

Hirundichthys affinis (Fourwing Flyingfish)

Family: Exocoetidae (Flyingfish)

Order: Beloniformes (Flyingfish and Needlefish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Fourwing flyingfish, *Hirundichthys affinis*.

[<http://www.agriculture.gov.bb/agri/images/stories/Fisheries/Images/flyingfish2.jpg> downloaded 8 March 2017]

TRAITS. *Hirundichthys affinis* is distinguished from the other species of the family by the following combination of characters. The pelvic and pectoral fins are both long, and extend at least to the middle of dorsal and anal fins, giving the name fourwing flyingfish (Encyclopedia of Life, 2017). The pectoral fins are mostly dark (Fig. 1). The snout is acute and shorter than the diameter of the eye. Palatine teeth are not present in this species. The dorsal fin is low, about the same length as the anal fin (Walls, 1976).

DISTRIBUTION. The fourwing flyingfish is dispersed widely in the eastern Atlantic and the western tropical Atlantic (Fig. 2). It is very plentiful in the western Atlantic and the Caribbean Sea where they play a vital role to fisheries. They are also found along coasts of West Africa and Brazil (Collette et al., 2015).

HABITAT AND ACTIVITY. *Hirundichthys affinis* is a species which inhabits surface waters, both near to and far from the coast. It can therefore be described as a species which is both neritic and pelagic. The depth range of this species is within 0-20m of the surface of deeper water (FAO, 2017). Its primary source of food is usually small fish and invertebrates. The juveniles are dominant in areas such as bays.

FOOD AND FEEDING. *Hirundichthys affinis* is a very vulnerable species since they are quickly drawn to light. This is why they are lured by fishermen utilizing light to gravitate them towards their vessels, hence the reason why this species is fished at night. Regardless of this fact, their feeding patterns are frequently at night. Their diet is mainly composed of planktonic invertebrates, small fish, crustaceans and zooplankton (Oxenford, 2004).

POPULATION ECOLOGY. *Hirundichthys affinis* is a migratory species which occurs in schools. This species is abundant in the Caribbean Sea and the Gulf of Mexico, despite the fact that it is not commercially fished in every part of this territory (Collette et al., 2015). This species is plentiful from December to June in the eastern Caribbean, with a patchy distribution. When the Intertropical Convergence Zone is in a southerly position, the abundance tends to be greater and spawning is at its maximum. Migration occurs between spawning periods. These fish have a lifespan of approximately 1 year (Oxenford et al., 1995).

REPRODUCTION. Reproduction takes place in open waters with weak currents. *Hirundichthys affinis* reproduce by spawning, which usually takes place between November and July. However, two peaks in spawning activity are present; a minor one from November to January and a major one from May to July. The eggs are buoyant and are able to float at the surface of the water. They can also be sticky hence attaching to floating debris, such as *Sargassum* clumps. A planktonic stage is shown by flyingfish larvae before they develop into juveniles (Wright and Hill, 1993).

BEHAVIOUR. This species has developed the ability to glide and escape predatory species such as tuna, swordfish and mackerel (Malburg, 2010). The process of ascent starts with the fish accumulating rapid speed below the water, at around 60 km/hour. The fourwing flyingfish then angles upwards and breaks the surface of the water, and keeps moving by a beating motion of its tail on the water. In full flight it can reach heights of up to 1.2m and can glide for very long distances of up to 200m. As soon as it reaches the surface of the water again, it flaps its tail and taxis without returning to the water fully, and continues its flight in this manner. Records have shown that they are able to make consecutive glides of up to 400m (Malburg, 2010).

APPLIED ECOLOGY. This species is listed under the Least Concern category by IUCN as it covers a very large range, hence it can be deduced that no major threats are affecting the species. Although the demand for *Hirundichthys affinis* as a commercial fish and as bait (Fig. 3) in the eastern Caribbean is high (Ifill, 2010), sustainable fishing methods have ensured that there are no major causes for concern (Collette et al., 2015). As bait they are used both cut and whole to suit different fishing applications, which include trolling or for use by recreational Anglers.

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■ Extant (resident)

Fig. 2. Geographic distribution of *Hirundichthys affinis*.

[<http://maps.iucnredlist.org/map.html?id=13487740> downloaded 7 March 2017]



Fig. 3. *Hirundichthys affinis* caught and frozen to be used as whole bait.

[http://www.fishbase.org/images/thumbnails/jpg/tn_Hiaff_u3.jpg downloaded 7 March 2017]

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