Abudefduf taurus (Night Sergeant)

Family: Pomacentridae (Damselfish and Clownfish)
Order: Perciformes (Perch and Allied Fish)
Class: Actinopterygii (Ray-finned Fish)

Fig. 1. Night sergeant, *Abudefduf taurus*.

[http://biogeodb.stri.si.edu/caribbean/en/gallery/family/1604, downloaded 18 February 2017]

TRAITS. The night sergeant is also called the pilotfish or dovetail, and was formerly known as *Glyphidodon taurus* (IUCN, 2017). This fish can be identified by its tawny yellow coloured nape of the neck, with 5-6 dark irregular bars along the body from the nape to the peduncle (narrow part of the body that attaches the tail), and a black spot that is sometimes seen on the upper base of the pectoral fin (fin behind the operculum) (Fig. 1). It is heavy-bodied; compressed, oblong, fairly deep, robust and heavily scaled body; single row of teeth with flat or notched tips; bluntly forked caudal fin, a total of 13 dorsal spines and 11-12 soft dorsal rays in a single continuous dorsal fin, 2 anal spines and 10 anal soft rays. The night sergeant can have a maximum body length of 25cm, with a common length of 20cm, and is the largest species in the Pomacentridae family (Robins and Ray, 1986).

DISTRIBUTION. Night sergeants are widely distributed in the tropical and subtropical eastern and western Atlantic Ocean (Fig. 2). In the western Atlantic this includes southern Florida down the coast of the United States of America and the Caribbean Sea. In the eastern Atlantic this includes the Cape Verde islands as well as from Senegal to Angola. This reef-associated species is non-migratory and is native to Trinidad and Tobago (IUCN, 2017).

HABITAT AND ACTIVITY. Rocky inshore reefs are inhabited by adult night sergeants, however, limestone shorelines or wave-cut rock edges and tidepools in areas with surf are preferred, at depths of 1-5m. These areas are suitable for them as these areas of the reef are shallow and wave swept (IUCN, 2017). The night sergeant is one of the most common reef fish in the West Indies. It is a diurnal (day time) feeder coming out to feed on algae in the sunlit shores, however according to the availability of food it interchanges between being nocturnal and diurnal. Therefore the night sergeant has interchangeable diurnal-nocturnal activity. They stay most times in crevices which explains why they are not often seen.

FOOD AND FEEDING. The night sergeant is a plant and detritus feeder. They feed on algae in the sunlit shores during the day as this is their main source of food, however adults also feed on *Zoanthus* (a soft coral genus) and hydroids (small animals related to jellyfish) whereas the young feed on copepods (microscopic crustaceans) (Wirtz et al., 2007). Night sergeants are omnivores (feeding on plant and animal material). Based on studies of the night sergeant's diet the trophic level is 2.1 ±0.1 and it is considered a primary consumer since its main food source is algae. However since it feeds on other food sources, it can be considered to be both a primary and secondary consumer (Rainer, 2014).

POPULATION ECOLOGY. The minimum doubling time of the night sergeant's population is medium being 1.4-4.4 years. Night sergeants are very shy fish and move away by darting around rocks when approached. Behind the rock a loose group of individuals may be found but would soon disappear due to your presence. They are rarely seen as a result of this. The night sergeant and the sergeant major are close relatives and look alike however there are distinct differences in their features such as size and colour. The night sergeant is a solitary (individuals occupy their own territories that are dispersed, and are encountered in groups only for spawning) and rare species (Fishelson, 1998).

REPRODUCTION. Night sergeants do not change colour with age. Fertilization occurs externally and the sexes of the species are separate (dioecism). Egg development occurs within 7 days. Parental care is paternal, as the males look after the young and nest. The males aerate and guard the eggs. Night sergeants are oviparous (egg laying) and have pelagic (stays in the pelagic zone of the ocean) larvae. The eggs of the night sergeant stick to the substrate as they are demersal (eggs placed near the bottom of the water body) and are elliptical (Wirtz et al., 2007). The cousin of the night sergeant, the sergeant major, can lay up to 20,000 eggs.

BEHAVIOUR. Juvenile night sergeants (Fig. 3) feed on different foods from the adults, mostly small crustaceans. Night sergeant are shy and usually swim away when approached. The juvenile night sergeant can fall prey to the invasive lionfish however this doesn't cause a decline in their population (Wirtz et al., 2007).

APPLIED ECOLOGY. This species is listed by IUCN however a lot is unknown about the species still. There are no conservation actions for the night sergeant however there may be some

threats but little research has been done in this area. Threats that marine fish may experience includes destruction of habitats, overfishing, invasive or problematic species as well as pollution and climate change however major threats to this species in particular is unknown. Subsistence fisheries harvest them to market fresh (IUCN, 2017).

REFERENCES

Fishelson, L. (1998). Behavior sociology and sexuality in damselfishes (Pomacentridae), Italian Journal of Zoology, 65:S1, 387-398.

IUCN. (2017). *Abudefduf taurus*. The IUCN Red List of Threatened Species. http://www.iucnredlist.org/details/41620/0.

Rainer, F. (2014). Fishbase: *Abudeduf taurus* (Müller & Troschel, 1848). http://fishbase.sinica.edu.tw/country/CountrySpeciesSummary.php?c_code=780&id=1120#

Robins, C.R. and Ray, G.C. (1986). A field guide to Atlantic coast fishes of North America. Houghton Mifflin Company, Boston, U.S.A.

Wirtz, P., Ferreira, C.E.L., Floeter, S.R., Fricke, R., Gasparini, J.L., Iwamoto, T., Rocha, L., Sampaio, C.L.S., and Schliewen, U.K. (2007). Coastal Fishes of Sao Tome and Principe islands, Gulf of Guinea (Eastern Atlantic Ocean) - an update. Zootaxa 1523: 1-48.

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Fig. 2. Night sergeant geographic distribution.

[http://maps.iucnredlist.org/map.html?id=188434, downloaded 7 March 2017]

Fig. 3. Juvenile night sergeant.

[http://www.fishbase.org/photos/ThumbnailsSummary.php?Genus=Abudefduf&Species=taurus, downloaded 7 March 2017]