

Weather during WWI and WWII: a short comparison

Several important factors need to be mentioned first. The land war started in 1914, while the naval war commenced at its fullest only in the autumn of 1916.

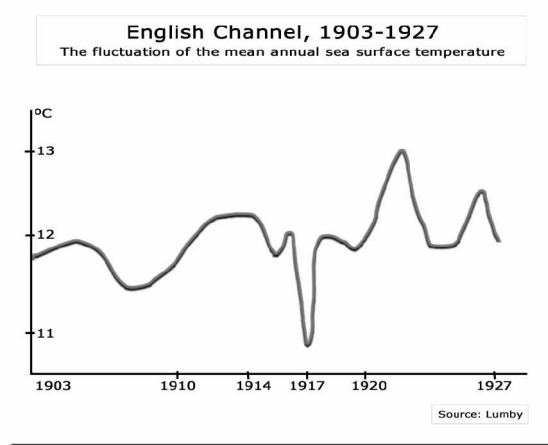
The German attack on Verdun started on February 21st 1916, the invading troops counting one million soldiers. This was the longest battle of WWI and ended on December 18th 1916. The French and German Armies lost several hundred thousands of men each. From the climatic point of view, close battle field regions were wetter than usual, e.g. Baden had 30% more precipitations, and in the Black Forest rain level was 50-80% higher than normal.

The battle of Verdun followed one of the top ranking cold winters of last century. The winter 1916/17 matched closely the record of the winter 1939/40. Not to forget that the devastating part of the naval war started only in the autumn of 1916. Submarine only went into action in 1915, sinking about 100,000 tons of ships per month and attaining about 300,000 tons per month during the second half of 1916. In addition, in 1916, a flotilla of more than 500 vessels was permanently navigating the seas around the British Isles covering a daily average of 1,000 square miles. All this, together with the increased use of sea mines, mine sweeping operations, and depth charges, had a particularly significant influence on the weather all over Great Britain. These changes are mentioned in the weather records. In Britain, June 1916 was a very cold and dull month. Rain persisted in the east and north, e.g. with about 150 hours of rain in Aberdeen and up to 200mm. The next extreme month was October 1916: it was wet and stormy, being recorded up to 200mm of rain daily. Up to this point, it was the highest daily rainfall ever recorded for the British Isles. An extremely cold December 1916 followed.

As sporadic events and monthly statistics are nevertheless not so relevant, we need more factual data to support our thesis. The position of the Great Britain, surrounded by the naval war, may represent our relevant evidence. For this purpose, we refer again to the time witness, A. J. Drummond from Kew Observatory, Richmond (London), who observed in 1943: "Since comparable records began in 1871, the only three successive winters as snowy as the recent ones (from 1939/40 until 1941/42) were those of the last war, namely 1915/16, 1916/17, 1917/18.ⁱ

As for the cooling down of the seas around Britain, it is also difficult to find veridical and solid evidence. In 1935, J. K. Lumby published a seawater temperature series of the English Channel between 1903 and 1927. Between 1901 and 1914, the temperature varied on a narrow band from 11.5°C to 12.2°C. During the war years (1914-1917), the temperature dropped to its lowest point of the series that is 10.9 °C.

*“In September 1916, at Zeebrugge, the German U-boat flotilla alone sank nearly 50,000 tons of ships in the Channel, without any interference of the patrol vessels. Soon, it became clear that the common methods of fighting submarines were simply not working. For example, in September 1916, three U-boats operated in the Channel between Beachy Head and Eddystone Light, an area which was patrolled by forty-nine destroyers (49), forty-eight torpedo boats (48), seven Q-ships (7), and 468 armed auxiliaries – around 572 anti-submarine vessels in all, not taking into account the aircrafts. Shipping in the Channel was held up or diverted. The U-boats were hunted. They sank thirty ships, and escaped entirely unscathed themselves.”*ⁱⁱ



In 1949, another investigation of the Irish Sea situation (1900-1950), conducted by D.C. Giles, shows an important decline from 1914 until 1919ⁱⁱⁱ. Sea chilling becomes inevitable when naval warfare occurs during autumn and winter, when thousands of ship movements churn the sea day and night, when thousands of explosions under and above the sea surface turn sea levels upside-down. Consequences are obvious. In autumn, the sea cools out quicker, implicitly causing the cooling of the air, followed by a larger quantity of snow and by harsher winter conditions. The cooling down of Britain and the unusual temperature drop of the Isles from 1915 until 1918 are undoubtedly determined by the naval warfare.

In conclusion, weather anomalies in Britain during WWI are so similar to those occurring during WWII that no one can deny the obvious impact of the war at sea on weather and on climate changes.

i Drummond, A.J.; 'Cold winters at Kew Observatory, 1783-1942'; Quarterly Journal of Royal Met. Soc., No. 69, 1943, pp 17-32, and; Drummond, A.J.; Discussion of the paper: 'Cold winters at Kew Observatory, 1783-1942'; Quarterly Journal of Royal Met. Soc., 1943, p. 147ff.

ii Winton, John; 'Convoy-- The defense of sea trade 1890-1900', London 1983.

iii Giles, D.C.; 'The Temperature and Salinity of the Surface Waters of the Irish Sea for the Period 1935-46', in: Monthly Notices of the Royal Astronom. Society, Geophys. Suppl., Vol.5, No.9, London 1949, pp. 374-397.