^{127}I and ^{129}I along a transect in the English Channel

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We present extensive and successive iodine isotopes (^{127}I and ^{129}I) data in seawaters so far that cover large areas from west to east in the English Channel. Concentrations of ^{129}I maintained a significant high level within the Channel, with 4-6 orders of magnitude higher than the recognized ^{129}I "background" value in marine waters. The distribution of ^{129}I and $^{129}I/^{127}I$ ratio was consistent with Atlantic water inflow that rapidly moves towards northeast along the French and European near-shore regions. A westward branch of La Hague ^{129}I was clearly observed, which demonstrates a new ^{129}I transfer route from the La Hague to the North Atlantic Ocean. In the westernmost English Channel, the ^{129}I may mixed with both La Hague and Sellafield signals, but more information, such as iodine species and geographic data in this area are required to identify and quantify the southwards ^{129}I from the Irish Sea. In addition, we show that the change of ^{129}I concentration is in accord with La Hague input function. This pattern is important because the La Hague plant has increased its discharge after 2010.