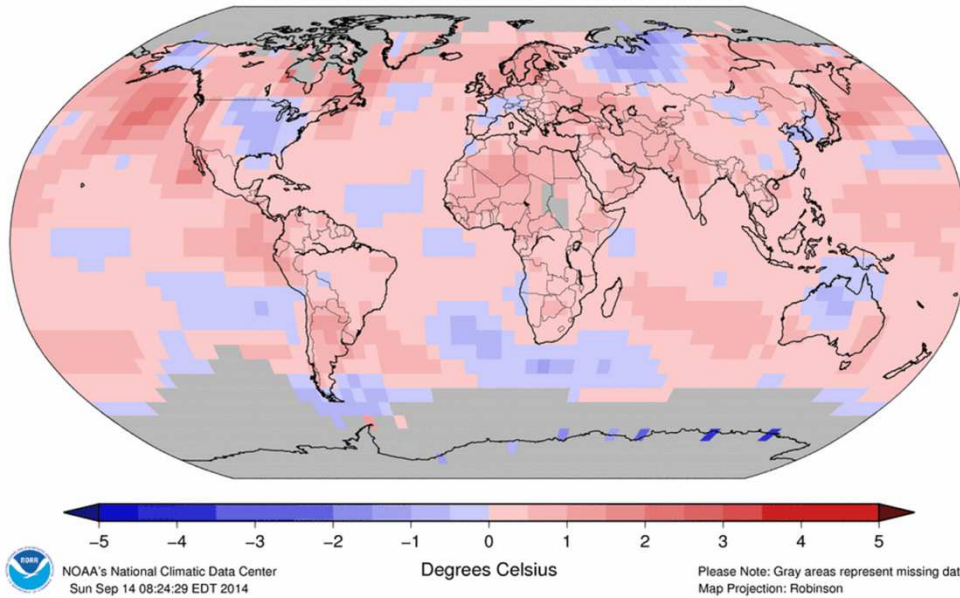


Winter 2013/14



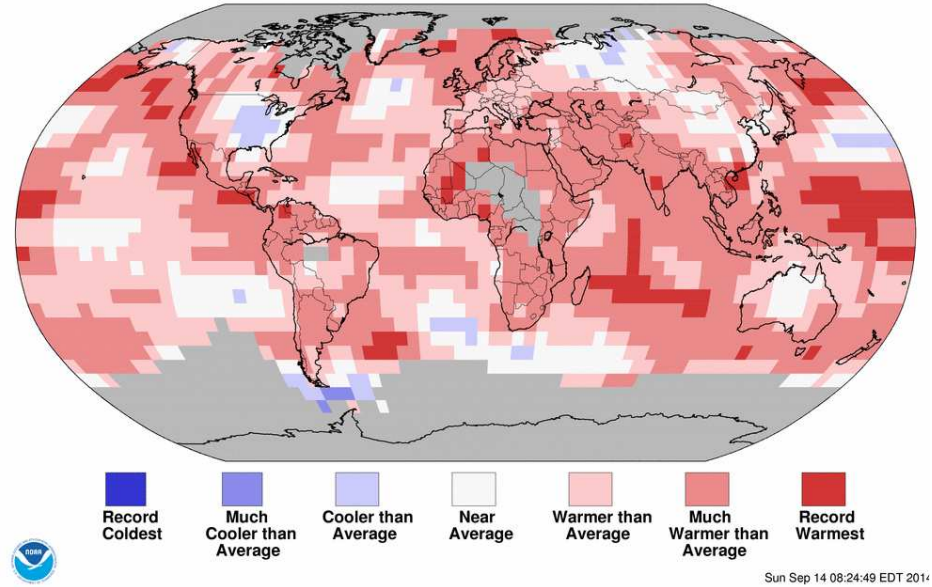


Land & Ocean Temperature Departure from Average Jun 2014–Aug 2014
(with respect to a 1981–2010 base period)
Data Source: GHCN–M version 3.2.2 & ERSST version 3b



Anomalies

Land & Ocean Temperature Percentiles Jun 2014–Aug 2014
NOAA's National Climatic Data Center
Data Source: GHCN–M version 3.2.2 & ERSST version 3b

