

**Conference Title:**

Ecological boundaries generated by coastal upwelling processes

**Author:**

Dr. Susanne Neuer  
School of Life Sciences  
Arizona State University  
Tempe, AZ 85287-4501 (USA)

**Abstract:**

Coastal upwelling processes, particularly those of the eastern boundary currents, shape ocean biology and biogeochemistry both near shore and far into the open ocean. They are sites of some of the highest primary production and fisheries yield found in the ocean, mainly due to the wind-driven transport of nutrients into the euphotic zone. These upwelling margins are also hydrodynamically diverse because of the interaction of the along-shore currents with the coastal topography. In this presentation I will investigate the ecological boundaries generated by coastal upwelling processes using examples of the Canary Current and California Current Upwelling systems. Both systems are influenced by upwelling filaments, fronts and offshore propagating mesoscale eddies that influence the distribution of organisms from phytoplankton to zooplankton to fish. Coastal upwelling margins have also been found to influence the biogeochemistry of the adjacent oligotrophic ocean regions many 100 s of km off shore because upwelling filaments and coupled mesoscale circulation advect sinking particulate matter (export production) off shore, leading to a de-coupling of primary and export production.

**References:**

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