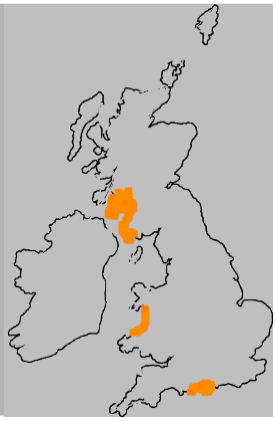
SurgeWatch

STORM EVENT

13th December 1942

Notable flooding along the south and west coast, with around 150 properties damaged



Severity Ranking

		3			

Social	Loss of life	*
	Residential property	Around 150 properties were damaged at Chiswell on the Isle of Portland
	Evacuation & rescue	*
Economic	Cost	*
	Ports	*
	Transport	Road and rail links to Portland were cut off
	Energy	*
	Public services	*
	Water & wastewater	*
	Livestock	*
	Agricultural land	*
Environmental	Coastal erosion	*
	Natural environment	*
	Cultural heritage	*
	Coastal defences	*

**No known sources of information available*

Source	The storm formed off the eastern North American seaboard on 9th December 1942 and followed a north-westerly path over the North Atlantic. By 13th December, the storm was centred west of Ireland with a central air pressure of approximately 960 mbar. The large pressure gradient produced a strong wind field predominantly of a south-westerly orientation. We are unaware of any information regarding the sea level conditions during this event. Within the national tide gauge network, only the Newlyn tide gauge was operational at the time, but this was away from the region of influence. At Newlyn the water level return period was less than 1 year. The event occurred 3 days after peak spring tides. We are unaware of any sources of information describing the wave conditions during this event.
Pathway	Other than the reports of overtopping at Chesil Beach, we are unaware of any further specific information regarding the flood pathways during this event.
Receptor & Consequence	There were reports of “considerable” damage and “extensive” flooding. Among the affected locations were Chesil Beach and Portland on the south coast, and Aberystwyth and the Firth of Clyde along the west coast (Met Office, 1942; Zong and Tooley, 2003). Road and rail links to Portland were cut off. According to West (2014), an 18 m wave broke through the windows of Cove House Inn, violently throwing someone against the bar. Around 150 properties were damaged at Chiswell on the Isle of Portland (West, 2014). The depth of the flood water in Victoria Square, Portland was reportedly 1.5 m. This event was reportedly associated with some loss of life, although details concerning the circumstances are not provided (Met Office, 1942).

Table 1: High water levels (m CD) recorded at the UK National Tide Gauge sites that were available during the event.

Tide gauge Site	Date and time (GMT)	Return period (years)	Water level (m CD)	Astronomical tide (m CD)	Skew surge (m)
Newlyn	12/12/42 08:00	<1	5.46	5.31	0.15

