

# Monthly Bulletin on the Climate in WMO Region VI



- Europe and Middle East -



**February 2010**

**Deutscher Wetterdienst**

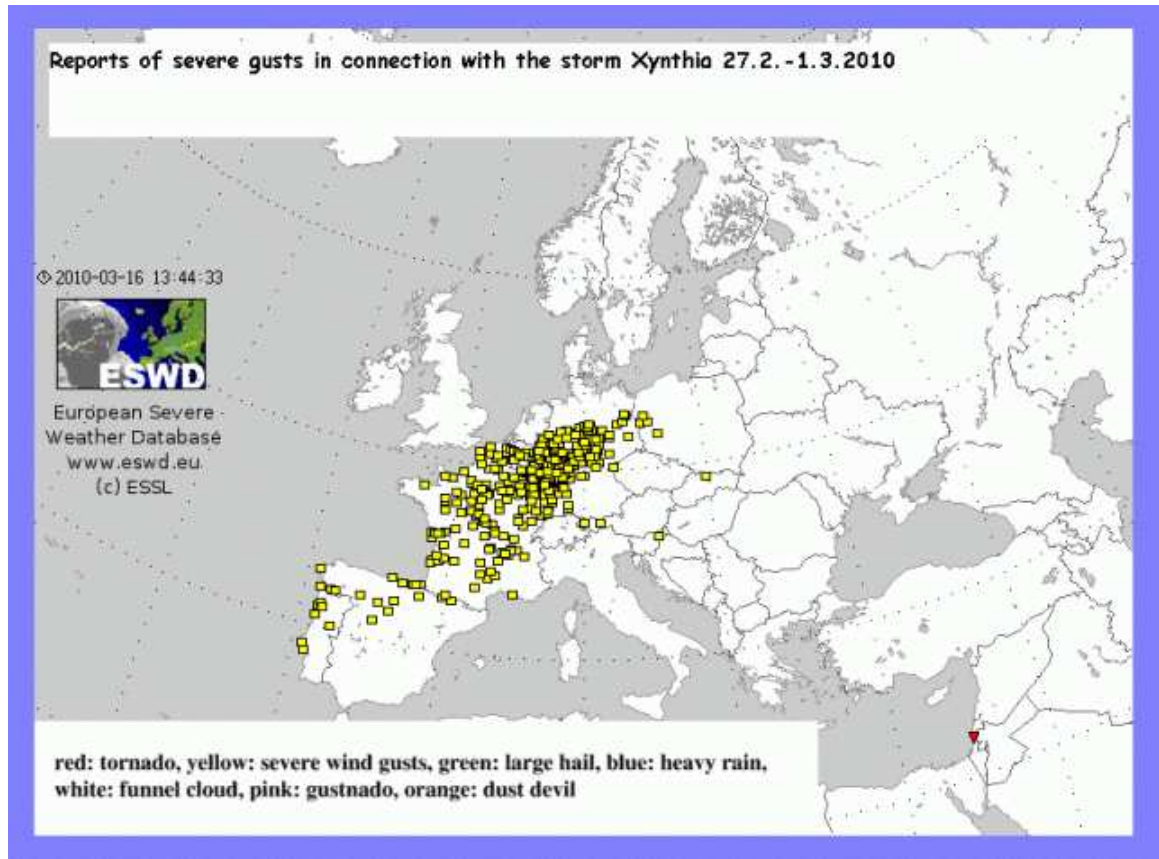
**Last Change: Thu Mar 18 11:44:01 UTC 2010**

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## **Highlights:**

- Cold to very cold in most of Europe with maximum of negative anomaly for northern Scandinavia. Warm in the southeast. Still warm in the Arctic,
- Wetter than normal for most of Europe.
- Dull or close to normal sunshine duration for most of Central Europe, sunnier in the north.

Locations of reports of severe gusts and damages during Xynthia



Shown is the distribution of checked, confirmed or validated reports of severe wind gusts in the ESWD (<http://essl.org/cgi-bin/eswd/eswd.cgi>) for the time interval 27.2.2010-01.03.2010 .

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 under the following topics.

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.

