Trichiurus lepturus (Cutlassfish or Largehead Hairtail)

Family: Trichiuridae (Cutlassfish)
Order: Perciformes (Perch and Allied Fish)
Class: Actinoptergii (Ray-finned Fish)

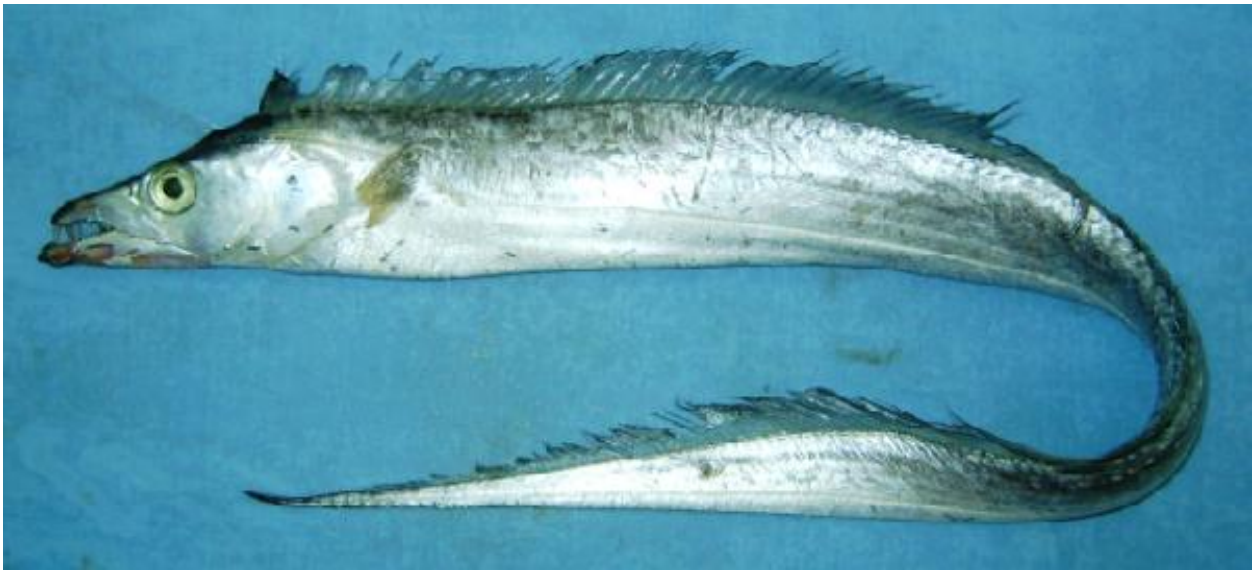

Fig. 1. Cutlassfish, *Trichiurus lepturus.*

[http://commons.wikimedia.org/wiki/File:Trichiurus_lepturus_Pakistan_2.png, downloaded 29 April 2015]

TRAITS. The cutlassfish or largehead hairtail is a marine fish with has a band-like body, elongated and compressed, with plain sliver colour (Fig. 1). There is a single long dorsal fin with spines and soft rays starting just behind the eyes, as well as a single nostril on each side. The dorsal fin is a pale yellow or dull green speckled along the margin with black. The eyes are large (Gulf of Maine Research Institute, 2002). The pectorals are small and located near the rear corners of the gill covers, and the anus is nearer to the snout rather than the posterior tip of the body. There are long barbed fangs in front of the large mouth (Fig. 2). The tips of the jaws are dark and with a dermal process (skin bulge). The maximum body length is approximately 2m (Encylopaedia of Life, 2015).

HABITAT AND ACTIVITY. Cutlassfish are located in the depths (50-1500 m) of tropical and temperate marine waters, such as the West Indies, Gulf of Mexico, and south Atlantic coast of the United States (Schultz, 2011), but are also found in coastal waters worldwide (Fig. 3). During the day, juvenile and small adult fish form schools in the depths. The juveniles feed on crustaceans primarily around midday. Adults feed on pelagic prey during the day. During the night they gather in large numbers in bays, estuaries and coastal areas, with a preference of the muddy bottom of shallow water (Schultz, 2011).

FOOD AND FEEDING. Cutlassfish are carnivores and lie in wait and ambush prey near the water surface. Juvenile and young adults suspend their bodies vertically with their jaws facing upwards and remain motionless. This decreases the cross section of the body visible to other smaller fish or squid. The mouth is large and tapering allowing for active hunting. When prey passes nearby, the cutlassfish lunges upwards and seizes it with the fang like teeth. The cutlassfish can be propelled upwards, out of the water if the lunge is in shallow water. They feed on anchovies, sardines, squid and crustaceans (Schultz, 2011). They change feeding habits; at the juvenile stage, they feed mostly on zooplankton but become carnivorous when adult feeding mainly on pelagic fishes.

