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Impact of river discharge on distribution of zooplankton biomass, community structure and food web dynamics in the Western coastal Bay of Bengal

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1 **Impact of river discharge on distribution of zooplankton biomass,**
2 **community structure and food web dynamics in the Western coastal**
3 **Bay of Bengal**

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12 **Abstract**

13 Observations were carried out along the western coastal Bay of Bengal, to examine the physical,
14 chemical and biological parameters during the summer monsoon particularly when the rivers of
15 India are in flood condition and discharge large quantities of fresh water into the Bay of Bengal.
16 River discharge has a significant impact on plankton biomass (Chl-*a*) in the coastal Bay of
17 Bengal. High concentrations of nutrients were observed at the Southern coastal Bay of Bengal
18 (SCB), which were associated with high suspended matter (SPM) that limits the phytoplankton
19 biomass. In contrast, the Northern coastal Bay of Bengal (NCB) was characterized by low
20 nutrients and SPM coupled with higher phytoplankton biomass and zooplankton abundance.
21 Therefore primary production in the coastal Bay of Bengal appears to be controlled by light
22 availability in the water column more so than by nutrients, particularly during the peak river
23 discharge. Relatively higher zooplankton biomass and abundance have been found in NCB than
24 in SCB. Zooplankton biomass showed a strong linear relationship with phytoplankton biomass in
25 NCB. On the other hand, a strong linear relationship was observed with particulate organic
26 carbon (POC) in the SCB.

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