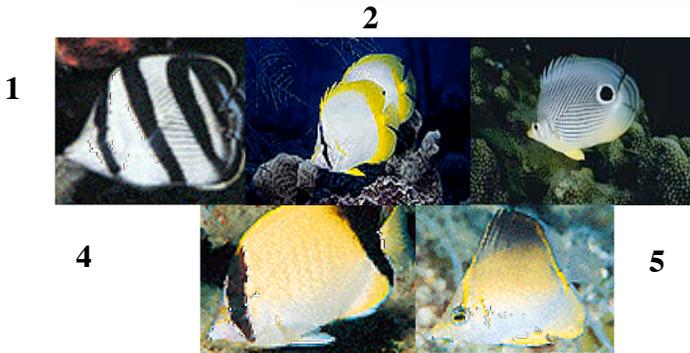




Department of Planning and Natural Resources
 Division of Fish and Wildlife
U.S.V.I. Animal Fact Sheet #22
Butterflyfish
 Family: Chaetodontidae



Of the 120 species of Butterflyfish found worldwide only seven are found in the Caribbean, with five of those found in the U.S. Virgin Islands. They are:

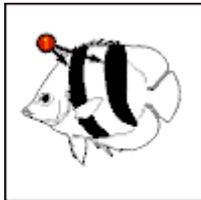
- 1) The Banded Butterflyfish (*Chaetodon striatus*)
- 2) The Spotfin Butterflyfish (*Chaetodon ocellatus*)
- 3) The Four-eye Butterflyfish (*Chaetodon capistratus*)
- 4) The Reef Butterflyfish (*Chaetodon sedentarius*)
- 5) The Longsnout Butterflyfish (*Chaetodon aculeatus*)

They are all found in the Chaetodontidae family, which include all the Butterflyfishes and some Angelfish. Butterflyfish are found in both the Atlantic and Pacific Oceans. They feed primarily on tiny worms, exposed coral polyps and other small marine invertebrates. Typical features shared by the Chaetodonts are a highly compressed body, small mouths with a row of brushlike teeth and a dark band across the eye.

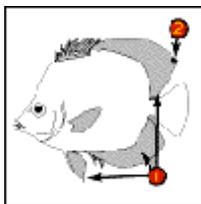
Description

Butterflyfish are round, thin-bodied fish with slightly concave foreheads and are usually less than six inches in length. The species found in the U.S.V.I., however, differ in coloration making them easy to differentiate.

The Banded Butterflyfish (1) has two distinct wide, black midbody bands. Between each band their colors vary from silver to white and a black bar runs across the eye. There is a blackish border on the rear of the body and at the base of the rear dorsal and anal fins. They are usually 3-5 inches in length with a maximum length of 6 inches. They can usually be found in relatively shallow water between 10 – 60 feet deep.

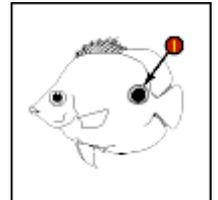


The Spotfin Butterflyfish (2) is silver-white with a black bar on the head that runs across the eye. There may also be a darkish spot on the rear of the dorsal fin below a distinct black dot on the outer edge of the rear dorsal fin. All the fins, except the pectoral, are bright yellow. They are usually 3-6 inches in length with a



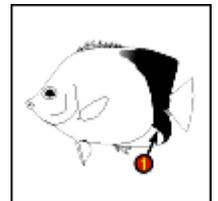
maximum length of 8 inches. They can usually be found in relatively shallow water between 10 – 60 feet deep.

The Four-eye Butterflyfish (3) is silver-gray with several dark thin lines that radiate at a diagonal from the middle of their bodies. There is a dark bar on the head that runs across the eye with a yellow submarginal band on the rear dorsal, tail and anal fins.

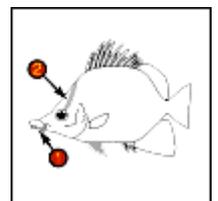


They have a distinctive black spot, which is ringed with white, on the rear of their body near the upper base of the tail. They are usually 3-4 inches in length with a maximum length of 6 inches. They can usually be found in relatively shallow water between 10 – 60 feet deep.

The Reef Butterflyfish (4) has a yellowish back and dorsal fins and a silver-white lower body. They have a yellowish-reddish to yellow tail and a black bar that runs across their eyes. There is a distinctive broad, dark bar on the rear of their body, which include the rear portions of the dorsal and anal fins. They are usually between 3-4 inches in length with a maximum length of 6 inches and can usually be found in both shallow and deep water between 20 – 120 feet deep.



