SurgeWatch

STORM EVENT

13th February 1938

Widespread flooding along the east coast as a half-kilometre-wide gap is torn in defences at Horsey

Severity Ranking

		3			

Social	Loss of life	*
	Residential property	Residential properties were flooded along parts of the east coast including central London
	Evacuation & rescue	“Hundreds” of families were evacuated
Economic	Cost	*
	Ports	*
	Transport	*
	Energy	*
	Public services	*
	Water & wastewater	*
	Livestock	*
	Agricultural land	30 km^2 agricultural land inundated
Environmental	Coastal erosion	Erosion associated with the large breach in the embankment at Horsey
	Natural environment	*
	Cultural heritage	*
	Coastal defences	A 470 m gap was torn in the defences at Horsey

**No known sources of information available*

Source	The storm developing east of Greenland on 11th February 1938 and rapidly moved eastwards reaching the North Sea within 36 hours. The central air pressure during 12th was approximately 990 mbar, which is relatively modest. The wind field was particularly favourable, however, with a northerly orientation over the North Sea. According to *The Sydney Morning Herald* (1938), gales of 60 knots [30 m/s] were registered (although there is no indication of where). 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 before peak spring tides. We are unaware of any sources of information describing the wave conditions during this event.
Pathway	The main mechanisms for flooding during this event was overtopping and breaching, notably a 470 m breach in defences at Horsey which inundated an area of 30 km^2. We are unaware of any further specific information regarding the flood pathways for this event.
Receptor & Consequence	Many east coast locations were affected during this event including Margate, Cromer, Maldon, London (Chelsea, Battersea, and Putney), Tilbury, Southend, Felixstowe and Grimsby (*The Argus,* 1938; Zong & Tooley, 2003). The heaviest damages were reportedly in Norfolk and Kent. The large defence breach and widespread inundation at Horsey caused inundation to mostly agricultural land, extending 5 miles inland (Summers, 1978). The village subsequently became a temporary island, and the stock losses were "heavy" (*The Argus*, 1938). Hundreds of families were forced to evacuate across many villages (*The Argus*, 1938). At Margate, the 10-mile seafront was damaged, with a 15 m gap torn in the jetty (*The Sydney Morning Herald*, 1938). Hundreds of chalets were "destroyed" and boats were "flung" up on the promenade. The tide in the Thames reached the highest levels since the disastrous event of 1928, with flooding reported in several places but nothing to the scale of 10 years earlier. There was again flooding in basements, where, despite a warning broadcast by the BBC, families went to bed (*The Argus*, 1938). Three deaths were attributed to the storms (*The Sydney Morning Herald*, 1938), but the cause is unstated.

T**able 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	14/02/38 04:00	<1	5.24	5.43	-0.19

