National Oceanography Centre

INTERNAL REPORT

The UK Storm Surges of 2025

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Abstract

This report contains summary plots for the 2025 storm surges from the NTSLF surgeQC data and NEMO surge model. Observational data is from the UK "Class A" Tide Gauge network, operated by the Environment Agency. The data is at 15 min intervals.

It also includes highest total water levels of 2025 at each site in the context of the 2018 Coastal Flood Boundary report.

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Data and Processing

Tide gauge sites

There are 43 named sites (the list includes Jersey, and Islay and Mumbles which are retained for backwards compatibility.) In the timeseries plots they are offset by 1 metre (10 metres for the total water lever plot) and ordered anticlockwise around the UK starting from Sheerness using the single-nearest-coastline method to include other islands.

Data and Quality Control

UK tide gauge data is quality controlled on a monthly basis at BODC, to GLOSS standards, intended for climate research. A great many gauges do not currently meet these criteria, either because there is no levelling of the gauge to fixed benchmarks or because of unexplained discrepancies between multiple data channels at the gauges. Of the 43 sites, only about 16 are substantially complete for 2025. I have included one plot of this data, for comparison of completeness.

Therefore as part of the monthly data summary, used by the Met Office to assess performance of the model, the tide gauge data undergoes a second quality control step at NOC, which we refer to as the surgeQC. Each month the most complete channel is used at each site, and this may change from the previous month, leading to datum jumps. Data should not drift or jump within the month by more than about 10 cm, but tidal-cycle oscillations between the full-tide and mid-tide sensors are accepted. Radar channels are used where they are substantially more complete than pressure channels. The data to this standard is much more complete, and most surge events are captured at most sites, allowing comparison of spatial patterns of the surge, although the absolute levels may not be correct. It is plots of this data that forms the bulk of this report. The data is not currently publicly distributed, but is archived internally at NOC Liverpool. Completion to this standard is much better. Islay has no data and only remains in the list for consistency with older records.

Note that for statistics of extremes, which may be sensitive to distribution tails, it is recommended to use the climate quality data. No extreme statistics are reported here.

Model

The model data here is the deterministic operational UK surge-and-tide NEMO model, as run every 6 hours at the Met Office and provided to NOC. Each model run starts from 6 hours in the past, for a total of 2.5 days. The first 6 hours forward of every run are used here, to provide a single timeseries at every gauge and at every grid point. Model surge residuals are the difference between the tide-and-surge model run and a tide-only run.

Tidal analysis

Observation-derived tide predictions are taken from the Marine Information Products and Services (MIPS) team at NOC Liverpool, and are based on POLTIPS predictions. These are harmonic tides predictions including up to 115 constituents, and nodal corrections.

Choice of storms

The storms are the named ones as listed on the Met Office (as part of the European weather centre Western group, UK, Ireland and the Netherlands), and also events not covered by the named storms where a skew surge of more than 0.5m was observed at no fewer than 8 sites. Where these events were named by other European weather centres the names are given here.

Spring-Neap tides

At most sites in the UK by far the dominant effect on total water level is the tide. During spring tides, the range between high and low water can be metres more than during neap tides, so flooding is far more likely to occur on spring tides. In the following figures the spring-neap cycle is indicated by yellow-pink bars, with a colour scale corresponding to the daily range of the predicted tide at Sheerness. Phases of the moon are indicated on the bars as space allows.

Acknowledgements

Many people contribute directly or indirectly to the routine analysis of the tide gauge data and surge forecasting. In particular, thanks are due to:

- Elizabeth Bradshaw, Polly Hadziabdic, Clare Bellingham and Richenda Houseago-Stokes at BODC, for regular data processing and quality control at BODC;
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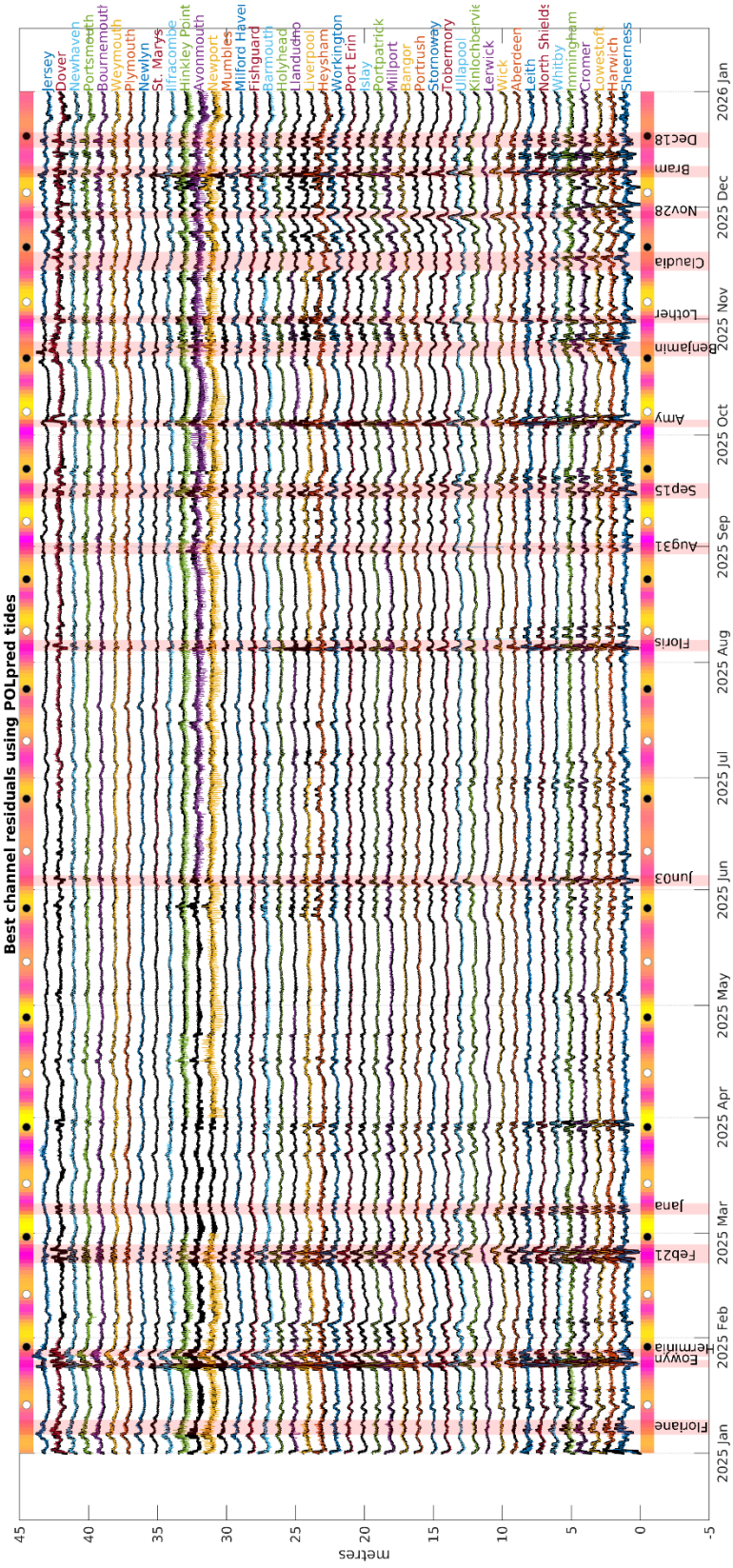
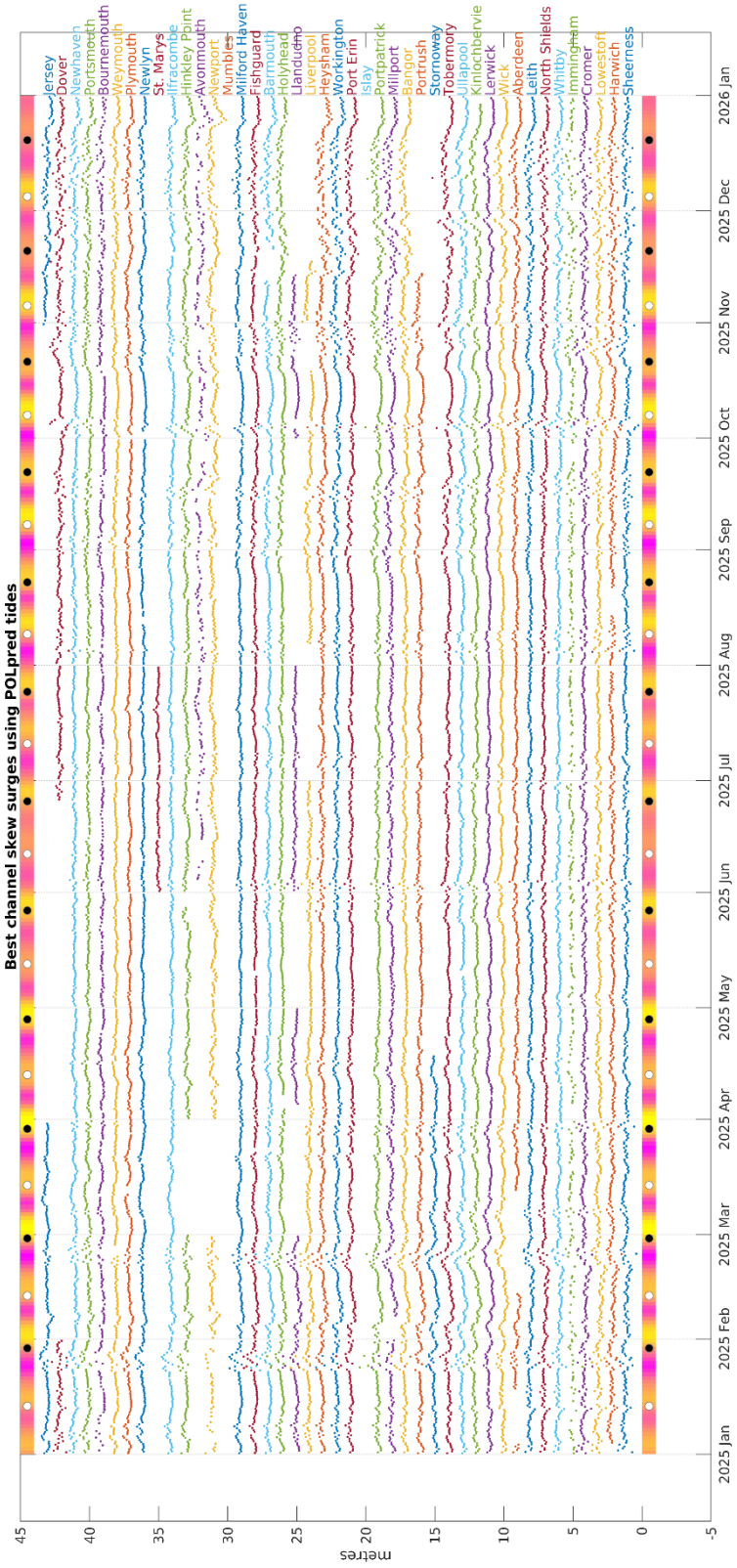
- Jenny Sansom, Philip Staley, Roger Quinn and others at the Environment Agency for funding and support of this and related work, and many helpful discussions.

Annual summary plots.

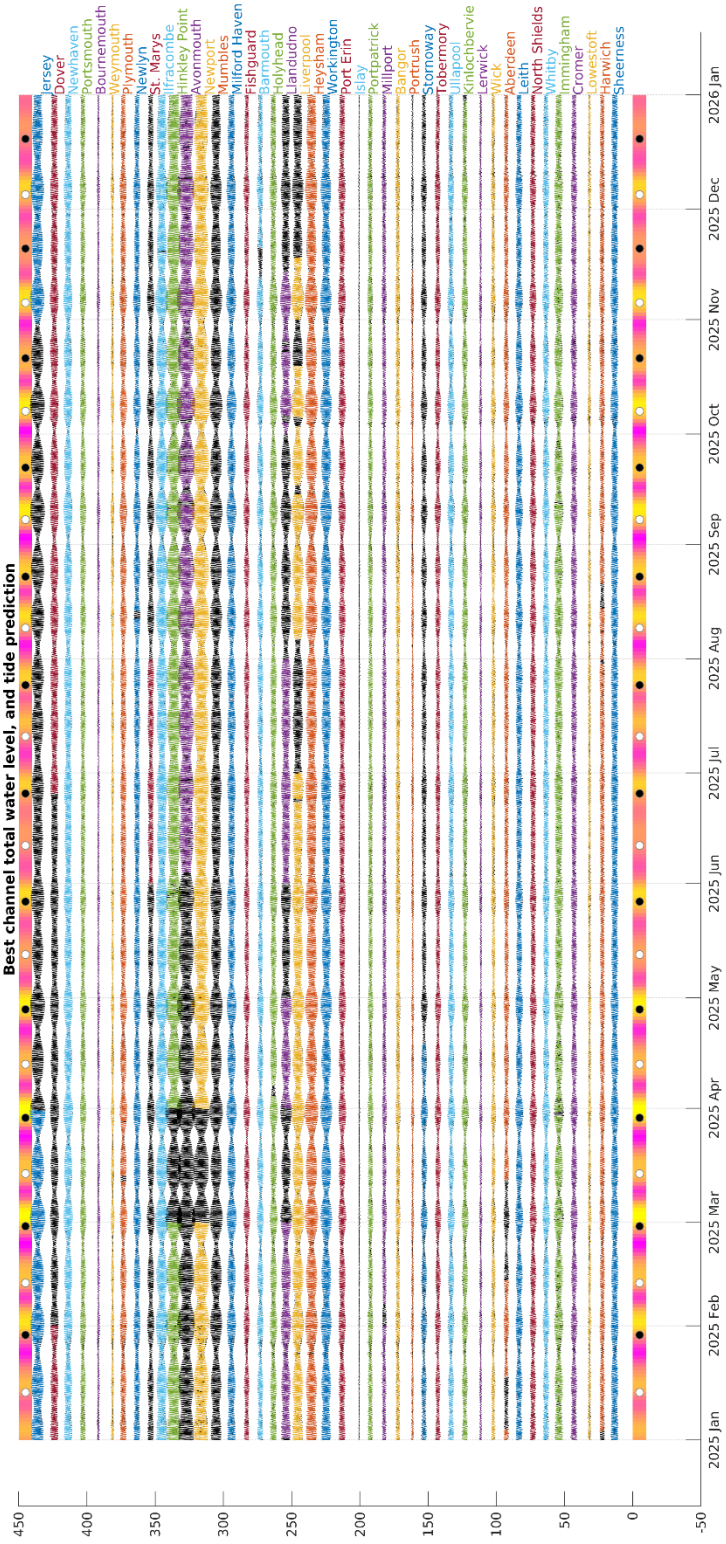
All data from 2025: Surge residual, observations and model



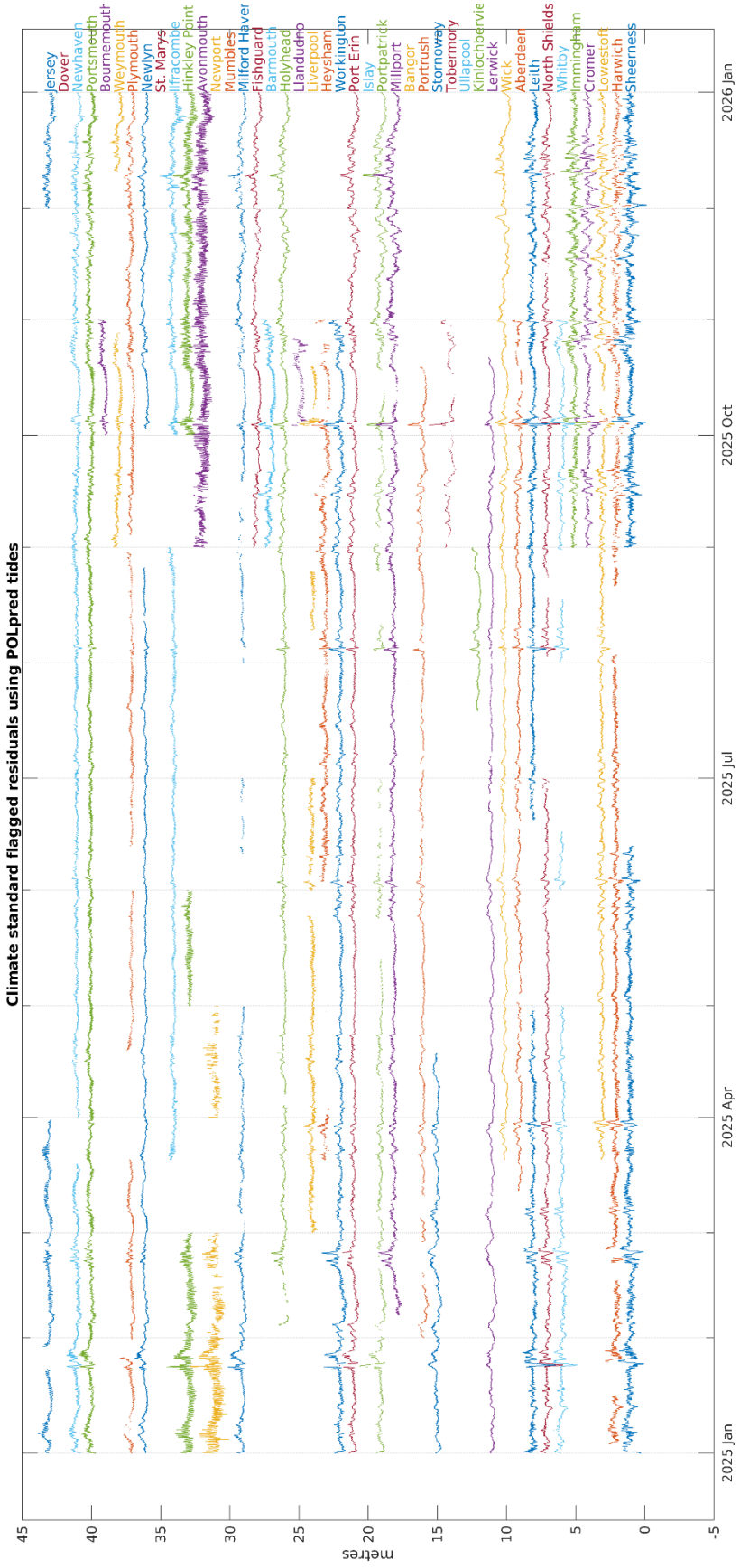
All data from 2025: Skew Surge observations.