The Longsnout Butterflyfish (5) has a long pointed snout and a dusky/yellow bar that runs from the top of the head across the eye but does not continue below the eye. The upper half of their bodies are yellow and gradually change to orange, darkening to orange-brown and black on the dorsal fin. The lower half of their bodies are white. They are usually solitary and are found in deeper reefs and walls between 30-200 feet deep. They tend to be more secretive than other members of the Chaetodontidae family and forage in dark recesses for marine invertebrates. They are usually between 2-3 inches in length with a maximum length of 3 _ inches.



Distribution and Habitat

Butterflyfish are found throughout the Caribbean as well as the Pacific and Indian Oceans. Mated pairs live together inside large home ranges and may remain together for a lifetime. Territorial defense rarely occurs and then only late in the day, generally close to the courtship period.

Growth and Reproduction

Very little is known about the spawning behavior of butterflyfish. Most of the recorded activities have taken place

at sunset between February and May in the Caribbean. However, spawning activities have been recorded in the fall, particularly in areas such as the Red Sea. At each spawning event the males and females broadcast spawn and they release their gametes into the water column. The eggs hatch into larvae called tholichthys with large yolk sacs 24 - 48 hours later. As the larvae mature they develop deep, laterally compressed bodies and a series of clear armor-like plates covering their heads and forebodies. Once they reach 1.5 cm they settle on the bottom.

Most juvenile butterflyfish are creamy white with yellow fin highlights, distinctive ocellated eyespots and barred patterns. They usually inhabit shallow habitats, such as sand pockets, isolated coral and sponge formations, sea grass beds and around mangrove roots. They lead solitary lives until they reach sexual maturity after a year, and are approximately 4 inches long.



Ecology

The butterflyfish in the Caribbean feed on anthozoids, which are stationary polyps from hard and soft coral, and zoanths, which are anemone-like animals that live in colonies. They also feed on tunicates, sessile marine animals that may be solitary or live in colonies, coral and other gametes. The Four-eye butterflyfish ranges widely over the reef platform while the Banded butterflyfish can be found along shallow reef crests and patch reefs. The Reef and Spotfin butterflyfishes live slightly deeper than their other counterparts near high-profile reefs, which allows them to feed on tubeworms, hydroids and small crustaceans. The Longsnout butterflyfish are found on deeper drop offs between 40-200 feet deep.

They are eaten by several nocturnal predators such as moray eels, sharks and other large piscivorous reef fish such as snappers and groupers feed on these fish.

Butterflyfish have been used to indicate the health of a coral reef. Since they feed on coral polyps the abundance of butterflyfish on a reef indicates the health of the reef in direct correlation with the distribution and amount of food available for them to eat. Also, butterflyfish respond to declines in coral quality and abundance with behavioral and spatial changes that can be observed easily making monitoring of these areas relatively easy. These species can therefore be used to help monitor changes in the health of a coral reef ecosystem and can allow for the rapid implementation of mitigation measures.

Adaptations

In order to avoid predators and live on the reef, butterflyfish have evolved certain adaptations that allow them to better do so. The size and shape of the fish also allows it to maneuver along the reef relatively easily. The compressed and discus-shaped fishes are designed for maneuverability in their habitats. Because of their small size and shape they are also able to lodge themselves between pieces of coral preventing predators from attacking them. They also erect fin spines which make it almost impossible for them to be dislodged.

Butterflyfish are very colorful and usually have dramatic colors and patterns. When predators are in the area, rather than run away they turn sideways and display their coloring. Within the patterns and colors are two typically cryptic patterns which include false eyespots and eye bands. Eyes are often a primary target for predators. The butterflyfish disguise their eyes with bands across them which help to disguise the eye from predators so that they are not easily attacked. This combined with false eyespots at the opposite end of the head help protect their most vulnerable area. The eyespots misdirect the predator allowing less vulnerable areas to be attacked first.

The mouths on butterflyfish are also adapted for the food that they eat. Butterflyfish with long snouts are able to use them to feed in narrow crevices. The small bristle-like teeth are also used to scrape and nip at invertebrates, living in the many cracks and crevasses on the reef.

Conservation

Occurrence in the U.S.V.I varies among species. The most common species is the Four-eye butterflyfish while the Reef and Banded butterflyfishes can also be frequently found. The least common species' are the Spotfin and Longsnout butterflyfishes.

Butterflyfishes are protected by both Federal and Territorial regulations. There is no harvest of individuals. You may not have, in your possession, any of these species, without appropriate permits from the Department of Planning and Natural Resources, Division of Fish and Wildlife.

References for this article are available upon request from DFW. For more information on this or other animals in the USVI please visit our web site at:

www.vifishandwildlife.com

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