Elacatinus evelynae (Sharknose Goby)

Family: Gobiidae (Gobies)
Order: Perciformes (Perch and Allied Fish)
Class: Actinopterygii (Ray-finned Fish)

Fig. 1. Sharknose goby, *Elacatinus evelynae*.

[http://www.reefsafe.com/elacatinus.html, downloaded 7 October 2016]

TRAITS. *Elacatinus evelynae*, which was once known as *Gobiosoma evelynae*, is commonly known as the sharknose goby (IUCN, 2016). This species displays three different colour morphs (types); yellow-blue (Fig. 1), yellow, and white (Fig. 2). They are usually 4cm in length, and have a yellow stripe at the front of both eyes, connecting close to the snout tip, forming a V shape. The stripes continue (as yellow, blue, or white) along the body, separating dorsal and lateral dark areas (Figs 1 and 2) (Randall, 1996). There are two dorsal fins; a rounded anterior fin, and a flat posterior fin in line with the anal fin.

DISTRIBUTION. Generally, *E. evelynae* can be located in the western Atlantic. It is native to most of the Caribbean islands such as Anguilla, Barbados, Jamaica, St. Vincent and the Grenadines, and Trinidad and Tobago amongst others (Fig. 3) (IUCN, 2016).

HABITAT AND ECOLOGY. *E. evelynae* can be found in a tropical marine reef environment, with temperatures ranging from 22-27°C at depths from 1-53m (Fig. 4). These fish can be found in pairs, practising monogamy (Whiteman et al., 2004). Sharknose gobies are 'cleaner fish', they feed on ectoparasites (parasites found on the outside of an organism) and dead skin from other fish (Randall, 1996). *E. evelynae* also eats sponges, sea squirts, coral polyps, zooplankton and free-living copepods (Arnal and Côté, 2000). The action of cleaning by the sharknose goby usually is hindered due to the presence of predators, resulting in the female gobies cleaning more in the presence of a large male goby since there would be greater protection. The paired cleaning is thus more effective than lone cleaning (Whiteman and Côté, 2003).

REPRODUCTION. *E.evelynae,* being monogamous in their mating, each fish has only one partner. If there are potential threats to the mating pair, both the male and female defend their mate (Whiteman et al, 2003). The male and female both protect the territory or area where the future eggs will be laid. However the male is solely responsible for guarding the eggs (Harding, 2003). They produce demersal adhesive eggs, which stick to the walls of small crevices (Fig. 5) (Thresher, 1984).

BEHAVIOUR. *E. evelynae* displays monogamy during their adult life but can be found singly in their juvenile stage (Harding, 2003). *E. evelynae* are known to have lengthy pelagic larval periods, hence the chance for dispersion and movement. *E. evelynae* feeds on ectoparasites as well as the dead scales of other fish, thus cleaning them, displaying a symbiotic-mutualistic relationship. These cleansed fish are often referred to as their 'clients'. *E. evelynae,* when cleaning would often cleanse their clients in detail, often reaching places as extreme as inside their client's mouths. *E. evelynae* offer their inspection and cleaning services immediately and more effectively to predators, with longer cleaning interactions and of a higher standard than usual (Marta et al., 2012).

APPLIED BIOLOGY. *E. evelynae* is a species of fish commonly caught for the aquarium trade, and also bred in captivity (IUCN, 2016). *E. evelynae*, inhabiting reef areas in the marine environment, is often threatened by the loss of corals.

REFERENCES

Arnal, C. and Côté, I.M. 2000. Diet of broad stripe cleaning gobies on a Barbadian reef. Journal of Fish Biology *57(4): 1075–1082.*

Harding A. J. 2003. Experimental analysis of monogamy in the Caribbean cleaner goby, *Gobiosoma evelynae. 1: 2-9*

IUCN. 2016. Sharknose goby. IUCN Red List http://www.iucnredlist.org/details/185988/0.

Marta, C. S., Bshary, R., Sonia, C. C., Côté, M. I. and Oliveira, F. R (2012). Face your Fears: Cleaning Gobies Inspect Predators despite Being Stresses by Them.

Randall, J.E. 1996. Caribbean reef fishes. *Third Edition - revised and enlarged*. T.F.H. Publications, Inc. Ltd., Neptune City, NJ, U.S.A.

Thresher, R.E. 1984. Reproduction in reef fishes. TFH Publications Inc. Ltd, Neptune City, New Jersey, USA.

Whiteman, E. A. and Côté, I. M. (2003). Social monogamy in the cleaning goby Elacatinus evelynae: ecological constraints or net benefit? *Animal Behaviour*. **66:** 281–291.

Author: Ayesha Saban

Posted online: 2016

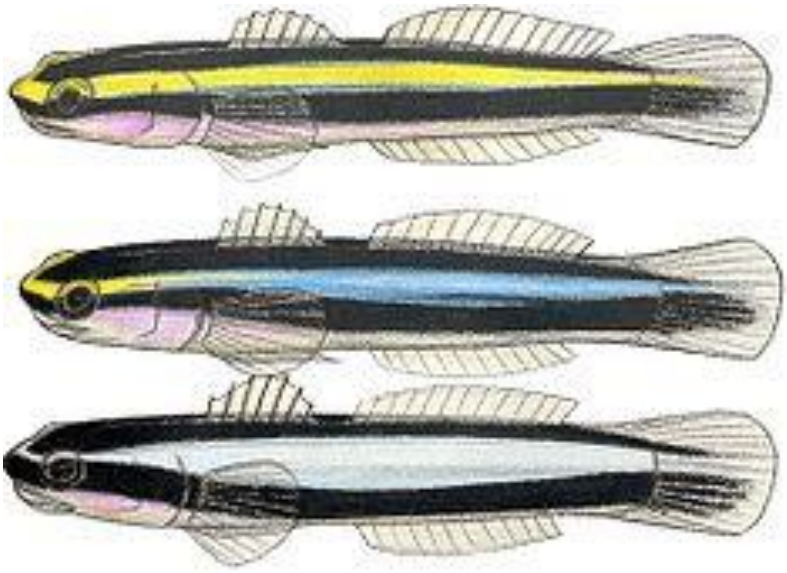

Fig. 2. Representation of three different morphs of *E. evelynae.*

[https://en.wikipedia.org/wiki/Elacatinus_evelynae, downloaded 9 October 2016]