All data from 2025: Total water levels



All data from 2025: Data meeting GLOSS climate-quality QC standards



Highlighted events

Named Storms

These events are the storms with names adopted by the Met Office and European Western Group, and also events not covered by the named storms with a skew surge of more than 0.5m at no fewer than 8 sites. Where these events were named by neighbouring countries the names are also given here (*entries in italics*).

Storm Name	Dates	Storm surge
Floriane (France)	2025-01-06 – 2025-01-09	Surges southern North Sea and English Channel, all, <0.5m. Neap tides.
Eowyn	2025-01-24 – 2025-01-25	**Largest skew surges of the year on west coast**: Tobermory (1.4m), Millport (1.6m), Portpatrick (1.4m), Heysham (1.8m), Workington (1.6m), Port Rush (1.3m), Liverpool (1.4m). Negative Skew surge Leith (-1.6m). Smaller skew surges all west and south coasts. Fortunately fell on very small neap tides, so total water levels remained generally low. Possible (flagged) highest total of the year recorded at Bournemouth.
Herminia (Spain)	2025-01-27 – 2025-01-28	Skew surges up to 1.1m on northern Irish Sea: Millport, Bangor, Portpatrick, Heysham, Workington, Port Erin, Liverpool & Holyhead. Slightly smaller southwest and south. Neap tides so total water levels remained low.
Unnamed, Feb21	2025-02-27 – 2025-02-28	Skew surges 0.5-1.1m over all west coast, including Millport (1.1m), and up to 0.7m southern North Sea. Harwich (0.7m), Lowestoft (0.7m). Neap tides so total water levels remained low.
Jana (Spain)	2025-03-06 – 2025-03-08	Small surge at Lowestoft (0.6m) to Harwich only.
Unnamed, Jun03	2025-06-03 – 2025-06-04	Skew surges 0.5m – 0.8m everywhere north of Holyhead to Whitby. Neap tides.
Floris	2025-08-04 – 2025-08-06	No surge. Small negative skew surge at Leith (-0.7m). Neap tides.
Unnamed Aug31	2025-08-30 – 2025-09-01	Widespread small skew surges on west coast, highest Millport (0.7m).
Unnamed Sep15	2025-09-14 – 2025-09-17	Moderate surges in Irish Sea, including Barmouth (0.8m), Heysham (0.8m) and also Cromer & Lowestoft. Neap tides.
Amy	2025-10-03 – 2025-10-06	Large skew surges northern Irish Sea including Millport (1.2m) Heysham (1.2m), Workington (1.2m) and Bangor (1.1m). East coast had small surges including negative surges at Cromer (-0.8m) and Immingham (-0.7m). Moderate tides. **Highest total of the year at Portrush (RP1-2yr),** and Lowestoft (flagged).
Benjamin (France)	2025-10-22 – 2025-10-24	Moderate surges southeast, Dover to Immingham, highest at Cromer (0.8m). Moderate tides.
Lother (Free Univ. Berlin)	2025-10-31 – 2025-11-01	Moderate surges (0.5-0.7m) in northwest. Moderate tides.
Claudia (Spain)	2025-11-14 – 2025-11-18	Moderate surges (0.8-0.9m) from Dover to Immingham. Moderate tides.
Unnamed Nov28	2025-11-27 – 2025-11-29	Moderate skew surges (0.5-0.8m) in Scotland. Neap tides.

Bram	2025-12-09 – 2025-12-11	Large skew surge in Tobermory (1.2m) and moderate skew surges (0.5-0.9m) over whole country. Moderate tides. **Highest total of the year at Millport (RP 5-10yr), Portpatrick (RP 10-20yr) and Port Erin (RP 2-5yr).** Also possible (flagged) highest at Bangor**.**
Unnamed Dec18	2025-12-17 – 2025-12-19	Moderate skew surges (0.5-0.8m) in northern Irish Sea and Scotland. Moderate tides.

Other high levels

Vernal spring tide	2025-03-30 – 2025-03-31	In combination with a small surge. **Highest totals of the year recorded at Sheerness, Harwich, and North Shields;** also possible (flagged) highest totals at Cromer, Ilfracombe, Newhaven and Jersey.
Autumn spring tide	2025-09-10 – 2025-09-11	In combination with a small surge. **Highest totals of the year recorded at Wick, Lerwick and Workington**. Also possible (flagged) highest totals at Kinlochbervie, Ullapool, Tobermory, Heysham, Liverpool.
Autumn spring tide	2025-11-05 - 2025-11-07	**Highest total of the year at Leith.** The beginning of this period also had a small surge leading to **highest totals of the year at Holyhead, Fishguard, Milford Haven, Newlyn and Plymouth,** and possible (flagged) highest totals at Aberdeen, Llandudno, Newport, Avonmouth, Hinkley Point, Weymouth and Dover.
Combined spring tide and small surge	2025-12-07	**Highest total of the year at Portsmouth (RP2-5yr)**

Maximums at Immingham, Stornoway, Barmouth, and St Mary's were not recorded in 2025, as those sites were missing quality-controlled data through significant parts of the year. Mumbles and Islay have no data.

Thames Barrier Closures

The Thames Barrier had no Flood Defence closures in the year 2025.

Total water levels

Highest totals at each site

These are the highest levels at each site with climate standard data (i.e. Quality Controlled to GLOSS standards). Heights are given in Ordnance Datum Newlyn, or local datums for island sites. This allows comparison with return periods as used in the Coastal Flood Boundary Conditions 2018 report,[1] and is meaningful to local land management. Return periods are reproduced below in Table 3 for convenience.

To summarize, highest confirmed levels were seen during the following storms:

Storm Amy (October) had the highest totals of the year at Port Rush in Northern Ireland. Although the surges were large in the northern Irish Sea, the timing during moderate tides kept total water levels small elsewhere.

Storm Bram (December) had moderate skew surges and moderate tides. The combination was enough to bring the highest totals of the year in the northern Irish Sea, at Millport, Portpatrick and Port Erin. For Portpatrick this was a 10-20yr return period event.

Storm Eowyn (January) had the largest skew surges, but due to fortunate timing with a neap tide, total water levels remained low in most cases.

At several sites the highest totals fell on the equinoctial spring tides, but since this was not an extreme year for tidal range (see Table 4), these events were only at around 1-2yr return period levels compared to CFBC2018.

Table 1: Highest totals in 2025, where at least 9 months data available to climate standard. Return periods are based on median levels.

Tide gauge (Climate standard data)	Height metres ODN	Date	RP in CFBC 2018	Storm or other event	Climate Standard Missing
Sheerness	3.68	2025-Mar-30 13:15	<1	Vernal spr tide + small surge	July-Aug
Harwich	2.69	2025-Mar-30 12:15	1 - 2	Vernal spr tide + small surge	-
North Shields	3.19	2025-Mar-30 15:45	<1	Vernal spr tide + small surge	July
Leith	3.44	2025-Nov-07 03:00	1 - 2	Autumn spr tide	May-Jun
Wick	2.50	2025-Sep-11 01:00	<1	Autumn spr tide + small surge	Jan-Mar
Lerwick	1.47	2025-Sep-11 00:30	<1	Autumn spr tide + small surge	Nov-Dec
Portrush	1.68	2025-Oct-03 17:45	1 - 2	Storm Amy	Nov-Dev
Millport	2.98	2025-Dec-09 14:45	5 - 10	Storm Bram	Jan
Portpatrick	3.16	2025-Dec-09 15:00	10 - 20	Storm Bram	July
Port Erin	3.43	2025-Dec-09 14:30	2 - 5	Storm Bram	-
Workington	4.98	2025-Sep-11 01:15	<1	Autumn spr tide	Nov-Dec
Holyhead	3.36	2025-Nov-05 21:45	<1	Spr tide + small surge	Jan

[1] See https://assets.publishing.service.gov.uk/media/5d667084e5274a170c435326/Coastal_flood_boundary_conditions_for_the_UK_2018_update_-_technical_report.pdf , Table 4.2.

Milford Haven	4.21	2025-Nov-05 17:45	1 - 2	Spr tide + small surge	May & July
Newlyn	3.21	2025-Nov-05 16:15	2 - 5	Spr tide + small surge	Aug
Plymouth	2.94	2025-Nov-05 17:15	<1	Spr tide + small surge	Apr
Portsmouth	2.66	2025-Dec-07 12:45	2 - 5	Spr tide + small surge	-

Table 2: Highest totals in 2025, all sites including those where the highest total was flagged as not meeting GLOSS QC standards, due to datum shift, gauge drift or instrument uncertainty.

Tide gauge	Height, metres ODN	Date	RP in CFBC 2018	Max Flagged?	Climate standard data in year (%)
Sheerness	**3.68**	**2025-Mar-30 13:15**	**<1**		**77**
Harwich	**2.69**	**2025-Mar-30 12:15**	**1-2**		**71**
Lowestoft	1.94	2025-Oct-05 07:30	<1	F	73
Cromer	3.27	2025-Mar-30 18:45	2-5	F	32
Immingham	4.03	2025-Oct-09 06:45	<1		32
Whitby	3.38	2025-Mar-30 16:30	1-2		55
North Shields	**3.19**	**2025-Mar-30 15:45**	**<1**		**85**
Leith	**3.44**	**2025-Nov-07 03:00**	**1-2**		**84**
Aberdeen	2.68	2025-Nov-05 00:00	<1	F	55
Wick	**2.5**	**2025-Sep-11 01:00**	**<1**		**74**
Lerwick	**1.47**	**2025-Sep-11 00:30**	**<1**		**77**
Kinlochbervie	3.12	2025-Sep-10 21:00	<1	F	12
Ullapool	3.19	2025-Sep-10 20:30	<1	F	00
Tobermory	3.01	2025-Sep-10 19:30	<1-2		09
Stornoway	2.78	2025-Mar-02 08:15	<1		29
Portrush	**1.68**	**2025-Oct-03 17:45**	**1-2**		**62**
Bangor	2.45	2025-Dec-09 14:15	5-10	F	00
Millport	**2.98**	**2025-Dec-09 14:45**	**5-10**		**86**
Portpatrick	**3.16**	**2025-Dec-09 15:00**	**10-20**		**68**
Islay	NaN	-	-		00
Port Erin	**3.43**	**2025-Dec-09 14:30**	**2-5**		**99**
Workington	**4.98**	**2025-Sep-11 01:15**	**<1**		**83**
Heysham	5.84	2025-Sep-11 01:00	<1		33
Liverpool	5.47	2025-Sep-11 00:45	1-2	F	37
Llandudno	4.66	2025-Nov-05 22:15	<1	F	04
Holyhead	**3.36**	**2025-Nov-05 21:45**	**<1**		**86**
Barmouth	3.35	2025-Dec-05 20:15	<1	F	17
Fishguard	**3.05**	**2025-Nov-05 18:45**	**<1**		**31**
Milford Haven	**4.21**	**2025-Nov-05 17:45**	**1-2**		**58**
Mumbles	NaN	-	-		00
Newport	7.52	2025-Nov-06 19:30	1-2	F	15
Avonmouth	7.29	2025-Nov-06 19:45	<1		30
Hinkley Point	6.65	2025-Nov-06 19:00	<1	F	50
Ilfracombe	5.31	2025-Mar-31 07:00	<1	F	67
St. Marys	2.74	2025-Jun-25 16:30	<1	F	00
Newlyn	**3.21**	**2025-Nov-05 16:15**	**2-5**		**89**
Plymouth	**2.94**	**2025-Nov-05 17:15**	**<1**		**70**
Weymouth	1.79	2025-Nov-05 18:30	<1	F	20
Bournemouth	1.40	2025-Jan-27 08:45 (Eowyn)	1	F	08
Portsmouth	**2.66**	**2025-Dec-07 12:45**	**2-5**		**97**
Newhaven	3.89	2025-Mar-31 00:00	1-2	F	84
Dover	3.68	2025-Nov-07 11:45	<1	F	00
Jersey	6.06	2025-Mar-31 07:45	<1		31

Coastal Flood Boundary Conditions 2018

These are the median heights (in ODN) for each return period in the Coastal Flood Boundary Conditions 2018. Sites marked * are relative to a local datum that may differ from ODN.

Reproduced from the Coastal Flood Boundary Report for convenience.

Table 3: Median heights for return periods

Return period (years)	1	2	5	10	20	25	50	75	100	150	200	250	300	500	1000	10000
St Helier*	6.21	6.29	6.38	6.45	6.52	6.54	6.61	6.65	6.68	6.72	6.75	6.78	6.8	6.85	6.93	7.2
Newlyn	3.11	3.18	3.26	3.33	3.39	3.41	3.47	3.5	3.52	3.56	3.58	3.6	3.61	3.65	3.7	3.88
St Mary's*	3.41	3.48	3.56	3.61	3.67	3.69	3.74	3.77	3.79	3.82	3.84	3.86	3.87	3.9	3.96	4.11
Padstow	4.56	4.63	4.73	4.79	4.85	4.87	4.93	4.96	4.99	5.02	5.05	5.07	5.08	5.13	5.19	5.42
Ilfracombe	5.43	5.51	5.61	5.68	5.75	5.77	5.85	5.89	5.92	5.96	5.99	6.01	6.03	6.09	6.17	6.45
Hinkley Point	7.05	7.14	7.25	7.34	7.44	7.47	7.57	7.63	7.67	7.73	7.78	7.82	7.85	7.93	8.06	8.54
Avonmouth	8.11	8.22	8.37	8.49	8.61	8.65	8.79	8.86	8.92	9.01	9.07	9.12	9.16	9.27	9.43	10.05
Newport	7.45	7.56	7.7	7.81	7.92	7.96	8.07	8.14	8.2	8.27	8.33	8.37	8.41	8.52	8.67	9.25
Mumbles	5.51	5.62	5.77	5.88	5.98	6.02	6.13	6.19	6.23	6.3	6.34	6.38	6.4	6.48	6.59	6.99
Milford Haven	4.2	4.29	4.4	4.49	4.57	4.6	4.68	4.73	4.76	4.81	4.84	4.87	4.89	4.95	5.04	5.33
Fishguard	3.1	3.17	3.26	3.33	3.4	3.42	3.49	3.52	3.55	3.59	3.62	3.64	3.65	3.7	3.77	3.99
Barmouth	3.46	3.59	3.75	3.87	3.99	4.03	4.14	4.21	4.26	4.33	4.38	4.42	4.45	4.54	4.67	5.09
Holyhead	3.37	3.44	3.55	3.62	3.7	3.72	3.79	3.84	3.87	3.91	3.94	3.96	3.98	4.03	4.1	4.35
Llandudno	4.7	4.78	4.9	4.98	5.06	5.09	5.17	5.22	5.25	5.3	5.33	5.36	5.38	5.44	5.53	5.81
Hilbre	5.24	5.34	5.47	5.57	5.66	5.69	5.78	5.84	5.87	5.92	5.96	5.99	6.01	6.08	6.17	6.5
Liverpool	5.44	5.56	5.73	5.86	5.98	6.03	6.16	6.24	6.29	6.37	6.42	6.46	6.5	6.6	6.73	7.19
Port Erin*	3.27	3.36	3.48	3.57	3.66	3.69	3.78	3.83	3.87	3.92	3.95	3.98	4	4.07	4.15	4.44
Heysham	5.86	5.99	6.16	6.29	6.42	6.46	6.59	6.67	6.72	6.8	6.86	6.9	6.93	7.03	7.17	7.63
Workington	5.09	5.21	5.35	5.47	5.58	5.61	5.73	5.79	5.84	5.91	5.95	5.99	6.02	6.11	6.22	6.62
Portpatrick	2.82	2.92	3.06	3.15	3.25	3.28	3.37	3.43	3.47	3.52	3.56	3.59	3.61	3.68	3.78	4.09
Millport	2.67	2.79	2.96	3.09	3.22	3.26	3.39	3.47	3.52	3.6	3.65	3.69	3.73	3.83	3.97	4.44
Port Ellen	1.45	1.56	1.7	1.81	1.91	1.94	2.04	2.1	2.14	2.2	2.24	2.27	2.3	2.37	2.47	2.81
Tobermory	2.98	3.09	3.23	3.34	3.45	3.48	3.59	3.65	3.69	3.76	3.8	3.84	3.87	3.95	4.06	4.43
Ullapool	3.22	3.32	3.44	3.53	3.62	3.65	3.74	3.78	3.82	3.87	3.9	3.92	3.94	4	4.08	4.34
Stornoway*	2.89	2.97	3.07	3.14	3.22	3.24	3.31	3.35	3.37	3.41	3.44	3.46	3.47	3.52	3.58	3.78
Kinlochbervie	3.17	3.28	3.42	3.52	3.62	3.65	3.74	3.8	3.84	3.9	3.94	3.97	3.99	4.06	4.16	4.46
Lerwick*	1.5	1.54	1.6	1.65	1.69	1.71	1.75	1.77	1.79	1.81	1.83	1.84	1.85	1.88	1.91	2.02
Wick	2.4	2.48	2.57	2.64	2.71	2.73	2.79	2.83	2.85	2.88	2.91	2.93	2.94	2.98	3.04	3.21
Moray Firth	2.85	2.92	3.01	3.08	3.14	3.16	3.22	3.26	3.29	3.32	3.35	3.37	3.39	3.43	3.5	3.71
Clachnaharry	3.15	3.23	3.34	3.43	3.52	3.55	3.64	3.69	3.73	3.79	3.83	3.86	3.88	3.95	4.05	4.38
Aberdeen	2.69	2.77	2.86	2.93	3	3.02	3.09	3.13	3.15	3.19	3.22	3.24	3.25	3.3	3.36	3.58
Grangemouth	3.92	4.01	4.13	4.22	4.32	4.35	4.45	4.51	4.56	4.62	4.66	4.7	4.73	4.81	4.93	5.37
Leith	3.37	3.45	3.56	3.63	3.71	3.73	3.81	3.85	3.88	3.93	3.96	3.98	4	4.06	4.14	4.41
North Shields	3.21	3.29	3.4	3.48	3.56	3.59	3.68	3.73	3.77	3.82	3.85	3.89	3.91	3.99	4.08	4.42
Whitby	3.36	3.45	3.57	3.67	3.77	3.8	3.9	3.96	4	4.07	4.11	4.15	4.18	4.26	4.37	4.81
Immingham	4.17	4.27	4.42	4.53	4.65	4.68	4.8	4.88	4.93	5	5.06	5.1	5.14	5.24	5.38	5.92
Cromer	3.07	3.19	3.35	3.48	3.61	3.65	3.79	3.88	3.93	4.02	4.08	4.13	4.17	4.29	4.45	5.03
Lowestoft	2.02	2.17	2.38	2.55	2.72	2.77	2.93	3.03	3.1	3.2	3.27	3.32	3.37	3.5	3.69	4.31

