

STORM EVENT

—— 17th December 1921 ——

Floods cause weekend shoppers in Hull to flee in terror with many rescued from rooftops



Severity Ranking



| | | |
|---------------|--------------------------------|---|
| Social | <u>Loss of life</u> | Although there were no known fatalities, residents in Hull reportedly had a “narrow escape” |
| | <u>Residential property</u> | 100's of properties ruined in Wincolmlee oil milling quarter, Hull, and many non-residential properties in the old town |
| | <u>Evacuation & rescue</u> | “Many” people rescued from upper-floor windows and rooftops |
| Economic | <u>Cost</u> | Approximately £30 million (2014 prices) in damages at Hull |
| | <u>Ports</u> | * |
| | <u>Transport</u> | The tramway network and telephone services in Hull were badly affected, and the railway track at Brough also flooded |
| | <u>Energy</u> | * |
| | <u>Public services</u> | “Almost” every business and public building in the old town of Hull was flooded |
| | <u>Water & wastewater</u> | * |
| | <u>Livestock</u> | * |
| Environmental | <u>Agricultural land</u> | * |
| | <u>Coastal erosion</u> | * |
| | <u>Natural environment</u> | * |
| | <u>Cultural heritage</u> | * |
| | <u>Coastal defences</u> | * |

*No known sources of information available

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|-----------------------------------|---|
| Source | <p>The storm responsible for this event initiated west of Iceland at about 65° N on 15th December 1921, following an easterly path towards Scandinavia over the next two days. By 17th December, the storm had developed considerably with a central air pressure of approximately 960 mbar while centred over the Norwegian Sea. Strong north-westerly to northerly winds were present over the North Sea before the storm continued eastwards and dissipated over Europe (The Argus, 1921; Met Office, 1921).</p> <p>Hickey (1997) described “unprecedented” high tides at Alloa (Scotland), which were the highest in a “considerable number of years”, and also reports a high tide of 10.4 ft. OD [3.17 m] at Aberdeen. Within the national tide gauge network, only the Newlyn tide gauge was operational at the time, but has missing data for this period. The event occurred at peak spring tides.</p> <p>We are unaware of any sources of information that describe the wave conditions during this event.</p> |
| Pathway | <p>We are unaware of any information regarding the flood defence pathways for this event. The most specific available information regarding inundation is that almost every business and public building in the old town was flooded up to 4 ft. [1.22 m], including the Town Hall, the Post Office, Holy Trinity Church, St. Mary’s Church, and the Bank of England (The Times, 1921). See below for some further details of inundation.</p> |
| Receptor & Consequence | <p>Despite the lack of detailed information, the few existing accounts of this event paint a harrowing picture. Several sources describe very dramatic flooding at Hull, where some streets were flooded to a depth of 8 ft. [2.44 m], with people hurriedly escaping to higher ground and many later rescued from upper-floor windows and rooftops (The Argus, 1921). Estimated damages at Hull totalled at £750,000 (equivalent to around £30 million in 2014 prices; The Argus, 1921). According to The Times (1921), the worst affected area was part of the Wincolmllee oil milling quarter, where thousands of citizens resided on low-lying ground. Hundreds of residential properties were ruined. Infrastructure was also badly affected with the electric light [ing], tramway and telephone services “thrown into disorder”. The railway track at Brough was also left under water (The Times, 1921). Despite much of the reported damage focused on Hull, many other east coast towns were also affected, including Grimsby, Blyth, and Alloa (Met Office, 1921; Hickey, 1997; Zong and Tooley, 2003; Eden, 2008; Northumberland County Council, 2010). In Dundee, ships were swept into the streets and subsequently moored to lamp posts (The Argus, 1921).</p> |

