



2015 Aquatic Sciences Meeting

Aquatic Sciences: Global And Regional Perspectives — North Meets South

22-27 February 2015 — Granada, Spain

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ABSTRACT

PLANKTON DIVERSITY AND METABOLISM IN THE CONGO RIVER DURING HIGH WATERS (DECEMBER 2013) AND LOW WATERS (JUNE 2014)

Ecological functioning of large river systems is described by several conceptual models which stressed the importance of allochthonous organic matter and autochthonous production from upstream sources to downstream. These concepts were challenged along a 1700-km stretch of the Congo river. The Congo river is the second largest river in the World in terms of freshwater discharge (1457 km³ yr⁻¹) and in terms of drainage basin (3.75 10⁶ km²). In sharp contrast to its biogeochemical and ecological importance, studies on metabolism and ecological functioning in the Congo river are entirely lacking. Here, we report a data-set of phytoplankton richness, diversity, abundance and plankton metabolism (respiration and photosynthesis) (total of 164 samples) in the mainstem and major tributaries of the Congo river, along the 1700 km stretch from Kisangani to Kinshasa, during the high water (December 2013) and low water (June 2014) periods. During high water periods, turbidity was high, with a mean euphotic depth of 3.2 m in the mainstem. Phytoplankton biomass was accordingly low (mean Chlorophyll a = 0.8 mg m⁻³). The areal integrated primary production ranged between 48 and 252 (mean, 111) mg C m⁻² d⁻¹. While the Oubangui river (2nd largest affluent of the Congo river) presented a higher

biomass (3.6 mg m⁻³) and a higher primary production (566 mg C m⁻² d⁻¹) than the mainstem, the Kwa river (1st largest affluent) showed a low biomass (0.8 mg m⁻³) and a low primary production (36 mg C m⁻² d⁻¹). The comparison of high and low water periods shows a general increase of phytoplankton biomass and productivity.

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DETAILS

Poster presentation

Session #:023

Date: 2/25/2015

Time: 18:30 - 20:00

Location: Poster/Exhibit Hall

Presentation is given by student: No

PosterID: 126



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