Felixstowe	2.68	2.81	2.97	3.11	3.24	3.29	3.43	3.52	3.58	3.68	3.74	3.79	3.82	3.95	4.12	4.77
Sheerness	3.7	3.81	3.96	4.08	4.21	4.25	4.37	4.45	4.51	4.59	4.65	4.7	4.74	4.85	5.01	5.59
Dover	3.8	3.91	4.06	4.17	4.29	4.33	4.44	4.51	4.56	4.63	4.68	4.72	4.75	4.84	4.97	5.39
Newhaven	3.87	3.94	4.04	4.12	4.2	4.22	4.3	4.35	4.38	4.43	4.46	4.49	4.51	4.57	4.66	4.96
Portsmouth	2.55	2.63	2.73	2.8	2.87	2.89	2.96	3	3.03	3.07	3.1	3.12	3.14	3.19	3.25	3.49
Bournemouth	1.4	1.47	1.56	1.63	1.69	1.71	1.78	1.81	1.84	1.88	1.9	1.93	1.94	1.99	2.06	2.28
Weymouth	1.82	1.89	1.99	2.05	2.12	2.15	2.22	2.26	2.28	2.32	2.35	2.37	2.39	2.44	2.51	2.76
Exmouth	2.76	2.84	2.95	3.03	3.1	3.13	3.2	3.24	3.27	3.31	3.34	3.36	3.37	3.42	3.48	3.66
Devonport	2.95	3.02	3.11	3.18	3.25	3.27	3.34	3.38	3.4	3.44	3.47	3.49	3.51	3.55	3.62	3.84
Belfast	2.16	2.26	2.39	2.49	2.6	2.64	2.74	2.8	2.85	2.91	2.96	2.99	3.02	3.11	3.23	3.69
Portrush	1.61	1.71	1.83	1.92	2	2.03	2.12	2.17	2.21	2.26	2.29	2.32	2.35	2.41	2.5	2.78

Highest predicted tide compared to 19yr period

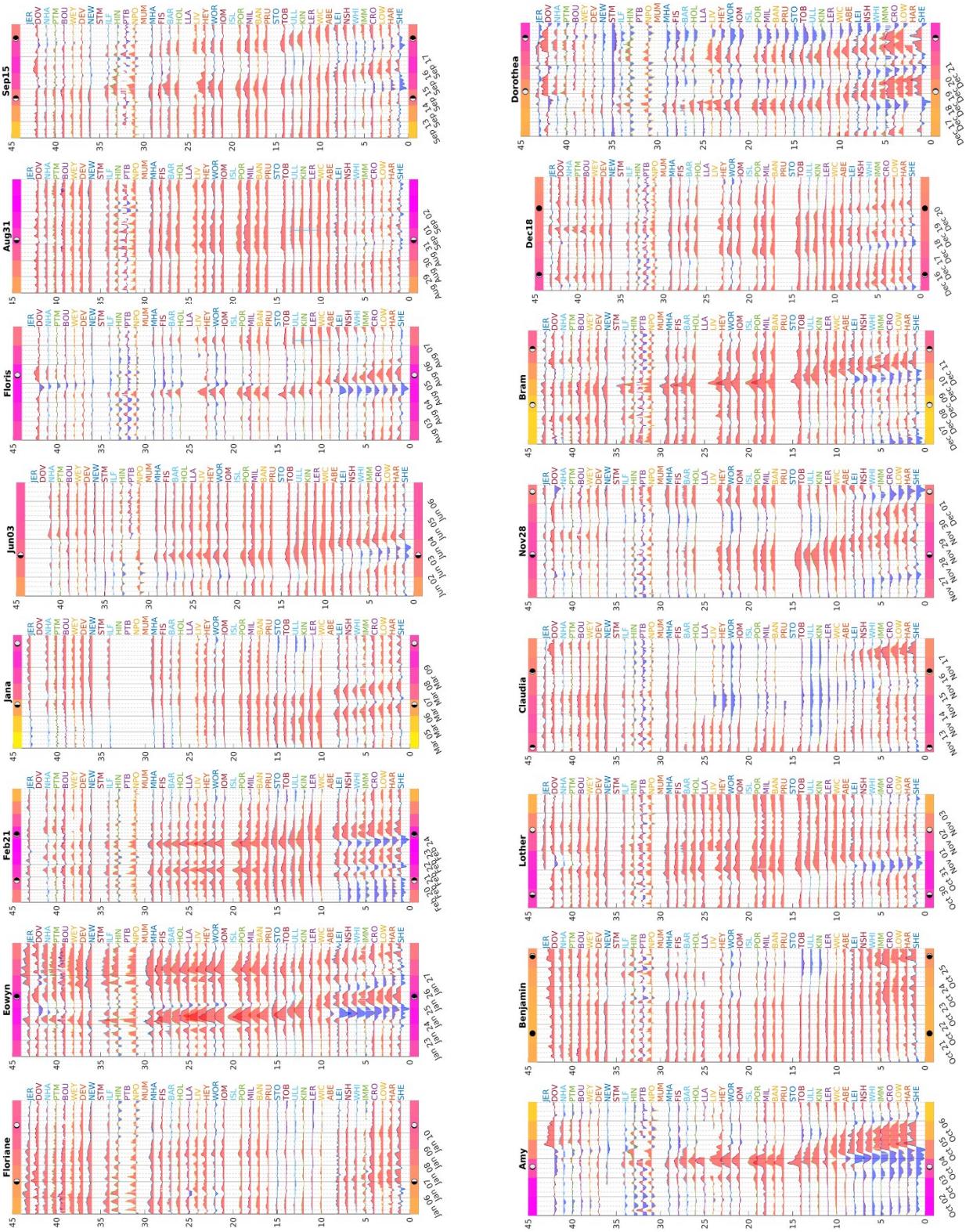
Long term nodal (18.6 year) and perigean (4.5 year) cycles affect the maximum tide that occurs in any given year, with up to 75 cm variation in the Severn. 2025 was a year of medium tides, and the UK sites had predicted tides 5-36 cm short of the local maximum possible due to astronomical factors alone (various coincidences in the timing of cycles of the position of moon and sun).

This table puts 2025 in context of the surrounding 19yr period for the predicted tide for each site. No allowance for sea-level rise or local datum is included in this table.

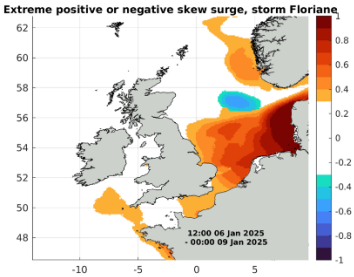
Table 4: Estimated height (metres, relative to mean tidal level) for astronomical tide predictions in 2024 compared to maximums for each year in the surrounding 19yr period. This table was calculated by comparing maximums of a 19-yr prediction of astronomical tide to the same prediction during 2025 alone. Eg at Sheerness the predicted maxtide in 2026 is 2.96m, in 2015 it was 3.24m above the mean tide.

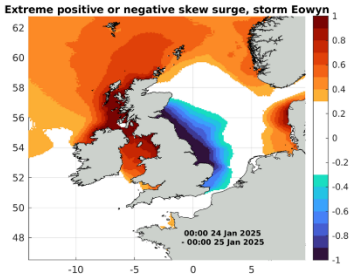
Site	Max annual Tide Predictions					Site	Max annual Tide Predictions			
	Smallest 2015-2034	2025	Largest 2015-2034	Shortfall, 2025 to max			Smallest 2015-2034	2025	Largest 2015-2034	Shortfall, 2025 to max
Sheerness	2.96	3.09	3.24	0.16		Heysham	4.92	5.26	5.53	0.28
Harwich	2.06	2.16	2.29	0.13		Liverpool	4.50	4.82	5.04	0.22
Lowestoft	1.13	1.21	1.27	0.06		Llandudno	3.98	4.28	4.48	0.19
Cromer	2.42	2.61	2.71	0.10		Holyhead	2.71	2.89	3.04	0.15
Immingham	3.39	3.63	3.76	0.13		Barmouth	2.64	2.86	2.98	0.13
Whitby	2.56	2.75	2.86	0.11		Fishguard	2.45	2.65	2.77	0.13
North Shields	2.46	2.66	2.76	0.10		Milford Haven	3.53	3.80	4.00	0.20
Leith	2.69	2.89	3.05	0.16		Mumbles	4.72	5.05	5.25	0.20
Aberdeen	2.02	2.21	2.29	0.08		Newport	6.48	6.85	7.22	0.36
Wick	1.70	1.83	1.91	0.08		Portbury	6.86	7.30	7.60	0.29
Lerwick	1.08	1.14	1.19	0.05		Avonmouth	6.86	7.31	7.63	0.32
Kinlochbervie	2.34	2.52	2.63	0.12		Hinkley Point	6.09	6.50	6.75	0.26
Ullapool	2.42	2.65	2.77	0.12		Ilfracombe	4.68	5.03	5.25	0.22
Islay	0.51	0.58	0.62	0.04		St. Marys	2.75	2.97	3.10	0.14
Tobermory	2.15	2.40	2.52	0.11		Newlyn	2.60	2.79	2.92	0.13
Stornoway	2.30	2.51	2.65	0.14		Plymouth	2.39	2.53	2.64	0.11
Portrush	1.13	1.28	1.36	0.08		Weymouth	1.34	1.44	1.53	0.09
Bangor	1.72	1.73	1.82	0.08		Bournemouth	0.87	0.97	1.05	0.08
Millport	1.69	1.73	1.83	0.09		Portsmouth	2.03	2.14	2.23	0.09
Portpatrick	2.02	2.02	2.13	0.11		Newhaven	3.30	3.48	3.63	0.15
Port Erin	2.73	2.84	2.98	0.14		Dover	3.19	3.36	3.47	0.11
Workington	4.19	4.48	4.71	0.23		Jersey	5.52	5.93	6.14	0.20

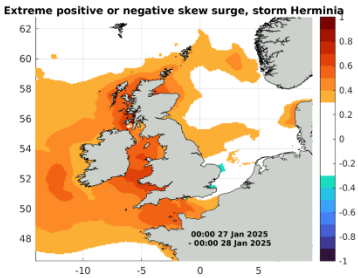
All storms: surge residuals.

