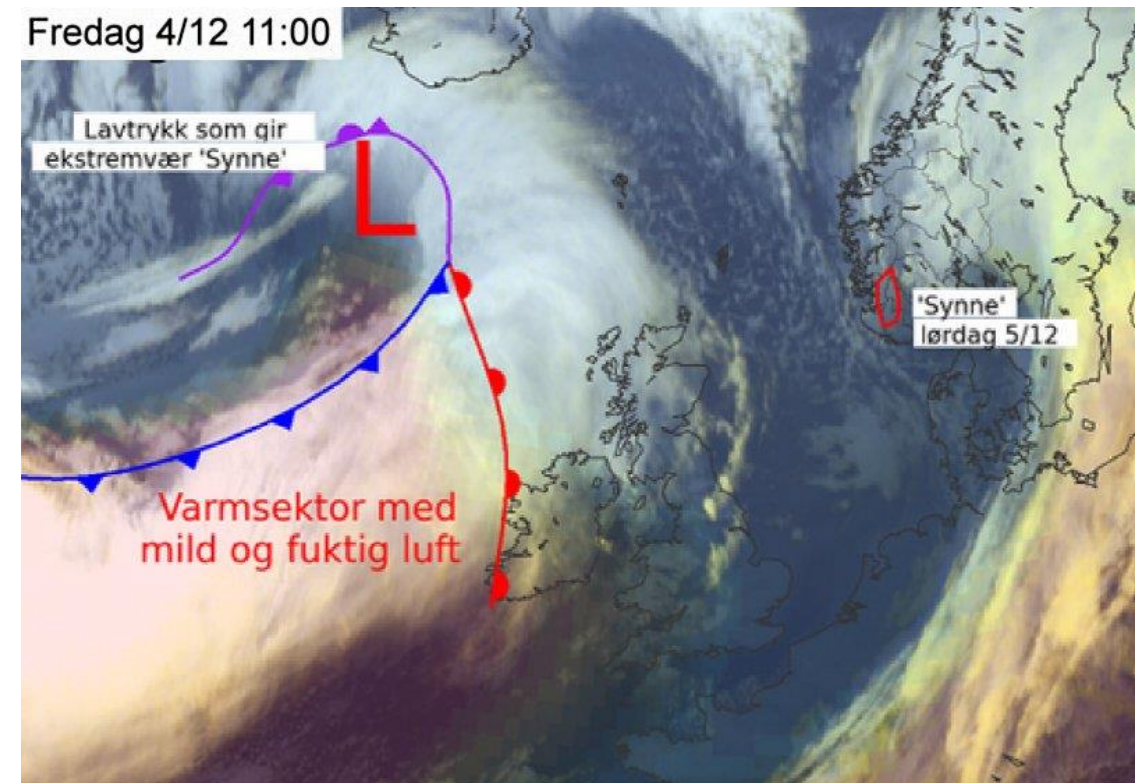


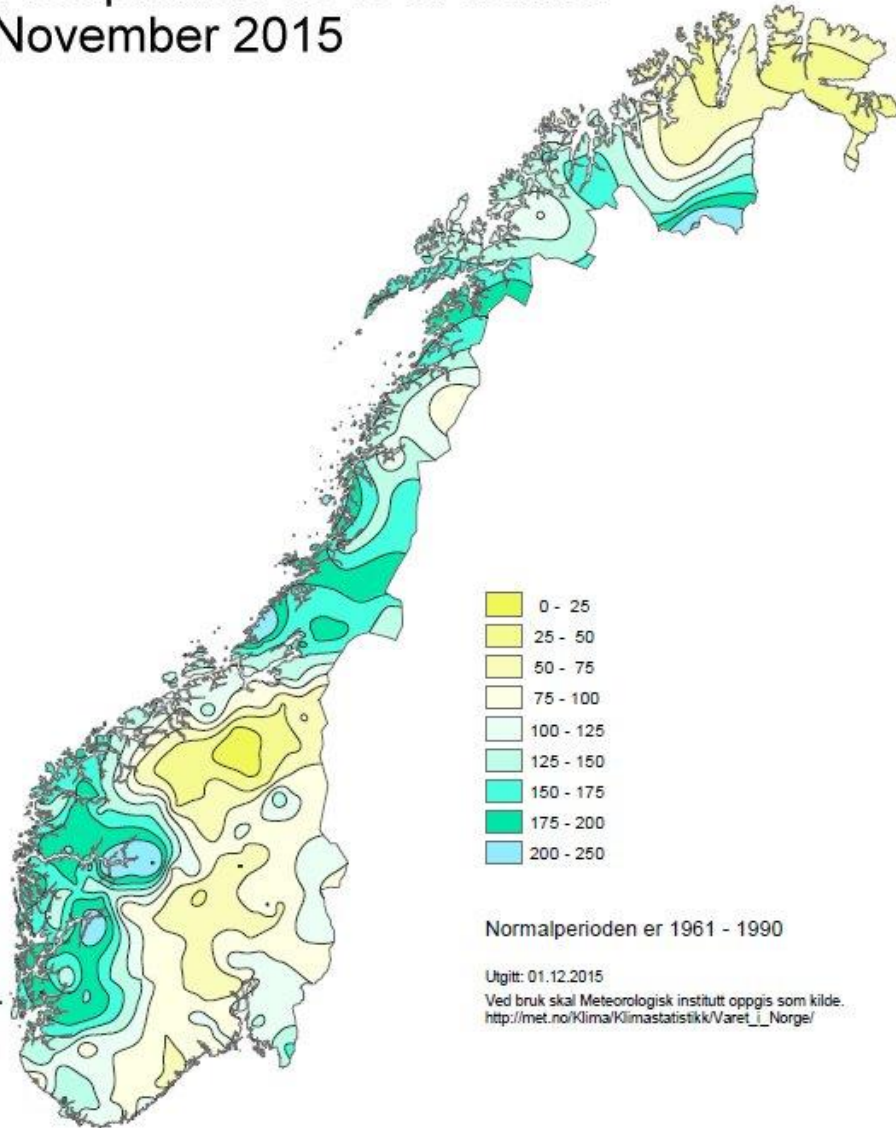
Comparison of Storm Desmond (Synne) Economic Damage in SW Norway and N England/S Scotland

Dr. Duncan Halley

- Storm Desmond affected N England/S Scotland in the period 4-6 December 2016.
- Known as Storm Synne, the same system arrived in Norway about 18 hours after its onset in Britain.
- Temperatures were above zero in all areas throughout, except a few mountain peaks. Almost all precipitation fell as rain on ground already wet from a wet November, in both Britain and SW Norway.



