

# Monthly Bulletin on the Climate in WMO Region VI



- Europe and Middle East -

## February 2012



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Last Change: Fri Apr 13 06:50:27 UTC 2012

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### Highlights:

- Colder than normal
  - Dry in the west and southwest, partly moist in the north, east and most of the Mediterranean
  - Sunnier than normal
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The following maps are first guess products based on meteorological bulletins which have been quality checked roughly. The text is based upon these maps as well as the monthly climate bulletins of the countries of RA VI as far as they are available on the web. More detailed information including updated analyses of more data which have undergone a better quality control and further aspects like clouds and water vapour may be found on the link of the Regional Climate Centre on Climate Monitoring in RAVI:

[RCC-CM RA VI/](#)

and at the Global Precipitation Climatology Center (GPCC):

[The GPCC](#)

The Monthly Bulletin on the Climate in WMO Region VI will usually be delivered after the 15th and before the 26th of each month for the preceding month. It may eventually be updated afterwards.

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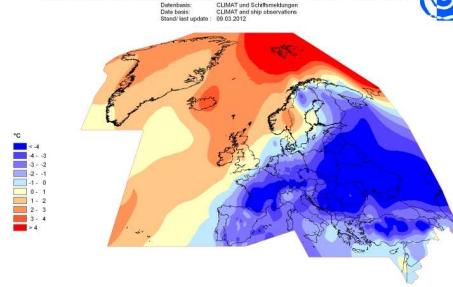
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### Monthly Overview:

## Temperature:

February 2012 was a cold month in most of continental Europe, Russia and the Middle East. Negative anomalies of -4 K or more occurred in France, the Alpine region, Poland, the Baltic states, Belarus, Ukraine, the Balkan states, parts of Russia and in Turkey. It was for instance on rank 10 of coldest February months since 150 years in Switzerland and on rank 15 of coldest February months since 1881 in Germany. Only the British Isles and southern Scandinavia were on the warm side. The Arctic Sea region had the highest positive anomalies of +4 K and more.

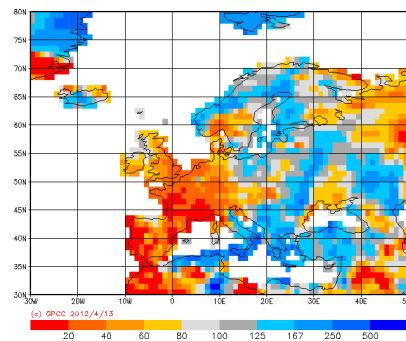
Temperaturabweichung Februar 2012 vom Normalwert 1961-1990  
Temperature deviation February 2012 (reference period 1961-1990)



## Precipitation:

In February 2012 it was dry in western, southwestern, and most of central Europe as well as southern Scandinavia. But the Scandinavian west coast as well as the central and eastern Mediterranean coast received partly remarkable precipitation surplus.

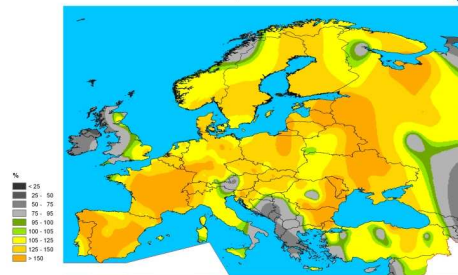
GPCC First Guess 1.0 degree  
precipitation percentage of normals 1951/2000 for February 2012  
(grid based)



## Sunshine Duration:

Sunshine duration in February 2012 was nearly everywhere over the normal except most of the British Isles, the western Balkan peninsula and southern Italy.

