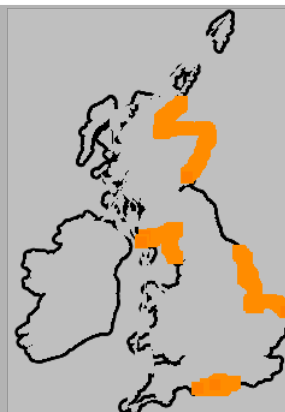


# STORM EVENT

1<sup>st</sup>-2<sup>nd</sup> February 1983

*On the 30<sup>th</sup> anniversary of the 1953 floods, a North Sea storm surge triggers the first deployment of the Thames Barrier to protect London*



## Severity Ranking



Social	<u>Loss of life</u>	*
	<u>Residential property</u>	Over 100 residential properties were flooded in Great Yarmouth, and some cottages were lost to the sea at Hensby. Over 150 properties were inundated in parts of the south coasts.
	<u>Evacuation &amp; rescue</u>	*
Economic	<u>Cost</u>	*
	<u>Ports</u>	*
	<u>Transport</u>	*
	<u>Energy</u>	*
	<u>Public services</u>	*
	<u>Water &amp; wastewater</u>	*
	<u>Livestock</u>	There was "some" loss of livestock
Environmental	<u>Agricultural land</u>	"Hundreds" of acres of agricultural land around Rye and Bexhill was inundated
	<u>Coastal erosion</u>	Significant erosion of dunes
	<u>Natural environment</u>	*
	<u>Cultural heritage</u>	*
	<u>Coastal defences</u>	*

*\*No known sources of information available*

**Source**

The storm developed off the east coast of the US on 28<sup>th</sup> January 1983 and moved northeastwards towards the UK. Late on 31<sup>st</sup> January and early on 1<sup>st</sup> February the storm crossed northern Scotland. It then travelled into the North Sea and moved over Denmark. As the storm crossed Scotland and the North Sea the central pressures dropped to below 960 mbar. Maximum gusts of 85 knots [44 m/s], 81 knots [42 m/s], 80 knots [41 m/s] at Sumburgh, Lynemouth and Sunderland, respectively (Eden, 2008).

The storm generated a skew surge of over 1.5 m in the Irish Sea and over 1 m at several sites in the southern North Sea and eastern part of the English Channel. Water levels exceeded the 1 in 5 year return level at 7 sites in these regions. The highest return period water level was at Heysham and was 100 years. The tide gauge at Heysham failed near the peak of the event, so the water level might well have been higher. Unfortunately, the tide gauge at Liverpool also failed during the peak of the event (Brown *et al.*, 2010). The next largest return period of 75 years was at Immingham. The highest skew surge was at Millport and was 1.74 m at Heysham (approximately a 1 in 100 year skew surge event).

We are unaware of any sources describing the wave conditions during this event.

**Pathway**

Aside from mentions of damage to defences and water depths at unspecified locations (see below), we are unaware of further specific information regarding the flood pathways for this event.

**Receptor & Consequence**

This event was associated with flooding of coastal roads and properties in several Scottish towns including Portgordon, Buckie, Kingston, and Findhorn (Hickey, 1997). The wind conditions from Portgordon to Cullen were described as the worst in 30 years. In Lossiemouth, the harbour wall was damaged over a stretch of 50 ft. [15 m], a car park flooded to a depth of nearly 2 ft. [0.6 m], and the old railway site was also inundated together with non-residential properties. "Many" residential properties were also flooded in Buckie and Portessie. In Findhorn, erosion of up to 11 m was observed in places, and the dunes here were "devastated". Similarly, at Buckie Loch a 12 m high dune was described as being "reduced to a small pile of sand". According to Eden (2008), a limited amount of coastal flooding was experienced in areas from Northumberland to Norfolk. Other affected areas include Lowestoft, Great Yarmouth, and Redcar on the east coast, and Morecambe on the west coast (Zong and Tooley, 2003). Over 100 residential properties were flooded in Great Yarmouth to a depth of 3 ft. [0.9 m] and three holiday cottages were lost to the sea at Hensby (*The Times*, 1983a). Hundreds of acres of agricultural land around Rye and Bexhill suffered serious flooding with some loss of livestock (*The Times*, 1983b). At Walcott, holiday caravans and chalets were smashed. This event also led to notable impacts along the south coast (Haigh *et al.* 2015).

