

Gramma loreto (Fairy Basslet)

Family: Grammatidae (Basslets)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Fairy basslet, *Gramma loreto*.

[https://en.wikipedia.org/wiki/List_of_marine_aquarium_fish_species, downloaded 18 January 2016]

TRAITS. The fairy basslet or royal gramma is a marine fish that is brilliantly coloured; it is a vibrant purple in the front and a striking yellow on the rear and tail (Fig. 1). There is a distinguishing black mark on the anterior of its dorsal fin and a dark stripe through the eye (McGinley, 2011). These fish grow to a maximum of approximately 7.5cm (Snyderman and Wiseman, 1996). It has a rounded face with its upper jaw possessing an external row of large and faintly curved teeth and the internal row of villiform (brush-like) teeth, while the lower jaw holds a few curved canines and a segment of villiform teeth (McEachran and Fechhelm, 2010).

DISTRIBUTION. Can be found in the western Atlantic Ocean, the entire Caribbean Sea and in limited parts of the Gulf of Mexico (Fig. 2) (Goodson and Weisgerber, 1985). It is native to Trinidad and Tobago and many other Caribbean islands like Saint Vincent and the Grenadines, Saint Lucia and Jamaica (Fraser and Gilmore, 2015).

HABITAT AND ACTIVITY. Existing mainly in tropical coral reefs, with other basslet species (Fig. 3), the fairy basslet is observed at depths of 1-70m (McGinley, 2011) and feeds on mainly plankton (Snyderman and Wiseman, 1996). It favours swimming upside down under overhangs, with its belly towards the roof (Fig. 4), and occupies areas of high vertical relief near coral heads, overhangs, ledges or walls and caves (Richards, 2005). It is considered a shy species of fish and is usually observed in small groups (Du Toit and Cambouris, 2014).

FOOD AND FEEDING. The fairy basslet is carnivorous and feeds on invertebrates and sometimes on smaller fish (Biasiola, 2000). Their diet mainly consists of plankton that descend near the reef, and crustaceans discovered at the sea bed or reef base (McGinley, 2011). Occasionally it feeds on ectoparasites located on the bodies of other fish (Fraser and Gilmore, 2015) and feeds mainly during the day. Larger fish inhabit areas with a high food source (Schofield, 2016) while juveniles feed at the back of the group in areas of low prey density.

POPULATION ECOLOGY. Group territorial; it exists in a community of 1-10 fish where all guard a particular area (McGinley, 2011). Usually observed between depths of 1-30m (Fraser and Gilmore, 2015). A superiority ranking is established among the group according to size, where the bigger fish dominate others (Schofield, 2016). Over an observed period the population growth was fairly stable with increases occurring favourably in July to September and decreases in early spring (Fraser and Gilmore, 2015), and there is limited dispersal to different areas.

REPRODUCTION. They become distinguishably male or female when the males are approximately 30mm long and the females are about 25mm (Schofield, 2016). Fairy basslets are unisexual or gonochoristic in that the two sexes are distinct and separate from each other. The males build nests in small openings in the substratum (Fraser and Gilmore, 2015). During the breeding season they tend to group in a polygynous manner where one male mates with several females (Schofield, 2016). Reproduction occurs at dawn (Schofield, 2016) during the months of February to June when the females journey to the male's nest in order to lay eggs and in turn the males care for the eggs (Fraser and Gilmore, 2015). The males are important in the care of the eggs by protecting, securing, maintaining and cleaning the den (Fraser and Gilmore, 2015). The eggs are developed within 10-11 days (McGinley 2011) at a temperature of 23-27°C (Schofield, 2016). Once hatched the larvae enter a planktonic state (McGinley, 2011). The hatched larvae are characterised by pigmented eyes and are 2.9-3.8mm long; their jaws are well developed and they have little yolk (Schofield, 2016).

BEHAVIOUR. Males tend to display paternal behaviour in the care for their eggs (Fraser and Gilmore, 2015). Larvae leave the nest and live in the plankton until an optimum size is achieved and they become juveniles (McGinley, 2011). Juveniles usually reside at the rear of the group in areas of low prey density and high predator density. Groups typically contain one or two larger males, several females and some smaller males and juveniles, and members rarely leave in an attempt to join another aggregation (Schofield, 2016). These fish are considered group territorial (McGinley, 2011) and are often observed swimming upside down (Fig. 4).

APPLIED ECOLOGY. The fairy basslet is a habitual aquarium fish and as a result of it being raised in confinement its population density in its natural environment has declined. It is also an

attainable prey for lionfish because they are small and live near the sea bed (Fraser and Gilmore, 2015).

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Fig. 2. Fairy basslet geographic distribution.

[<http://biogeodb.stri.si.edu/caribbean/en/thefishes/species/3566>, downloaded 25 January 2016]



Fig. 3. Fairy basslets swimming alongside other species of basslet.

[<http://www.mindenpictures.com/search?s=Gramma%20Loreto>, downloaded 26 February 2016]



Fig. 4. Fairy basslet swimming upside down.

[<http://www.geocaching.com/track/details.aspx?id=3567332&page=4>, downloaded 28 February 2016]

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