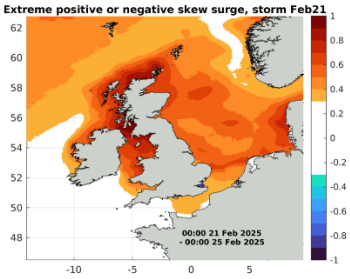


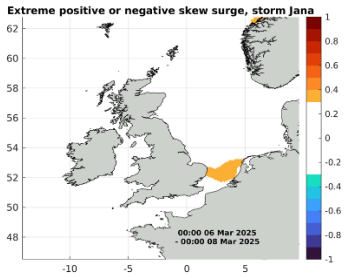
All storms: model skew surge

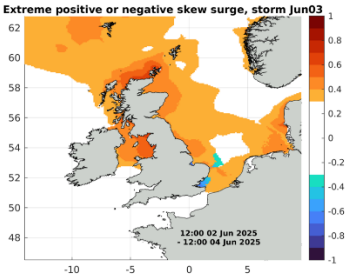


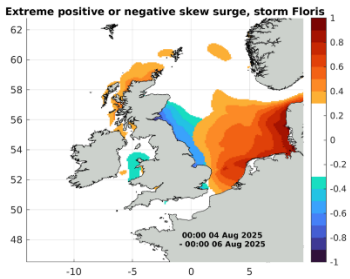


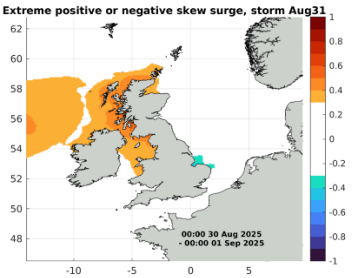


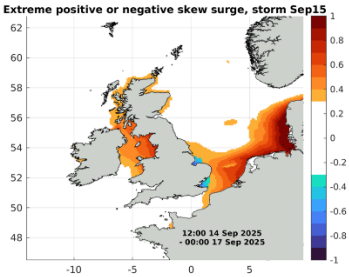


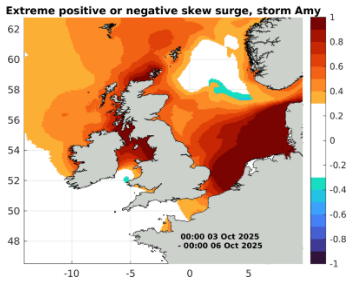


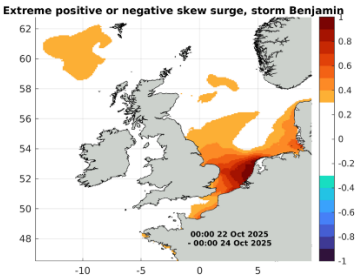


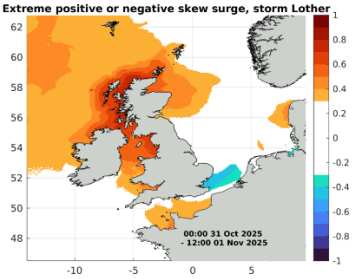


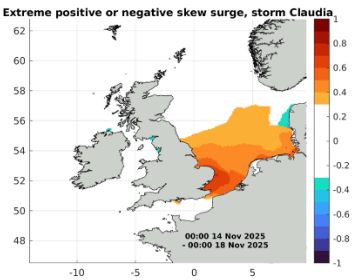


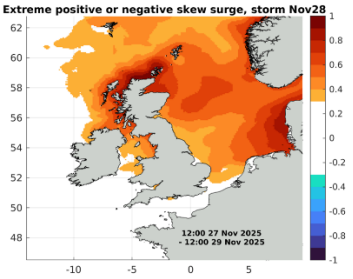


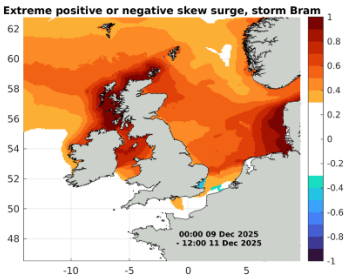


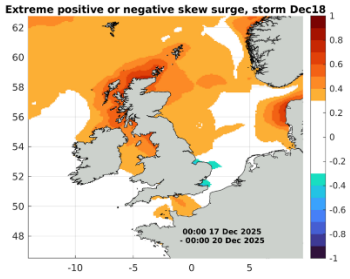






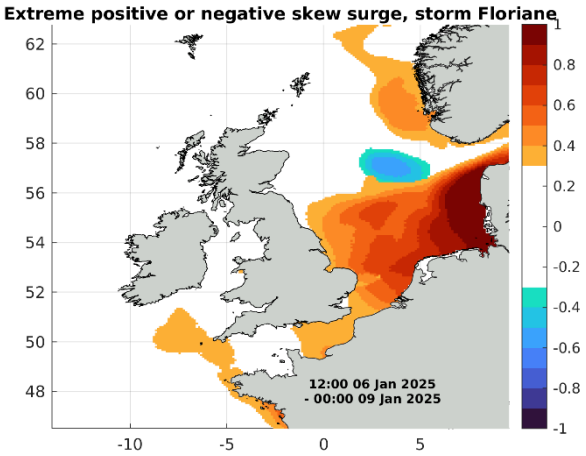


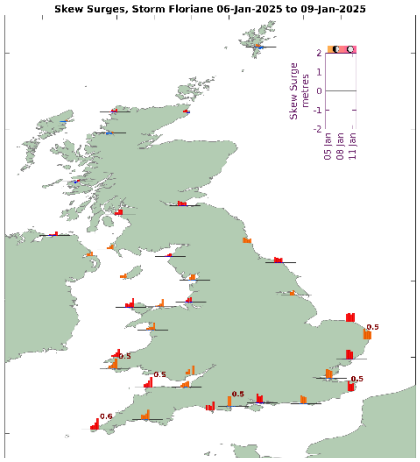


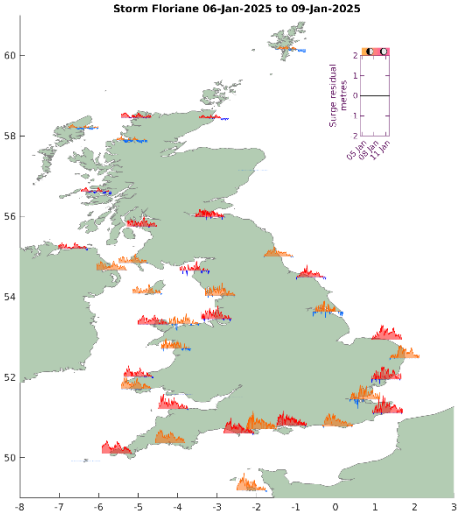


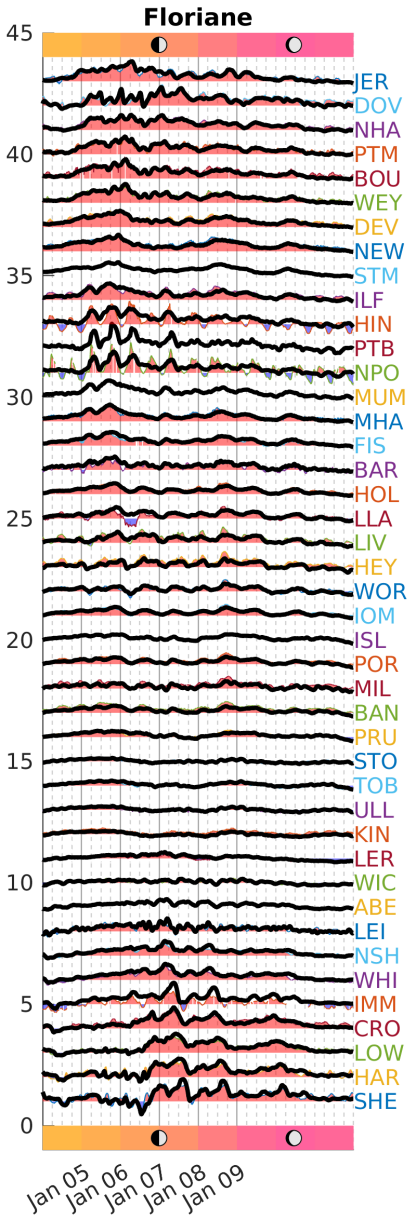
Individual Storms.

