

## **Foraminiferal Assemblages and Palaeoenvironmental Inferences of the Lowermost Colon Formation (Late Campanian), Catatumbo Basin, Colombia**

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### **Abstract**

The La Luna Formation is the main source rock in the Cretaceous successions of Catatumbo basin (northern Colombia) and the Maracaibo area. However, few paleontological studies have focused on the contact with contiguous units such as the Colon Formation. To clarify the possible paleoenvironments of this unit, the foraminiferal content of several wells in the basin were examined for the lowermost Colon Formation and its contact with La Luna Formation.

For the lowermost Colon Formation, the foraminiferal assemblages are highly diverse, mainly composed by epifaunal benthic and non-keeled planktonic foraminifera suggesting well to moderately oxygenated conditions on an inner shelf. Taxa such as *Globotruncana* spp., *Rugoglobigerina* spp., *Siphogenerinoides* spp., *Anomalina* spp., *Pullenia cretacea*, *Praebulimina petroleana* and *Haplophragmoides excavata* are characteristic of this section of Colon Formation. In contrast, the upper part of La Luna Formation contains less diversified foraminiferal assemblages with a high proportion of infaunal foraminifera and biserial plancktonics, suggesting an oxygen-depleted open marine environment, probably related to higher surface productivity. Taxa such as *Bolivinooides* spp. (*Bolivina explicata*), *Anomalina redmondi*, *Praebulimina* spp., and *Heterohelix* spp. are found in this unit.

This contrast in foraminiferal assemblages and suggested paleoenvironments agrees with previous studies that propose a regional discordance between the Colon and La Luna Formations in the Catatumbo basin. Furthermore, this contrast in the foraminiferal assemblages has been observed in coeval successions in the Middle Magdalena Basin and the Perijá Range.