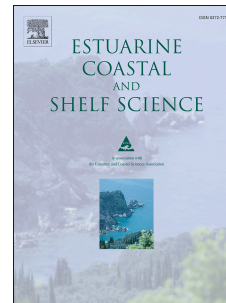


# Accepted Manuscript

Hydro-sedimentary processes of a shallow tropical estuary under Amazon influence.  
The Mahury Estuary, French Guiana

Sylvain Orseau, Sandric Lesourd, Nicolas Huybrechts, Antoine Gardel



PII: S0272-7714(17)30065-3

DOI: [10.1016/j.ecss.2017.01.011](https://doi.org/10.1016/j.ecss.2017.01.011)

Reference: YECSS 5370

To appear in: *Estuarine, Coastal and Shelf Science*

Received Date: 24 February 2016

Revised Date: 16 January 2017

Accepted Date: 17 January 2017

Please cite this article as: Orseau, S., Lesourd, S., Huybrechts, N., Gardel, A., Hydro-sedimentary processes of a shallow tropical estuary under Amazon influence. The Mahury Estuary, French Guiana, *Estuarine, Coastal and Shelf Science* (2017), doi: 10.1016/j.ecss.2017.01.011.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Hydro-sedimentary processes of a shallow tropical estuary under Amazon influence. The Mahury Estuary, French Guiana.

Sylvain Orseau<sup>a,b,1</sup>, Sandric Lesourd<sup>c</sup>, Nicolas Huybrechts<sup>d</sup>, Antoine Gardel<sup>a,b</sup>

<sup>a</sup>USR 3456, CNRS center of French Guiana, 2 avenue Gustave Charlery, 97300, Cayenne, Guyane Française.

<sup>b</sup>UMR 8187, Univ. Littoral Cote d'Opale, CNRS, Univ. Lille, UMR 8187, LOG, Laboratoire d'Océanologie et de Géosciences, F 59 000 Lille, France.

<sup>c</sup>UMR 6143, M2C, Université de Caen, 24 rue des tilleuls, 14000, Caen CEDEX, France.

<sup>d</sup>UMR 7337, Roberval laboratory, LHN (joint research unit UTC-CEREMA), 60200, Compiègne, France.

---

## Abstract

Along the Guianas coast, coastal dynamic is characterized by the migration of mud banks originating from the Amazon. This singular feature affects the dynamic and the morphology of local estuaries and can induce rapid bathymetric evolution in lower estuaries. Since 2012, the navigation channel of the Mahury Estuary (French Guiana) is enduring a severe siltation whose origin comes from a mud bank crossing the estuary mouth. This study aims to determine how the migration of a mud bank through an estuary mouth could influence the transport and fluxes in the estuary. Field measurements were performed over a year with the monitoring of the salt intrusion length, mooring surveys during spring-neap cycles and shipboard profiling surveys during semi-diurnal cycles. Salt intrusion lengths underline a significant seasonal variation characterized by the transition from a steady-state length during high river discharge and a wide range of lengths with the tidal range during low to moderate river discharge. During the rainy season, measurements indicate a fluvial-dominated condition with low suspended-sediment concentrations most of the semi-diurnal cycle.

---

1. Corresponding author. E-mail address : sylvain.orseau@cnrs.fr (S. Orseau)

Download English Version:

<https://daneshyari.com/en/article/5765210>

Download Persian Version:

<https://daneshyari.com/article/5765210>

[Daneshyari.com](https://daneshyari.com)