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# Natural and anthropogenic forcing of North Atlantic tropical cyclone track position since 1550 A.D.

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Over the last 30 years, North Atlantic tropical cyclones (TC) have increased in frequency, intensity, and duration in response to rising North Atlantic sea surface temperatures (SST). Here we present a 450-year record of western Caribbean TC activity reconstructed using subannually-resolved carbon and oxygen isotope ratios in a stalagmite from Yok Balum Cave, southern Belize. Western Caribbean TC activity peaked at 1650 A.D. coincident with maximum Little Ice Age cooling and decreased gradually to 1983 A.D. (the end of the record). Comparison with existing basin-wide reconstructions reveals that the dominant TC tracks corridor migrated from the western Caribbean toward the North American east coast through time. A close link with Atlantic Multidecadal Oscillation (AMO) exists throughout the record but with a clear polarity shift in the TC-AMO relationship at 1870 A.D., coincident with industrialisation. We suggest that the cause of this reversal is Greenhouse gas and aerosol emission induced changes in the relationship between the Intertropical Convergence Zone and the Bermuda High between the modern warm period and the Pre-Industrial Era. The likely impact of continued anthropogenic forcing of TC track on population centres of the western North Atlantic and Caribbean will be addressed.