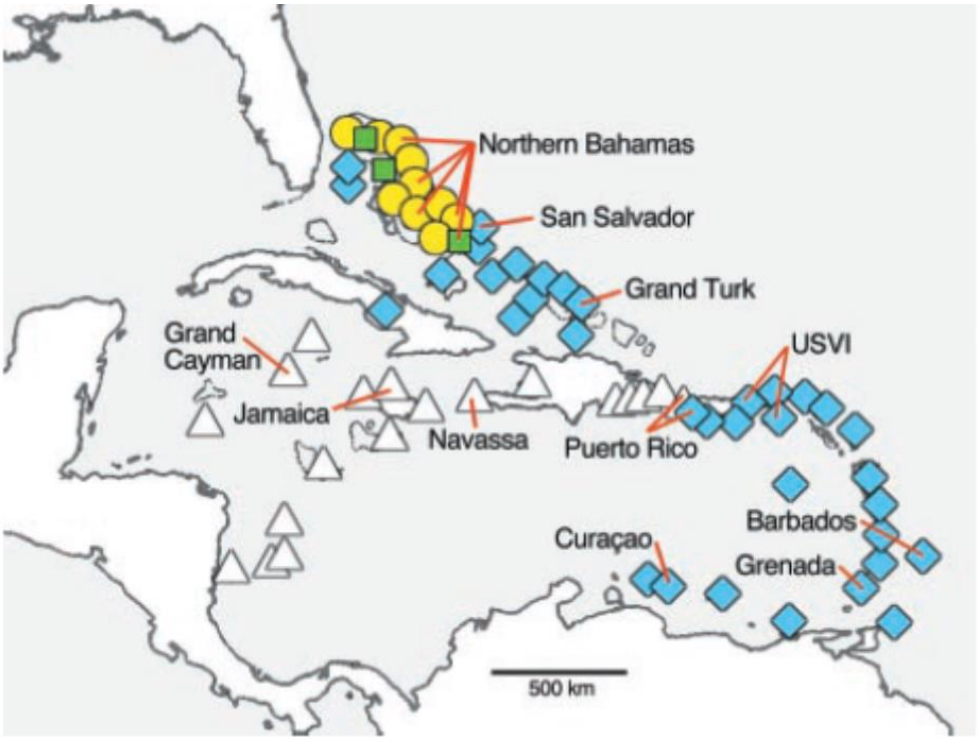

Fig. 3. *E. evelynae* distribution.

[http://web.stanford.edu/group/Palumbi/manuscripts/TaylorandHellberg2003.pdf, downloaded 15 October 2016]

Fig. 4. *E. evelynae* in its reef habitat.

[http://www.natuurlijkmooi.net/caribische_zee/vissen/vissen.htm, downloaded 21 October 2016]

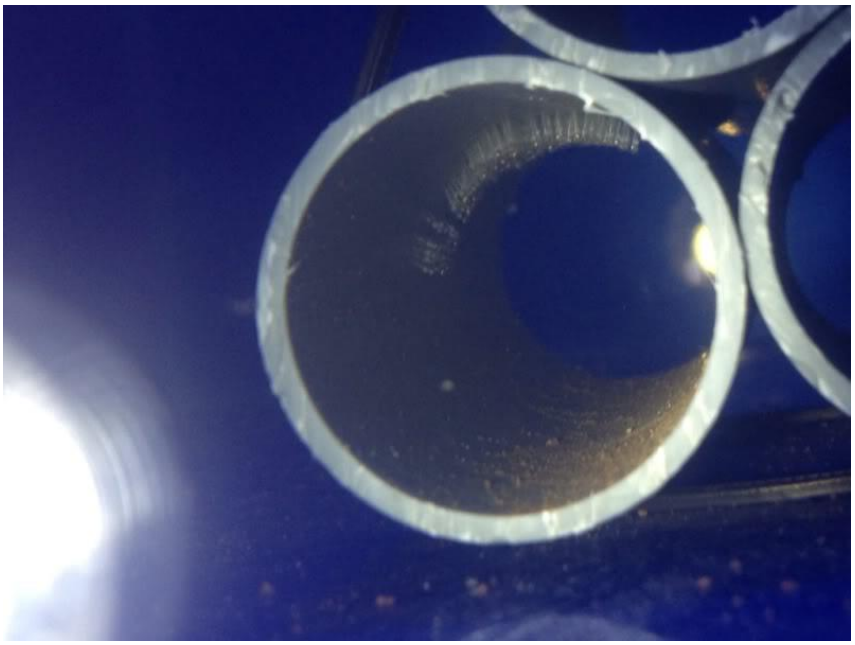

Fig. 5. *E. evelynae* eggs attached to upper wall of artificial crevice.

[http://www.mbisite.org/Forums/tm.aspx?m=70165&mpage=1&print=true, downloaded 11 October 2016]