This impacts of this event continued during 2<sup>nd</sup> January along the English south coast, with over 150 properties in Littlehampton and Shoreham inundated, along with properties in Newhaven (Sussex Emergency, 2008). In the Solent (Hampshire and Isle of Wight), many non-residential properties in Cowes were affected, with incurred damages up to six figures and some businesses subsequently left uninsurable and unsaleable (Ruocco *et al.*, 2011). Residential properties were also flooded in Cowes and Bembridge, with some requiring pumping to remove floodwater. Other affected areas included Southampton.

**Table 1:** High water levels (m CD) recorded at the UK National Tide Gauge sites that reached or exceeded a 1 in 5 year return level during the event.

Tide gauge Site	Date and time (GMT)	Return period (years)	Water level (m CD)	Astronomical tide (m CD)	Skew surge (m)
Newhaven	02/02/83 02:00	25	7.69	6.94	0.76
Newlyn	31/01/83 07:00	<1	6.01	5.82	0.19
Holyhead	01/02/83 01:00	<1	6.38	5.62	0.76
Heysham	01/02/83 01:00	100	11.56	9.82	1.74
Portpatrick	01/02/83 02:00	<1	4.5	3.87	0.63
Millport	31/01/83 14:00	<1	4.01	3.76	0.26
Ullapool	31/01/83 21:00	<1	5.64	5.24	0.4
Lerwick	01/02/83 13:00	<1	2.51	2.35	0.16
Wick	01/02/83 14:00	<1	4	3.73	0.27
Aberdeen	01/02/83 16:00	2	4.94	4.57	0.37
North Shields	01/02/83 18:00	8	5.97	5.3	0.66
Whitby	01/02/83 18:00	9	6.61	5.7	0.91
Immingham	01/02/83 20:00	75	8.68	7.41	1.27
Lowestoft	01/02/83 23:00	32	4.19	2.72	1.47
Sheerness	02/02/83 03:00	3	6.63	5.75	0.89
Dover	02/02/83 02:00	65	8.03	6.81	1.21