This is the Link to the Regional Climate Centre on Climate Monitoring in RA VI:

[RCC-CM RA VI/](#)

and partners producing further European monthly climate monitoring products including:

- monthly means and anomalies e.g. of wind speed, relative humidity, as well as parameters at several pressure levels from ARPEGE model output

- anomalies for 42 climate indices from the ECA&D dataset
- regional tailored products for the Eastern Mediterranean
- drought monitoring products for Southeastern Europe

may be found under these links:

[ARPEGE model products /](#)

[ECA&D monitoring products /](#)

[Eastern Mediterranean Climate Center /](#)

[Drought Management Centre for Southeastern Europe/](#)

Or see these links for further or more detailed information and analyses

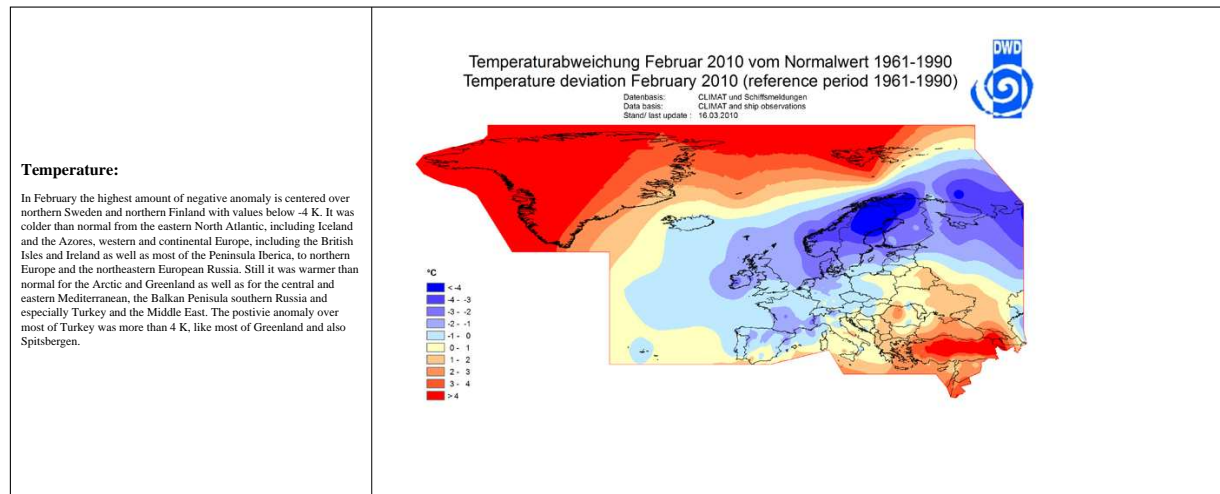
[Precipitation Climatology /](#)

[European Snow Climatology /](#)

[European Circulation Indices /](#)

[Satellite-based Regional Climate Monitoring](#)

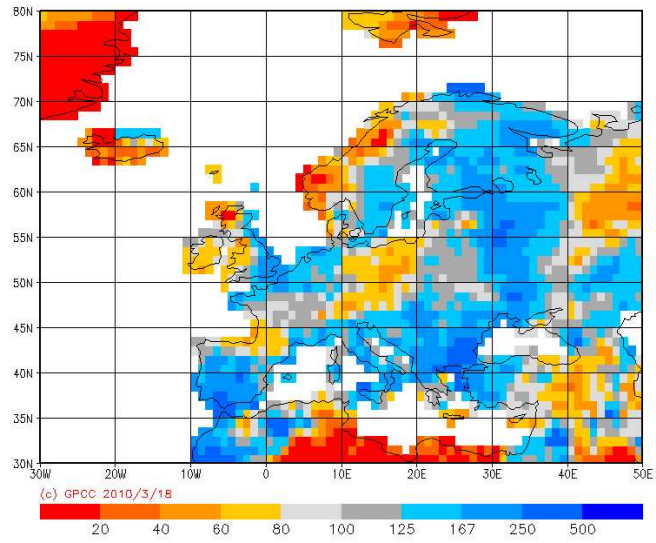
## Monthly Overview:



**Precipitation:**

Most of Europe received more precipitation in February 2010 than the 1961-1990 average except Iceland, Ireland, the western UK, Norway, eastern Germany and Poland, the Pyrenees, northern Russia and parts of the Middle East.