Precipitation as % of normal November 2015

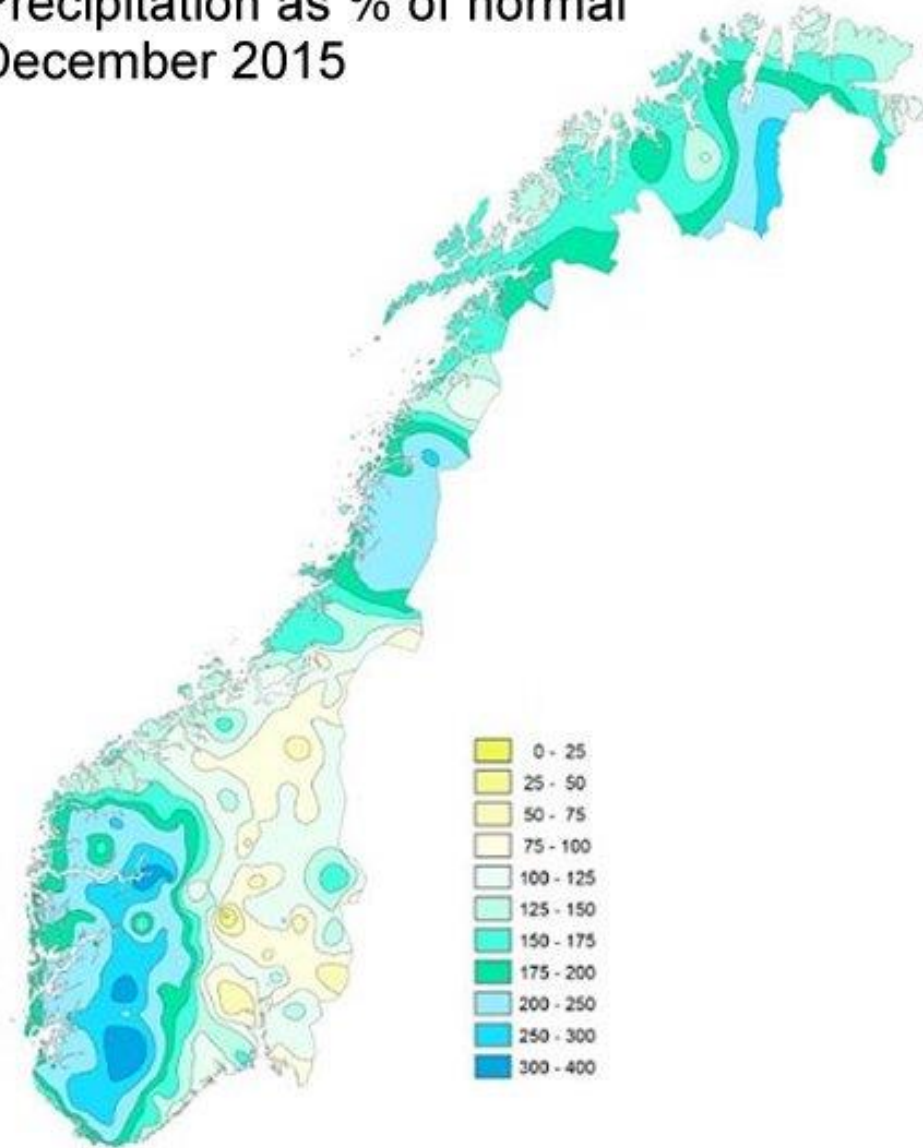


Normalperioden er 1961 - 1990

Utgitt: 01.12.2015

Ved bruk skal Meteorologisk institutt oppgis som kilde.
http://met.no/Klima/Klimastatistikk/Varet_i_Norge/

Precipitation as % of normal December 2015



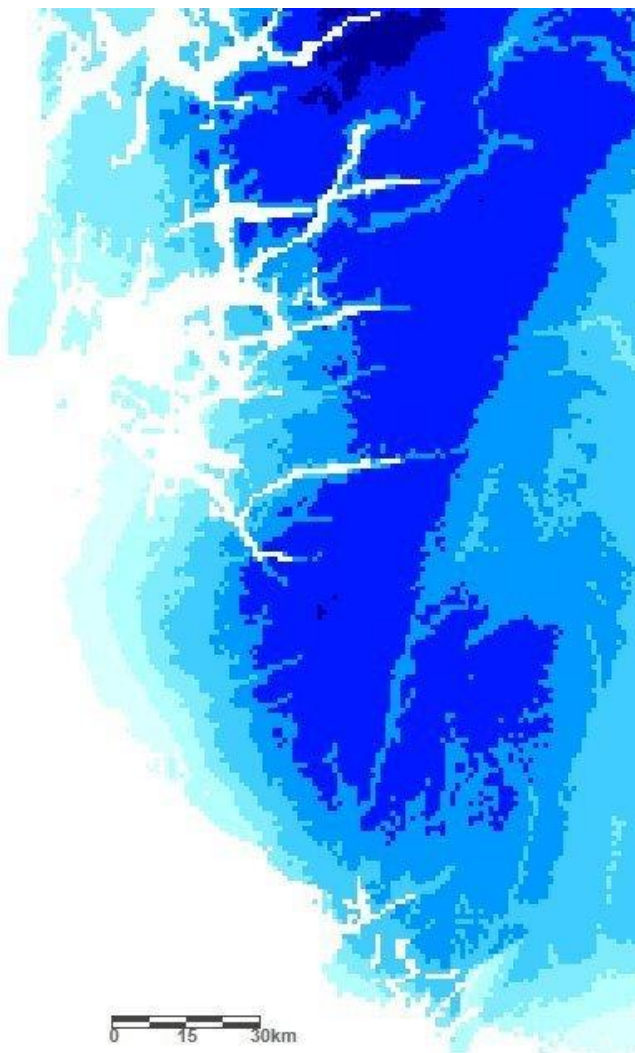
Storm Desmond (aka Synne)



UK Floods "Storm Desmond"
Accumulated Rainfall 4-6 Dec 2015 (COSMO-EU Model)