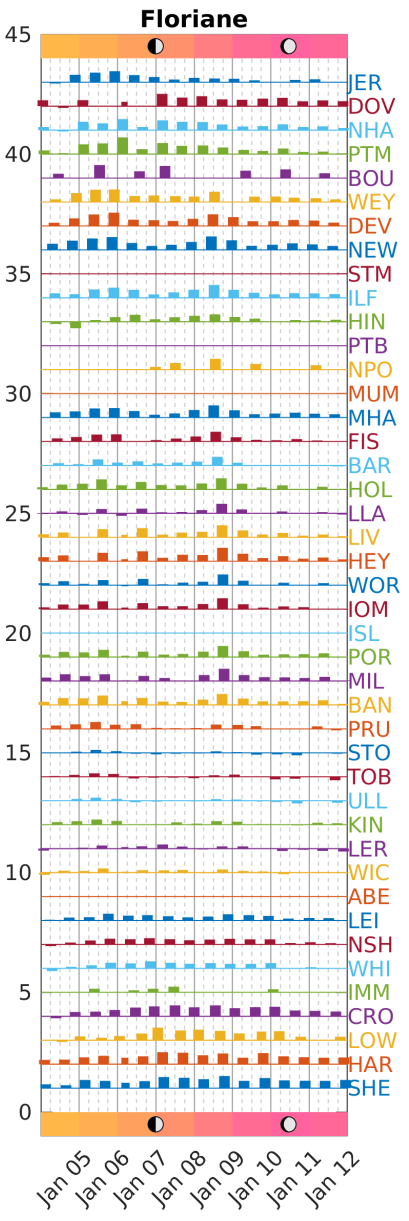
Storm Floriane, 6th - 9th January



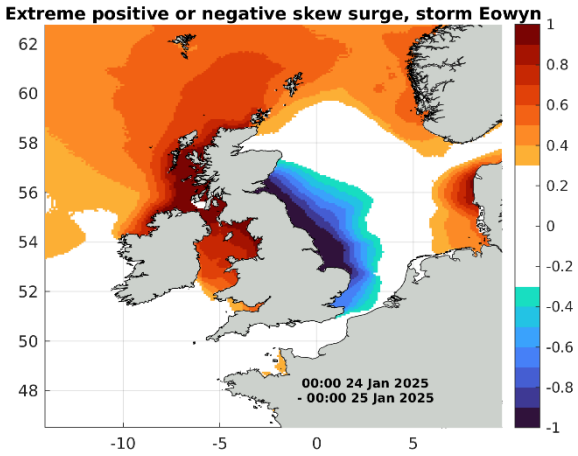


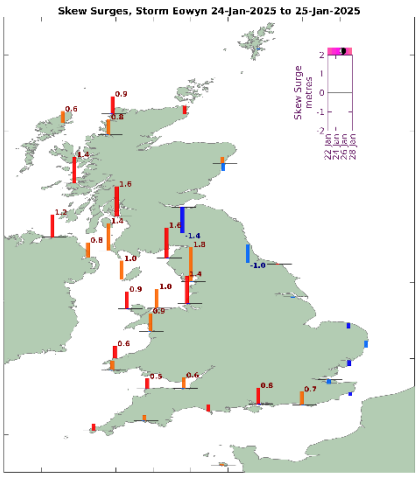


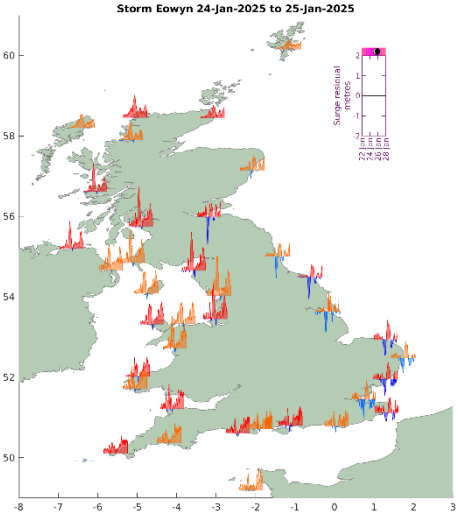


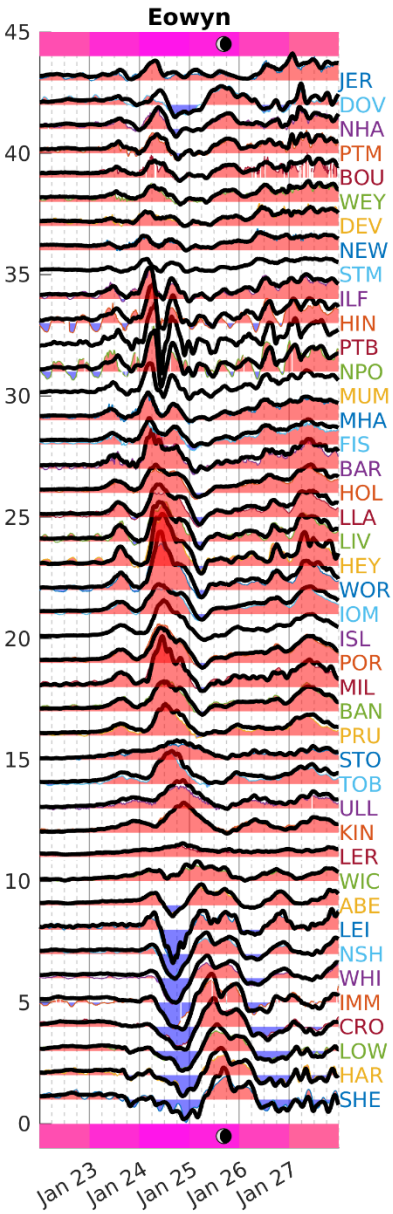


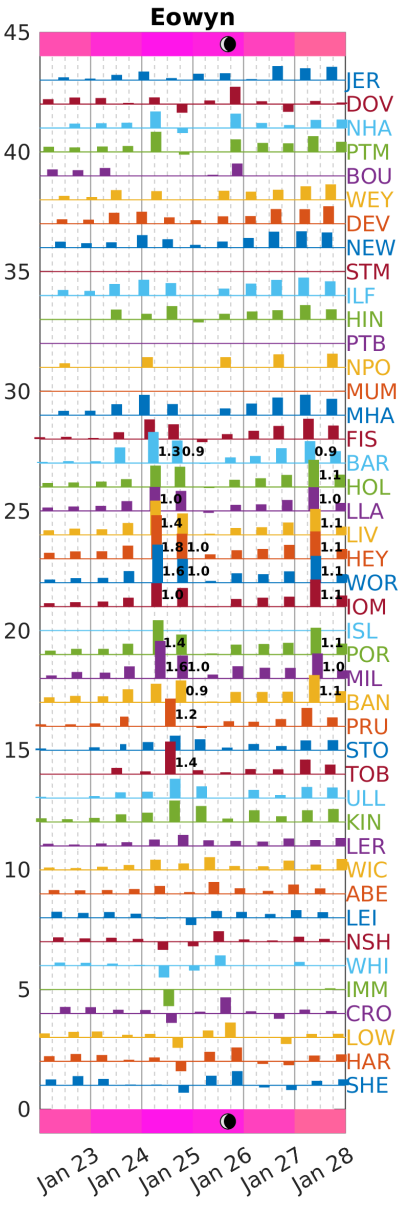
Storm Eowyn, 24th - 25th January



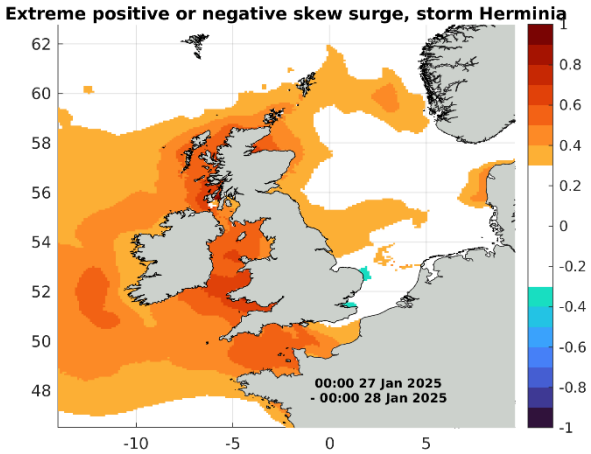


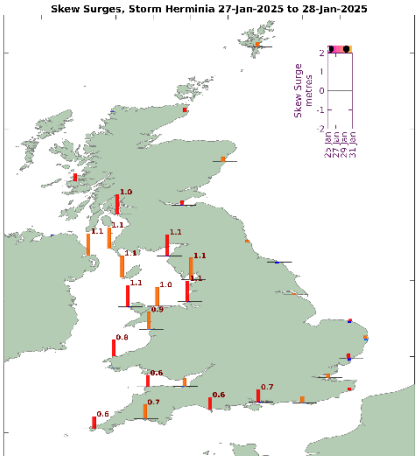


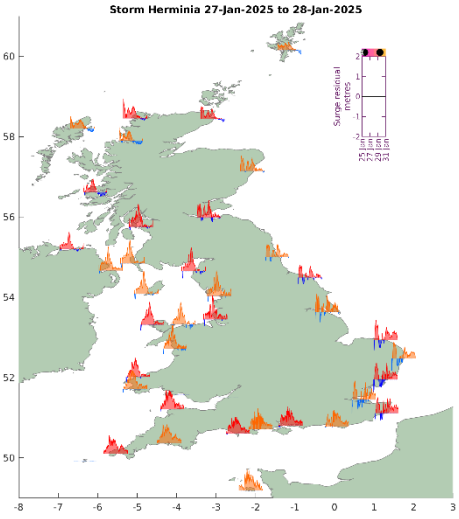


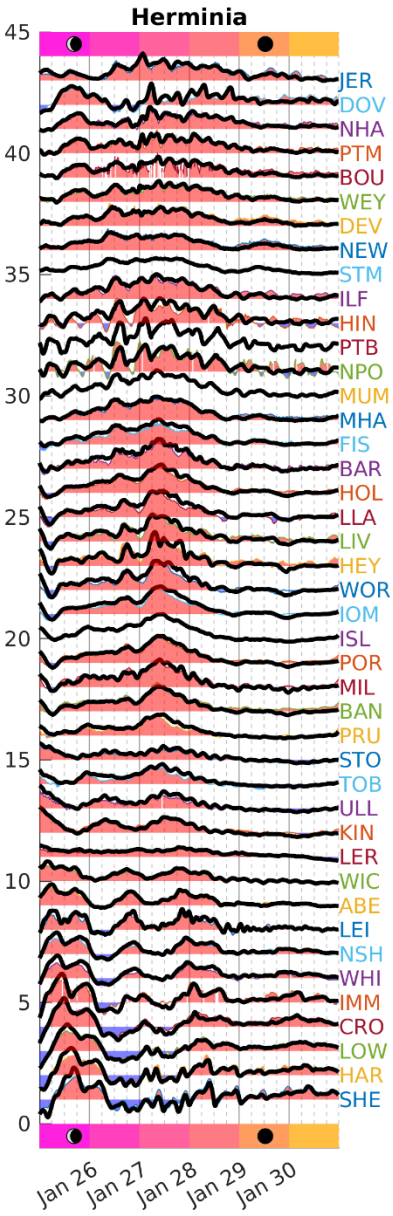


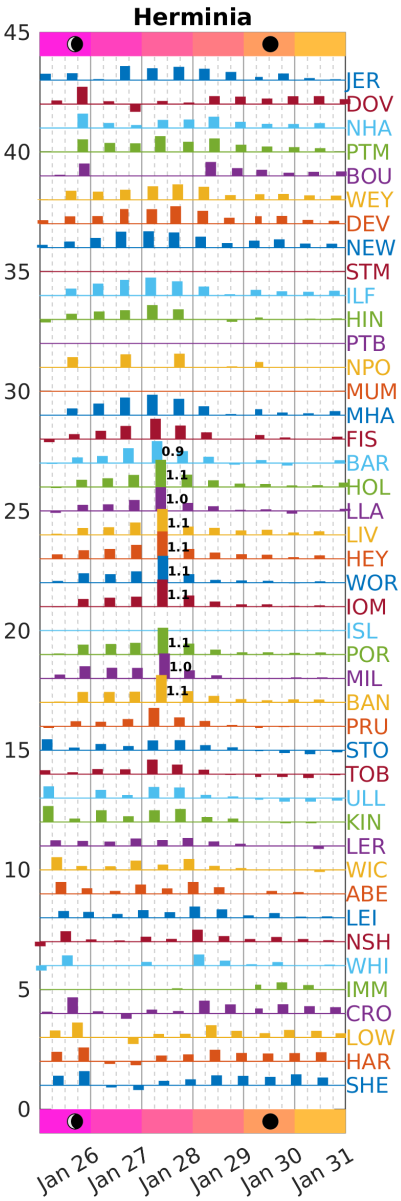
Storm Herminia, 27th – 28th January



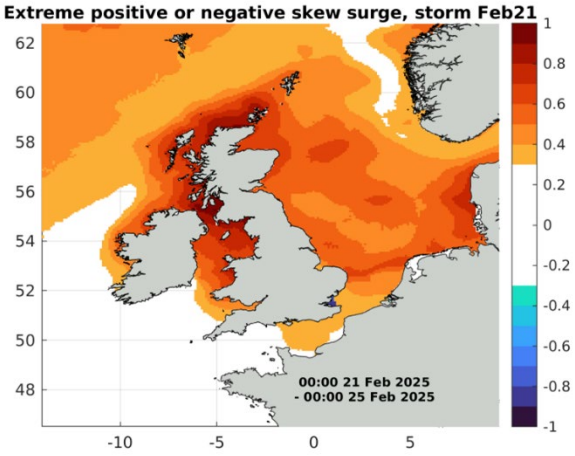


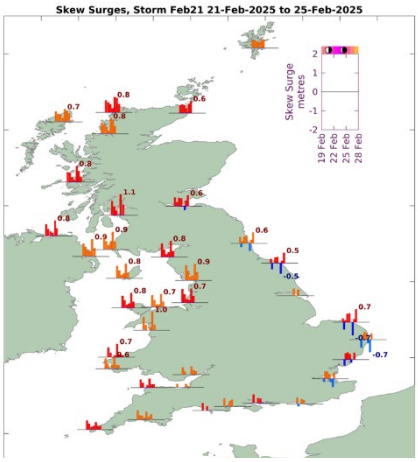


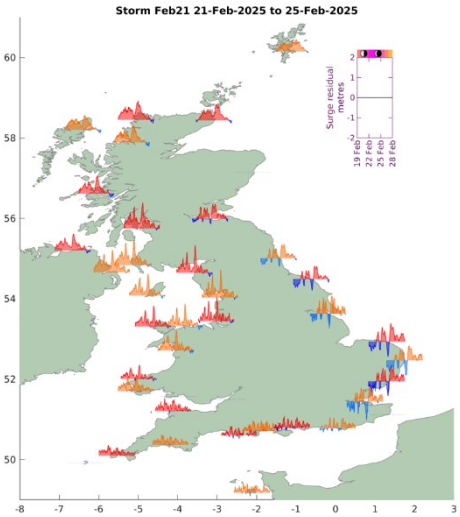


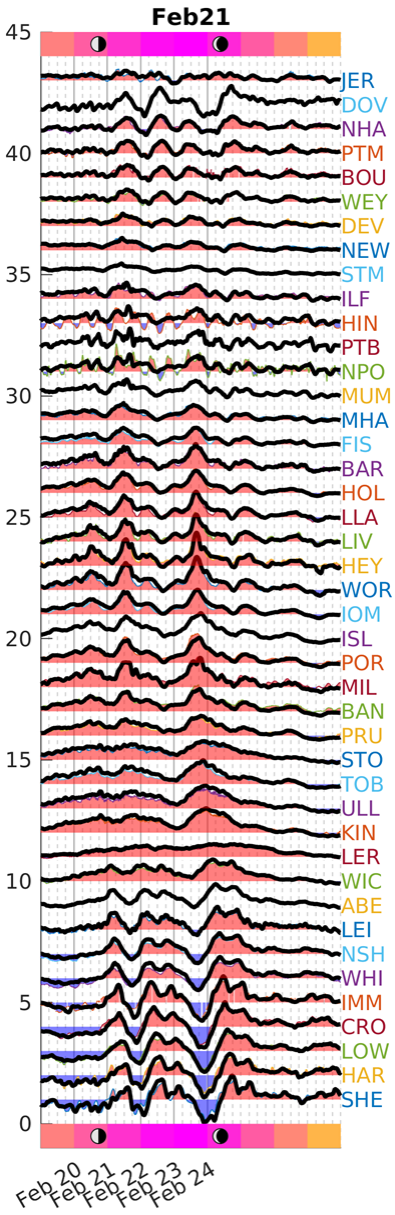


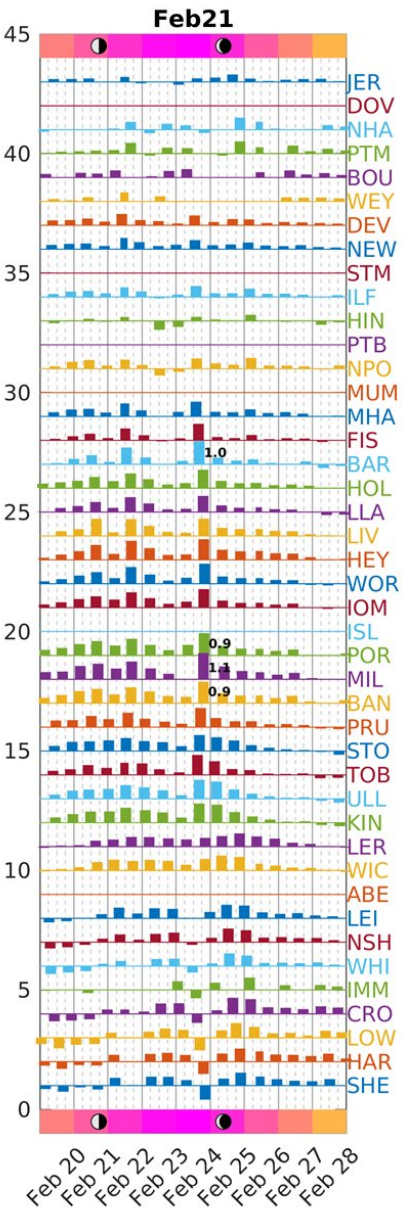
Event Feb21, 21st – 25th February



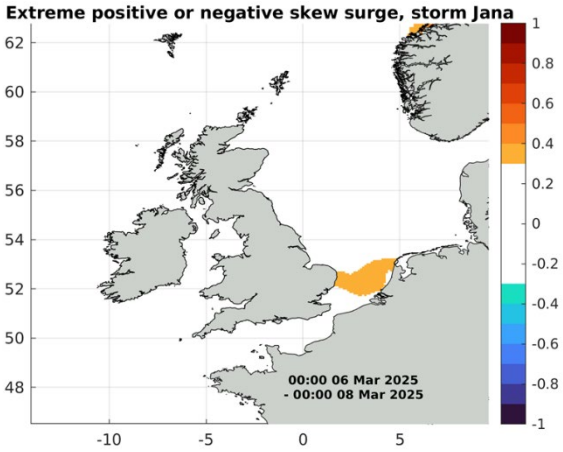


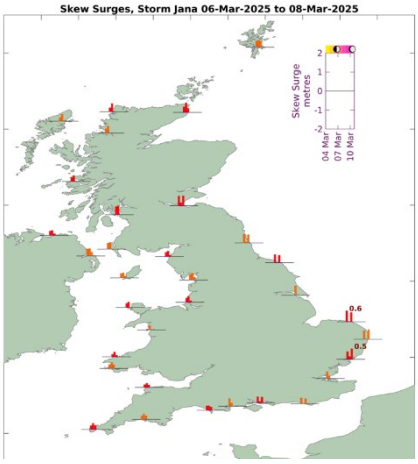