GPCC First Guess 1.0 degree precipitation percentage of normals 61/90 for February 2010 (grid based)



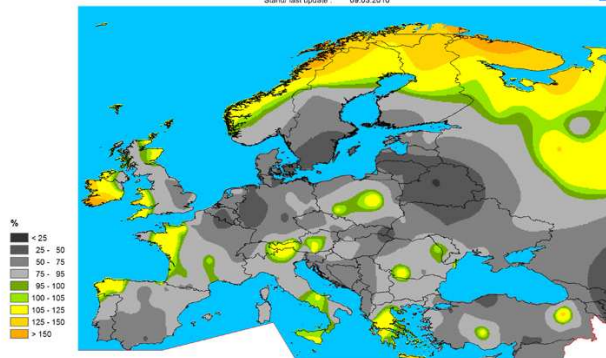
**Sunshine Duration:**

The sunshine duration in February 2010 was below 50 hours for the easternmost parts of France, most of Belgium, parts of Netherlands, most of Germany, Denmark, southern Sweden, the Baltic States, Belarus, western Russia and the northern Ukraine. Thus more sunshine than average was recorded mainly in western and northern Scandinavia and Russia, in the Atlantic regions and parts of the Mediterranean (Sicily, Greece and Malta) whereas everywhere else the sunshine duration was mostly below the normal value.

Sonnenscheindauer Februar 2010 in % vom Normalwert 1961-1990  
Sunshine duration February 2010 in % of the 1961-1990 normal



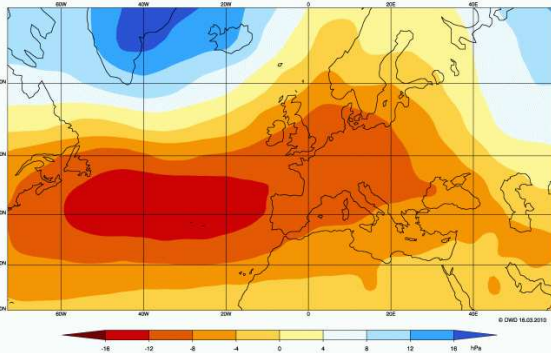
© DWD/Deutscher Wetterdienst - CLM40T  
Stand/last update: 09.03.2010



**Air Pressure (surface):**

The field of sea surface level pressure is again remarkable in February 2010 with an extended area of negative anomaly centered over the central North Atlantic reaching far to the east and covering western, central and southern Europe and the Middle East. The largest amount of negative anomaly over the central North Atlantic lies between -12 and -18 hPa. A monthly mean of low pressure between 990 and 995 hPa is centered in the western part of the Central North Atlantic while Greenland is under high pressure.

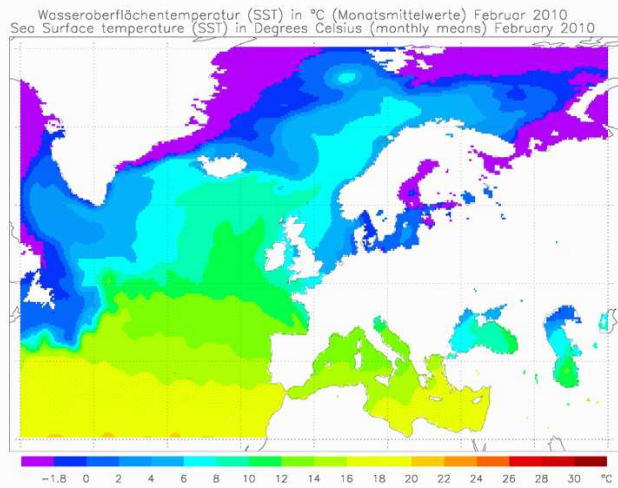
Anomalies of Sea Level Pressure in hPa Reference Period: 1961 - 1990  
February 2010



**Sea Surface Temperature:**

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

The Sea Surface Temperature was higher than the mean of 1971-2000 for the Norwegian Sea, the northern North Atlantic, the eastern Mediterranean and the southern Caspian Sea. It was on the other hand lower than the long-term mean in the Arctic Sea, the North Sea and the Baltic Sea according to the analysis of the Climate Modeling Branch/EMC/NCEP, see [http://www.emc.ncep.noaa.gov/research/cmb/sst\\_analysis/](http://www.emc.ncep.noaa.gov/research/cmb/sst_analysis/). The northern part of the Baltic Sea, the Barents Sea and the White Sea are frozen.