Source: COSMO-EU, DWD
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Precipitation

<07-07hrs 4-5 December

07-07hrs 5-6 December>

2015

▼ Døgnedbør

Observasjonsbasert

Utstedt 17.12.2015 kl 13:46

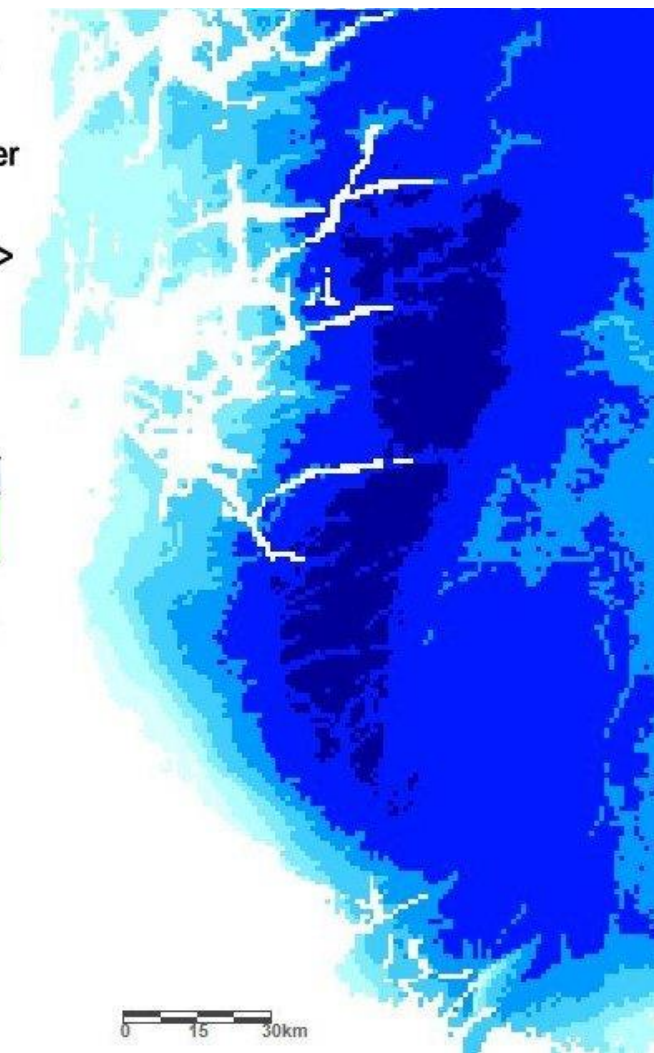
Basert på interpolerte værdata

Kartet viser nedbørmengde siste 24 timer.

Oppdateres ca kl 0, 6, 8, 9, 12, 18, 19 og 21 normalt.

Dataeier: Meteorologisk institutt

mm



- Heaviest accumulated rainfall band N England/S Scotland (PERILS map): >90mm
- Large areas of SW Norway at least 225mm



Storm Desmond (Synne) Economic Damage

	Lancashire, Cumbria, Co. Durham, Northumberland, Scottish Borders	Vest Agder, Rogaland, Hordaland
Area (km ²)	22309	29818
Population	2 887 570	1 067 588
Population density (km ²)	129	36

	UK	Norway
Storm Desmond/Synne Insurance claims estimates	<u>€833.6 million</u>	<u>€31.8 million</u>
Insurance claim/person main affected area, defined above	€289	€30

‘severe flooding mainly affected the counties of Cumbria and Lancashire’ (PERILS AG catastrophe insurance market news, 4th March 2016) (Population Cumbria & Lancashire: 1.9 million)

Conclusion

- Detailed comparative research would be useful to compare river flood profiles* and damage levels, to explain the apparent very large differences in economic damage levels (> nine times greater per head in affected region of Britain) from an event of similar or greater magnitude [in SW Norway](#).
- These will likely have complex causes. However, the main land cover difference between the areas, a factor known to strongly affect runoff rates, is the difference in **extent and character of woodland cover**. SW Norway is largely wooded, mostly by natural regeneration, and mostly in recent decades; and almost entirely without artificial drainage. There is comparatively little woodland in N England & S Scotland, with large areas of open hill; woodland mainly artificially drained commercial plantations.
- data for Norwegian hydrological stations is publically available at www.xgeo.no