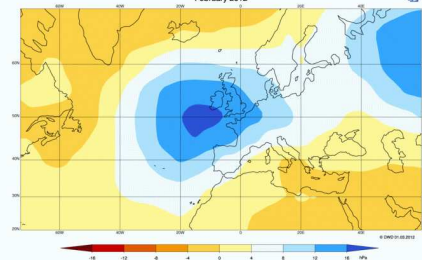
Sonnenscheindauer Februar 2012 in % vom Normalwert 1961-1990  
Sunshine duration February 2012 in % of the 1961-1990 normal



## Air Pressure (surface):

High pressure over western Europe as well as over Russia was the decisive feature in February 2012. The positive anomalies were highest west of the British Isles with more than 16 hPa. More than 12 hPa higher than normal was the sea level pressure on the North Atlantic between 40 N and 55 N, extending nearly to 30 W and including most of the British Isles and western and northern France. Similar anomalies occurred in northeastern Russia.

Anomalies of Sea Level Pressure in hPa Reference Period: 1961 - 1990  
February 2012

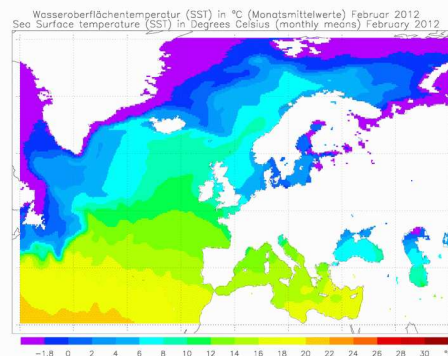


## Sea Surface Temperature:

The map on the right side shows the monthly mean of the sea surface temperature. The analysis is a result of the numerical weather forecast model GME of DWD.

The sea surface temperature is relatively warm in the North Atlantic with a warm tongue into the Norwegian Sea. Also the Barents Sea is relatively warm. The Arctic Ocean, as well as the White Sea, parts of the northern and the eastern Baltic Sea and the northern Caspian Sea are ice-covered.

[http://www.emc.ncep.noaa.gov/research/cmb/sst\\_analysis/images/archive/monthly\\_anomaly/monanomv2\\_201202.png](http://www.emc.ncep.noaa.gov/research/cmb/sst_analysis/images/archive/monthly_anomaly/monanomv2_201202.png)



## Circulation Indices:

Circulation indices are a means to analyse the atmospheric large scale influences upon climate. One of the best known indices is the North Atlantic Oscillation (NAO). Another well known one is ENSO which is especially connected to the El Niño phenomenon.

Monthly values of different circulation indices relevant for Europe: North Atlantic Oscillation (NAO), East Atlantic Pattern (EA), East Atlantic/West Russia Pattern (EA/WR), European Zonal Index (ZI\_EU)

(see [www.cpc.noaa.gov/data/teledoc/telecontents.shtml](http://www.cpc.noaa.gov/data/teledoc/telecontents.shtml) and [www.dwd.de/GWL](http://www.dwd.de/GWL) for more information)

Index	Monthly Value	Mean Value	Reference Period	Producer
NAO	0.03			cpc/noaa
EA	-1.73			cpc/noaa
EA/WR	-0.64			cpc/noaa
ZI_EU	na	na	1961-1990	dwd

Graph of daily indices of cyclonality (based on the DWD objective weather types classification) on pressure levels 950 hpa resp. 500 hpa

Graph of daily European zonal index values (20W-40E)

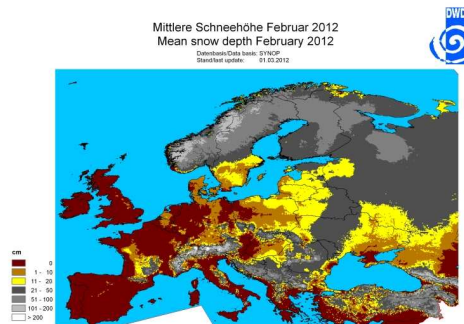
## Mean Snow Cover and Depth :

Beside Scandinavia and Russia and the high European Mountains there was especially much snow on the Balkan Peninsula as well as in Turkey.

