Trapped in time: U, Pu and Am signatures in a *Porites Lutea* coral from Montebello Islands (1950-1960)

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At the Montebello Islands located off Western Australia, three nuclear detonations led to the dispersion of radioactive material across the islands, into the sea and beyond. Corals, as they grow, incorporate elemental and isotopic information, and can therefore provide a record at the time of growth and serve as an environmental archive. We analysed a *Porites Lutea* coral, which was collected north to the North West Island at Montebello Islands, for their U, Pu and Am uptake between 1950 and 1960. This covers the time prior to and post the nuclear tests which took place in 1952 and 1956, respectively.

Of particular interest were ²³⁶U, ^{239,240}Pu and ²⁴¹Am as they have characteristic fingerprints relating to the nuclear tests at the Montebello Islands. These radionuclides were measured using the 1 MV Vega accelerator at ANSTO and we report on the temporal variation of their isotopic concentrations and ratios with a time resolution of a few months. The initial elevated concentrations followed by lower but persistent levels indicating ongoing presence of radionuclides in the marine system around the Montebello Islands.