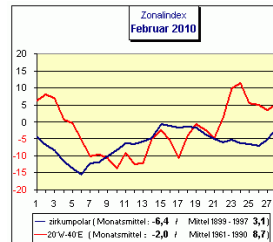
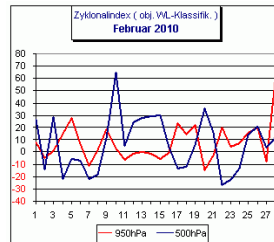
**Circulation Indices:**

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.

Again in February 2009 the NAO-Index is remarkably negative with a value of -1.98. The mean of the wintermonths (DJF) is -1.66. This value is even below the value of -1.48 for the winter 1962/1963 which was a very cold winter in western Europe and -1.25 for the winter 1968/1969 which was very cold in the east.

Monthly values of different circulation indices relevant for Europe: (see [www.cpc.ncep.noaa.gov/data/teledec/telecontents.shtml](http://www.cpc.ncep.noaa.gov/data/teledec/telecontents.shtml) and [www.dwd.de/GWL](http://www.dwd.de/GWL) for more information)

Index	Monthly Value	Mean Value	Reference Period	Producer
NAO	-1.98			cpc/noaa
EA	1.34			cpc/noaa
EA/WR	-0.69			cpc/noaa
ZI_EU	-2.0	8.7	1961-1990	dwd



**Mean Snow Depth :**

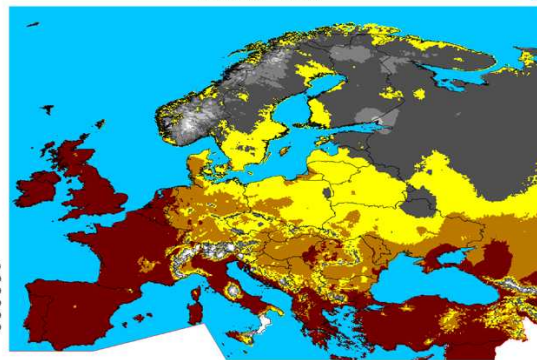
The following table shows the snow covered area for 7 mountaneous subregions in km\*\*2 and in %:

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

Region	Covered Area (km**2)	Covered Area (%)
Germany	285213	80
Fennoscandia	1440942	48
Caucasus	203920	37
Eastern_Alps	121570	77
Pyrenees	14079	6
Carpathian_Mts_N_Balkan_Peninsula	665252	65
Western_Alps	67344	56

**Mittlere Schneehöhe Februar 2010**  
Mean snow depth February 2010

Datenbasis/Data basis: SYNOP  
Stand/last update: 01.03.2010



**Summaries**

## Summary 1: Monthly Statistical Values

The content of the following table is based upon 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 <sup>(1)</sup> or a selection of a few CLIMAT stations ist evaluated <sup>(2)</sup>