The following table shows the snow covered area for 7 mountaneous subregions in km<sup>2</sup> and in %:

(see <http://www.dwd.de/rcc-cm> for definition of the subregions and more information)

Region	Covered Area (km**2)	Covered Area (%)
Germany	162657	46
Fennoscandia	1299900	84
Caucasus	360752	66
Eastern_Alps	121043	76
Pyrenees	18954	9
Carpathian_Mts_N_Balkan_Peninsula	732551	71
Western_Alps	71854	60



## Summaries

### Summary 1: Monthly Statistical Values

The content of the following table is based upon SYNOP reports (°) resp. the data provided on the web by National Meteorological and Hydrological Services (NMHSs) in form of tables, maps or texts in monthly climate bulletins. The tables usually contain values for a number of stations or regions. Especially data for precipitation may refer to catchment-areas. In some cases only one station is available (1) or a selection of a few CLIMAT stations is evaluated (2)

Tmx = highest reported mean temperature of the month; Tmn = lowest reported mean temperature of the month; Txx = absolute highest temperature reported; Tnn = absolute lowest temperature reported; w/n/c = warm/normal/cold (reference usually 1961-1990; in some cases<sup>(3)</sup> 1971-2000 or other); RRmx = highest sum of precipitation reported for the month; RRmn = lowest sum of precipitation reported for the month; RRdx = highest daily sum of precipitation reported for the month; w/n/d = wet/normal/dry (reference usually 1961-1990; in some cases<sup>(3)</sup> 1971-2000 or other); SHx = highest reported sum of sunshine duration for the month; SHn = lowest reported sum of sunshine duration for the month; s/n/d = sunny/normal/dull (reference usually 1961-1990; in some cases<sup>(3)</sup> 1971-2000 or other); na = value not available

Country	Tmx [°C]	Tmn [°C]	Txx [°C]	Tnn [°C]	w/n/c	RRmx [mm]	RRmn [mm]	RRdx [mm]	w/n/d	SHx [h]	SHn [h]	s/n/d
Albania <sup>o</sup>	7.3	7.3	21.7	-16.0	na	189	70	47	na	na	na	na
Armenia	-5.1	-11.0	11.1	-25.4	na	59	18	14	na	159.8	159.8	na