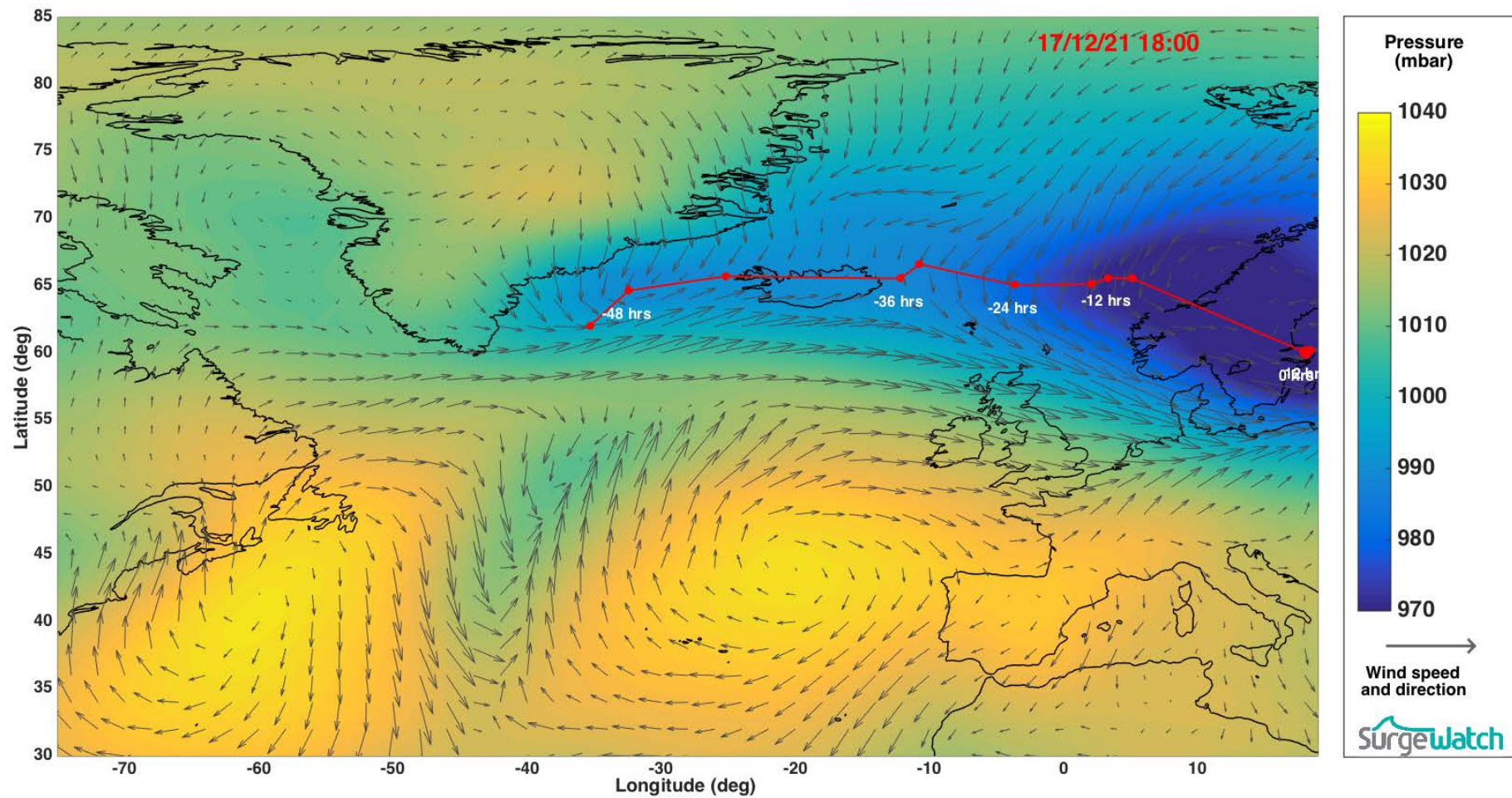


Figure 1: Meteorological conditions at time of maximum water level overlaid by the storm track