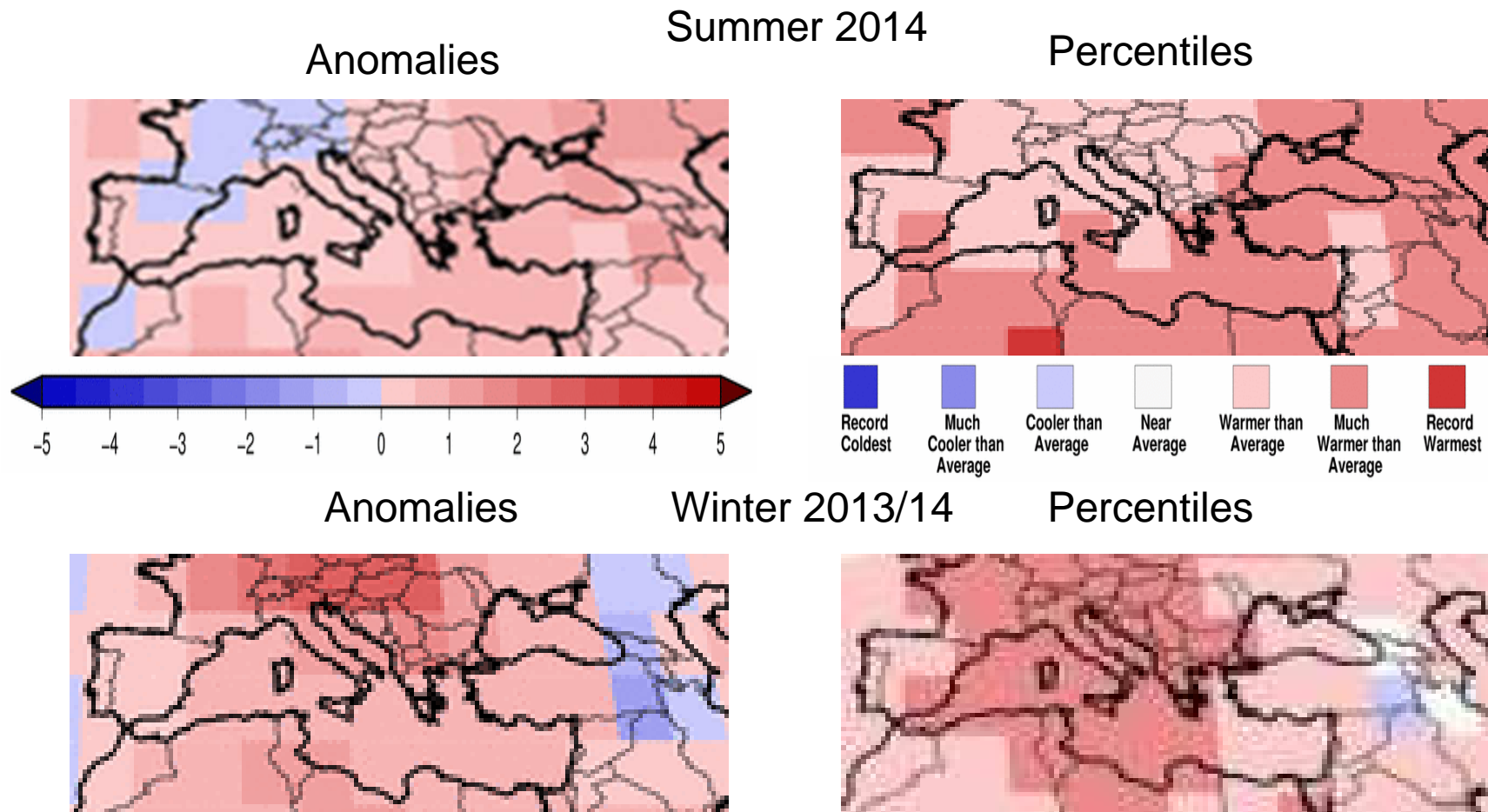


Percentiles





Anomalies vs. percentiles

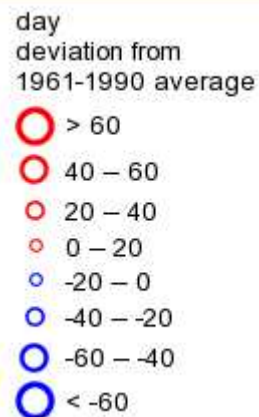
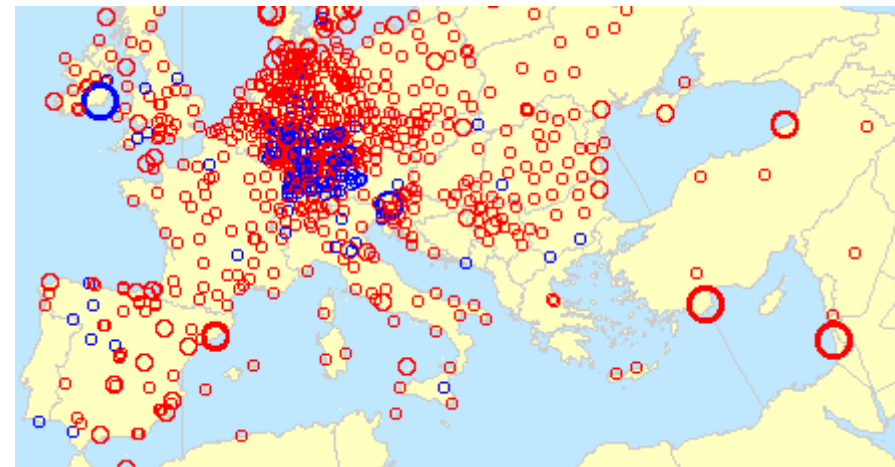
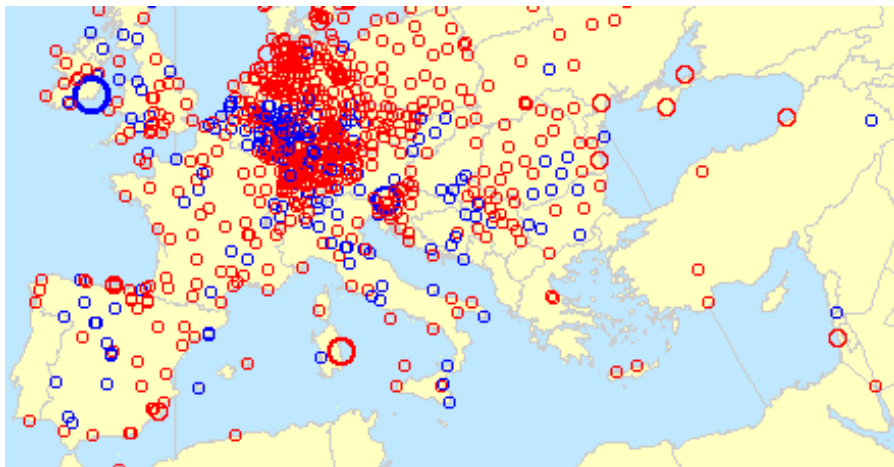




