

Characteristics of temperature and precipitation in summer 2014 in Montenegro

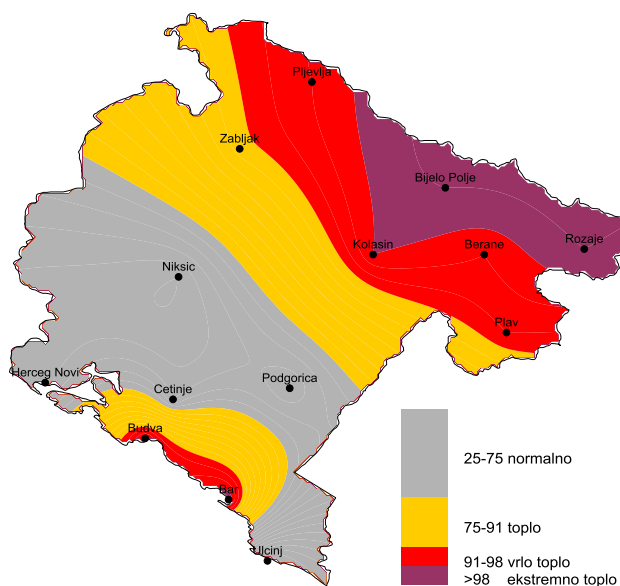
- temperature higher than normal in the northern region and in the central part of the coastal region
- according to the percentile temperature is ranked as *normal, warm, very hot and extremely hot*;
- precipitation is ranked as *dry, normal, wet, very wet and extremely wet*.

Mean air temperature ranged from 14.5⁰C in Žabljak to 25.4⁰C in Podgorica. Deviations from the mean summer temperature were positive ranging from + 0.4⁰C in Niksic and Herceg Novi to +2.6⁰C in Rožaje. Summer in capital town Podgorica was warmer for +0.5⁰C than climatological mean for the summer 1961-1990.

On a scale of highest summer temperature in Montenegro, summer 2013 is in the top 10 highest values, but is “cooler than summer 2012“.

Number of tropical days was in range from 3 days in Kolasin to 63 days in Podgorica.

Raspodjela percentila temperature vazduha za ljeto 2014.godine



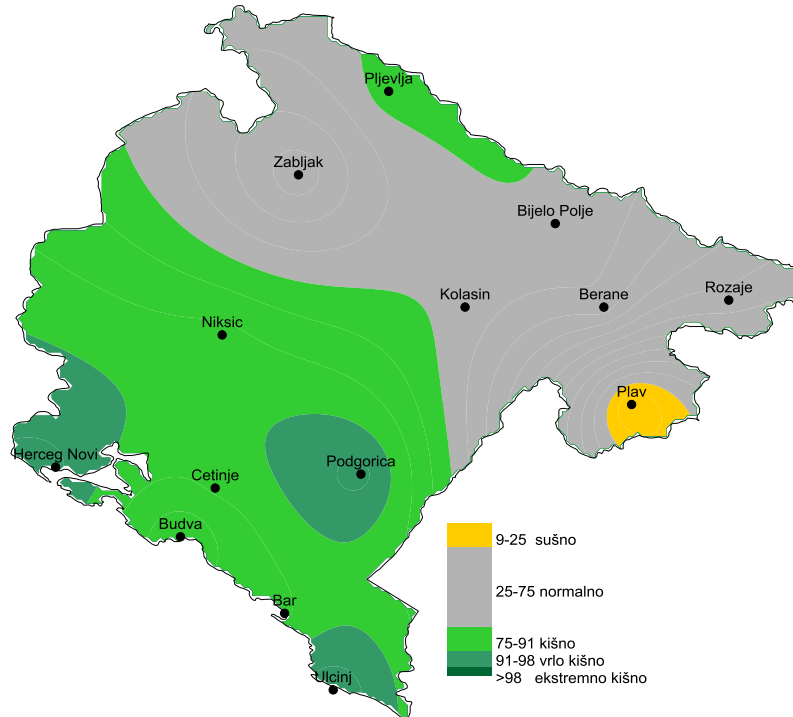
source: IHMS, prepared by Slavica Micev

Figure 1. The percentile distribution of summer temperature' anomalies in Montenegro with respect to the 1961-1990 basic period

The average summer rainfall was in range from 93 mm (or 50% less than normal) in Plav (eastern region) to 451 mm in Cetinje (karstic region). In capital town Podgorica, total sum was 307 mm, i.e. +91% more than climatological mean.

The number of days with precipitation ≥ 0.1 mm was in range from 17 days in Budva (on the coast) to 43 days in Bijelo Polje (northeastern region). In general, the number with precipitation ≥ 0.1 mm was higher than the average number for the summer, except in Budva and Berane where was 2 days and 3 days less than average.