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	Tmn	Txx	Tnn	w/n/c	RRmx	RRmn	RRdx	w/n/d	Shx	Shn	s/n/d
	[°C]	[°C]	[°C]	[°C]		[mm]	[mm]	[mm]		[h]	[h]	
Austria	1.3	-13.3	17.7	-20.9	c	123	12	38	na	150	42	na
Belgium <sup>1</sup>	5.2	0	na	na	c	75.6	na	na	w	28.53	na	d
Bulgaria <sup>1</sup>	1.6	na	18.5	-12.2	w	56	na	na	w	76	na	d
Switzerland	na	na	16	-35.6	c	>150	<25	na	na	na	na	na
Cyprus	na	na	24.0	-0.3	na	114.4	47.9	49.3	na	na	na	na
Germany	2.9	-12.4	16.6	-22.9	c	127	14	35.1	d	149	20	d
Denmark	-0.5	-3.5	5.6	-15.3	c	67	27	16.3	w	69	32	d
Estonia	-5.5	-9.2	4.3	-22.9	c	57	30	13	w	53	34	d
Canary_Islands	na	na	31.2	-1.1	w	na	na	134.1	w	168.7	na	d
Spain <sup>3</sup>	na	na	34.2	-12.4	c	209	51.5	99.4	w	na	57.6	d
Finland <sup>1</sup>	-9.1	na	1.3	-2.3	c	50	na	na	w	44	na	d
France <sup>3</sup>	na	na	27.6	-16.2	na	456.6	33.2	102.4	na	150	36	na
Greece <sup>1</sup>	12.8	na	21.8	0.2	w	38	na	na	d	126	na	d
Hungary <sup>3</sup>	3	-3	15.8	-23.5	c	97.8	0	34.4	w	na	na	na
Ireland	4.8	2.1	11.3	-6.6	c	87	33	28.2	na	119	60	na
Iceland <sup>1</sup>	0.0	na	na	na	c	26	na	na	d	87	na	s
Lithuania	-3.3	-5.2	7	-18	n	52	35	na	w	42	11	d
Luxembourg <sup>1</sup>	1.0	na	11.6	-8.0	c	89.0	na	20.8	w	40.5	na	d
Montenegro	na	na	na	na	w	>900	>50	111.2	w	na	na	na
Malta <sup>1</sup>	13.8	na	24.2	5.5	w	15.6	na	na	d	na	na	na
Netherland <sup>3</sup>	2.6	-0.1	na	na	na	na	na	na	na	66.7	38.5	na
NorthSea/NorwegianSea	3.4	0.7	na	-10.6	c	na	na	na	na	na	na	na
Arctis	-3.4	-12.2	-1.4	-15.8	w	19.1	1.4	4.1	d	na	na	na
Norway	2.3	-14.7	6.8	-41.6	c	114.4	2.1	38.2	na	na	na	na
Poland <sup>3</sup>	>-0.9	-8.2	na	na	c	84	<10	na	na	na	na	d
Madeira <sup>3</sup>	17.5	7.5	26.9	-0.2	w	1379.1	170.4	287.6	w	134.0	111.1	d
Azores	na	na	17.4	6.8	na	183.8	na	33.6	w	na	na	na
Portugal <sup>3</sup>	>11	<3	20.7	-8.5	c	531	77	66.4	w	>130	<100	d
Romania <sup>2</sup>	2.8	-0.5	20.4	-16.2	na	94	19	na	w	77	60	d
Russia	2.8	-12.5	13.3	-21.1	na	77	28	na	w	73	59	na
Sweden	na	na	7.3	-42.0	c	na	na	na	w	na	na	na
Syriah <sup>1</sup>	10.7	na	28.0	-5.0	w	16	na	na	d	na	na	na
Turkey <sup>3</sup>	15.5	-2.9	26.9	na	w	272.1	39.2	na	w	na	na	na
Ukraine <sup>1</sup>	-0.3	-4.2	8.5	-16.6	w	90	59	na	w	62	51	d
United_Kingdom	3.5	-0.1	12.3	-19.2	c	98.1	56.0	52	d	73.4	2.4	na



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

Country	FFx [m/s]	Location	Day
Belgium	29.7	Ernage	28
Switzerland	40.9	Altdorf	27/28
Germany	50.3	Brocken/Harz	28
Germany	45.5	Weinbiet/Pfaelzer_Wald	28
Germany	39.1	Schmuecke/Thueringer_Wald	28
Germany	41.9	Zugspitze	28
Germany	39.0	Wasserkuppe/Rhoen	28
France	44.4	Saint_Clement_Des_Baleines	27/28
France	66.1	Pic_Du_Midi	27/28
France	58.1	Puy-de-Dome	27/28
France	44.7	Scille(Deux-Sevres)	28
Netherlands	31.1	Maastricht	28
Madeira	44.1	Canical/Ponta_de_Sao_Lorencio	18
Portugal	46	Pampilhosa	27

## 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: Tornadoes, Hail with large (> 5cm diameter) hailstones, etc.

Country	Phenomenon	Reported Impact (y/n)	Day	Location
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### Selected Significant Events

- Madeira suffered from a severe landslide at Fuchal after extremely heavy rain between the 18th and the 20th. This was not the first event of heavy rain in the region for this month. Also at the beginning of the month Madeira already received very much rain with more than 100 mm in 24 hours at several stations.
- Storm Xynthia affected several countries at the end of the month (27.02.-01.03.) causing the break of sea dikes at the French Atlantic coast and much damage by falling trees, etc.. See the



report under <http://www.dwd.de/rcc-cm> -> 'Severe Weather Events' -> Europe.