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Unexpected observation of blue streak cleaner wrasse (*Labroidesdimidiatus*) on a deep-water reef off Southern Africa

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Introduction

Cleaning symbiosis whereby cleaner fishes and shrimps remove parasites and some tissue from hosts is wide spread on coral reefs. Arguably the most iconic cleaner is the blue streak cleaner wrasse, *Labroides dimidiatus*[1] which is found in reef environments throughout the tropical and subtropical Indo-Pacific. *L. dimidiatus* is common to abundant on shallow reefs[2] and has been shown to service a wide range of fish species and to impact the distributions of host fishes. However, little is known about its presence or activity in deeper reefs. Regional fish guides, as well as FishBase, list the typical depth range as "up to 30m", with a maximum depth of 40m. However, Sih et al.,[3] reported *L. dimidiatus* as deep as 54m and Randall 1958 cited observations by Regan in 1908 of specimens from "34 fathoms" (62m) in the Maldives, suggesting that this speciesmay occur deeper.

On 8 April 2018 at 12:28 (water temperature 21˚C) during a recreational dive conducted on closed circuit re-breather in Diepgat Canyon (27˚36'36.2" S; 32˚40'04.4" E), Sodwana Bay, KwaZulu-Natal, South Africa, *L. dimidiatus* was observed (Figure 1) actively cleaning at a depth of 57m deeper than reported on by Sih et al.[3] by dive leader Christo van Jaarsveld, in an area known locally as Diepgat Coral Tree (a large coral tree atop a triangular rocky outcrop surrounded by sand). A second unexpected observation was made on 9 April 2018 at 12:42 (water temperature 20˚C) during a recreational dive in Diepgat Canyon (27˚36'36.2"S; 32˚40'04.4"E) conducted on closed circuit rebreather. *L. dimidiatus* were observed (Figure 2) actively cleaning at 64m deeper than reported on by Randall by dive leader Christo van Jaarsveld. This observation was made at a rocky outcrop surrounded by sand approximately 50m east of Diepgat Coral Tree and appears to be the deepest recording for *L. dimidiatus* to date. These observations are the first deep reef observations of cleaning behaviour by *L. dimidiatus* on east African reefs.

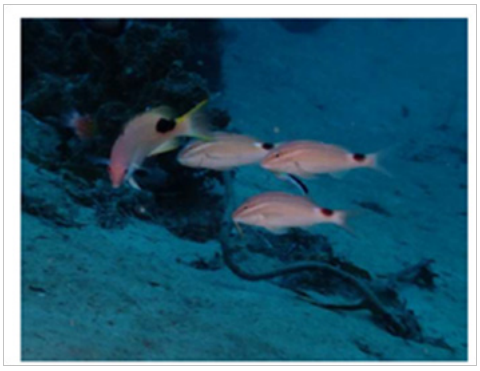

Figure 1 (Photo credit C van Jaarsveld).

While changes in species depth records are not always noteworthy, the importance of cleaner wrasse in reducing fish parasite loads and altering the composition of fish communities, along with this site being at the southern extreme of coral reefs off east Africa (with cooler winter temperatures) add to the importance of our observations. Given advances in deep-diving technology that enabled these observations, along with warming seawater, we expect such observations to become more common. Such technological advances also enable important comparative studies of cleaner-host interactions along depth gradients.

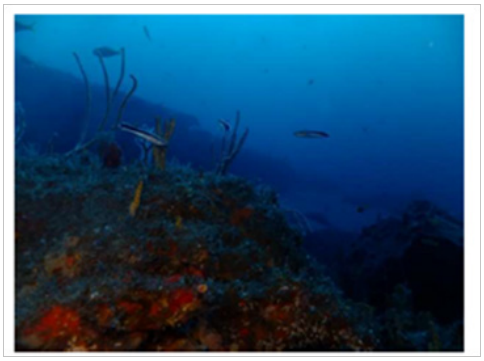

Figure 2 (Photo credit C van Jaarsveld).

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Conflicts of interest

The author declares that there are no conflicts of interest.

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SeaXplore Dive Center (Pty) Ltd.

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