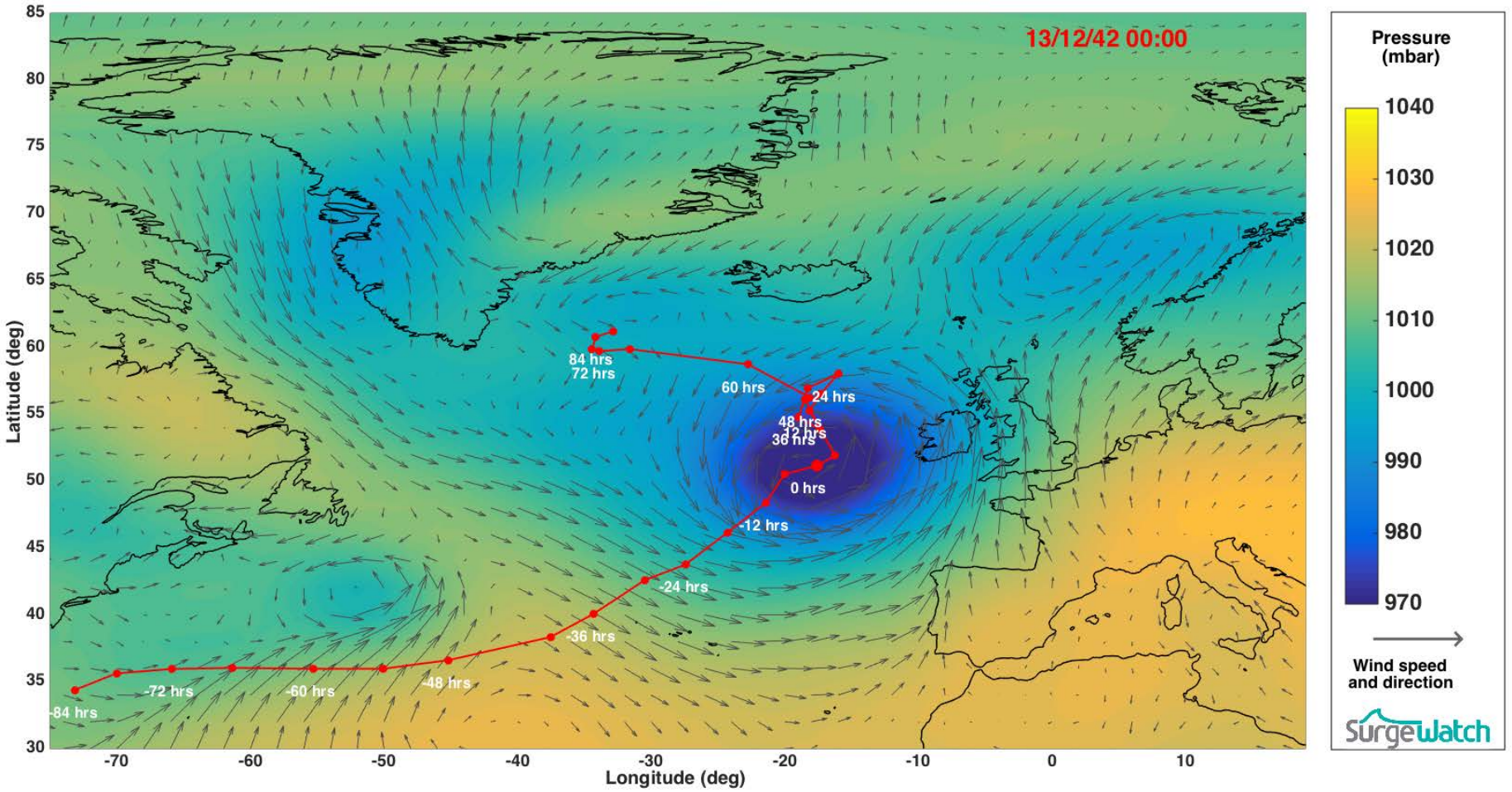


Figure 1: Meteorological conditions at time of maximum water level overlaid by the storm track

