

ABSTRACTS

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**Oceanographic environment of the Sodwana Bay coelacanths
(*latimeria chalumnae*), South Africa**

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Trimix scuba divers discovered coelacanths in Jesser Canyon at a depth of 104m on the northern KwaZulu- Natal (KZN) coast (Sodwana Bay) in October 2000. The existence of these animals at such a shallow depth and in the swift and powerful Agulhas Current led to a suggestion that this might be an isolated group swept well away from the main population in the Comoros, where they live at depths of 200 – 350m with little current. Subsequent observations from three manned submersible surveys and one remotely operated vehicle expedition together with recreational diver observations indicate that the South African population of coelacanths has at least 26 individuals, mostly occupying the depth range of 104 – 140m in canyons. Seventeen CTD sections collected during four cruises in 2002 and 2003 indicate the temperature range in this habitat to be similar to that found in the Comoros Islands (that is 15 – 22°C cf. 15 – 19°C in the Comoros). However, a 2.5-month-long time series of hourly data collected by a thermistor array deployed a known coelacanth cave in Wright Canyon indicated greater variation than anticipated, with temperature changes between 16°C and 24°C occurring in a day. Dissolved oxygen levels in this depth zone were found to range between 3.0ml l⁻¹ and 4.8 ml l⁻¹ compared to 3.5ml l⁻¹ in the Comoros. The low oxygen values along this coast are a result of the shallow oxygen minimum, which becomes shallower in the southwest Indian Ocean, particularly in the Agulhas Current, than in tropical latitudes. Current velocities measured using a ship-borne ADCP in the depth range 100 – 140m at Sodwana were considerably higher than those measured in the Comoros habitat (20 – 60cm s⁻¹ cf 3 – 4cm s⁻¹) and may be an important factor explaining the coelacanths occupation of the canyons found along the northern KZN shelf-break.