



Supplementary material: How the origin of sedimentary organic matter impacts the benthic nutrient fluxes in shallow coastal mudflats

Laurent Jeanneau^{DOI *, a}, Emilie Jardé^{DOI a}, Justine Louis^{DOI b, c}, Alexandrine Pannard^{DOI b}, Marine Liotaud^a, Françoise Andrieux-Loyer^{DOI c}, Gérard Gruau^{DOI a}, Florian Caradec^c, Emilie Rabiller^c, Nathalie Lebris^b and Anniet Laverman^{DOI b}

^a Univ Rennes, CNRS, Géosciences Rennes, UMR 6118, F-35000 Rennes, France

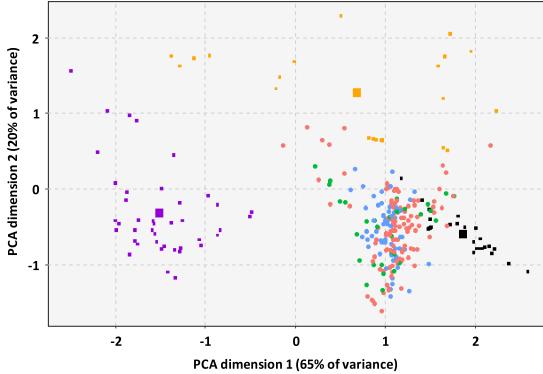
^b Univ Rennes, CNRS, ECOBIO, UMR 6553, F-35000 Rennes, France

^c Ifremer, DYNECO, F-29280 Plouzané, France

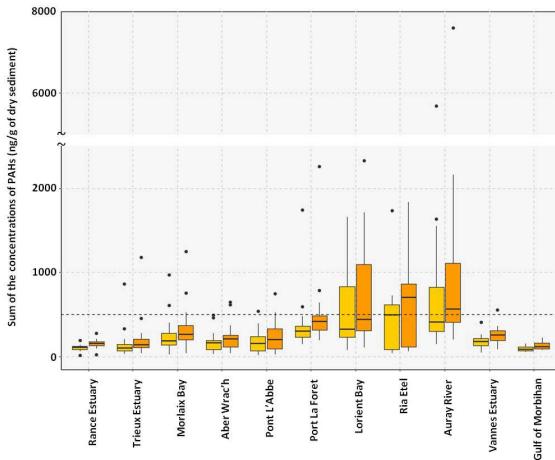
E-mails: laurent.jeanneau@univ-rennes1.fr (L. Jeanneau),
emilie.jarde@univ-rennes1.fr (E. Jardé), justine.louis@ceva.fr (J. Louis),
alexandrine.pannard@univ-rennes1.fr (A. Pannard), marine.liotaud@univ-rennes1.fr
(M. Liotaud), Françoise.Andrieux@ifremer.fr (F. Andrieux-Loyer),
gerard.grauu@univ-rennes1.fr (G. Gruau), Florian.Caradec@ifremer.fr (F. Caradec),
Emilie.Rabiller@ifremer.fr (E. Rabiller), nathalie.lebris@univ-rennes1.fr (N. Lebris),
anniet.laverman@univ-rennes1.fr (A. Laverman)

Supplementary Table S1. Flux, isotopic and lipidic data.

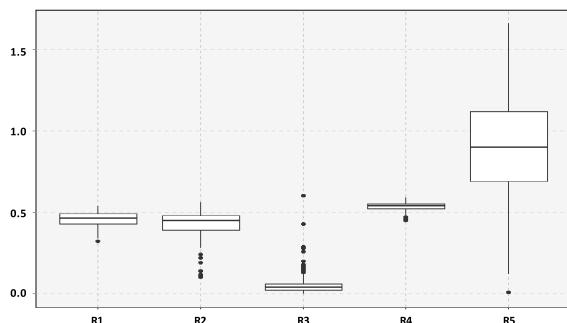
* Corresponding author.



Supplementary Figure S1. Projection of the samples (dots) in the plane formed by the two first components calculated by the principal component analysis of the distribution of the four fecal stanols in the main sources of fecal contaminations in Brittany, i.e. bovine manures (black square, $n = 25$), pig slurries (orange square, $n = 22$) and municipal waste water treatment plant effluents (purple square, $n = 41$). The largest squares represent the average projection for each type of source. The color of the dots differentiates the ecosystems between middle estuaries (blue), lower estuaries (green) and bays (pink).



Supplementary Figure S2. Sum of the concentrations in ng/g of dry sediment of PAHs investigated in the OSPAR survey (gold) and listed by the US-EPA (orange). The black dashed line at 500 ng/g is the background contamination determined by the OSPAR commission in sediments of the Eastern North Atlantic (OSPAR, 2017).



Supplementary Figure S3. Ranges of variation of isomeric ratios calculated on PAHs. The formulas and diagnostic values are given in Table 2.