Austria	-1.2	-15.9	22.6	-31.0	c	174	3	47	d	152	64	s
Azerbaijan°	2.5	-4.3	25.6	-15.0	na	43	0	12	na	116.3	67.4	na
Bosnia_and_Herzegovina°	1.9	-9.5	19.2	-39.7	na	203	6	86	na	134.3	39.7	na
Belgium	1.9	-3.6	14.5	-20.8	c	288	11	52	d	95.4	na	s
Bulgaria	1.5	-13.2	11.3	-28.6	na	246	3	101	na	134	54.2	na
Belarus	-7.9	-12.6	7.3	-34.8	na	68	20	25	na	129	59.2	na
Switzerland	3.1	-15.5	24.5	-35.1	c	161	1	86	na	207.3	79.9	s
Cyprus°	12.4	11.3	20.1	-0.7	na	197	0	37	na	199.0	177.0	na
Czech_Republic°	-2.8	-10.4	15.4	-24.4	na	107	7	31	na	118.9	65.0	na
Germany	1.4	-14.6	17.3	-29.4	c	130	5	47.3	d	149.8	56.8	s
Denmark	0.7	-1.2	18.1	-23.1	c	54	26	15.8	d	82	58	s
Estonia	-4.5	-11.5	6.4	-35.0	c	70	15	26	d	107	62.5	s
Spain	11.2	2.1	33.1	-14.4	c	132.5	2.7	45.0	d	288.2	90.5	s
Finland°	-2.5	-16.6	6.9	-41.5	na	86	4	26	na	na	na	na
Faroe_Islands°	6.2	6.2	13.8	-4.6	na	71	71	26	na	na	na	na
France	7.8	-4.9	25.1	-20.1	c	42	0	24.8	d	258.5	76.4	s
Georgia°	4.0	-6.9	19.1	-20.7	na	124	0	21	na	na	na	na
Gibraltar°	12.2	12.2	19.3	3.7	na	34	34	25	na	na	na	na
Greenland°	-2.9	-28.4	30.4	-42.6	na	478	1	112	na	na	na	na
Greece	11.7	-2.1	22.1	-16.5	c	388	25	151	w	168	49	na
Bosnia_and_Herzegovina <sup>2</sup>	1.6	-4.9	17.7	-19.0	na	144	107	na	na	114	56	na
Croatia <sup>2</sup>	6.1	-6.7	23.0	-25.5	na	301	7	134	na	127	117	na
Hungary <sup>2</sup>	-2.4	-5.3	na	na	na	37	19	na	na	123	95	na
Ireland°	9.1	6.3	14.8	-6.3	w	80	18	23	d	60.8	20.5	d
Israel°	16.8	6.6	29.1	-0.2	na	113	0	37	na	158.5	155.1	na
Iceland <sup>2</sup>	4.4	-2.3	13.2	-12.3	na	244	40	67	na	39	37	na
Italy	10.9	-14.2	25.6	-30.0	na	575	2	152	na	201.6	118	na
Jordan°	na	na	28.0	-6.0	na	150	0	41	na	na	na	na
Kazakhstan°	-14.4	-14.4	8.0	-31.7	na	13	2	4	na	127.7	127.7	na
Lebanon°	14.3	6.2	24.2	-4.2	na	209	69	45	na	135.1	107.8	na
Liechtenstein°	-2.7	-2.7	15.0	-15.9	na	9	9	3	na	115.2	115.2	na
Lithuania°	-6.5	-10.0	6.1	-29.9	na	68	27	16	na	91.5	82.5	na
Luxembourg	-1.6	na	13.7	-15.0	c	13.4	na	5.6	d	129.3	na	s
Latvia	-5.2	-11.7	7.5	-33.0	c	87	45	34	w	97	82.8	na
Moldova	-7.1	-9.5	9	-32	c	95	30	18	d	112.2	na	na
Montenegro	7.8	-5.4	19.7	-22.9	na	270.1	110.0	125	na	115.3	97.9	na
Macedonia_The_Former_Yugoslav_Rep°	-1.2	-2.8	30.0	-23.7	na	117	19	31	na	na	na	na
Malta <sup>1</sup>	10.2	na	15.9	3.6	na	133	na	32	na	192	na	na
Netherlands	1.4	-0.4	13.3	-22.9	c	36	16	9	d	130	97	s
Arktis	-1.8	-7.2	7.8	-21.8	w	92.9	30.1	31	w	na	na	na
Norwegian_Sea	3.8	6.0	na	na	w	na	na	na	na	na	na	na
Norway	5.5	-16.5	16.9	-39.7	na	448.7	2.7	84.4	na	29	na	na
Poland <sup>2</sup>	-1.4	-12.1	12.0	-29.9	na	118	35	18	na	105	98	na
Acores	15.6	13.7	20.6	7.0	w	198.8	29.6	47.5	d	na	na	na
Madeira	17.4	2.3	23.0	-1.9	na	115.6	2.3	42.2	d	172.0	140.3	s
Portugal	15.2	2.0	23.3	2.8	c	5	0	2.8	d	>220	<160	s
Romania <sup>2</sup>	-0.4	-14.1	17.1	-32.5	na	176	3	50	na	141.2	35.3	na
Serbia°	-2.8	-9.5	15.6	-28.7	na	105	48	38	na	100.4	53.3	na
Russian_Federation <sup>2</sup>	3.8	-27.9	21.2	-40.6	na	200	11	67	na	181.4	6.0	na

Sweden <sup>2</sup>	-0.4	-16.7	14.0	-42.8	na	122	7	36	na	97	76	s
Slovenia <sup>1</sup>	-0.8	na	21.6	-12.2	na	23	na	na	na	135	na	na
Slovakia_(Slovak_Republic) <sup>2</sup>	-2.0	-14.9	14.8	-30.7	na	216	10	34	na	161.1	120.0	na
Slovenia <sup>o</sup>	-1.3	-3.5	21.8	-25.0	na	73	7	26	na	176.5	101.2	na
Syrian_Arab_Republic <sup>o</sup>	na	na	20.9	-5.2	na	184	0	68	na	na	na	na
Turkey <sup>o</sup>	12.0	-14.6	20.0	-35.0	c	275	19	90	na	196.2	0.0	na
Ukraine <sup>2</sup>	-5.5	-10.5	13.5	-26.8	na	33	23	na	na	114	101	na
United_Kingdom	8.1	-1.5	18.7	-15.6	w	198	5	70.6	d	105.0	25.6	na