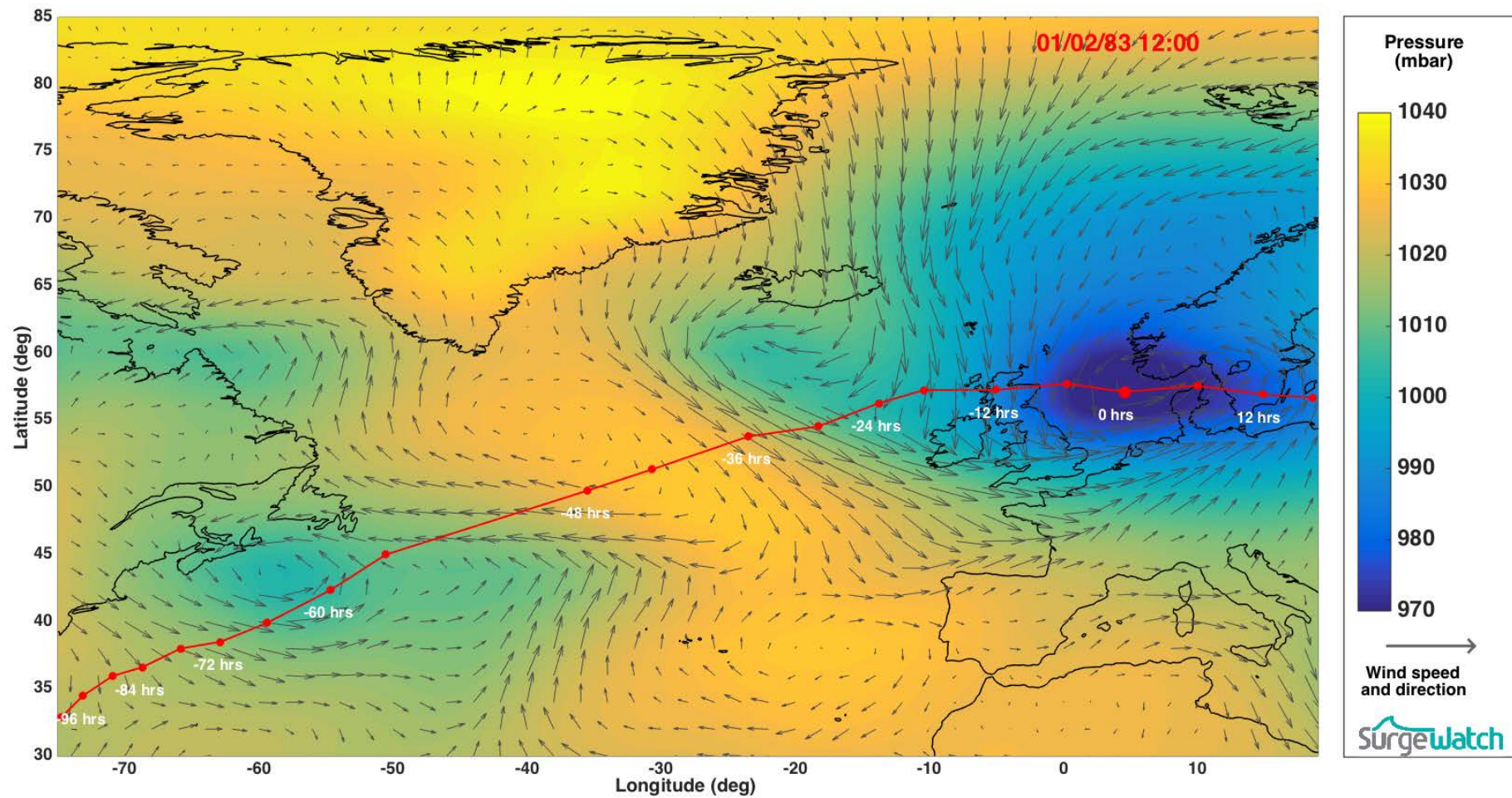


Figure 1: Meteorological conditions at time of maximum water level overlaid by the storm track