Anomalies of the number of days in summer 2014

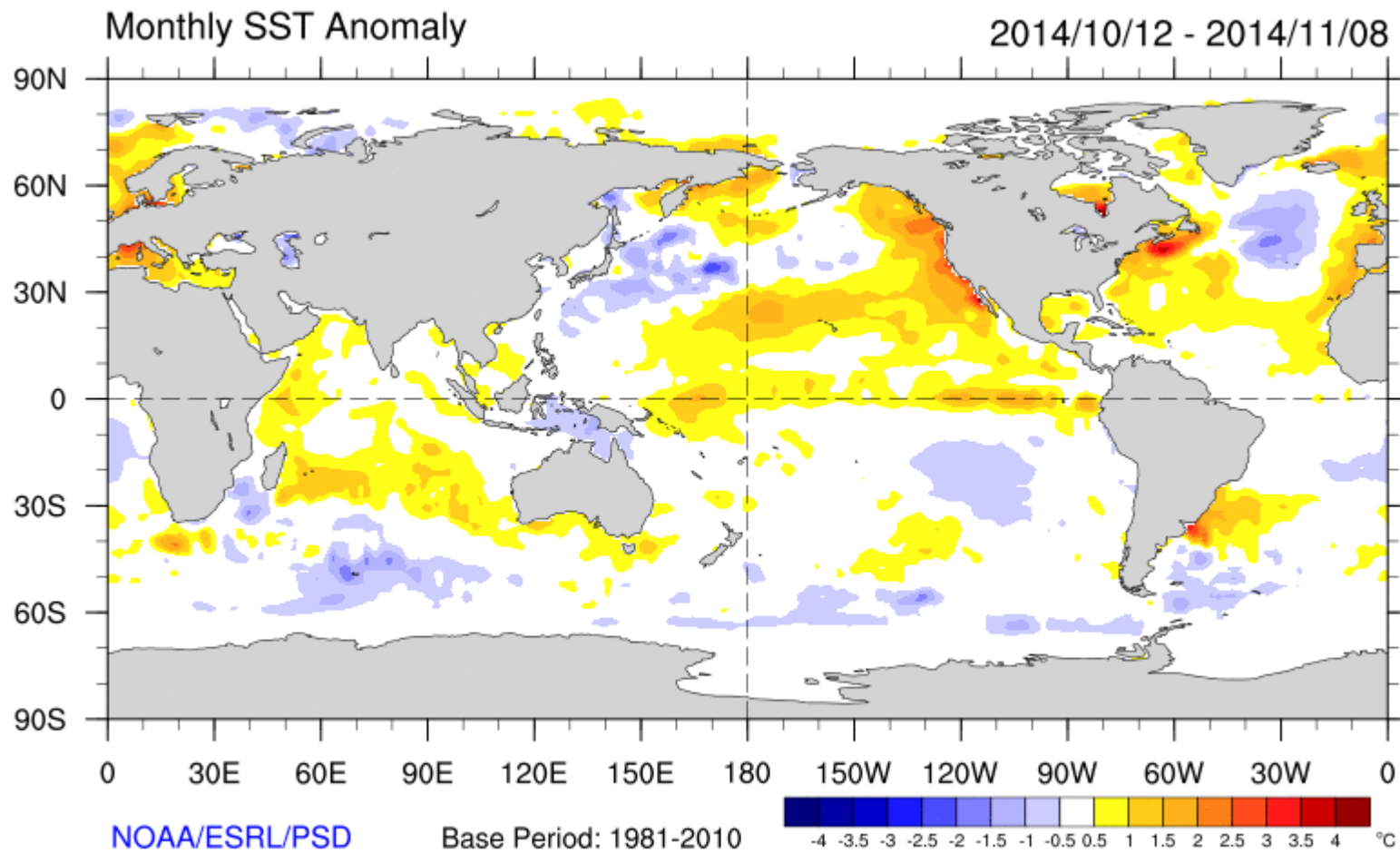
($T_{\max} > 90\text{th percentile}$)

$T_{\min} > 90\text{th percentile}$

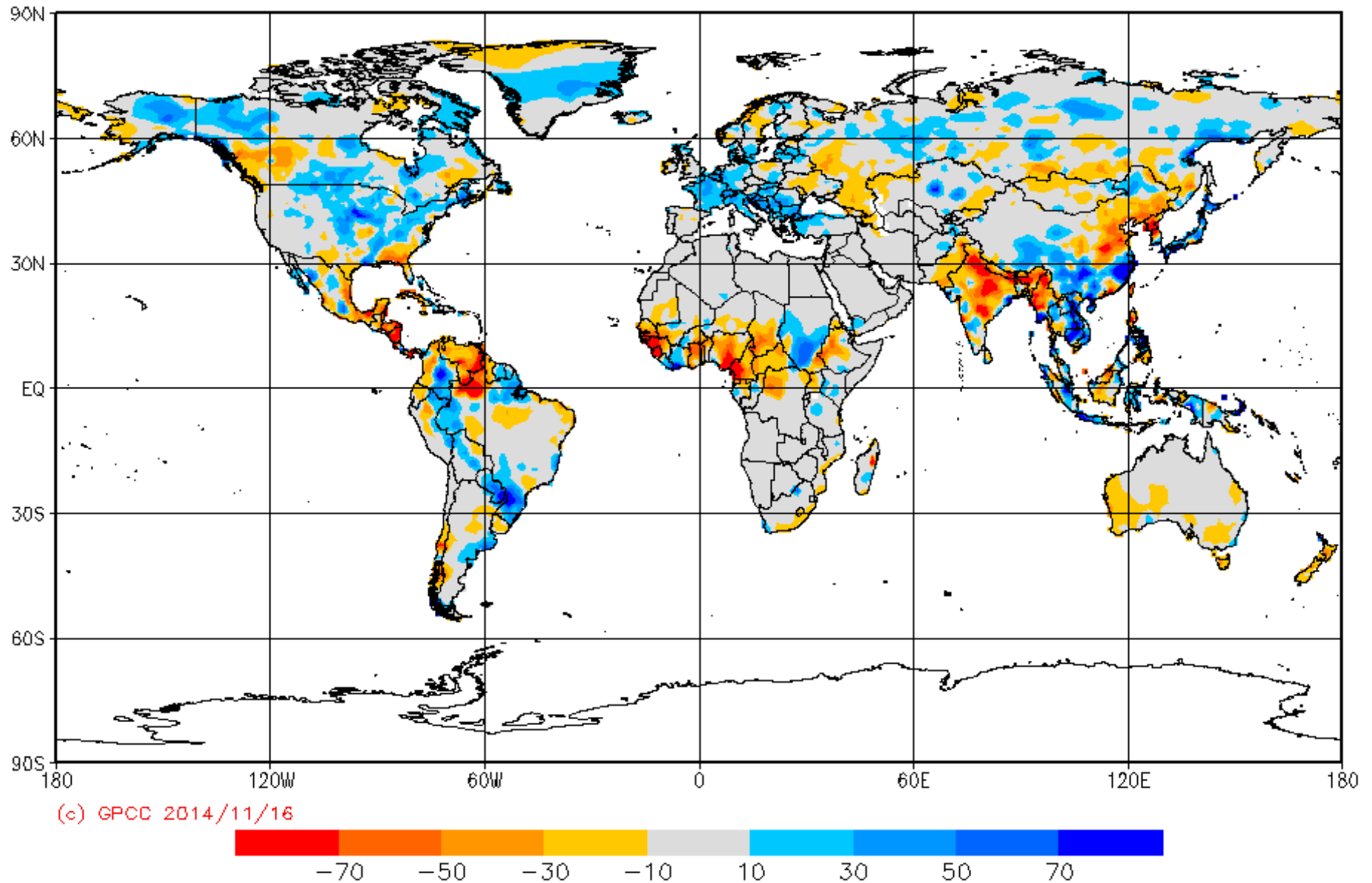


Source: ECA&D





GPCC Monitoring Product Gauge-Based Analysis 1.0 degree precipitation anomaly for Season (Jun,Jul,Aug) 2014 in mm/month (deviation from normals 1951/2000) (grid based)