## Summary 2: Reported Maximum Windgust (m/s) in the Month

<b>Country</b>	<b>FFx</b> <b>[m/s]</b>	<b>Location</b>	<b>Day</b>
Austria	42.0	Alpinzentrum Rudolf	14
Austria	42.0	Feuerkogel	15
Bosnia and Herzegovina	44	Ivan Sedlo	28
Bulgaria	34	Burgas	7
Bulgaria	40	Mourgash	12
Czech Republic	58	Snezka-Postovna	18
Germany	30	Arkona	9
Germany	35.5	Brocken	23
Espania	29.4	Mllorca Aeropuerto	2
Espania	28.9	Base de Rota	7
France	45.3	Cap Bear	7
France	40.6	Bec de l'Aigle (Bouche-du-Rhone)	15
Croatia	38.0	Makarska	26
Italy	35.5	Bonifati	21
Romania	65.0	Vladeasa 1800	24
Romania	40.0	Tarcu	29
Slowenia	39	Kredarica	28
Slovakia	44	Chopok	28
United Kingdom	43.1	Cairngorm Summit	22

Values in the table as reported from SYNOP stations resp. in Monthly Climate Bulletins. Further information may be found here: [European Severe Weather Database](#)

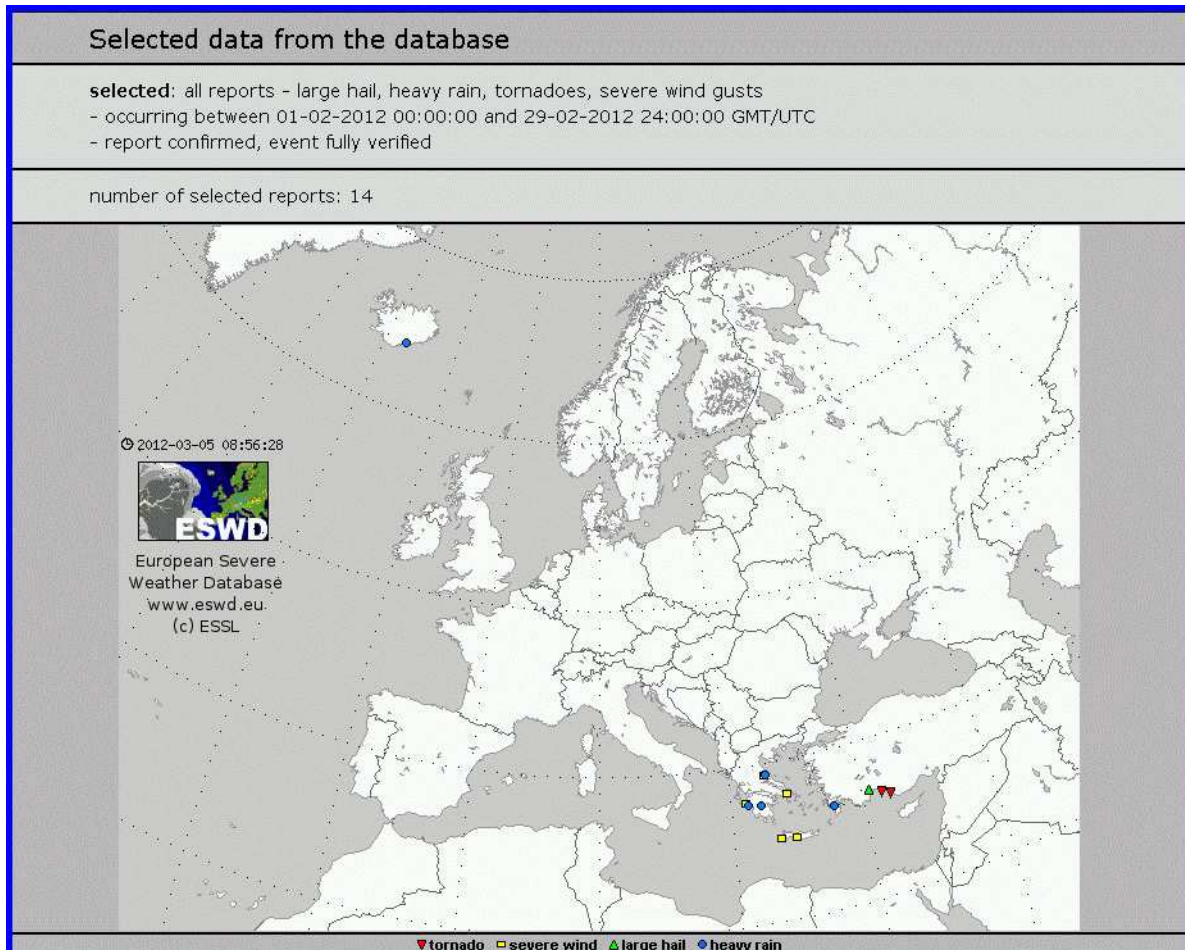
### **Summary 3: Selected Reported Phenomena in the Month**