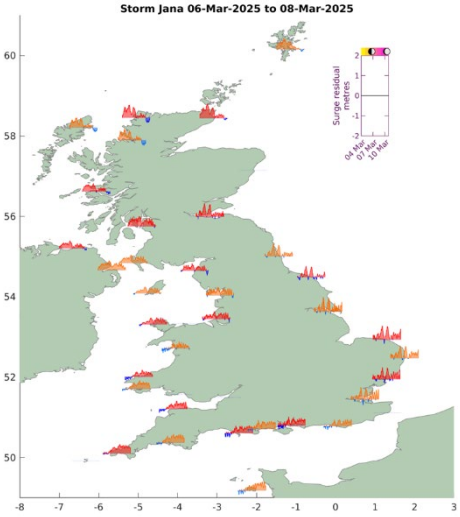


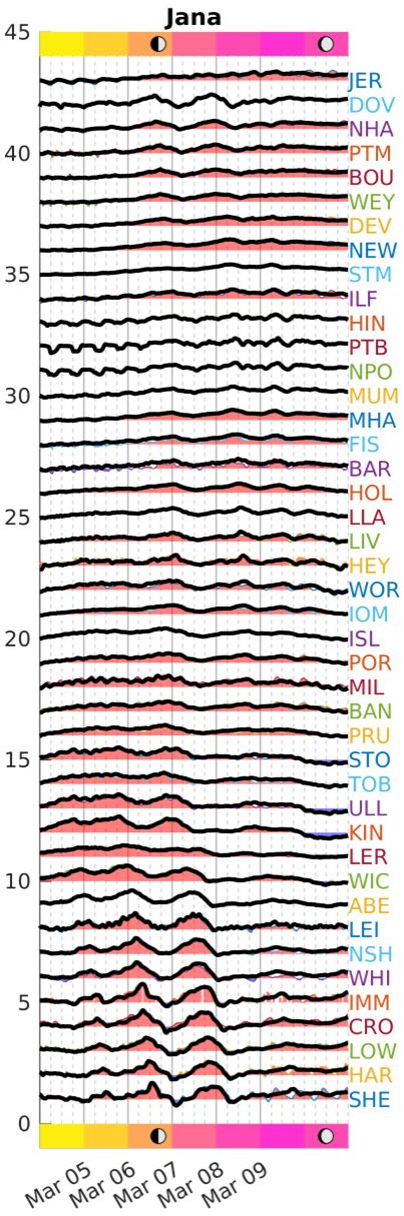


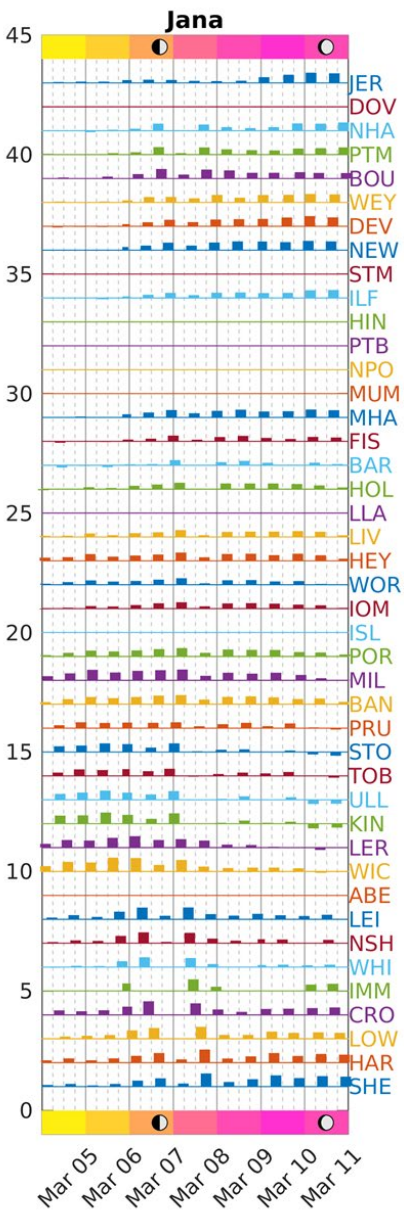
Storm Jana, 6th - 8th March



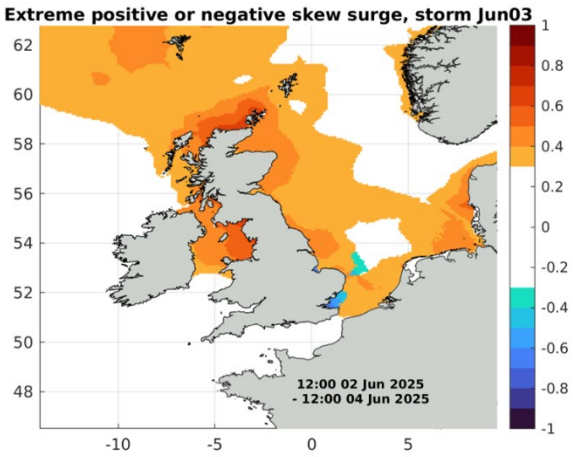


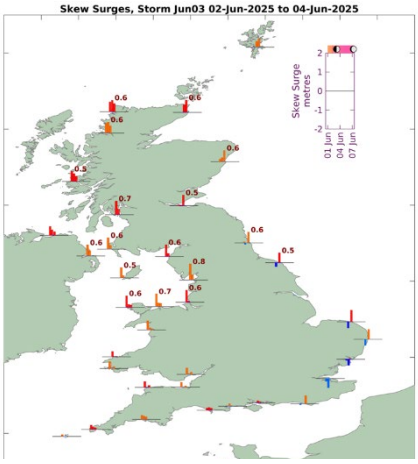


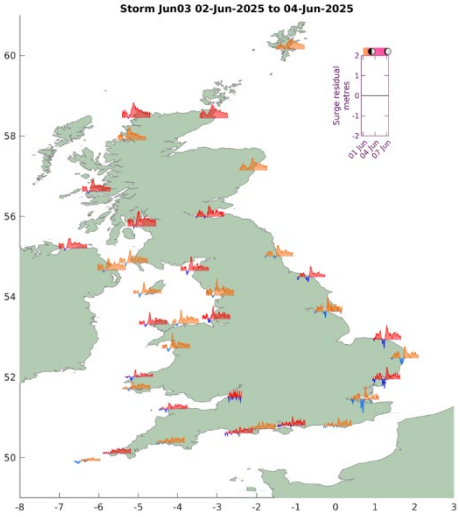


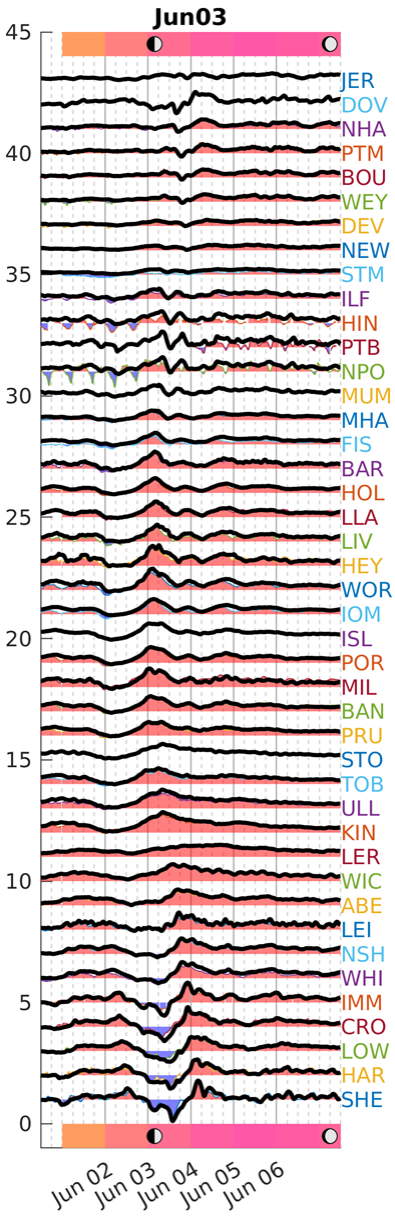


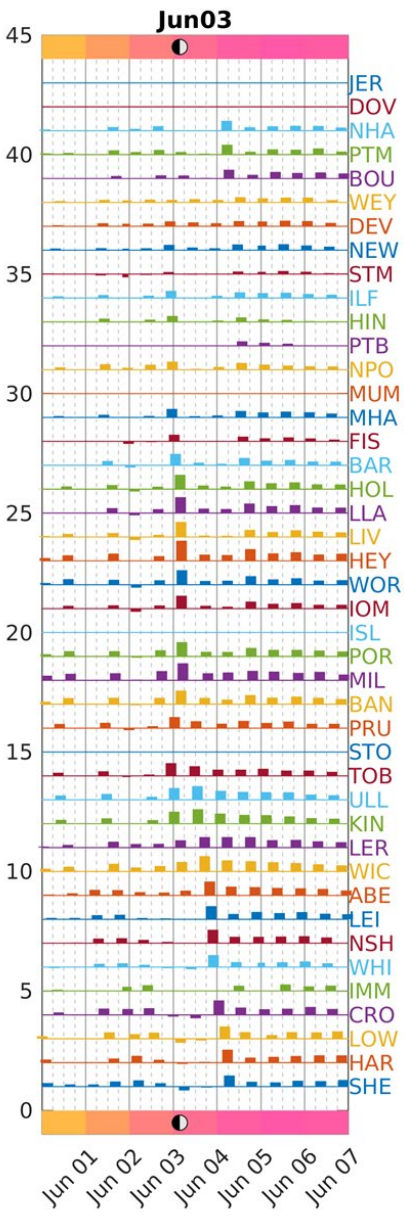
Event Jun03, 3rd – 4th June



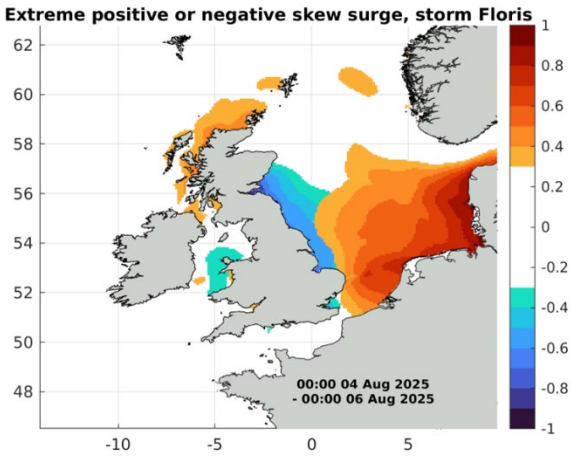


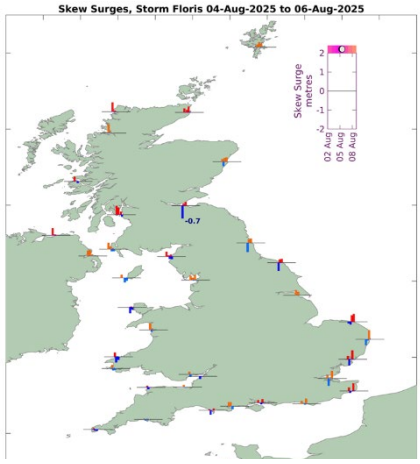


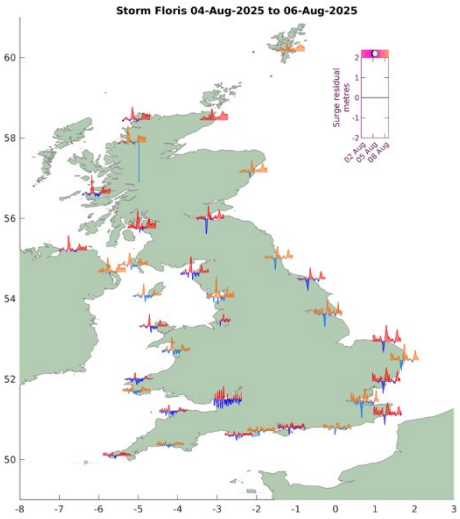


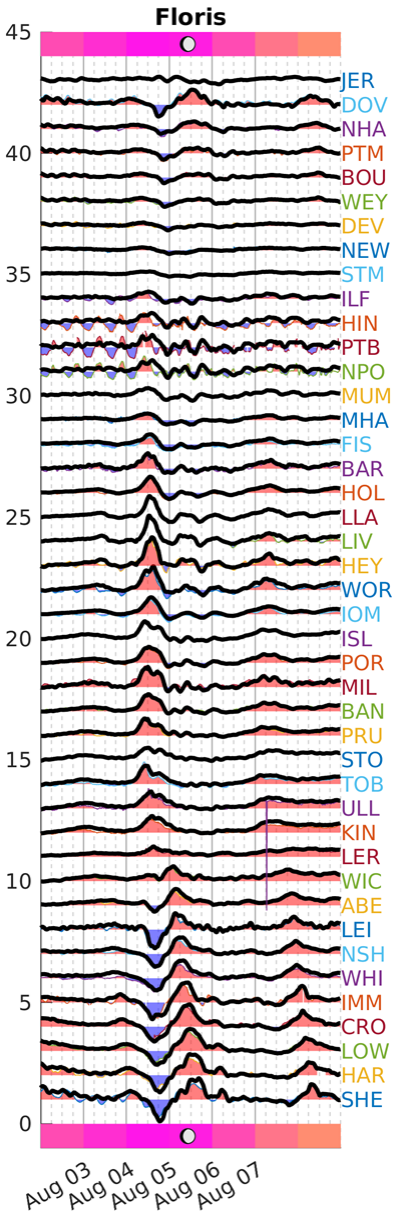


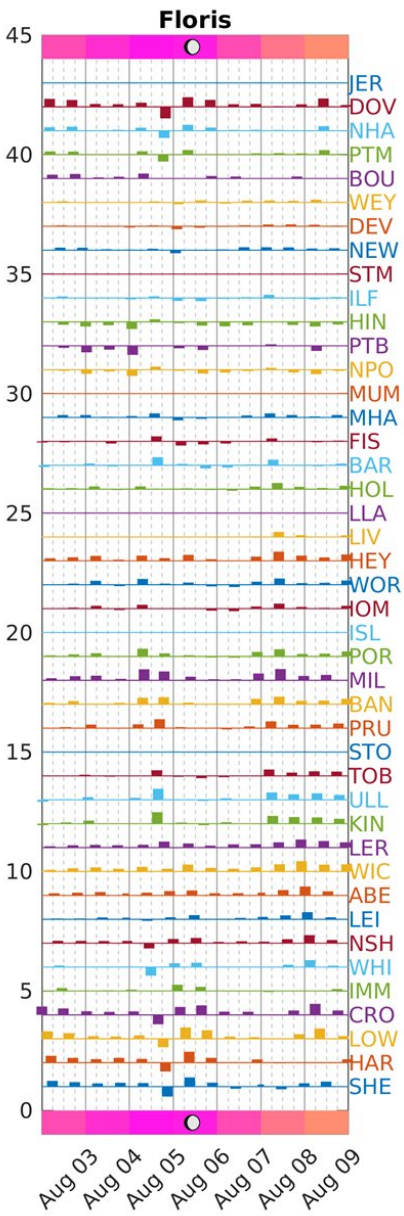
Storm Floris, 4th – 6th August



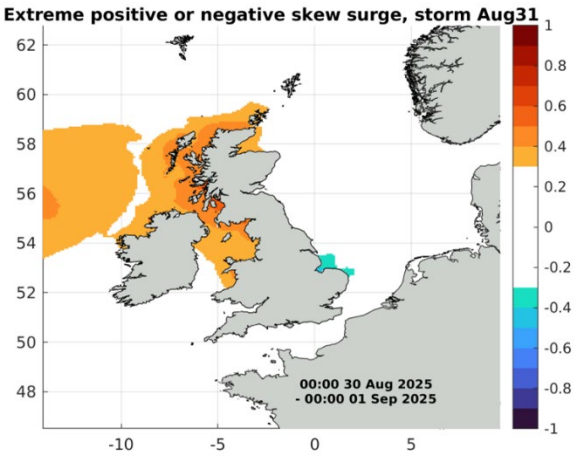


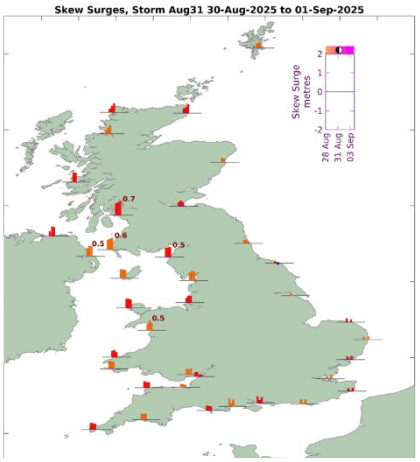


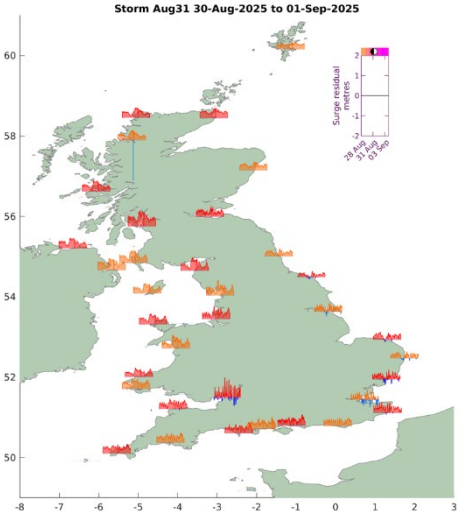


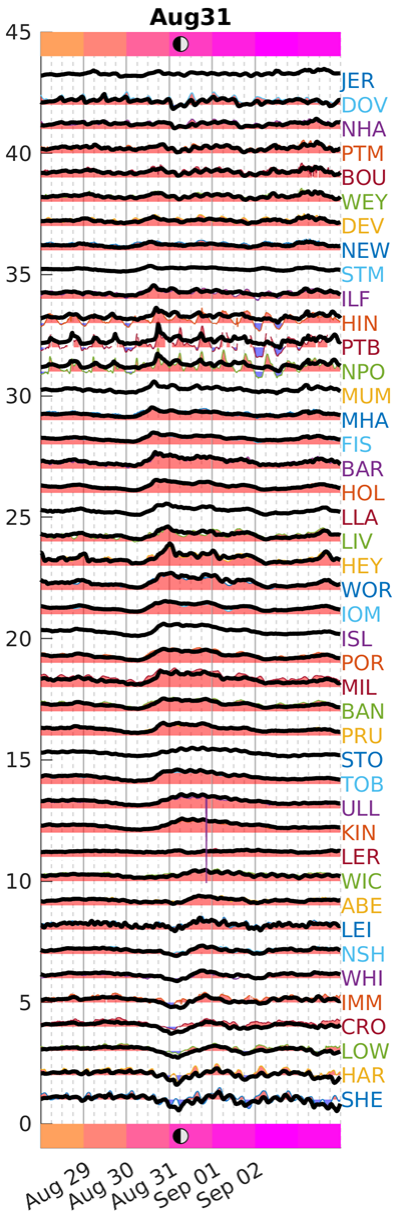


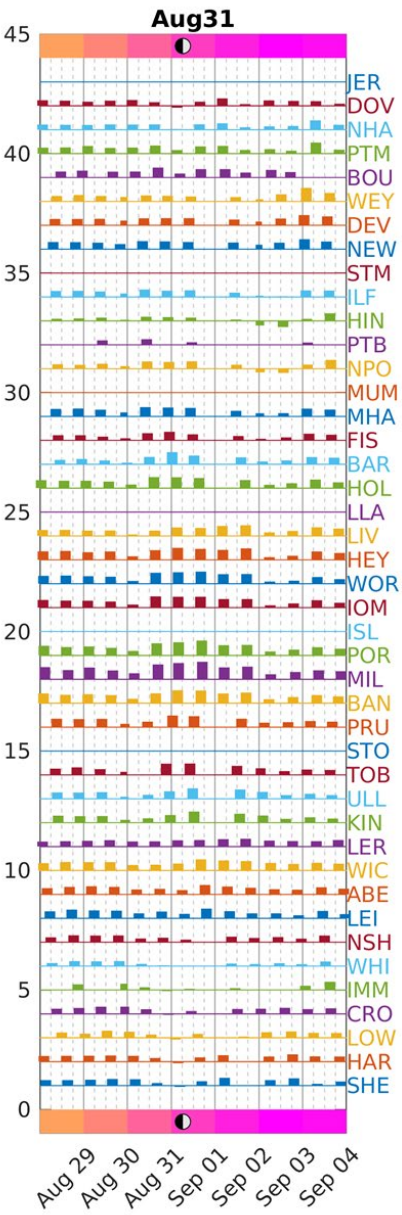
Event Aug31, 30th August – 1st September