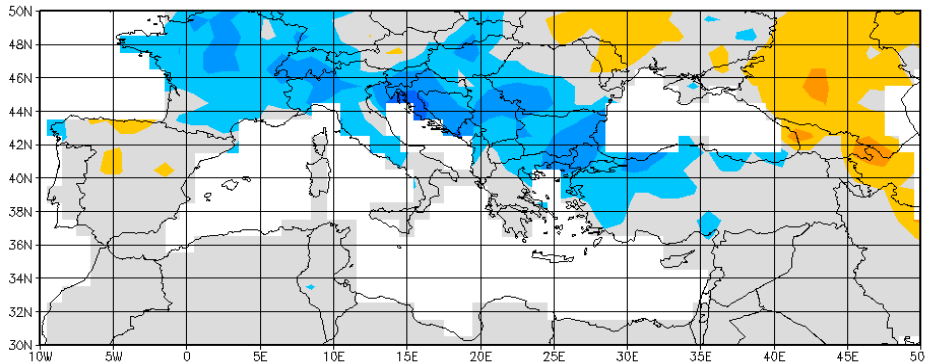


Absolute anomalies (GPCC)

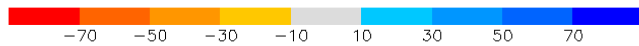
Summer 2014

Relative anomalies (GPCC)

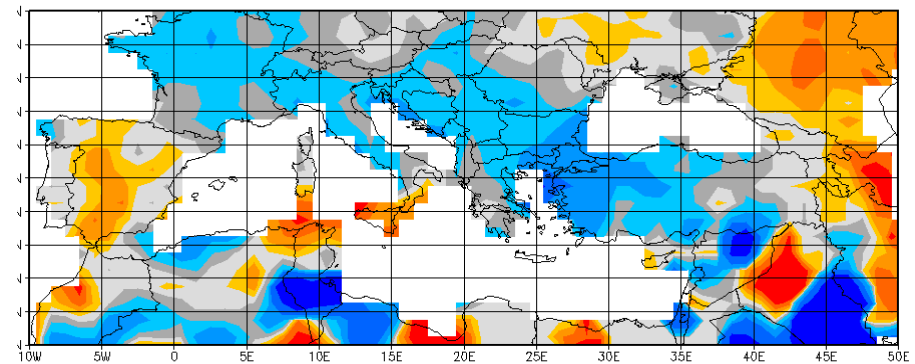
GPCC Monitoring Product Gauge-Based Analysis 1.0 degree
precipitation anomaly for Season (Jun,Jul,Aug) 2014 in mm/month
(deviation from normals 1951/2000) (grid based)



(c) GPCC 2014/11/16



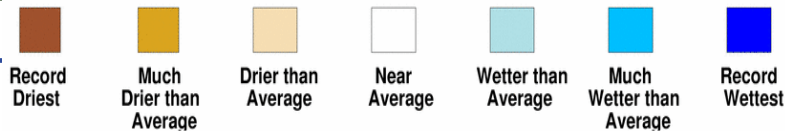
GPCC Monitoring Product Gauge-Based Analysis 1.0 degree
precipitation percentage of normals 1951/2000 for Season (Jun,Jul,Aug) 2014
(grid based)



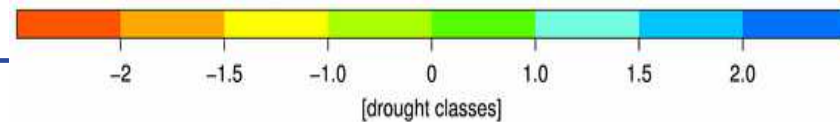
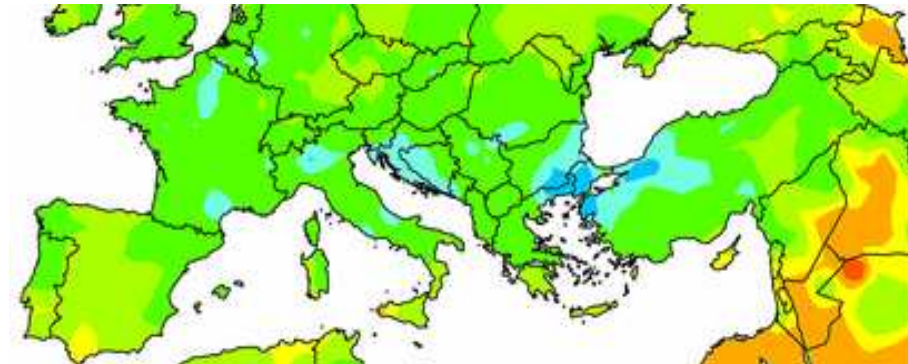
(c) GPCC 2014/11/16



Percentiles (NOAA NCDC)



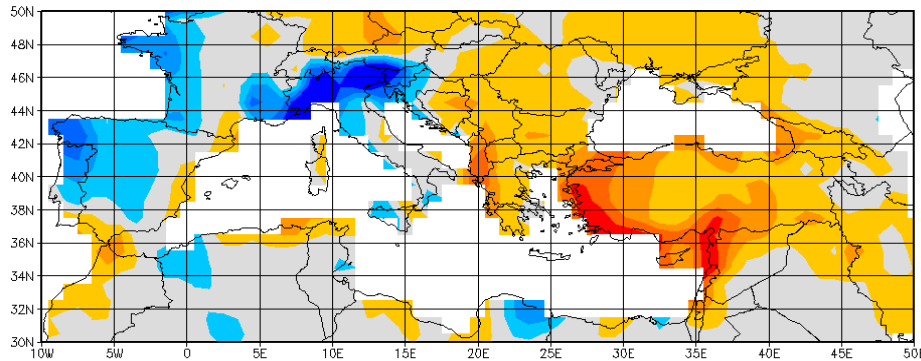
Drought Index (DWD)





Winter 2013/14

GPCC Monitoring Product Gauge-Based Analysis 1.0 degree
precipitation anomaly for Season (Dec,Jan,Feb) 2013/2014 in mm/month
(deviation from normals 1951/2000) (grid based)