Selected phenomena that were reported by the National Meteorological Services are listed in the following table. Selected phenomena may be: Tornados, Hail with large (> 3cm diameter) hailstones, etc.

No remarkable reports from SYNOP found

Values in the table as reported from SYNOP stations resp. in Monthly Climate Bulletins. Further information may be found here: [European Severe Weather Database](#)

## Severe Weather



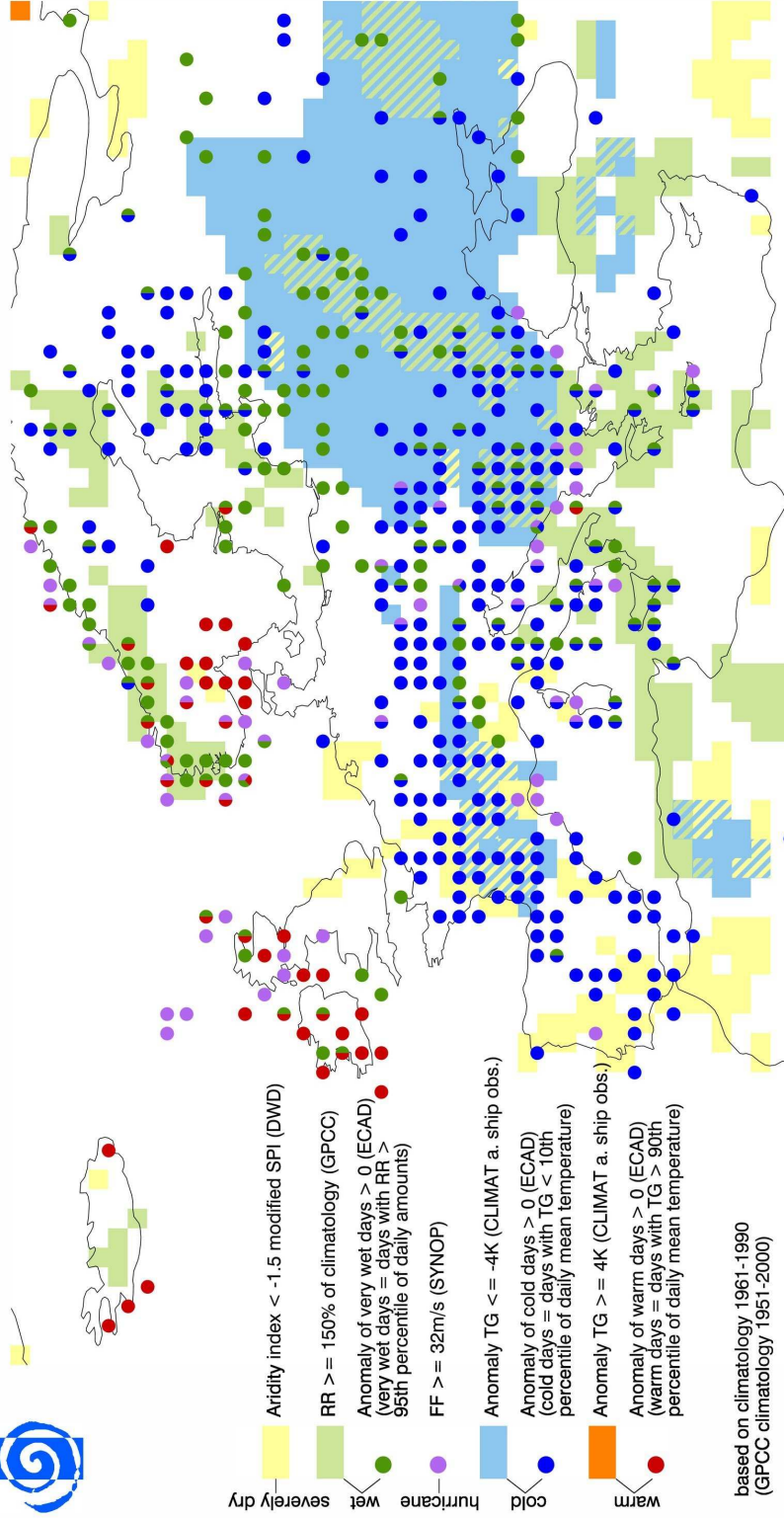
[European Severe Weather Database](#)