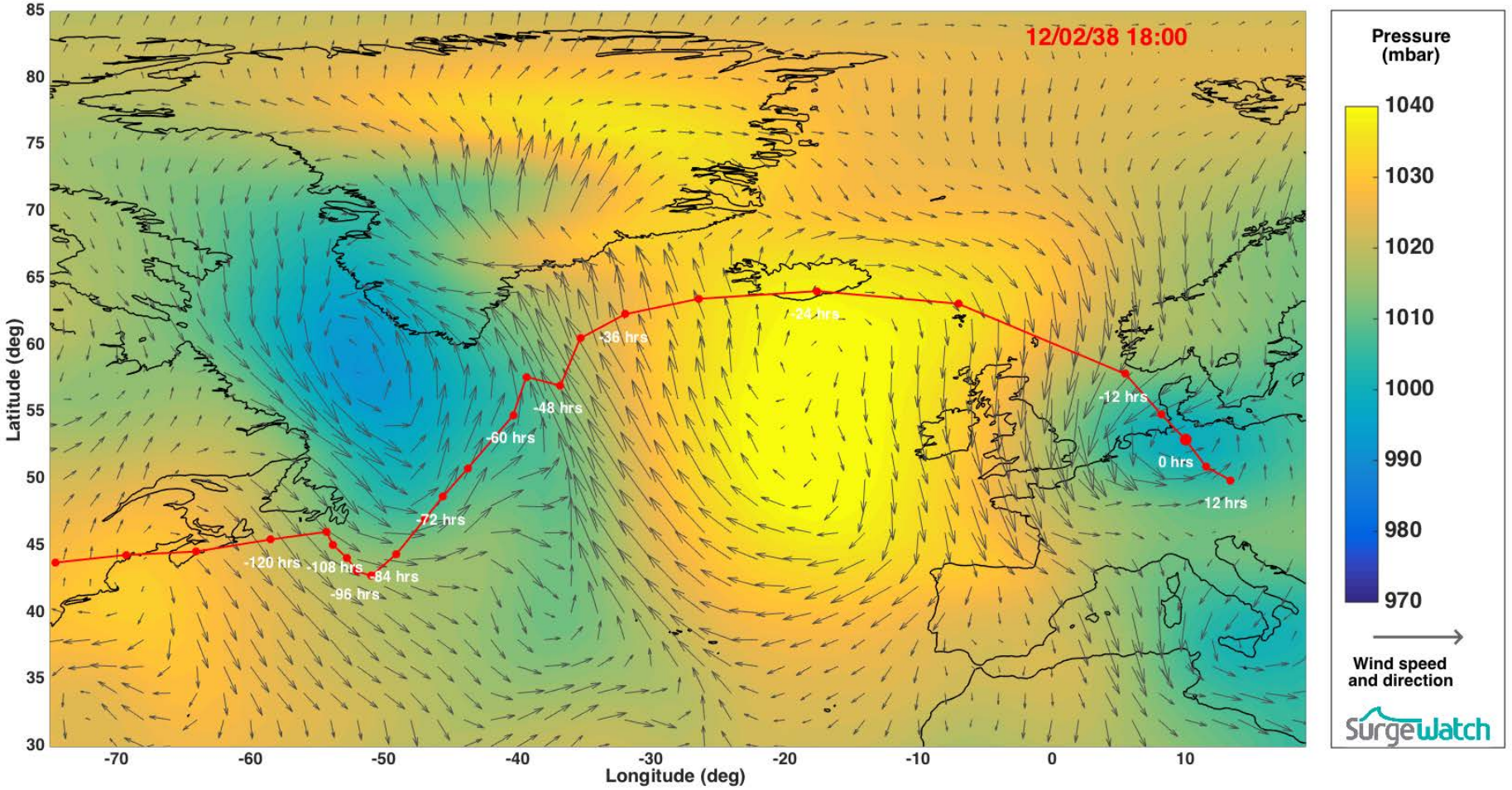

Figure 1: Meteorological conditions at time of maximum water level overlaid by the storm track