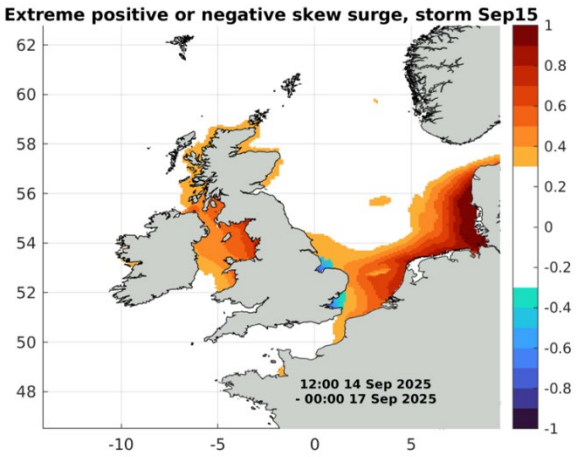


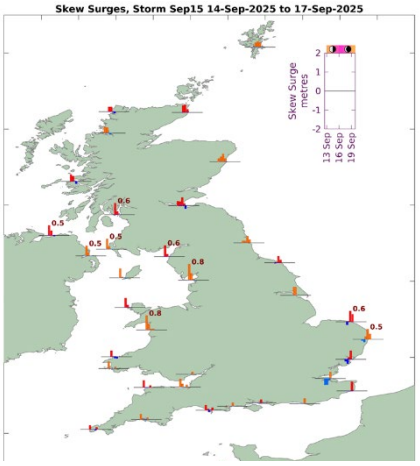


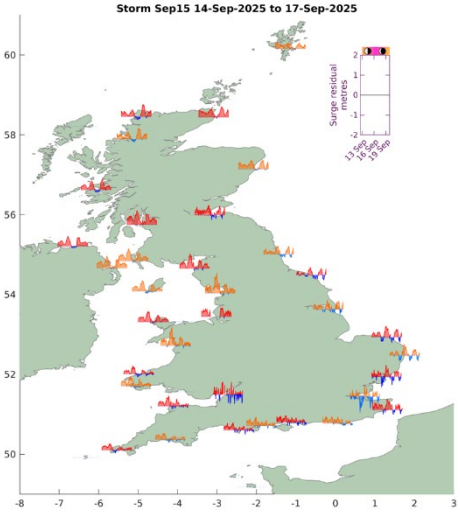


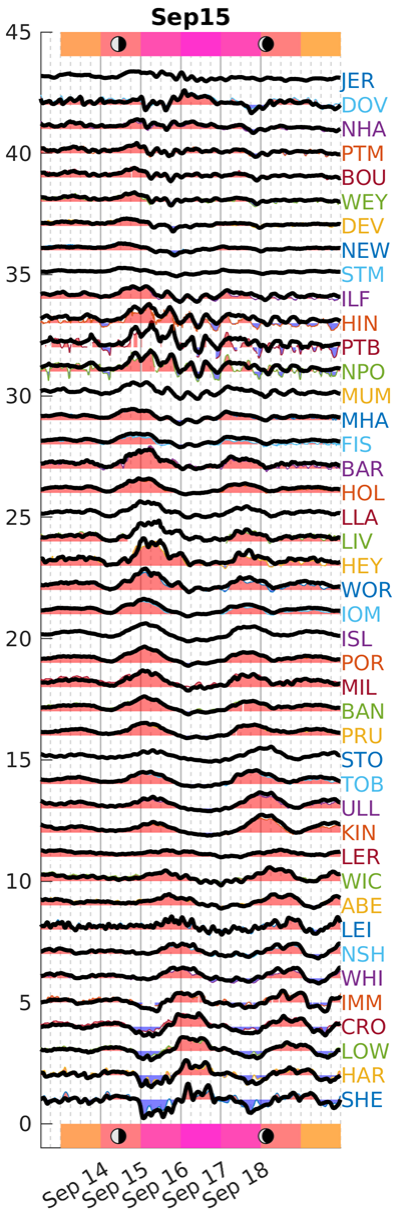


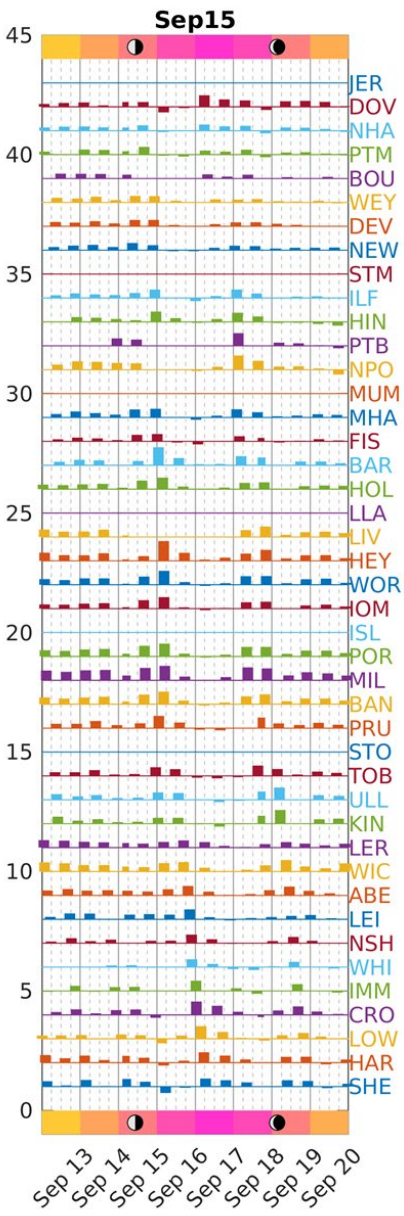
Event Sep15, 14th – 17th September



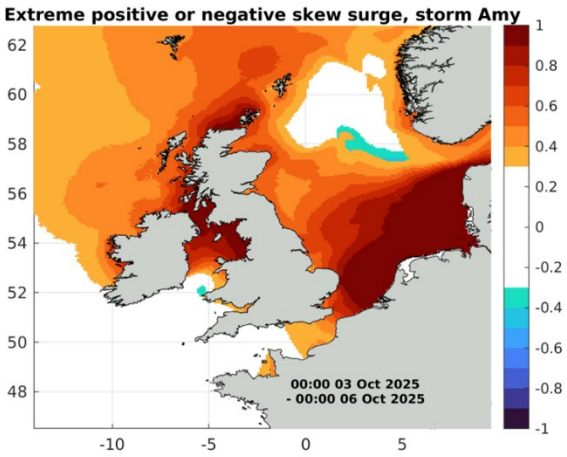


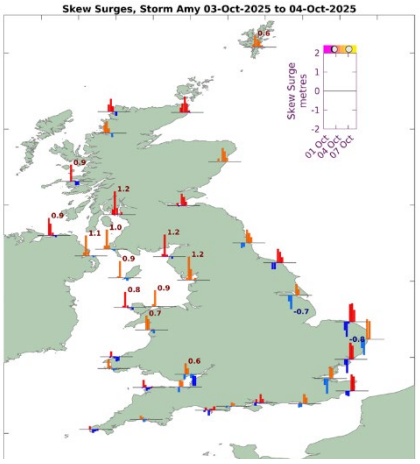


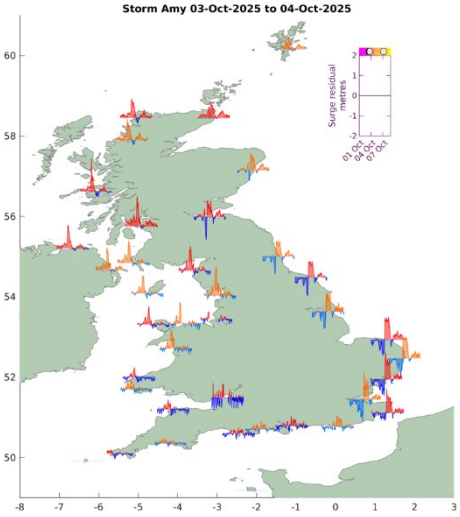


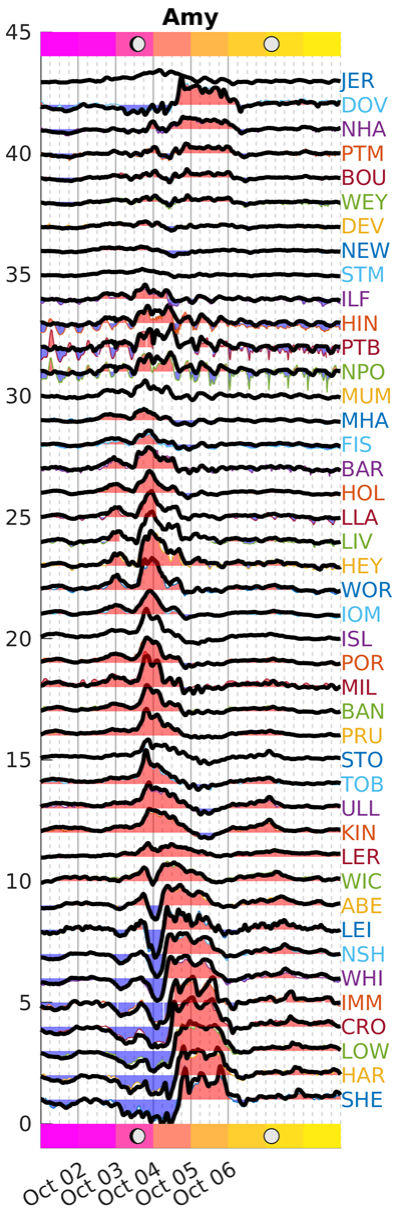


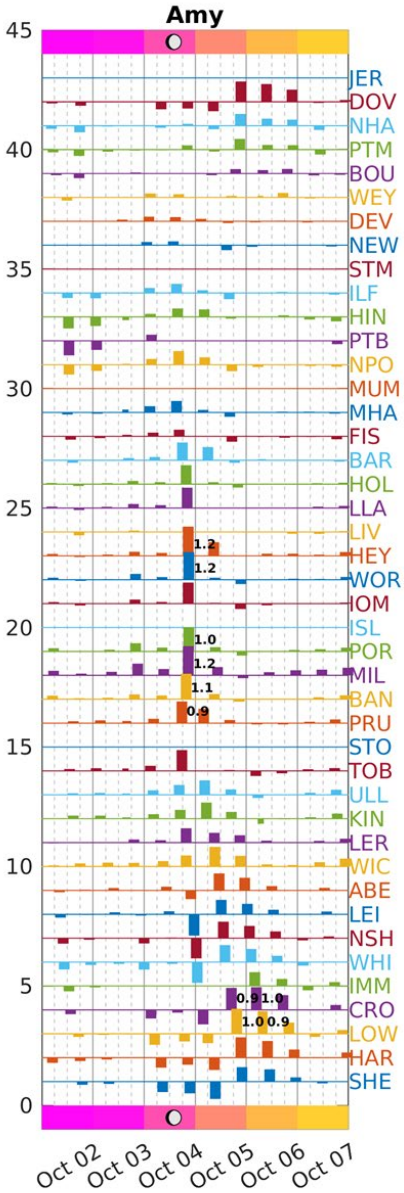
Storm Amy, 3rd – 6th October



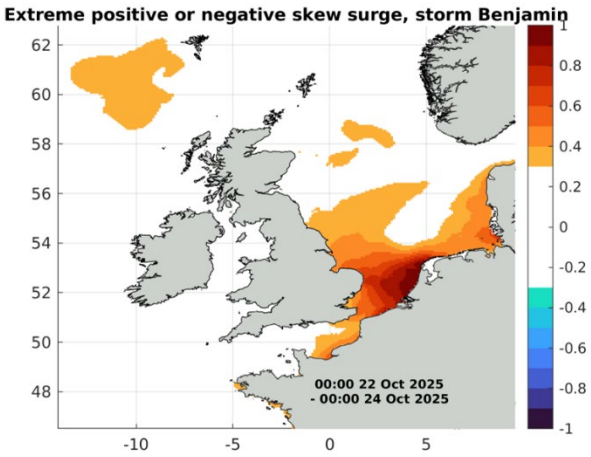


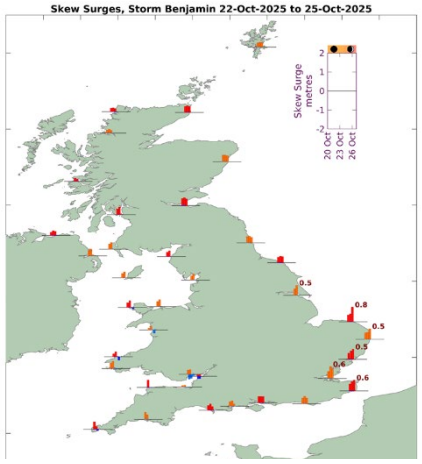


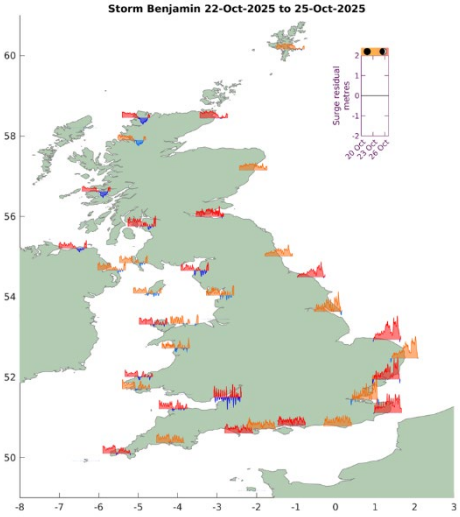


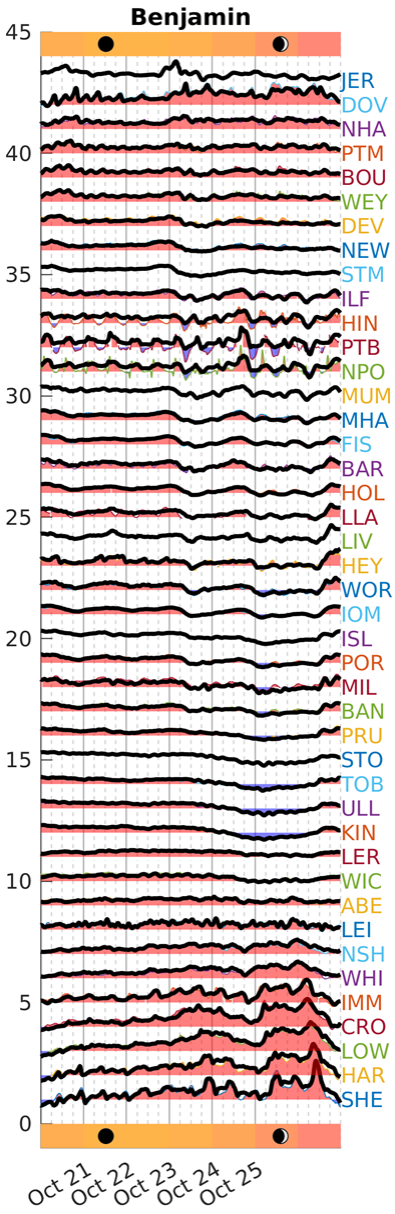


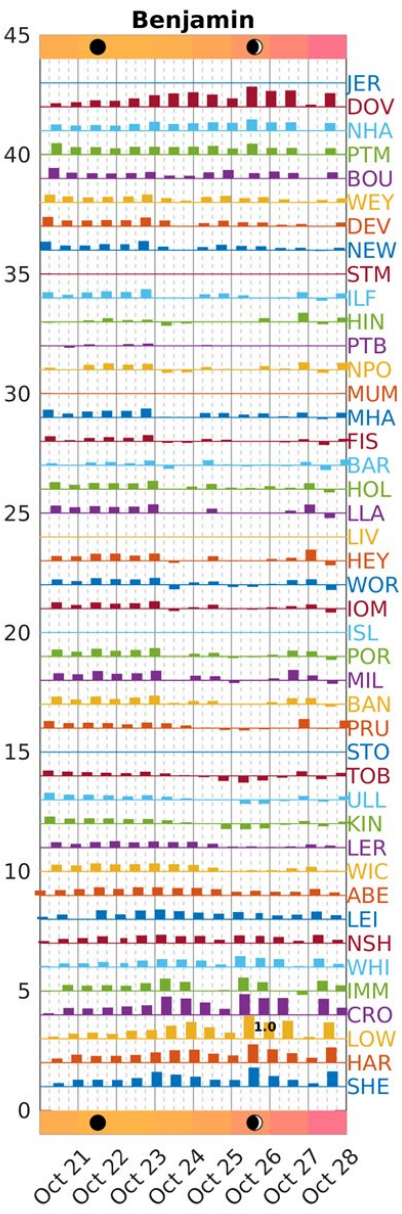
Storm Benjamin, 22nd – 24th October



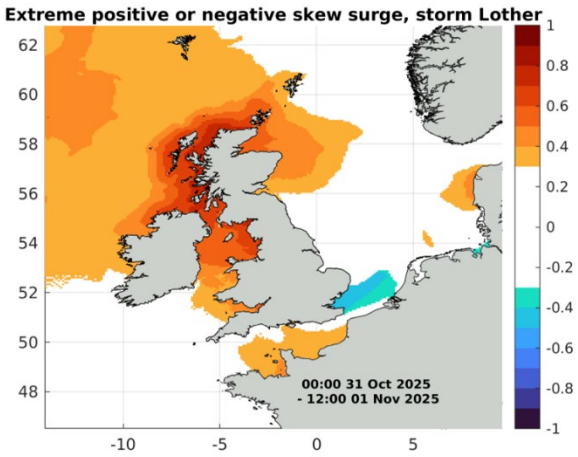


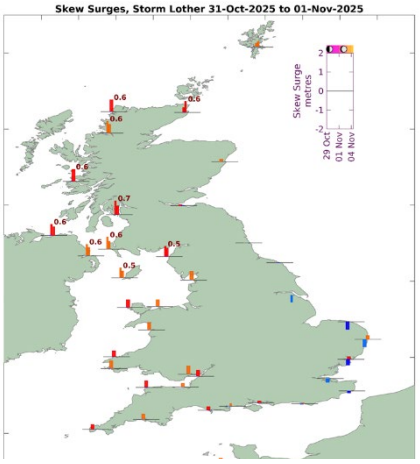


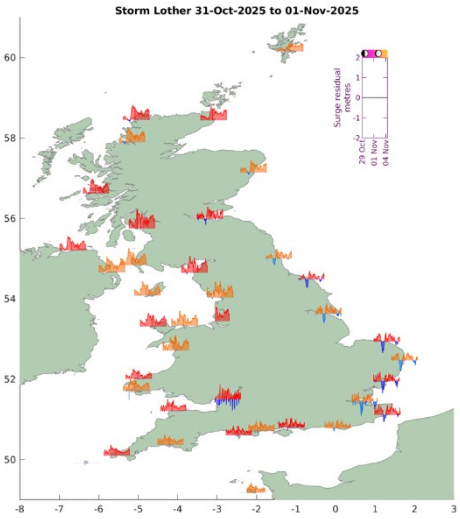


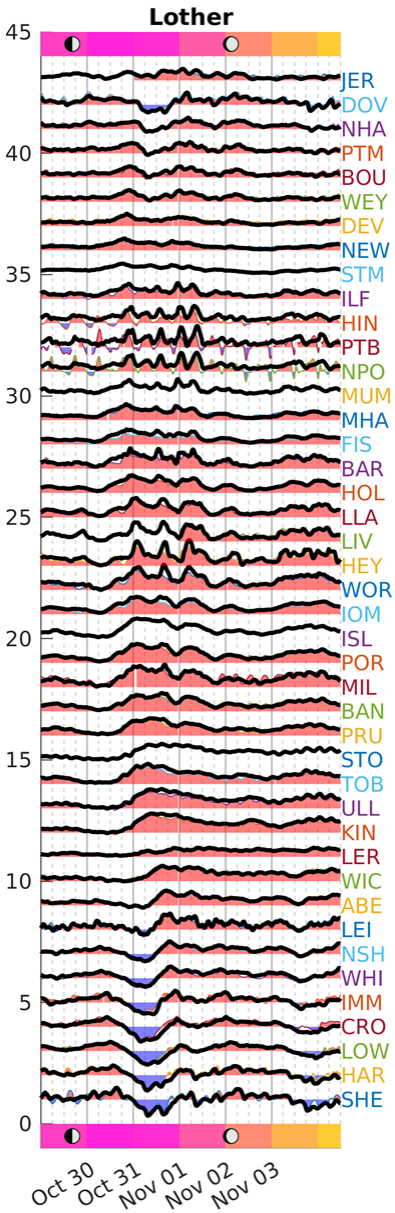


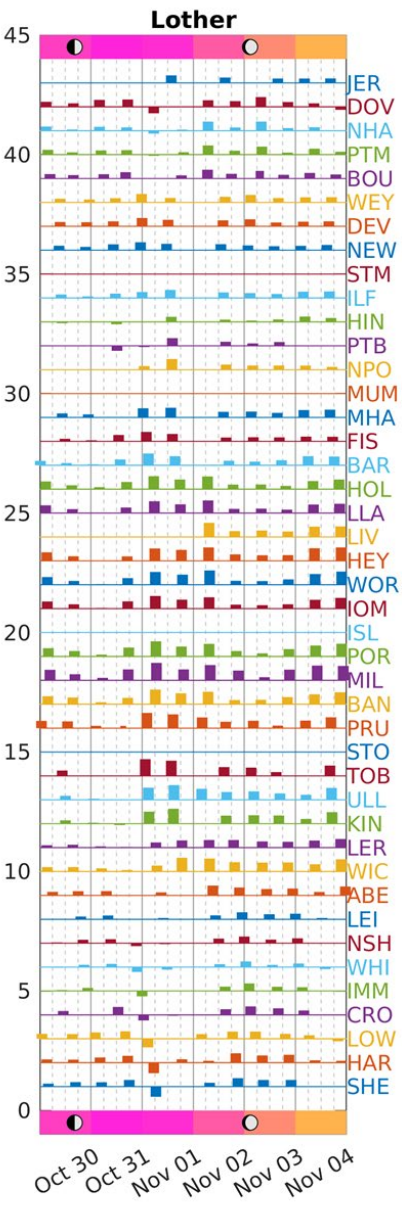
Storm Lother, 31st October – 1st November