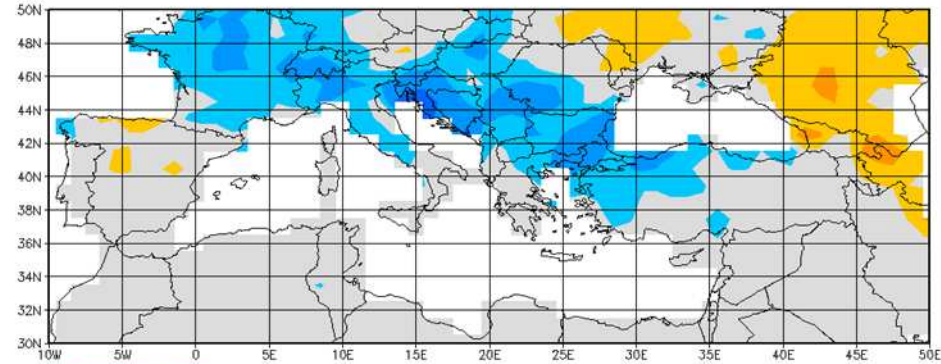


(c) GPCC 2014/11/16

Seasonal

Summer 2014

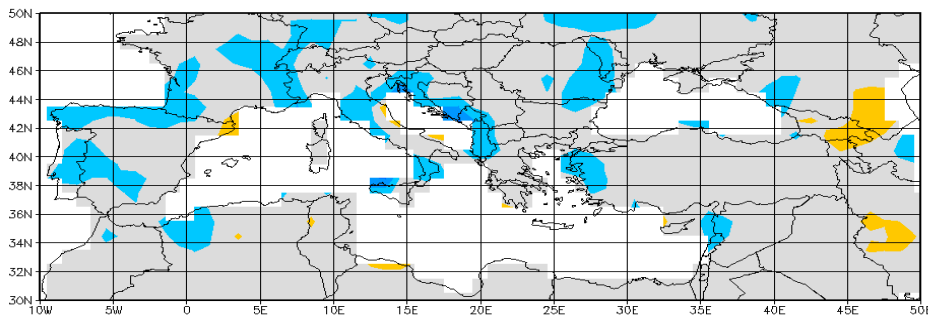
GPCC Monitoring Product Gauge-Based Analysis 1.0 degree
precipitation anomaly for Season (Jun,Jul,Aug) 2014 in mm/month
(deviation from normals 1951/2000) (grid based)



(c) GPCC 2014/11/16

2012/13

GPCC First Guess 1.0 degree
precipitation anomaly for year (Nov - Oct) 2012/2013 in mm/month
(deviation from normals 1951/2000) (grid based)

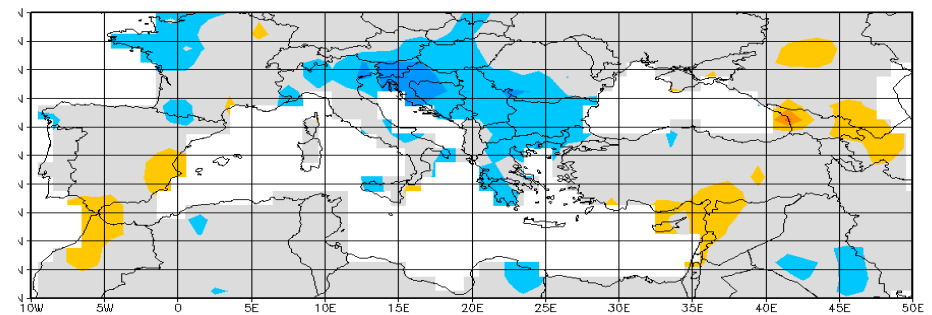


(c) GPCC 2013/11/15

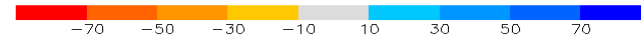
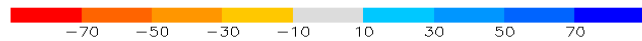
Hydrological year (Nov.-Oct.)

2013/14

GPCC First Guess 1.0 degree
precipitation anomaly for year (Nov - Oct) 2013/2014 in mm/month
(deviation from normals 1951/2000) (grid based)



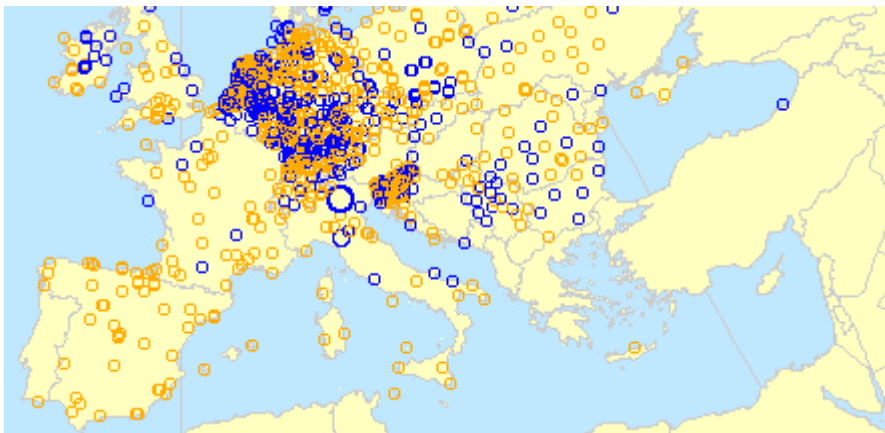
(c) GPCC 2014/11/16



Extreme precipitation in summer 2014



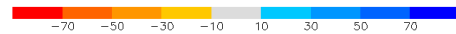
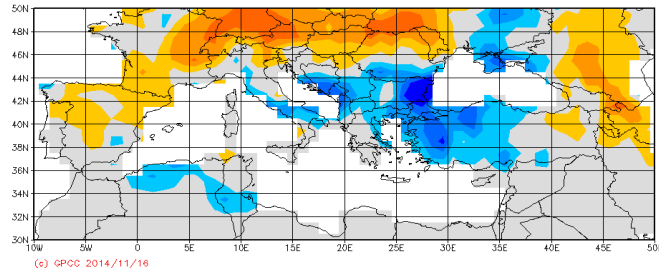
Anomalies of highest
5-day precipitation amount



Days >99th percentile precipitation
(number of very wet days)

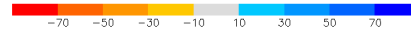
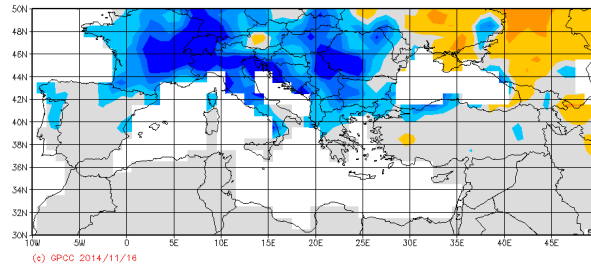
Monthly precipitation anomalies

