Labroides dimidiatus (Valenciennes, 1839)

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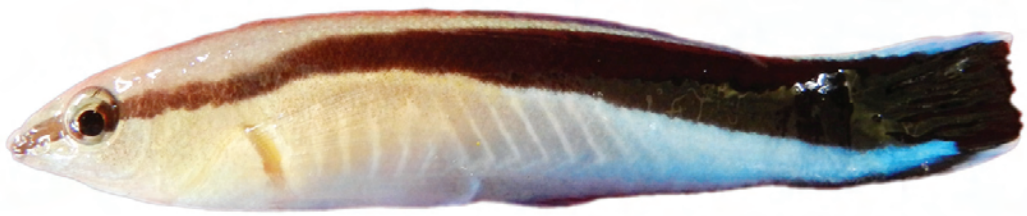
IDENTIFICATION

Order	:	**Perciformes**
Family	:	**Labridae**
Common/FAO Name (English)	:	**Blue streak cleaner wrasse**

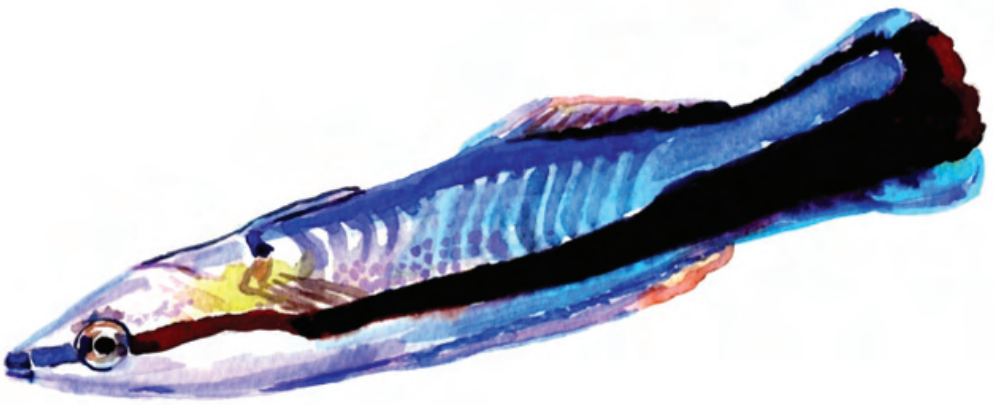


Local names: Not available

MORPHOLOGICAL DESCRIPTION

Blue streak cleaner wrasse is one of the most important and popular species of ornamental fish widely distributed in the natural waters of tropical countries. It is commercially valuable both as ornamental fish and for controlling ectoparasites. These are small fishes of about 9-14 cm size with blue to yellow colour dorsally, fading to white or yellow ventrally. There is a black stripe running from the eye to the caudal fin margin which widens posteriorly. Dorsal fin has 9 spines and 10-11 soft rays and anal fin has 3 spines and 10 soft rays. Maximum size reported is 17 cm.

Source of image : RC of CMFRI, Vizhinjam



PROFILE

GEOGRAPHICAL DISTRIBUTION

This is a widely distributed species commonly found in the rocky areas and coral reefs in tropical marine waters of the Indo-Pacific region from southern and eastern Africa and the Red Sea to the Tuamotus in the south Pacific and from southern Japan to the southern Great Barrier Reef and south-western Australia between 30° N - 30° S.

HABITAT AND BIOLOGY

Cleaner wrasse usually dwells in nearshore area within a depth range of 1-40 m and temperature range of 24-28 °C. It is reported to be a monandric hermaphrodite but later it was confirmed to have socially controlled sex reversal. The species lives in small groups with one male and few females. Males are larger and more dominant than all females. This small group forms a cleaning station where all other fishes visit for cleaning themselves. They are quick and agile swimmers which can leap through narrow crevices and also through the mouth and gill opening of larger fishes. These fishes show diurnal behaviour and in night they burrow themselves (for sleeping) till day light.

Cleaner wrasse is mainly carnivorous and feeds on external parasites. In tanks they can be fed with bivalve or crustacean meat. Spawning of this species is reported from Japan. Spawning season is from May to September. Eggs are spherical and will hatch within 30 h and larvae are 1.8 mm in size. They exhibit mating dance during courtship. Eggs and larvae are planktonic. Largest observed total length is nearly 11 cm. Individuals above 6 cm were observed to spawn. Sex change from female to male usually takes place before they are 3 years old.

PRODUCTION SY STEMS

BREEDING IN CAPTIVE CONDITIONS

There are few reports stating incidental breeding of this species. Bi-directional sex change has been confirmed for this species. Distinct pairing during breeding has been observed. They are pelagic spawners. Sex reversal is completed in 14-18 days. It is a monandric species, with sex change at approximately 8.8 cm total length. Artificial breeding and commercial rearing of these are yet to be undertaken. There exists a huge demand for this species in the ornamental fish culture industry which is now met from wild collection which has reduced the population of this species in the wild. This species can be grown along with other cultured fishes in cages and pens to reduce the parasitic load.

Reports are available from Japan on spawning. Spawning in *L. dimidiatus* included a pair of male and female living within the male's territory. After the sequence of courtship displays, the pair rushed upward a few meters off the bottom, where eggs and sperm were released free into the water. Spawning occurred mostly at the offshore fringes of the reef in a male's territory. The eggs were buoyant, colourless and spherical measuring 660-690 µm in diameter, and contained numerous oil globules which joined together later. The egg membrane was smooth, without any conspicuous structure, the yellow not segmented and the perivitelline space narrow.

LARVAL REARING

Hatching took place 29-30 h after spawning. The newly hatched larvae measured 1.78-1.81 mm total length. The larvae were provided with *Brachionus plicatilis* as food.

FOOD AND FEEDING

Cleaner fish of all sizes mainly feed on gnathid isopod juveniles. Other items in their diet include scales, parasitic copepods and non-parasitic copepods. The number of gnathid isopods and scales in the diet increases with the size of the fish. Juveniles feed mostly on non parasitic copepods.

GROWTH RATE

During summer and autumn, juveniles grow very rapidly, whereas, in winter, growth is very less. Adults grow slower than juveniles.

DISEASES AND CONTROL MEASURES

The cleaner fishes control the parasites of other fishes. Practically, no information is available on the diseases affecting this species in the wild. In ornamental fish culture tanks, disease incidents are very less for this species. It is ideal for keeping in broodstock tanks for controlling external parasites of large brood fishes.

PRODUCTION, MARKET AND TRADE

PRODUCTION

Information not available

MARKET AND TRADE

There is good market demand for this species, which presently is being met from wild collections. The fishes are often caught by divers using small scoop nets and are transported in oxygen packed polythene bags. Nearly 87,000 numbers of *Labroides dimidiatus* has been imported worldwide from 1997-2002. Labridae contributes 6 % to the global trade and major countries which import are EU and United States.

CHALLENGES TO MARICULTURE

This species can be grown along with other cultured fishes in cages and pens to reduce the parasitic load, provided the habitat is supplemented with rocky areas or coral reefs. Basic research needs to be done in India. Attempts are being undertaken in many countries for standardising the technology of captive breeding and larval rearing.

FUTURE PROSPECTS

There is a very high demand for this species in the ornamental fish industry. If standardising the technology for captive breeding and larval rearing is successful, it will pave the way for India to contribute higher quantities of *Labroides dimidiatus* to the internatitional ornamental fish trade.

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