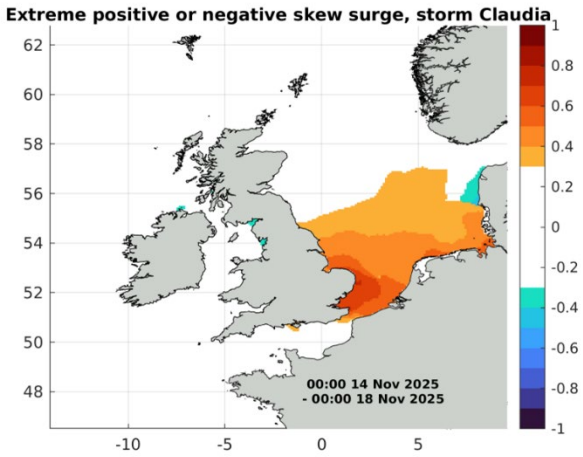


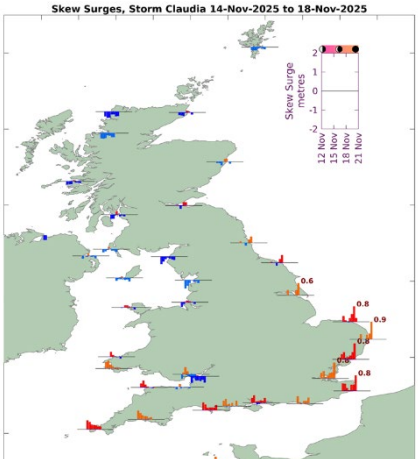


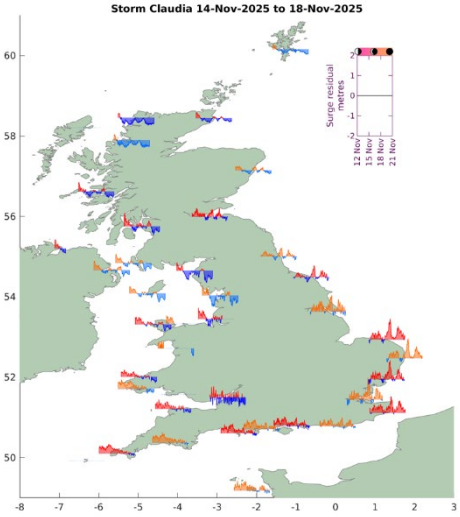


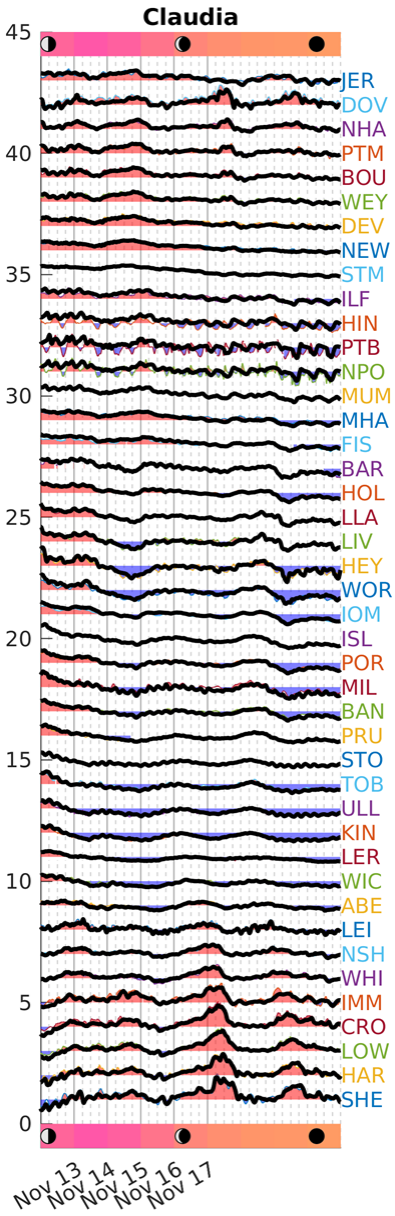


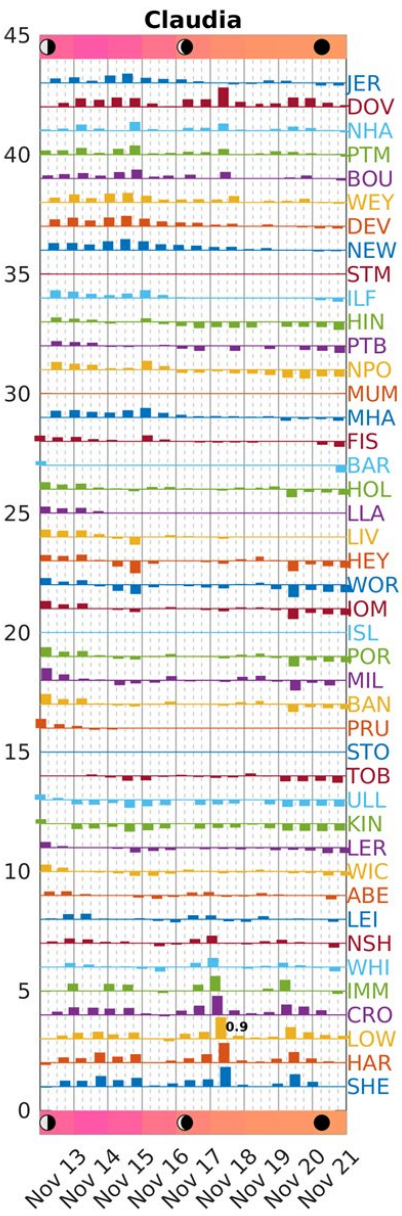
Storm Claudia, 14th – 18th November



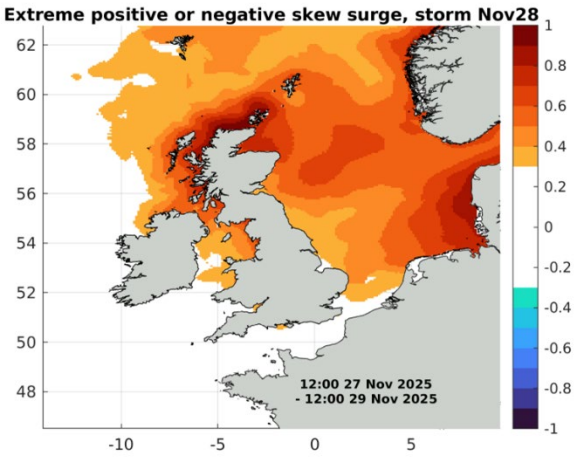


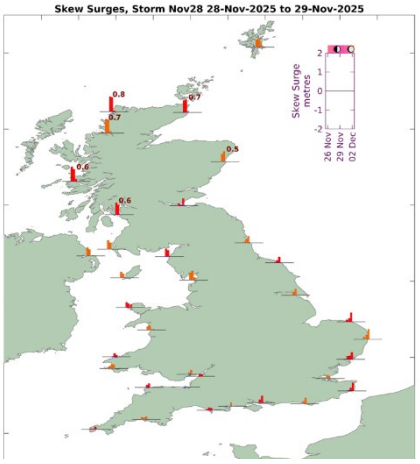


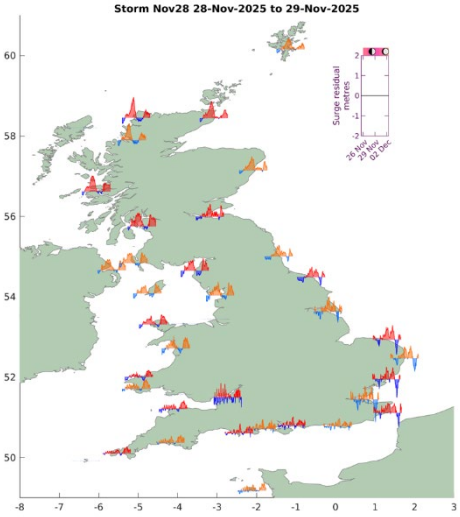


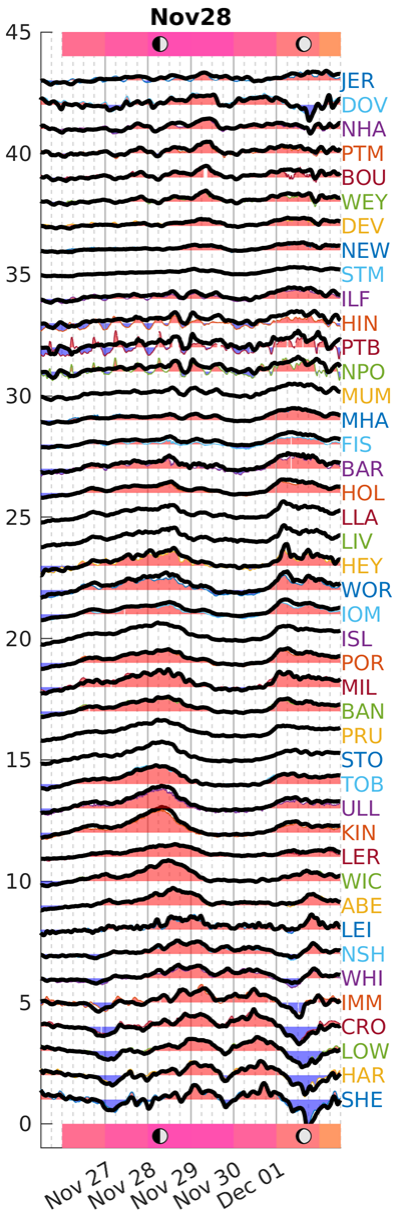


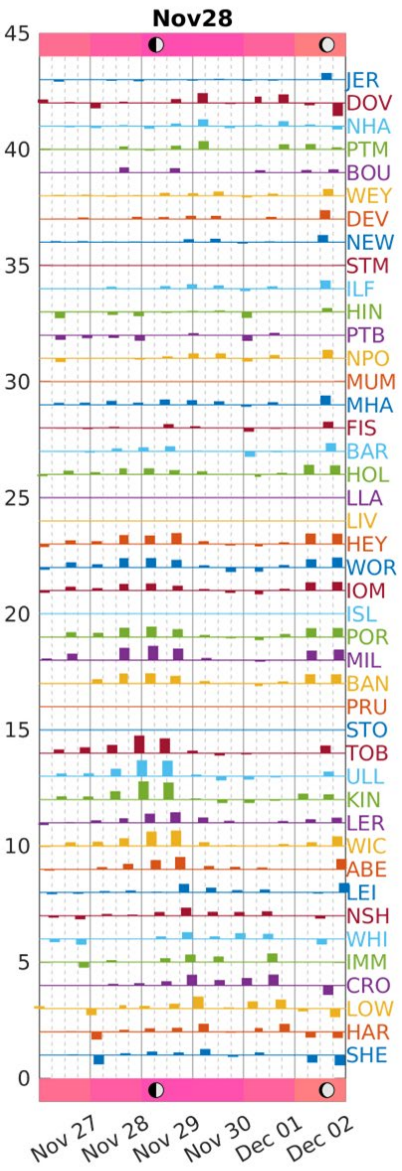
Event Nov28, 27th – 29th November



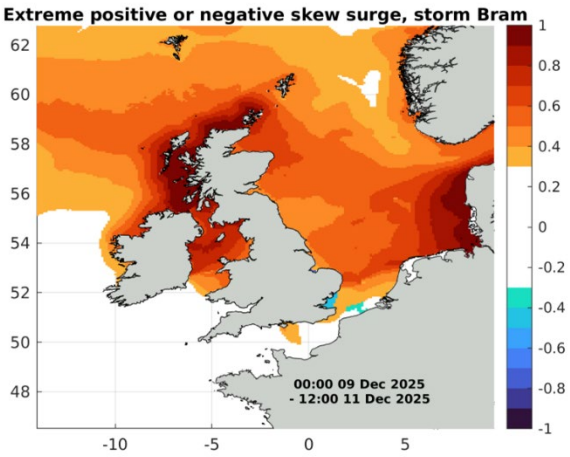


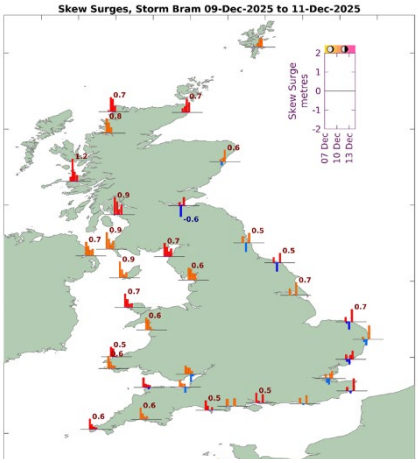


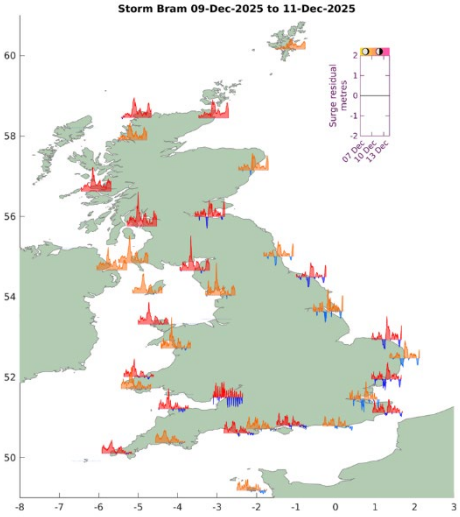


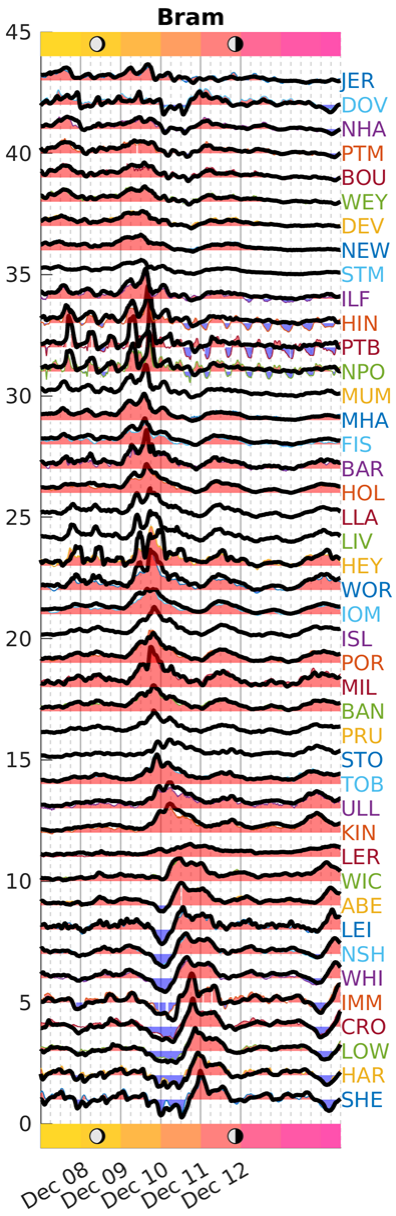


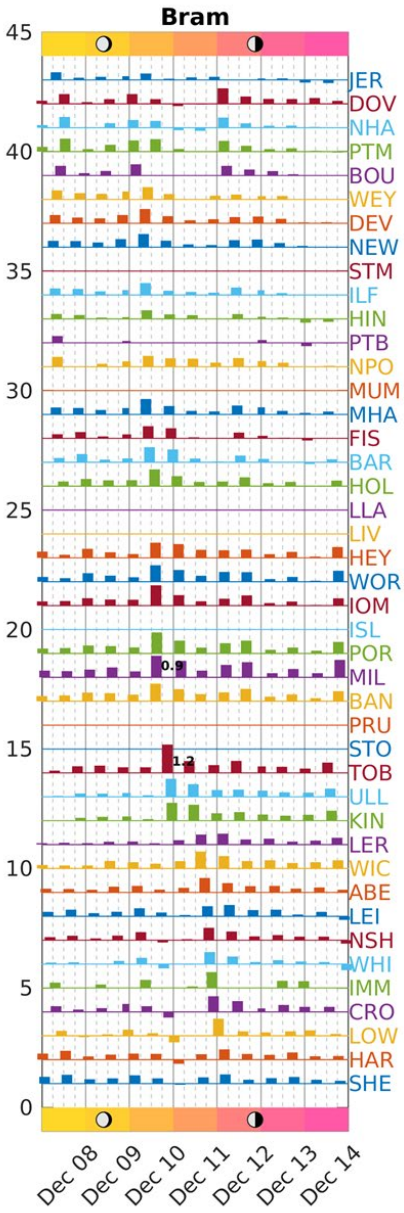
Storm Bram, 9th – 11th December



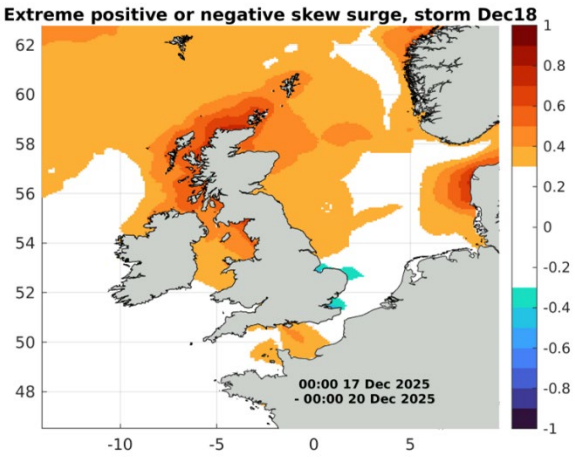


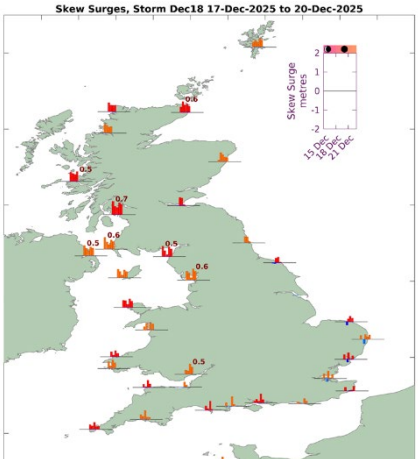


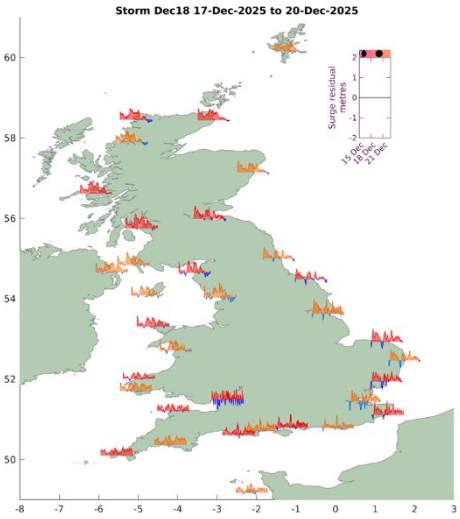


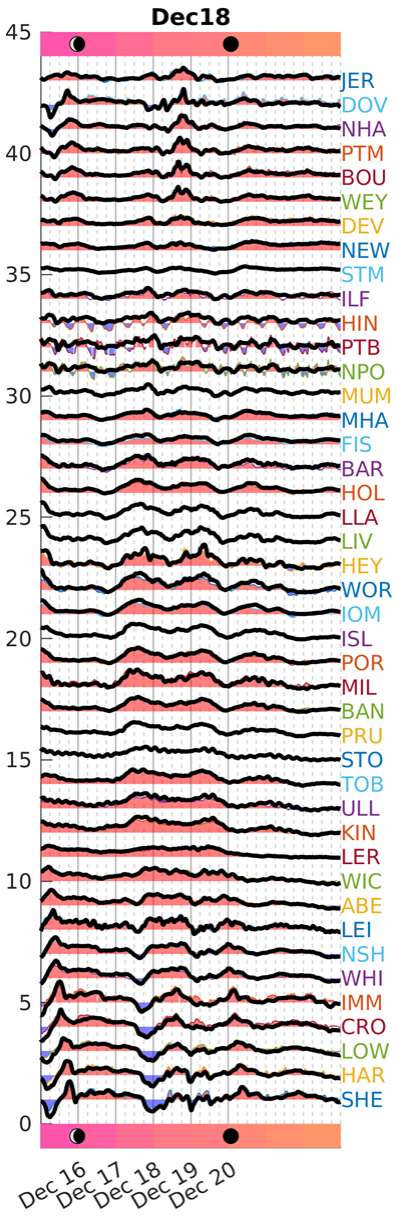


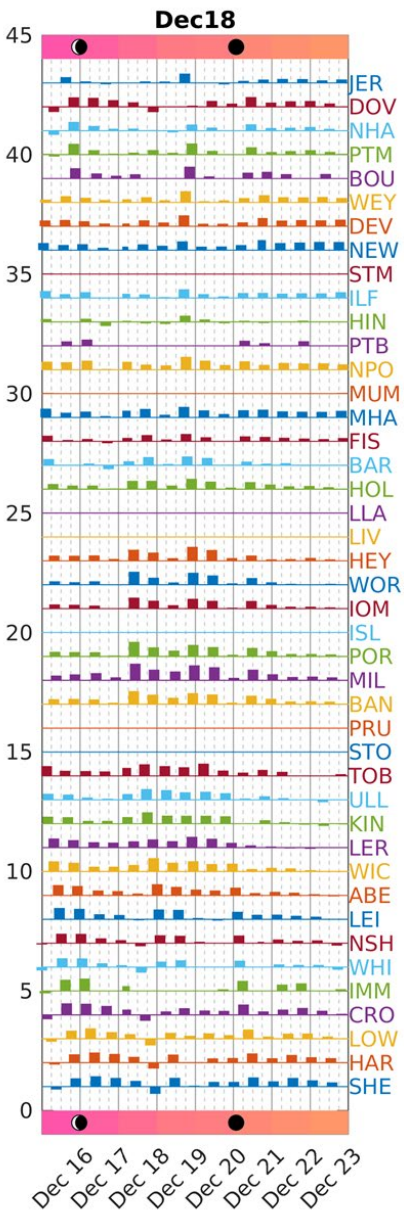
Event Dec18, 17th – 20th December











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