



A Hawksbill turtle seen in the pristine waters off Diego Garcia

The pristine waters of the British Indian Ocean Territory

Pollutant levels in Chagos waters and marine life are exceptionally low. Analyses in 1996 suggested that "The marine environment of the Chagos Archipelago as a whole is exceptionally pristine"^{1,2} and was the cleanest water tested so far in the world.

Hydrocarbons found are almost entirely of biological (natural) origin. Oils, and pyrogenic (combustion) hydrocarbons are present only in parts per billion, while some particularly toxic organic pollutants such as PCBs, lindane and dieldrin are present in parts per trillion only. Many others screened showed no trace at all, even in bird livers and other tissues which concentrate pollutants. The identity of those chemicals that were detected suggest that they are wind borne, rather than of local origin.

Toxic metals were similarly low, orders of magnitude lower than most areas. One exception was in Salomon where small quantities of nickel were concentrated in some marine life, which probably came from the fungicide used in the coconut plantation forty years previously.

The 2006 Chagos expedition again sampled lagoon water, this time of Diego Garcia, focussing on a range of 'booster biocides'—chemicals from antifouling paints which are highly toxic to marine life, and terrestrial herbicides. These inhibit the photosynthesis of plants, and are very damaging to corals. Analytical sensitivity was such that during sampling, no sunscreen, perfume or deodorants could be worn in case this caused contamination! Samples were processed on the island and then analysed in Plymouth Marine Laboratory. Again, concentrations found were at mostly below detection limits of 1 part per trillion, using the most sensitive instrumentation available. We conclude that Chagos water **"...could be considered appropriate as a global reference baseline"**³.

¹ Everaarts, JM, Booij K, Fischer CV, Maas YEM, Nieuwenhuize J. 1999. Assessment of the Environmental Health of the Chagos Archipelago (Indian Ocean). In: *Ecology of the Chagos Archipelago*. Linnean Society Special Publications. pp 305–326.

² Readman, JW, Tolosa I, Bartocci J, Cattini C, Price ARG, Jolliffe A. 1999. Contaminant levels and the use of molecular organic markers to characterise the coastal environment of the Chagos Archipelago. In: *Ecology of the Chagos Archipelago*. Linnean Society Special Publications. pp 297–304.

³ Guitart C., Sheppard A., Frickers T., Price A., and Readman J. 2007. Negligible risks to corals from antifouling booster biocides and triazine herbicides in coastal waters of the Chagos Archipelago. *Marine Pollution Bulletin* **54**:226–246.

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