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Iodine levels in the North Atlantic since the mid-20th century

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Atmospheric iodine causes tropospheric ozone depletion and aerosol formation, both of which have significant climate impacts, and is an essential dietary element for humans. However, the evolution of atmospheric iodine levels at decadal and centennial scales is unknown. Here, we report iodine concentrations in the RECAP ice-core (coastal East Greenland) to investigate how atmospheric iodine levels in the North Atlantic have evolved over the last 260 years (1750-2011), this being the first long-term record of atmospheric iodine. The results suggest that the observed increase is driven by anthropogenic ozone pollution and enhanced sub-ice phytoplankton production associated with the recent thinning of Arctic sea ice.