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Occurrence of *Abudefduf* spp. (Pisces: Pomacentridae) in the Lebanese coastal waters (eastern Mediterranean) - morphological traits and visual evidence

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List of links consulted

[https://www.fishbase.se/photos/PicturesSummary.php?ID=1119&what=species: *A. saxatilis*](https://www.fishbase.se/photos/PicturesSummary.php?ID=1119&what=species:A.saxatilis) (Fig. 3A) from Ascension Island. Juvenile specimen characterized by a continuous 5th bar and a peduncle without spots (permission Peter Wirtz).

[https://www.fishbase.in/photos/PicturesSummary.php?StartRow=4&ID=1119&what=species&TotRec=8: *A. saxatilis*](https://www.fishbase.in/photos/PicturesSummary.php?StartRow=4&ID=1119&what=species&TotRec=8:A.saxatilis) (Fig. 3B) from Bonaire, Netherlands Antilles. Specimen characterized by a continuous 5th bar and a peduncle with two spots (permission Robert Patzner).

[http://www.fishbase.us/photos/UploadedBy.php?autoctr=7323&win=uploaded: *A. vaigiensis*](http://www.fishbase.us/photos/UploadedBy.php?autoctr=7323&win=uploaded:A.vaigiensis) from Oman. Specimen characterized by a continuous 5th bar and a peduncle with two spots (Photo: Richard Field). According to the Mediterranean literature, those characters distinguish *A. vaigiensis*.

[https://bodavidsson.com/galleries/marine-life/actinopterygii/perciformes/pomacentridae/BD-121128-Aqaba-7607-Abudefduf-vaigiensis-\(Quoy---Gaimard.-1825\)-\[Indo-pacific-sergeant\]-single.php](https://bodavidsson.com/galleries/marine-life/actinopterygii/perciformes/pomacentridae/BD-121128-Aqaba-7607-Abudefduf-vaigiensis-(Quoy---Gaimard.-1825)-[Indo-pacific-sergeant]-single.php): *A. vaigiensis* from Aqaba, Jordan. Specimen characterized by a non-continuous 5th bar and a peduncle with two spots (Photo: Bo Davidsson).

[https://commons.wikimedia.org/wiki/File:Sergeant_major_\(Abudefduf_vaigiensis\)_27040150637.jpg](https://commons.wikimedia.org/wiki/File:Sergeant_major_(Abudefduf_vaigiensis)_27040150637.jpg): *A. vaigiensis* from Lembeh, Indonesia. Specimen with the same morphological characteristics of the one of Aqaba (Photo: Rickard Zerpe).

<https://www.flickr.com/photos/manzanita-pct/7257628594/>: *A. troschelii* (Fig. 3E) from Cabo Pulmo, Baja California. Specimen showing the same morphological characteristics, a continuous 5th bar and a peduncle with two spots, of the two individuals of *A. saxatilis* photographed in the Lebanese waters (Fig. 2A, B; permission Roger Steeb).

<http://www.oceanlight.com/spotlight.php?img=33538>: *A. troschelii* from Isla San Diego, Baja California, Mexico (Photo: Phillip Colla). Specimen showing the same morphological characters as Fig. 2A, B, link 6.

<https://www.fishbase.se/photos/PicturesSummary.php?StartRow=1&ID=8245&what=species&TotRec=4>: Specimen of *A. troschelii* (Fig. 3F) from Panama showing the same morphological characteristics, a non-continuous

5th bar and a peduncle with two spots, of the two individuals of *A. vaigiensis* photographed in the Lebanese waters (Fig. 2D, E; permission Gerald R. Allen).

[https://reeflifesurvey.com/species/abudefduf-saxatilis/: *A. saxatilis*](https://reeflifesurvey.com/species/abudefduf-saxatilis/A.saxatilis) from Abrolhos, Bahia, Brazil. Specimen characterized by a non-continuous 5th bar and, by a peduncle with one spot (Photo: Graham Edgar).

[https://www.fishbase.se/Photos/PicturesSummary.php?StartRow=3&ID=1119&what=species&TotRec=9: *A. saxatilis*](https://www.fishbase.se/Photos/PicturesSummary.php?StartRow=3&ID=1119&what=species&TotRec=9:A.saxatilis) characterized by a 5th bar without separation and a peduncle with three spots (Photo: Robert Fenner).

