**Abstract 4.08.B.T-03:** Savage, G.1, Deakin, K.1, Jones, J.2, Kriston, I.3, Santillo, D.3, Boxall, A.4, Galloway, T.S.1 & Lewis, C.1 (2024). Mapping Coastal Chemical Contamination in Different Environmental Matrices Across the Galapagos Archipelago.  Platform presentation at **SETAC Europe 34th Annual Meeting, Seville, 5-9 May 2024.**

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As a developing island province, the Galapagos Archipelago is at the forefront of the Anthropocene footprint, with its population influx, urbanisation, reliance on fossil fuels, growing tourism, fishing and agricultural industries cumulatively contributing to increasing pollutant input at the coastal interface. Subsequently, despite its geographical isolation ~1000 km off the coast off South America in the eastern Pacific Ocean, the Galapagos Marine Reserve (133,000 km2 encompassing the islands) is at risk from oil, plastic, pesticides, persistent organic pollutants and heavy metal contamination; such contaminants threaten to overwhelm the adaptive capacity and resilience of these fragile island ecosystems and the unique biodiversity they support. Here we characterise and quantify coastal chemical contamination in different environmental matrices at the archipelago scale. Surface seawater and benthic sediment samples were collected in triplicate using grab techniques from eleven coastal sites around the three main inhabited Galapagos Islands (San Cristobal, Santa Cruz and Isabella). Novel passive samplers (Markes ‘HiSorb’ probes) – steel probes coated with PDMS solid phase – were also deployed at each site for a period of 1–3 weeks to further understand the temporal variability of contamination and evaluate their potential use as rapid assessment monitoring tools. HPLC-MS analysis revealed carbendazim and diuron to be the most frequently detected pesticides and found at the highest concentrations (43.75% and 37.5% of samples; 24.6 ng/L and 24.9 ng/L, respectively). Proximity to urbanisation and point-sources appeared to influence levels of pesticide contamination, with enclosed brackish waterbodies exhibiting the highest concentrations. Initial forensic GC-MS screening of compounds bound to HiSorb probes has identified medium-to-long chain hydrocarbons, chemical ingredients associated with sunscreen products and residues of the widely used insect repellent DEET. This investigation provides valuable baseline data on chemical contamination across the Galapagos Archipelago to inform future management and mitigation strategies by the Galapagos National Park. Over the next decade, a complex trade-off between urbanisation and conservation must be carefully navigated to ensure the preservation of this UNESCO World Heritage Site in this evolving chemical landscape.