

Storms on Chesil Beach

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Chesil Beach faces south-west and the waves impacting the beach may have travelled from far out in the Atlantic Ocean. Under storm conditions huge waves can push water over and through the beach and considerably modify the beach profile, and, in extreme conditions, can cause temporary breaches of the beach. Wave heights most winters regularly reach 6 metres during periods of gale force winds. Under extreme conditions peak wave heights of 12 metres and more can occur. These high waves will move the pebbles along and over the beach, considerably changing its profile.

When the wind and waves combine water and pebbles are pushed over the top of the beach. Pebbles can also be sucked back from the beach into Lyme Bay. There may also be a storm surge raising the water level in Lyme Bay. The combined effect of a storm surge and water coming over the beach top and percolating down through the pebbles can result in a large flow of water out into the Fleet. As it flows out large volumes of pebbles can be pushed out into the Fleet leaving voids known as 'canns'. Examples can be clearly seen in the beach opposite the Wyke Bridging Camp.



A storm on Chesil Beach



Examples of cann's

Under extreme conditions, the top of the beach can be lowered sufficiently to allow water to flow through. This occurred in 1978 just north of the entrance to the WPNSA on the Portland Beach Road and the resulting flow of water washed away a portion of the beach road and railway embankment. Breaches can also occur in the northern section of the beach. This last occurred in November 2023 at Cogden.

From Abbotsbury northwards, under storm conditions there can be erosion of the land behind the beach. This can clearly be seen at Burton Cliff and West Cliff, with major cliff falls occurring. Further south, erosion of the Fleet land shore can occur from waves and during strong current flows..



The breach at Cogden



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A major storm occurred in December 1978 and this was followed by a major swell event in February 1979. There was much flooding in Chiswell and across the beach road.



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The worst storm in recorded history occurred on the 22/23 November 1824 when hurricane force winds combined with a storm surge and high swells. Chiswell and Fleet villages were devastated, the ferry to Portland washed away. The Swannery was totally flooded.



Victoria Square