

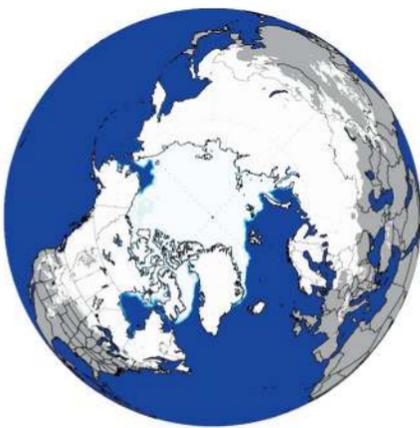
# Snow Extent in the Northern Hemisphere now Among the Highest in 56 years Increases the Likelihood of Cold Early Winter Forecast both in North America and Europe

by Renato R. Colucci, 26. Nov. 2022, [LINK](#)

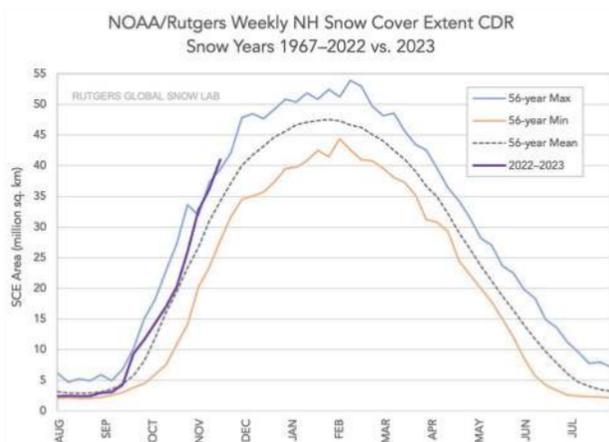
Snow extent in the Northern Hemisphere at the end of November represents an important parameter for the early winter forecast. This year snow extent is running much higher than average and according to existing global estimates, it is now beyond the highest ever observed so far. Winter forecast, especially in its early phase and in Europe, might be strongly influenced by such a large snow extent, although many other factors need attention.

## SNOW EXTENT IN NOVEMBER 2022

Northern Hemisphere snow extent is currently indeed very high, now at about 41 million square kilometers, according to the NOAA/Rutgers Global Snow Lab, [LINK](#). The most recent snow cover information is given in the image below.

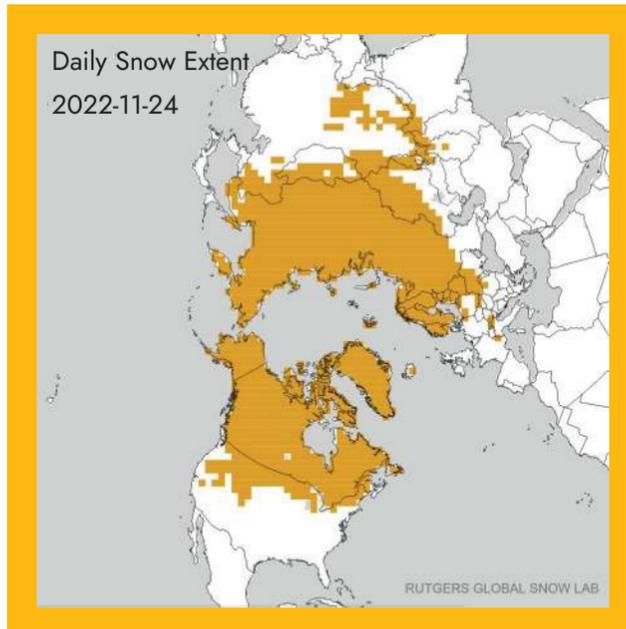


The Weekly Northern Hemisphere snow cover extent for the winter season 2022-2023 in purple is plotted together with the mean (grey dashed line), maximum (blue), and minimum (orange) snow cover extent for each week. Mean weekly snow cover extent and extremes were calculated using the 56-year period from October 1966 to July 2022.



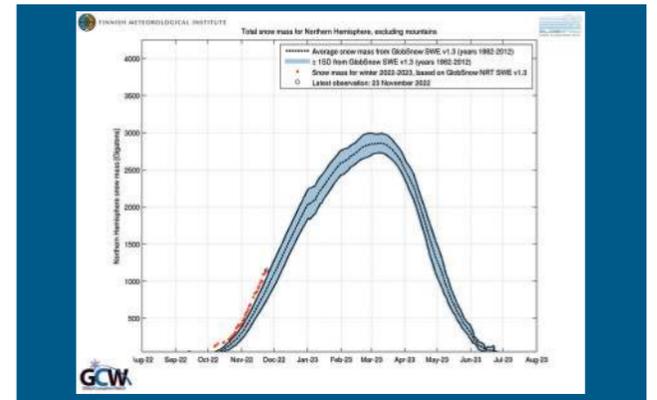
Looking at the following Rutgers Daily Snow Extent map, it is clearly noticeable how Russia is completely covered in snow now. Snow is also seen overwhelming all of Canada, and Alaska, as well as a good portion of the Lower 48. This is an important parameter for the early winter forecast.

You could probably forecast a colder-than-normal winter based on Autumnal Northern Hemisphere snow cover extent alone. It's the largest snow extent in decades. Having so much snow on the ground means any arctic outbreak is going to be a little bit colder. But why should be like this?



According to the Finnish Meteorological Institute, also the total snow mass for the Northern Hemisphere is tracking comfortably above the 1982-2012 average. This result is based on the current Northern Hemisphere snow-water equivalent relative to the long-term mean and variability.

Snow extent grew pretty fast in the last 30 days, as it should generally be in this period of course, but 2022 is setting a clearly very favorable season for snow on the ground.



By the way, as a curiosity, the temperature is always colder on the ground in winter and at night in calm conditions, that is without or with the very weak wind. That's because the Earth warms up and cools off much faster than the atmosphere does. More, colder air is denser, therefore the air near the ground is colder at night than the higher air. That's why for instance your thermometer says +1 or +2 degrees Celsius, but you might see frost on the ground.

Extensive snow extent early in the season is an indicator of persistent cold as we head into winter proper, mainly due to albedo and emissivity feedback.

Read the whole article, [LINK](#)

