June 29th 2005 Thunderstorm over St Merryn - 3 miles west of Padstow

During the 4 hours from around 12:30 -16:30 BST there was an exceptionally severe 'Boscastle' type storm over St. Merryn (just west of Padstow). Motorists were trapped in their cars as roads became impassable between St. Merryn and Morgan Porth (just north of Newqay). Many properties in St Merryn, and villages just to the south, were flooded. Staff at a surf shop in St Merryn had to recover surfboards which floated down the street Fire crews from Padstow helped to pump out flooded properties.

The morning had been very warm with sunny periods and a light southerly gradient wind. I'd spent it walking along the west side of the Camel estuary and was lucky enough to see dolphins. There were at least 10 swimming up and down the mouth of the estuary.

The speed the storm developed was amazing. This photograph was taken on the Padstow side of the river at 12:02 BST. Inland it was mainly clear, the line of cumulus being on the sea breeze front which at that time was just off-shore. During the half hour it took me to get the ferry across to Rock, on the east side of the estuary, the sea breeze front had moved just inland, and the cloud had grown at an alarming rate.

I had lunch at the Blue Tomato cafe in Rock, which faces west across the Camel estuary towards Padstow and I had a grandstand view of events. The storm photo below was taken looking west towards Padstow at 12:52 BST. The darkest area marks the sea-breeze limit (sea to the right). Within 10 minutes of this photo being taken the flag in the foreground was blowing just as hard in the opposite direction. The cloud looked so threatening I was fully expecting to see a tornado.

75-100mm of rain fell in 4 hours in the St Merryn area (76mm was recorded just south of St. Merryn).

Padstow had a rather lucky escape. The intense rain fell on the sandy farmland just behind the town. After a dry June it could absorb a lot of water. If the storm was 1 mile to the east the water would have flooded down the deep valley into Padstow.

The rapid development of the storm was due to a northerly sea breeze moving up the river at the same time as a westerly sea breeze moved in from west of Trevose head. This led to a sort of 3 way convergence with the southerly gradient wind. This is much what happened at Boscastle storm in 2004, and is typical of many north coast events. Storms form just east of north coast headlands, where the aspect of the coast changes from west to north. In this case Trevose Head, in the case of the 2004 Boscastle storm, Tintagel. Godrevy and St. Agnes Beacon create a similar affect.

Heavy showers and thunderstorms which develop over and just to the east of these headlands tend to drift up the coast. The exception being those which form over Trevose head, where the Camel can cause some disruption to the sea breeze front. In this case the storms tend to drift towards Wadebridge and Bodmin.

All this makes these storms rather more predictable than the EA and others seem to realise. Severe storms along the north coast sea breeze front happen almost entirely June-August, with fairly specific atmospheric conditions (high humidity, unstable S-SW wind, sea breeze front just inland) and are statistically most likely in the Boscastle area. Similar flooding to that in 2004 occurred in Boscastle twice in the 1950's. I wouldn't want to live there.

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