

## **Sedimentary signature of Hurricane Isaac in a *Taxodium* swamp on the western margin of Lake Pontchartrain, Louisiana, USA**

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**Abstract** Compositional and geochemical profiles were established for a 59-cm sediment core extracted from a small pothole pond in a *Taxodium* (bald cypress) swamp 830 m inland from Lake Pontchartrain in south-eastern Louisiana, USA. The core consists of a top organic unit (peat to clayey peat) from 0–29 cm above a bottom clay unit at 30–59 cm depth. Four distinct zones, marked by gradual changes in organic content and elemental concentrations, occur in the clay unit. These changes probably reflect two cycles of slowly changing water depths. Hurricane Isaac's signature, a brown clay band at 3–5 cm, is identified based on the stratigraphic and compositional correspondence with the storm's event layer, documented from nearby sites. Sedimentary and geochemical similarities between this material and clastic bands at 15–19 and 23–25 cm identify those two intervals as potentially representing earlier floods. The Cl/Br ratio presents a potentially useful method for distinguishing fluvial and marine flooding.

**Key words** paleotempestology; Lake Pontchartrain; Cl/Br ratio; Hurricane Isaac; sedimentary signature