GPCC Monitoring Product Gauge-Based Analysis 1.0 degree precipitation anomaly for June 2014 in mm/month (deviation from normals 1951/2000) (grid based)



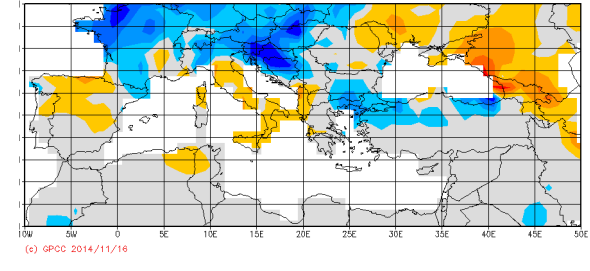
June 2014

GPCC Monitoring Product Gauge-Based Analysis 1.0 degree precipitation anomaly for July 2014 in mm/month (deviation from normals 1951/2000) (grid based)



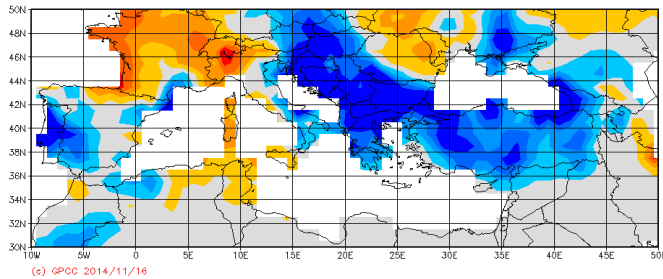
July 2014

GPCC Monitoring Product Gauge-Based Analysis 1.0 degree precipitation anomaly for August 2014 in mm/month (deviation from normals 1951/2000) (grid based)



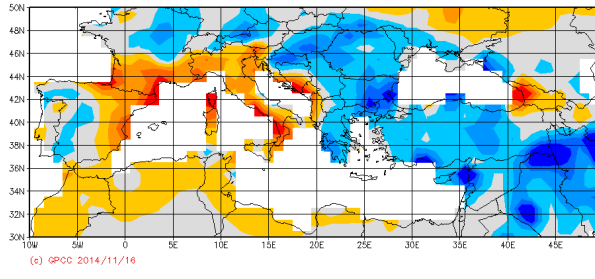
August 2014

GPCC First Guess 1.0 degree precipitation anomaly for September 2014 in mm/month (deviation from normals 1951/2000) (grid based)



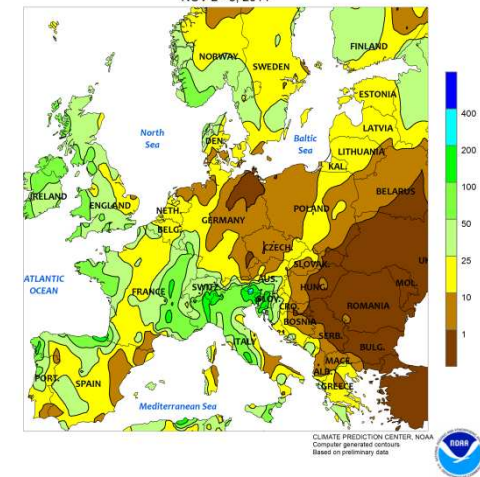
September 2014

GPCC First Guess 1.0 degree precipitation anomaly for October 2014 in mm/month (deviation from normals 1951/2000) (grid based)



October 2014

EUROPE
Total Precipitation (mm)
NOV 2 - 8, 2014



First week Nov. 2014

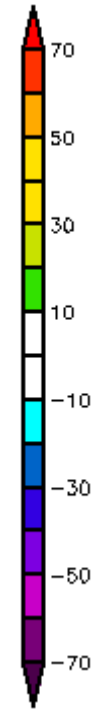
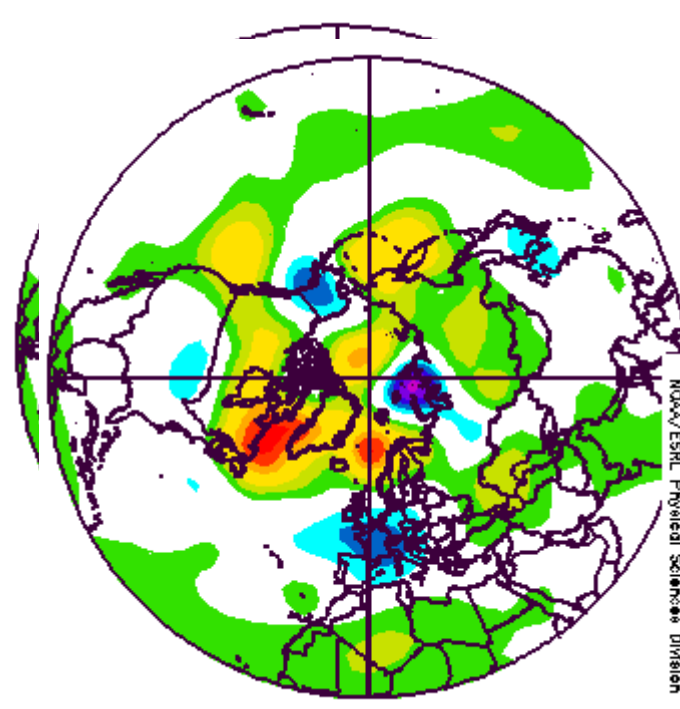
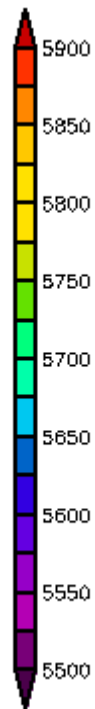
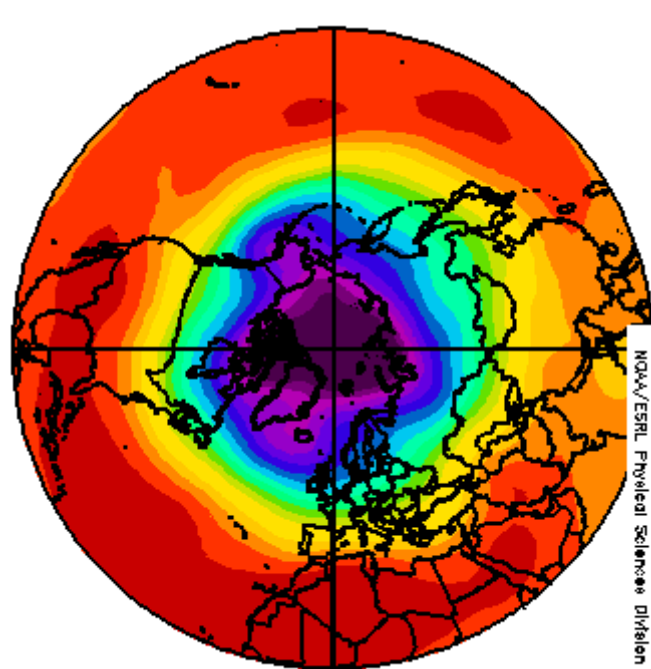