Raspodjela percentila kolicine padavina za ljeto 2014.godine



source: IHMS, prepared by Slavica Micev

Figure 2. The percentile distribution of summer precipitation' anomalies in Montenegro with respect to the 1961-1990 basic period

OBSERVED EXTREME EVENTS AND THEIR IMPACTS

- **14/06/2014-** in Danilovgrad and surrounding villages (Zetsko-Bjelopavlici region) the hail with size up to 2 cm had the impact on agriculture especially on crops of tomato, pepper, maize while the pretty large impact was on vineyards. Storm was lasting around 1 hour.
- **17/06/2014** – Storm in Ulcinj and its surroundings (southern coastal part) made pretty large material losses: floods on the streets, marine leech uprooted the

woods and damaged the roofs of restaurants and weekend houses. Torrent of water was interflowing from surrounding hills getting into several business objects, flats, and flooded the streets. The rescue service was intervened in one nearby village where the houses were flooded. Distribution of electricity was also affected.

- **19/06/2014** - Storm in Herceg Novi (northwestern coastal part) followed by hail destroyed plantations of citrus, olives, palms and ornamental plants. Due to the torrent of water and sand drift the traffic on the main and local roads was impeded. The level of water on the streets in Kumbor was between 30 and 50cm.

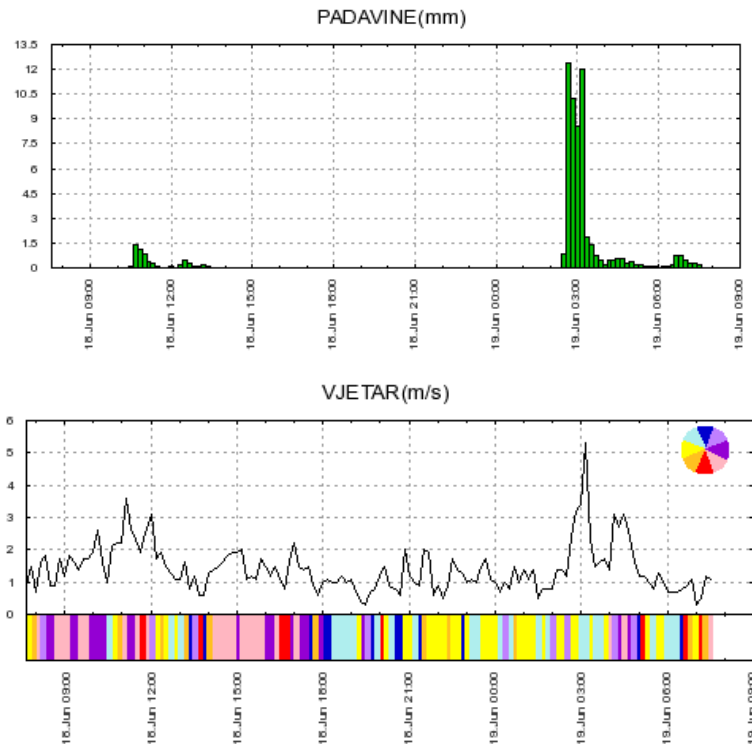


Figure 3. Precipitation and wind records during the storm in Herceg Novi

- **28-31/07/2014** – Strong storm with high waves and heavy rain. Many streets in the coastal towns were inundated. In Herceg Novi in 10 min fell 25 mm of rain. There were landslides on the roads. Due to the heavy storm the floating out from the Port of Bar was forbidden by the Port Authority.
- **13/08 – 24/08/2014** – Periods of strong storm with high waves along the coastal region, heavy precipitation and thundering. Electrical lines were damaged and the distribution was cut. The landslides on the road in the vicinity of Petrovac impeded the traffic. The rainfall was heavy and some cellar and ground floors were flooded. Torrent of water caused floods on the streets in Budva and the economic yard of the Hotel Palas. The Settlement Velji Vinogradi in Budva was flooded, and several cars were captured in the flooded garage.

source: IHMS, prepared by Mirjana Ivanov

2014 Summer Season Assessment of Montenegro Compare to SEECOF 11 Experts Forecast

Climate outlook for the summer temperature in 2014 almost corresponds with the observed situation in the northwestern to northeastern part of Montenegro and its central coastal part.

Comparing prediction of precipitation in Zone 3 of high uncertainties, with observed precipitation in Montenegro, it could be noted that the summer was characterized with the extreme events and different categories of rainfall amount, i.e. from dry to normal and very wet conditions. During the jun, july and august, episodes of enhanced convection with heavy rainfall and wind storms were observed especially in the coastal region where the waves were very high and dangerous, then in the karstic region and Zetsko-Bjelopavlici region. Northern mountainous region has normal precipitation amount, while further northern part had wet conditions and further eastern part had dry conditions.

*Prepared by Slavica Micev and Mirjana Ivanov
IHMS, Montenegro
28/10/2014*