[http://www.fishbase.us/photos/UploadedBy.php?autoctr=7324&win=uploaded: *A. vaigiensis*](http://www.fishbase.us/photos/UploadedBy.php?autoctr=7324&win=uploaded:A.vaigiensis) from Fahl Island, Oman. Specimen characterized by a 5th bar with separation and an unspotted peduncle (Photo: Richard Field). Subsequently, one other specimen with the same morphological characteristics from Australia, link:

<https://reeflifesurvey.com/species/abudefduf-vaigiensis/>
<https://www.aquainfo.org/abudefduf-vaigiensis-indo-pacific-sergeant/>: One specimen of *A. vaigiensis* characterized by a 5th bar with separation, and a peduncle with one spot (Copyright zsispeo – CC BY-NC-SA 2.0; without indication of the locality).

<http://aquaticcommons.org/21102/1/Abudefduf%20A0vaigiensis.pdf>: *A. vaigiensis* from Kish Island, Iran characterized by a 5th bar with separation, and a peduncle with three spots (Photo: Ramin Ketabi).

<https://reeflifesurvey.com/species/abudefduf-troschelii/>: specimen of *A. troschelii* from Machalilla, Ecuador characterized by a 5th bar without separation, and an unspotted peduncle (Photo: Graham Edgar).

<https://www.alamy.com/panamic-sergeant-major-pintano-abudefduf-troschelii-sea-of-cortez-image61692585.html>: Image ID: DGA9EH. A school of *A. troschelii* from Sea of Cortez, Mexico characterized by a 5th bar without separation and a peduncle with one, or two, or three spots (Photo: Ralph Bixler).

<https://www.fishbase.se/photos/PicturesSummary.php?StartRow=0&ID=6630&what=species&TotRec=13>: A school of *A. vaigiensis* from the Red Sea including a specimen with a stretched spot on the peduncle (Photo: Robert Fenner).

<https://ncfishes.com/marine-fishes-of-north-carolina/abudefduf-saxatilis/>: *A. saxatilis* from North Carolina characterized by a 6th bar on the peduncle.

<https://www.saltwaterfish.com/product-sgt-major>: *A.*

saxatilis characterized by a 5th bar without separation and a 6th bar on the peduncle (without indication of locality).

[https://commons.wikimedia.org/wiki/File:Sergeant_major_\(Abudefduf_vaigiensis\)_48272171132.jpg](https://commons.wikimedia.org/wiki/File:Sergeant_major_(Abudefduf_vaigiensis)_48272171132.jpg): A specimen of *A. vaigiensis* from Indonesia characterized by a 5th bar with separation and a 6th bar on the peduncle (Photo: Rickard Zerpe).

<https://fishesofaustralia.net.au/home/species/310>: *A. vaigiensis* from Queensland, Australia characterized by a 5th bar without separation and a 6th bar on the peduncle.

<https://static.inaturalist.org/photos/4460945/medium.jpg?1470520953>: *A. troschellii* (Fig. 6 C) from Veraguas Province, Panama. characterized by a 5th bar without separation and a 6th bar on the peduncle (permission Ryan McMinds).

<https://www.fishbase.se/photos/PicturesSummary.php?StartRow=0&ID=8245&what=species&TotRec=4>: *A. troschellii* from Galapagos Islands characterized by a

5th bar without separation and a 6th bar on the peduncle (Fig. 6 D) (permission Gerald R. Allen).

<https://www.fishbase.in/photos/UploadedBy.php?autoctr=28278&win=uploaded>: *A. vaigiensis* from Persian Gulf, Kish Island (Iran) characterized by a continuous 5th bar, and two spots on the peduncle (Photo: Ramin Ketabi).

<https://www.fishbase.in/photos/UploadedBy.php?autoctr=11231&win=uploaded>: two individuals of *A. troschellii* from Costa Rica both characterized by a continuous 5th bar, but with an unspotted peduncle for the first, and a peduncle with two spots for the second one (Photo: Jörg Vierke).

<http://www.picture-worl.org/scuba-diving-musandam-oman-abudefduf-vaigiensis-quoy-gaimard-1825.html>: two individuals of *A. vaigiensis* from Oman characterized by a 5th bar with separation, and two spots on the peduncle.