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Distribution of iron, copper and manganese in the Arabian Sea

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The distribution of iron, copper and manganese was studied on a zonal transect of the Arabian Sea during the SW monsoon in 2007. The distribution of metals in the eastern and western ends of the transect are completely different, with concentrations of Fe and Mn higher in the east, but copper much higher in the west. Redox cycling in the east, and enhanced ventilation in the west contributes to these processes. It seems likely that blooms of Phaeocystis sp. contribute to the pronounced surface depletion and oxicline regeneration we observe, particularly for copper. The results are very different than similar surveys in the Peru upwelling, indicating controls by very different processes. These results have important implications for carbon and nitrogen cycling, particularly for processes mediated by key Cu and Fe metalloenzymes.