Selected Significant Events in the MedCOF region

- **Heat waves** with daily maxima locally above 40°C and rainfall shortage in some parts of the eastern MedCOF region caused less favorable conditions for agriculture (Moldova, Ukraine, Georgia, Azerbaijan, Cyprus)
- **Heavy rainfalls**, locally record-breaking, partly with hail, flash floods at coasts, strong gusts and locally tornados in many parts of the MedCOF-RAVI region (France, Italy, Slovenia, Croatia, Bosnia-Herzegovina, Serbia, Montenegro, Macedonia, Bulgaria, Moldova, Turkey, Cyprus, Georgia, Azerbaijan) caused damage to crops and traffic (road, rail, flights)



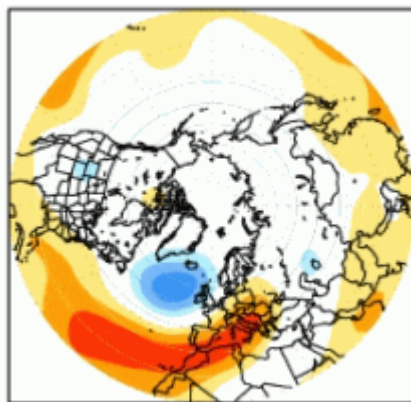
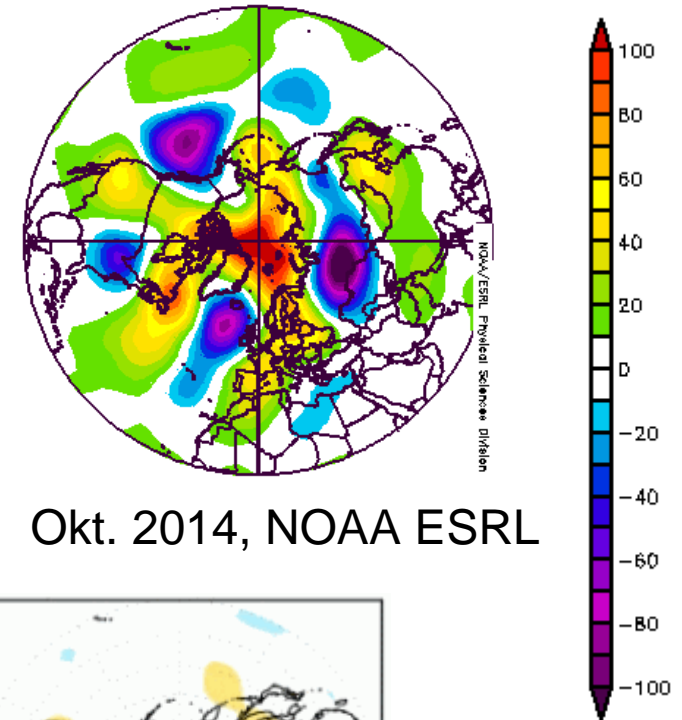
Geopotential 500 hPa mean Summer 2014



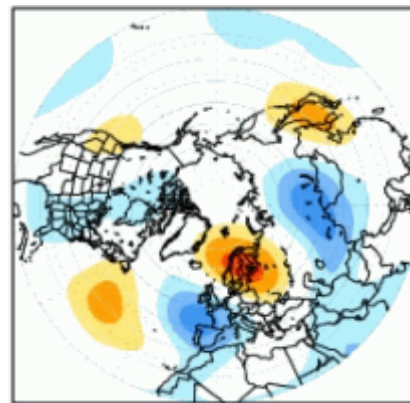


Teleconnection patterns: NOAA
CPC

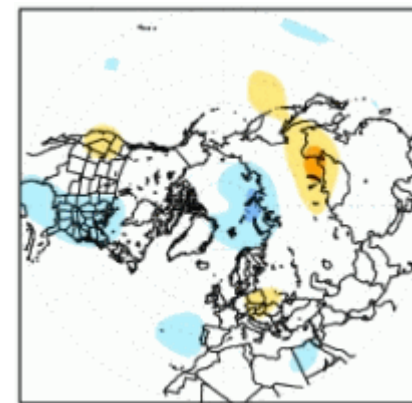
yyyy	mm	NAO	EA	EA/WR	SCA	POL
2014	6	-0.67	-1.03	0.03	0.19	-0.01
2014	7	0.21	0.58	-0.31	1.56	-0.93
2014	8	-2.28	0.75	-1.69	-0.59	1.57
2014	9	1.72	0.20	0.47	1.14	1.10
2014	10	-0.87	1.02	-0.37	1.11	-1.03



