Groundwater seepage from coastal aquifers has recently been recognized as an overlooked major source of nutrients (N, P) and contaminants to the coastal environment. Nutrient and contaminants concentrations in groundwater are often much higher than those in river water, compensating for the lower flux of groundwater relative to the lagoon surface water. The Ria Formosa is a coastal lagoon located in the south of Portugal (Algarve, Faro) and surrounded by an intensely farmed area. We hypothesize that water quality and ecological health of the Ria Formosa environments are influenced by past and on-going contamination of terrestrial groundwaters with nutrients from fertilizer, sewage and industry. Following Leote, Ibanhez and Rocha (2005) Estimated submarine groundwater discharge (SGD) into the lagoon to be 3.6 m$^3$ day$^{-1}$ per linear meter of coastline with freshwater contributions (per volume) ranging from 10% to 50%. SGD as an important nutrient source to the Ria Formosa, estimating annual loads of 36.2 mol (0.507 kg) of Nitrogen, 1.1 mol (0.034 kg) of Phosphorus and 18.6 mol (0.522 kg) of Silicon per meter of coastline. Based on these results, it was suggested that SGD is a potential contributor to the observed nutrification status of the Ria Formosa lagoon.