

## Characteristics and landcover of estuarine boundaries: implications for the delineation of the South African estuarine functional zone

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### ABSTRACT:

This study investigated whether the current lateral boundary for estuaries in South Africa, i.e. the estuarine functional zone (EFZ), includes all estuarine habitats. The EFZ covers 173 930 ha in 304 estuaries/outlets nationally. Field surveys and analysis of available aerial images showed that 82 (12 956.70 ha) of these estuaries (26%) had estuarine habitats occurring outside of this boundary. As a result of mapping scale, the National Vegetation Map does not represent habitats that are associated with small estuaries (approximately 50% of South Africa's estuaries). For estuaries in the Western and Eastern Cape provinces, most habitats have been lost due to urban development, whereas in subtropical areas (northern Eastern Cape and KwaZulu-Natal), cultivation has removed estuarine habitat. Although delineation of boundaries can be complicated by landcover changes, the estuarine lateral boundary in Cape estuaries could be identified based on sediment characteristics (moisture content, organic content, electrical conductivity), groundwater characteristics (salinity, conductivity and depth) and plant species. The delineation of the EFZ needs to be consistent, inclusive of all estuarine physical and biological processes, and cost-effective to identify so that it can protect estuarine habitats.