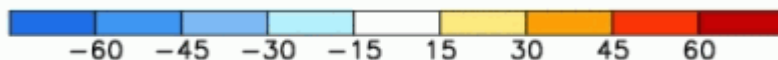
EA



SCAND

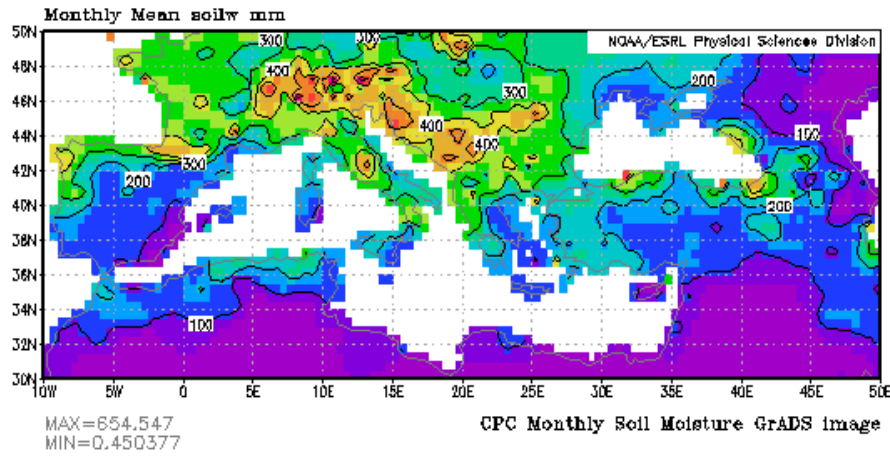


POL



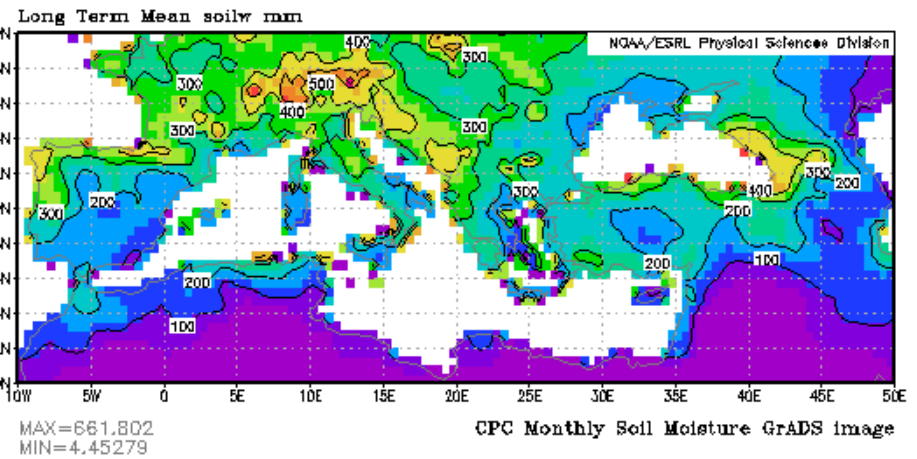


lon: plotted from -10 to 50.00
lat: plotted from 30.00 to 50.00
t: averaged over Jun 2014 to Aug 2014
lev: 0



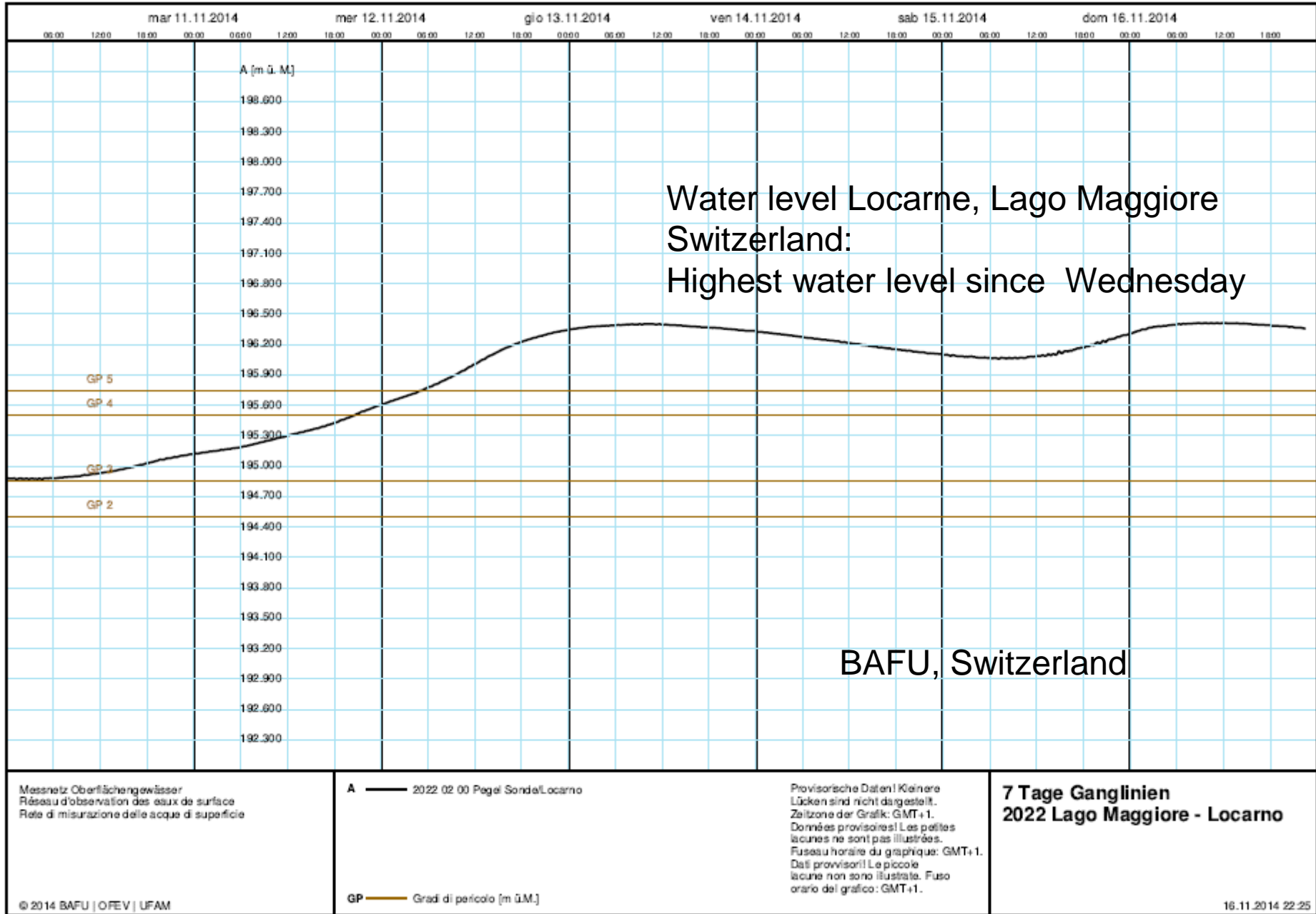
Summer 2014

lon: plotted from -10 to 50.00
lat: plotted from 30.00 to 50.00
t: averaged over Jun 9999 to Aug 9999
lev: 0



Climate Mean





Summary and Conclusions

- **Temperature:** Slight cooling in western Europe in summer 2014, warming in the east, very warm September, Oktober, November 2014
- **Precipitation:** Frequent heavy precipitation, especially France, Italy, Balkan Peninsula
- **Circulation:** Presently (Oktober 2014) EA, SCAND, POL contribution
- Climate Watch active for southern Europe and south Scandinavia

Thank you for your attention!



Image from NASA