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## **Impact of seasonal touristic activity on emerging contaminants of micro-estuaries and hydraulically connected water bodies in North-Western Corsica**

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Micro-estuaries are very common in the Mediterranean. Their ecological role is also of uppermost importance for the preservation of biodiversity as well as for the nutrient input towards the coastal marine environment. Strong seasonal contrasts are characteristic of the Mediterranean regions, for the hydrological behaviour of rivers but also for activities in relation with the tourism industry. Therefore, in coastal regions water bodies can be exposed to very strong impacts due to the very focused touristic activity especially along the most appreciated zones like beaches, sand dunes and sand banks where micro-estuaries are very frequently also located. Due to the very short duration of the highest touristic season and to the very frequently under-calibrated capacities of sanitation infrastructures, it is frequent to observe wastewaters releases towards the surface waters which can contaminate groundwaters and in the end micro-estuaries. It is then of major interest to evaluate what type of emerging contaminants can be found in these regions, and if a clear seasonality in the contaminant release can be observed.

The strategy is to investigate the emerging contaminant content in waters of micro-estuaries and other types of connected waters (river waters, groundwaters) from a coastal areas of North-Western Corsica characterized by a very dynamic seasonal touristic activity. Sampling were organized before the touristic period and after in order to appreciate the impact of the high season peak on the water quality. 102 molecules were analysed on 20 water samples from 4 different coastal watersheds.

Results show a clear impact of the increase in the population due to the touristic activity, but a baseline contamination is also observed for the winter season. 11 molecules are present for each sampling and mostly composed of pharmaceuticals, nicotine and caffeine metabolites as well as artificial sweeteners. A tendency towards the reduction of concentrations is observed in rivers along the flow due to dilution processes and degradation of contaminants. Groundwater contamination appear as really more stable and mostly in relation with the immediate vicinity of boreholes and wells. Micro-estuaries, which are the final collector all the watershed pollution sources, are the most contaminated water bodies of the survey.