

## **Wood-rich turbidites in the Bengal Fan: A discovery by IODP expedition 354**

CAMILO PONTON<sup>1</sup>, VALIER GALY<sup>2</sup>, ALBERT GALY<sup>3</sup> AND  
IODP EXPEDITION 354 SCIENCE PARTY

<sup>1</sup>University of Southern California, Los Angeles, CA, USA.  
cponton@usc.edu

<sup>2</sup>Woods Hole Oceanographic Institution, Woods Hole, MA,  
USA. vgaly@whoi.edu

<sup>3</sup>Université de Lorraine, Nancy, France. agaly@crpg.cnrs-  
nancy.fr

Sediments recovered along a transect of drill sites at 8°N across the Bengal Fan by IODP expedition 354 provide an integrated picture of Himalayan erosion processes and fluxes over the Neogene. As such, they will allow investigation of the effect of the Himalayan erosion on the global carbon cycle through processes consuming atmospheric CO<sub>2</sub>, specifically silicate weathering and organic carbon burial.

We present initial observations and shipboard analysis of turbiditic sediments recovered at each of the 7 sites across the Bengal Fan. Preliminary estimates of organic carbon loading and behavior – such as preferential association of organic matter with clays – mirror observations made in the modern Ganges-Brahmaputra river system [1], suggesting efficient terrestrial organic carbon burial in the Bengal Fan throughout the Neogene. In addition, the organic carbon burial budget is likely to be affected by the frequent presence of woody debris many turbiditic sequences, especially during the Early and Mid-Miocene and described in the Bay of Bengal for the first time by Expedition 354.

Further investigations will focus on the mode of transport and deposition of these woody turbidites as well as on reconstructing the provenance of the organic debris within the Himalayan basin. This will eventually allow deriving a budget of organic carbon burial associated with this unusual mode of transport and deposition.

[1] Galy et al. (2007), *Nature* (**450**), 407-410.