## Map of Climate Extremes (Prototype Version)





# Event map February 2012 / Ereigniskarte Februar 2012



- Aridity index < -1.5 modified SPI (DWD)
- RR >= 150% of climatology (GPCC)
- Anomaly of very wet days > 0 (ECAD)  
(very wet days = days with RR > 95th percentile of daily amounts)
- FF >= 32m/s (SYNOP)
- Anomaly TG <= -4K (CLIMAT a. ship obs.)
- Anomaly of cold days > 0 (ECAD)  
(cold days = days with TG < 10th percentile of daily mean temperature)
- Anomaly TG >= 4K (CLIMAT a. ship obs.)
- Anomaly of warm days > 0 (ECAD)  
(warm days = days with TG > 90th percentile of daily mean temperature)

based on climatology 1961-1990  
(GPCC climatology 1951-2000)

Date: 20.03.2012

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## Selected Significant Events

- **Intense cold spell in Europe costs several hundred human lives**

The intense cold spell that started in the last January decade continued until mid of February. About 600 human beings lost their lives according to the cold. An extended report was prepared by the WMO Regional Climate Centres II and VI, see link below.

Beside the low temperatures (see the Tnn-values in the summary table) that caused many people's death due to freezing, intense snowfall caused problems for instance in the Alpine region and on the Balkan Peninsula. Avalanches occurred and snowdrift due to strong winds caused interruptions of traffic ways. In many countries like Bulgaria, Romania, Moldavia, Albania regions were not reachable for long time so that partly food supply by helicopter had to be organized. The snow load caused roofs to break and Austria reported severe damage to the mountain forests by broken trees. Ice drift on rivers (i.e. the Danube river) caused damages to ships and the river had to be closed for traffic. In Bulgaria a dam broke and flooding caused catastrophic conditions to villages.

**Links:**

[Cold spell in Europe and Asia in late winter 2011/2012](#)

[Roger Brugge News](#)

[Austria: Unwetterbericht Februar 2012](#)

[Bulgaria:Monthly Bulletin](#)

[EarthObservatory: Snow in Lebanon and Syria](#)

[Beiträge zur Berliner Wetterkarte: Kälte und Schnee auch in Italien](#)

[Snow depths in Croatia on 15.02.2012 at 07 h](#)

[Switzerland: Kältewellen im Vergleich](#)

[Moldavia: Caracterizarea perioadei geroase din ianuarie-februarie 2012](#)