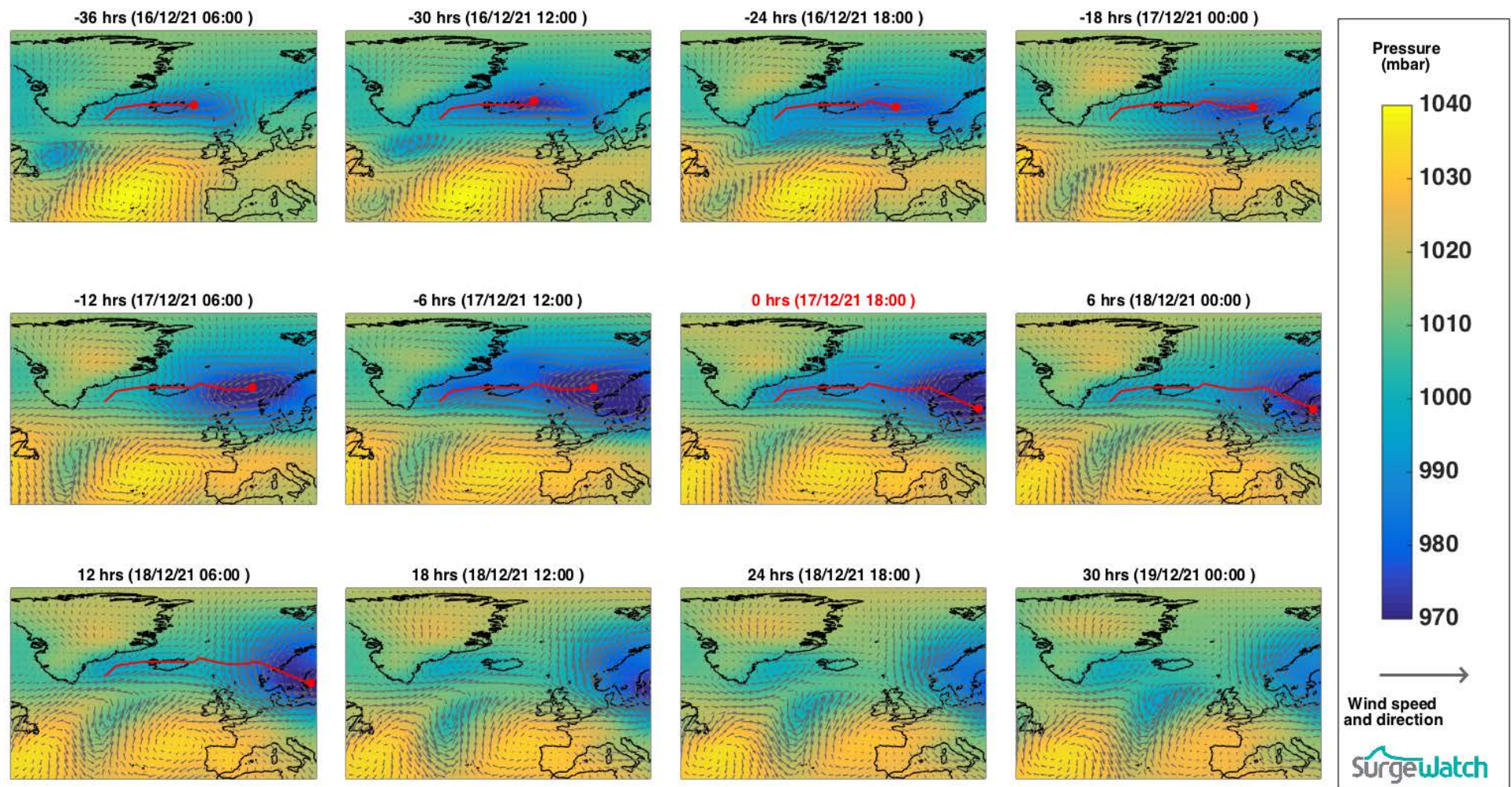


Figure 2: Meteorological conditions during event

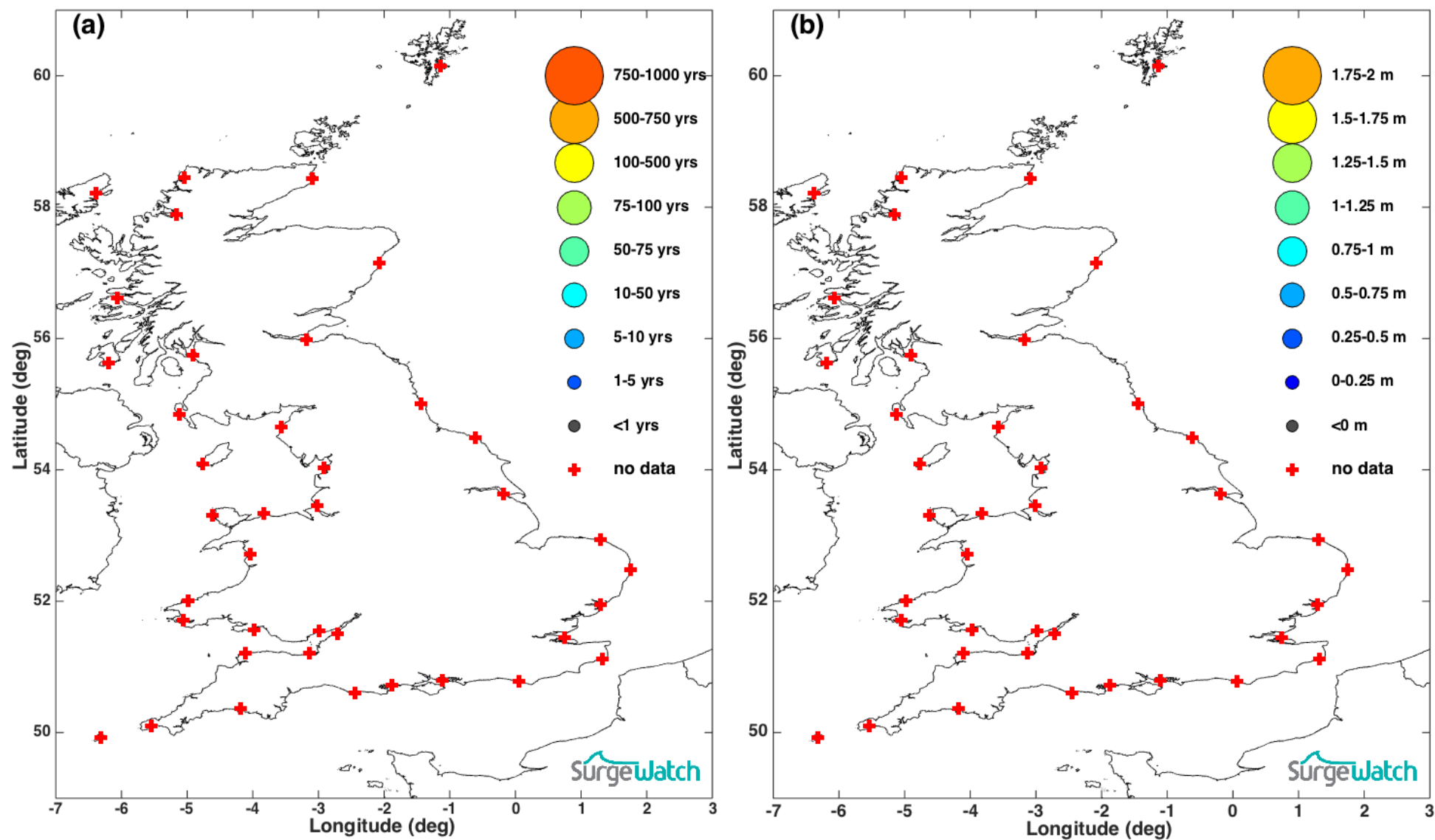


Figure 3: (a) Water level return period; (b) Skew surge levels

References

- Eden, P., 2008. *Great British Weather Disasters*, London: Continuum UK.
- Hickey, K.R., 1997. *Documentary records of coastal storms in Scotland, 1500-1991 A.D.* Coventry University. Available at: <https://curve.coventry.ac.uk/open/items/aa6dfd04-d53f-4741-1bb7-bdf99fb153be/1/>.
- Met Office, 1921. Monthly Weather Report of the Meteorological Office. *Monthly Weather Report*, 43(11). Available at: <http://www.metoffice.gov.uk/learning/library/archive-hidden-treasures/monthly-weather-report-1920s>.
- Northumberland County Council, 2010. *Level 1 Strategic Flood Risk Assessment. Appendix A. Document prepared by Scott Wilson Group plc*, Morpeth. Available at: <http://www.northumberland.gov.uk/default.aspx?page=3458>.
- The Argus, 1921. Flood Tide at Hull; Old Town Inundated; Week-end Shoppers Trapped. *The Argus*. Available at: <http://trove.nla.gov.au/ndp/del/article/4612263>.
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- 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].

Additional sources of information

- The Daily News, 1921. Flood in Hull; Heavy Damage. *The Daily News*. Available at: <http://trove.nla.gov.au/newspaper/article/83111519>.