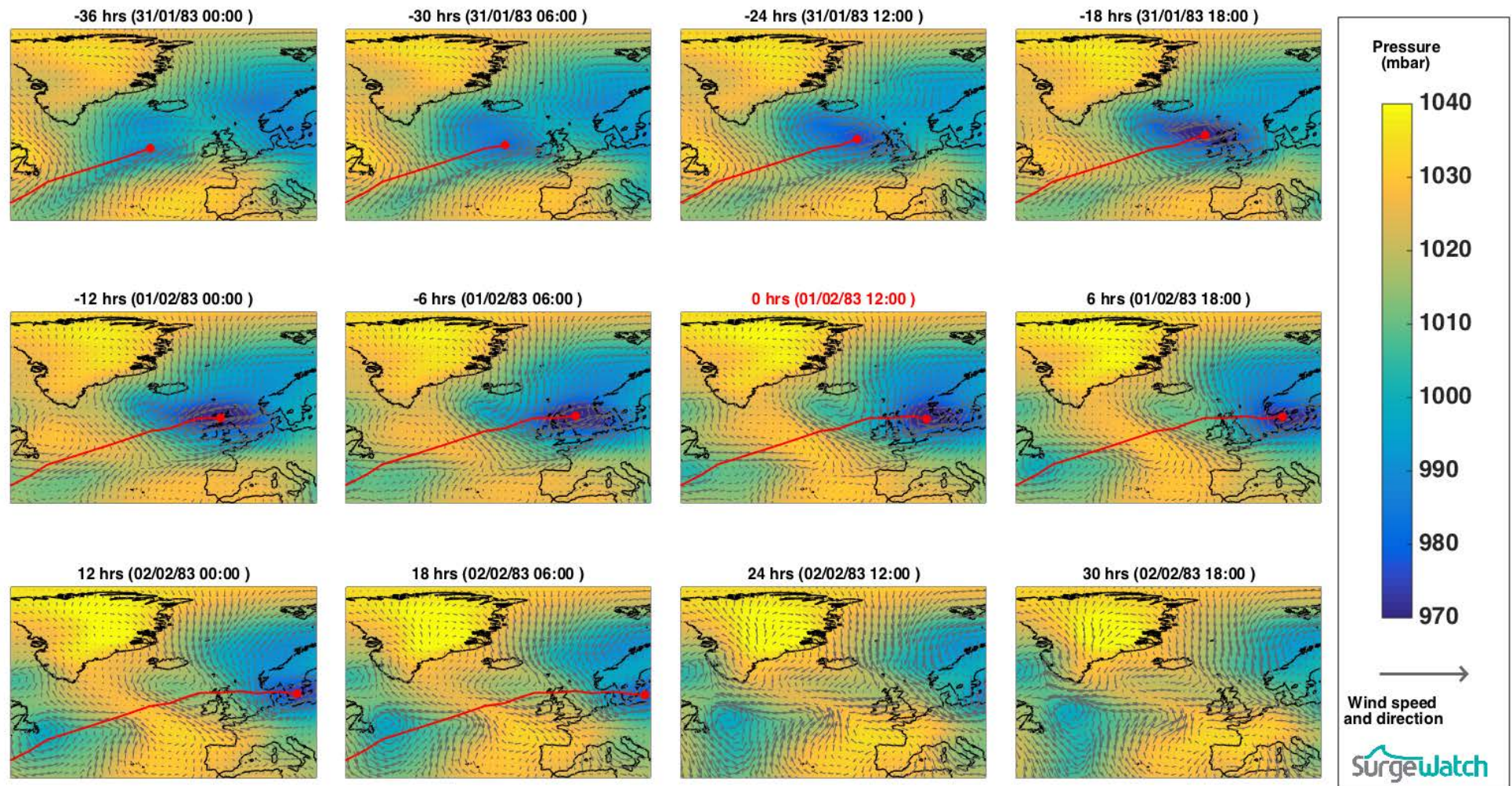


Figure 2: Meteorological conditions during event

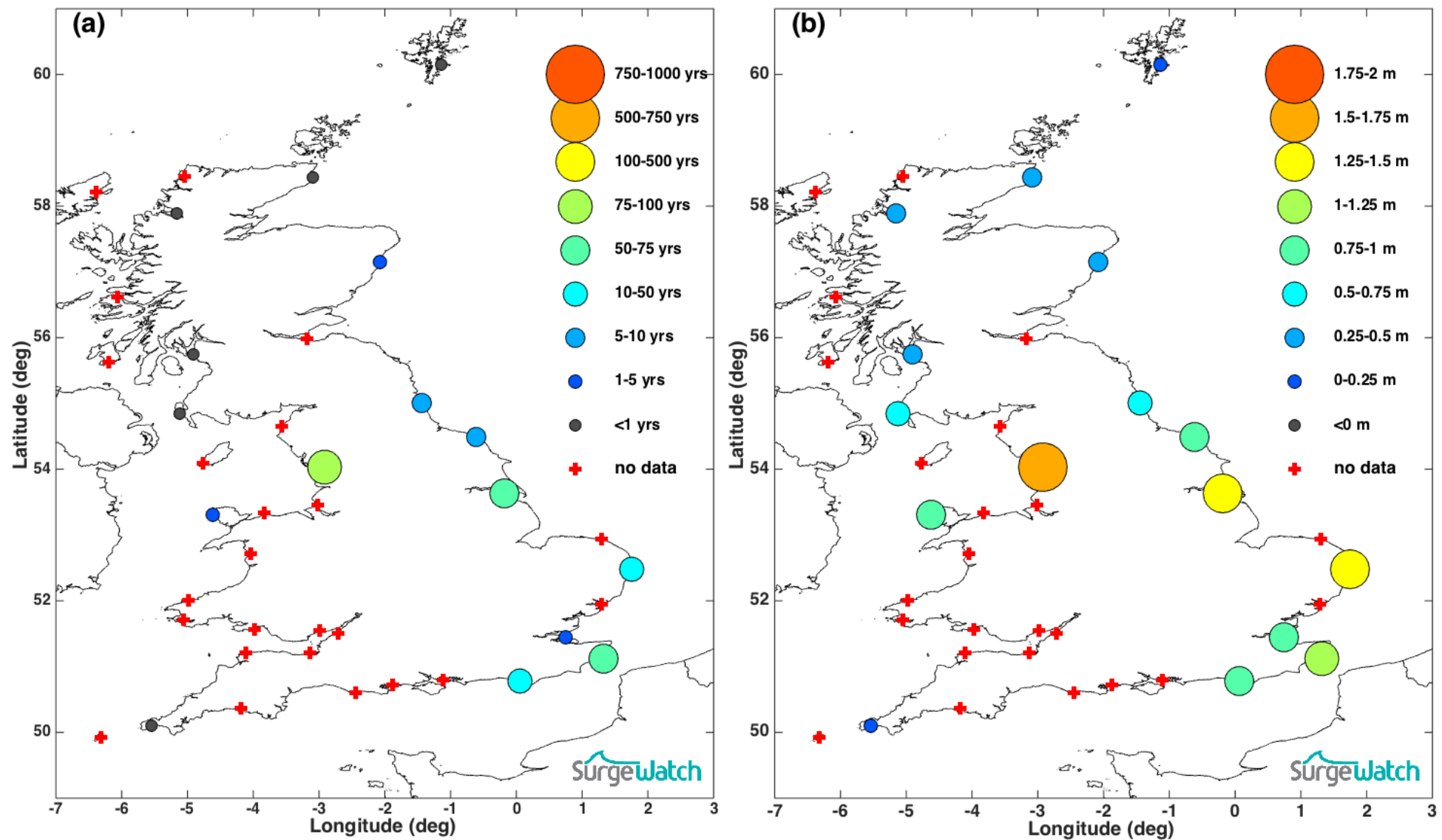


Figure 3: (a) Water level return period; (b) Skew surge levels

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## Additional sources of information

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