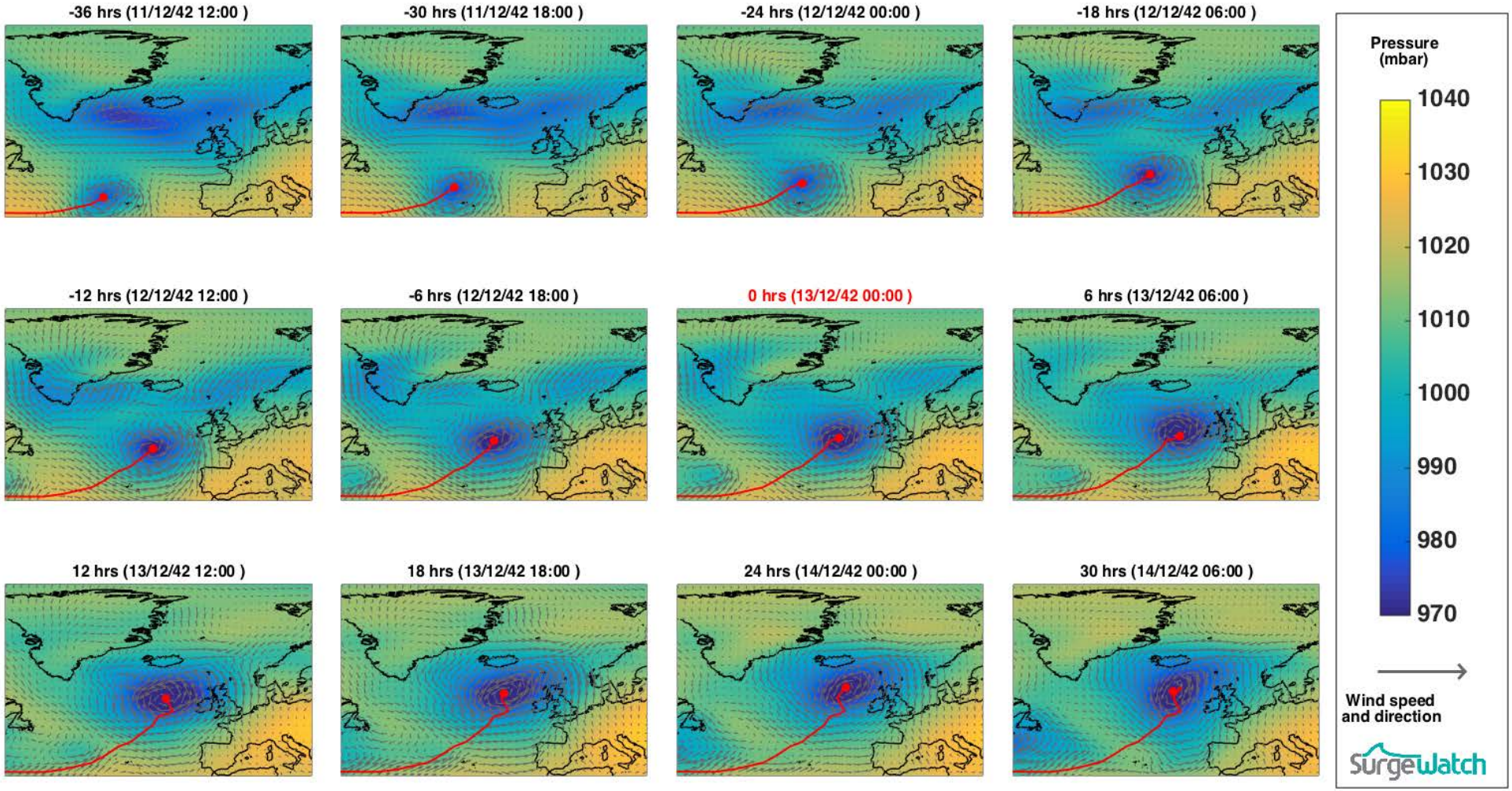


Figure 2: Meteorological conditions during event

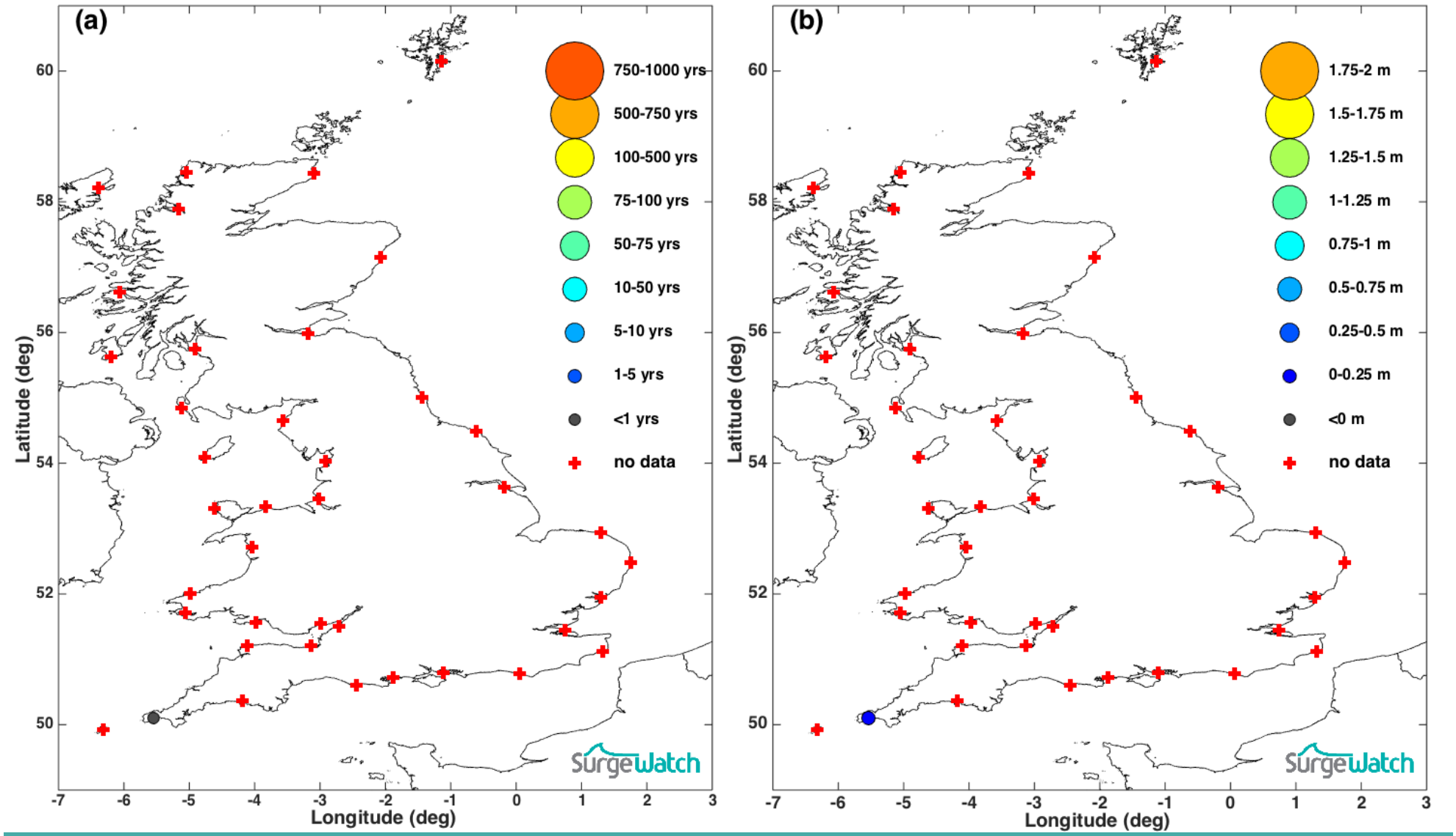


Figure 3: (a) Water level return period; (b) Skew surge levels

References

Zong, Y. & Tooley, M.J., 2003. A Historical Record of Coastal Floods in Britain: Frequencies and Associated Storm Tracks. *Natural Hazards*, 29(1), pp.13–36. Available at: http://link.springer.com/article/10.1023/A%3A1022942801531 [Accessed March 5, 2015].

Met Office, 1949. Monthly Weather Report of the Meteorological Office. *Monthly Weather Report*, 66(3). Available at: http://www.metoffice.gov.uk/learning/library/archive-hidden-treasures/monthly-weather-report-1940s.

West, I.W., 2014. Chesil Beach - Hurricanes, Storms, and Storm Surges. *Geology of the Wessex Coast of Southern England*. Available at: http://www.southampton.ac.uk/~imw/chestorm.htm [Accessed March 8, 2015].

Additional sources of information

Hodder Education, n.d., Sea defence, coastal protection, and flood alleviation. Holding back the sea. Available at: https://www.hoddereducation.co.uk/media/Documents/magazine-extras/Geography%20Review/Geog%20Rev%20Vol%2028%20No%201/GeogRev-28_1_Chesil_case_study.pdf?ext=.pdf [Accessed 10/11/2015].