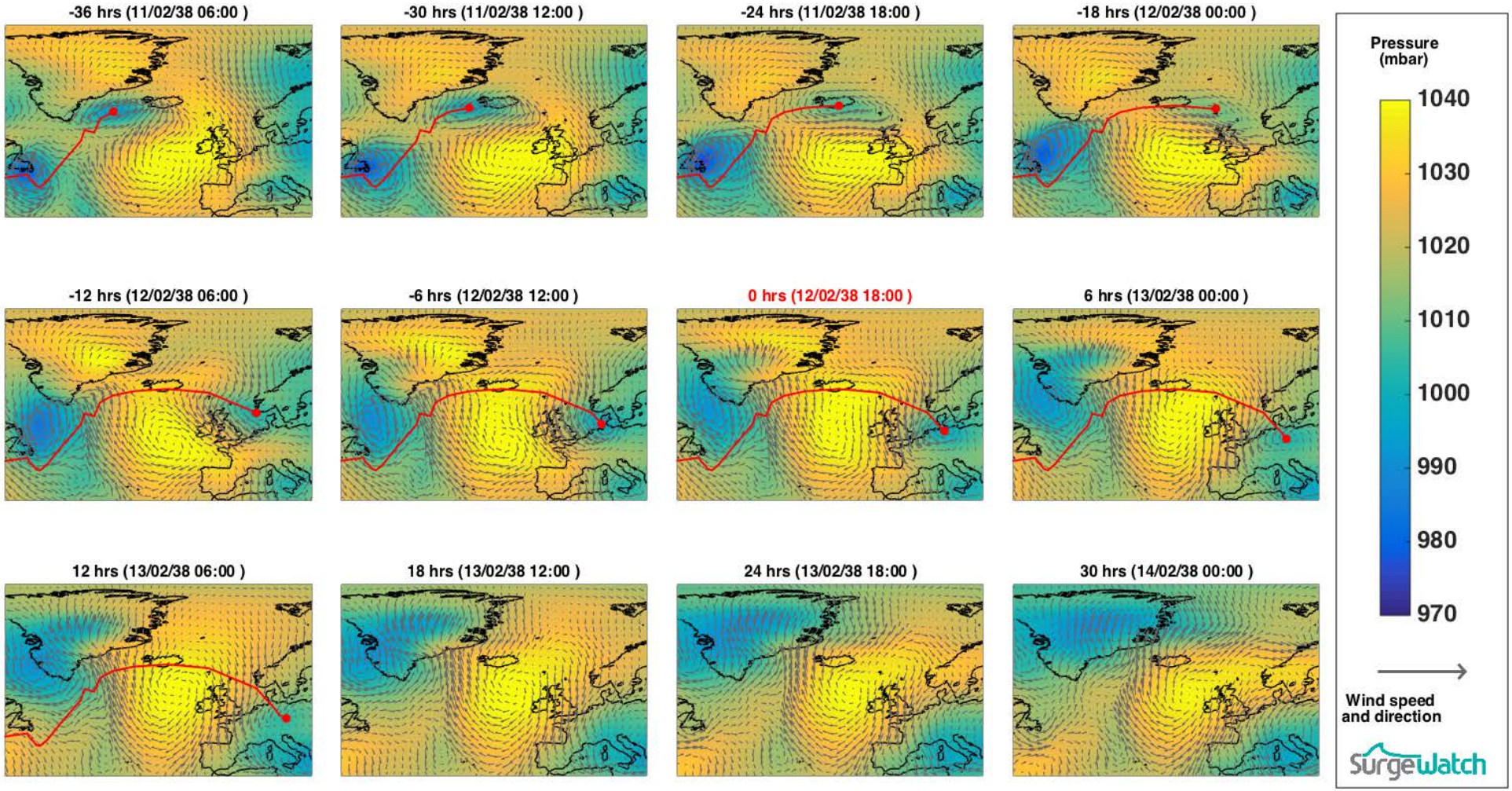

Figure 2: Meteorological conditions during event

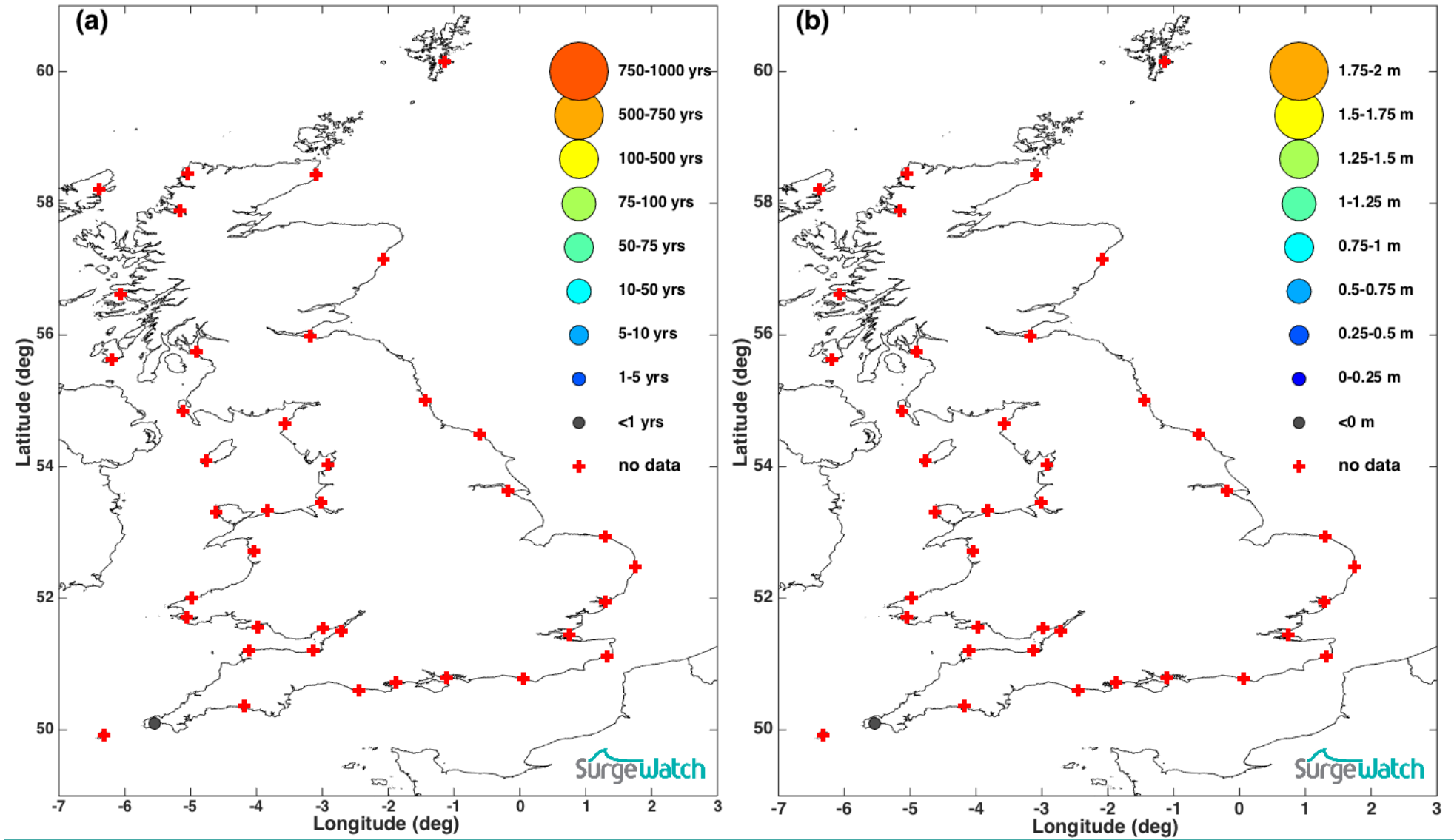

Figure 3: (a) Water level return period; (b) Skew surge levels

References

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Additional sources of information

Mosby, J.E.G., 1939. The Horsey Flood, 1938: An Example of Storm Effect on a Low Coast. *The Geographical Journal*, 93(5).