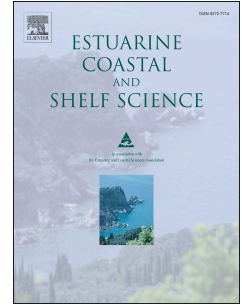


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# LARVAL FISH ASSEMBLAGES ACROSS AN UPWELLING FRONT: INDICATION FOR ACTIVE AND PASSIVE RETENTION

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## ABSTRACT

In upwelling areas, enrichment, concentration and retention are physical processes that have major consequences for larval fish survival. While these processes generally increase larval survival, strong upwelling can also increase mortality due to an offshore transport of larvae towards unfavorable habitats. In 2013 a survey was conducted along the Senegalese coast to investigate the upwelling effect with regard to larval fish assemblages and possible larval fish retention. According to water column characteristics two distinct habitats during an upwelling event were discriminated, i.e. the inshore upwelled water and the transition area over the deepest part of the Senegalese shelf. Along the two areas 42,162 fish larvae were collected representing 133 species within 40 families. Highest larval fish abundances were observed in the inshore area and decreasing abundances towards the transition, indicating that certain fish species make use of the retentive function of the inner shelf area as spawning grounds. Two larval fish assemblages overlap both habitats, which are sharply delimited by a strong upwelling front. One assemblage inhabited the inshore/upwelling area characterized by majorly neritic and pelagic species (Sparidae spp., *Sardinella aurita*), that seem to take the advantage of a passive retention on the shelf. The second assemblage consisted of a mix of pelagic and mesopelagic species (*Engraulis encrasicolus*, Carangidae spp. and Myctophidae spp.). Some species of the second assemblage, e.g. horse mackerels (*Trachurus trachurus* and *Trachurus trecae*), large finned-lantern fish (*Hygophum macrochir*) and foureyed sole (*Microchirus ocellatus*), revealed larval peak occurrences at intermediate and deep water layers, where the near-ground

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