POPULATION ECOLOGY. Cutlassfish are seen along the coast during late spring and summer. Adult males move to warmer waters northward to feed and females remain during the cold season. Cutlassfish larvae are found on the shelf and slope around temperatures above 21°C. Juveniles reside in coastal waters, young adults stay on the shelf break and adults are found in thermal fronts. Males are seen to maintain exclusive home ranges.During the wet season, feeding intensity increases as food sources increase, that is, crustaceans have increased numbers as well as shrimps. The population abundance of these top predators acts as a good indicator of primary productivity (Martins, 2000). The population fluctuates when there is increased numbers of crustaceans and other food sources.

REPRODUCTION. The reproductive cycle is divided into three seasonal phases from July to October then spawning occurs in the coast during late spring and summer, from November to February (Agnaldo Silva Martins, 2000). Males and females have different patterns of seasonal reproductive investment and feeding activity. Adult males move to warmer waters northward to feed and females remain during the cold season. Females that remain in colder, more reproductive coastal water during winter grow larger and have enhanced reproductive activity as more eggs hatch during a more favourable period. Adult males move offshore, spawn for a longer season or throughout the year. Females that remain over winter in the coast have delayed maturation (Martins, 2000). Cutlassfish have a gonochoristic style of reproduction that is, separate male and female sexes. In Japan, maturity is achieved at two years and fishes do not feed before the spawning period but afterwards feeding intensity increases significantly.

BEHAVIOUR. Males maintain exclusive home ranges while females were seen associated with different ranges. Juveniles and small adults form schools at 100 m depths during the daytime and they form loose feeding aggregations at night near the surface. Cutlassfish ambush squid and small fish that crossed their paths during feeding. They remained static, in a nearly vertical position, staying in the edges of the shaded area where they could remain inconspicuous. The attacks observed were quick and consisted of the fish swimming rapidly toward the prey with the mouth opened wide, biting and swallowing the squid when reached. The lunge can result in the cutlassfish jumping out of water by up to nearly one meter. They were also seen to mimic the form and swimming pattern of pelagic fish such as anchovies (Rodrigo Silvestre Martins, 2006).

APPLIED ECOLOGY. Increased fishing pressures have led to reduced body size and increased maturational rate. In some countries it represents an exploitable fish, is ranked in the sixth place of landing volume worldwide, with areas in the Asian Pacific (Lijun He, 2014).

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Fig. 2. Jaws and teeth of cutlassfish.

[http://commons.wikimedia.org/wiki/File:Trichiurus_lepturus_mouth.jpg, downloaded 29 April 2015]

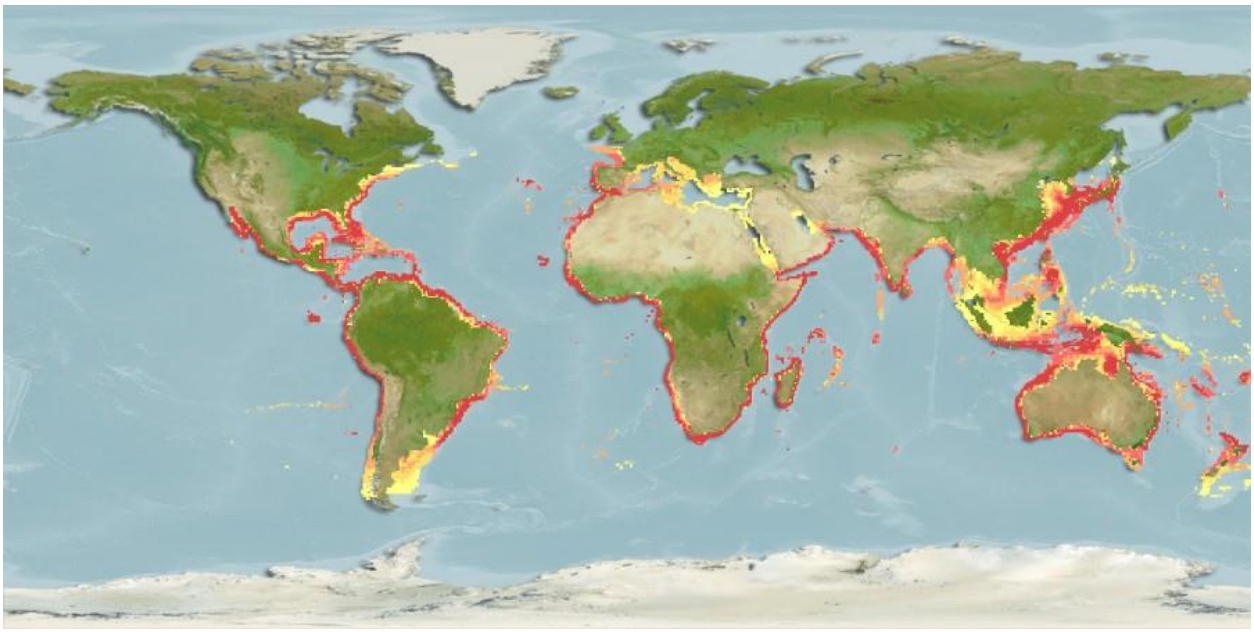

Fig. 3. Geographic distribution of cutlassfish.

[http://www.aquamaps.org/receive.php?type_of_map=regular, downloaded 29 April 2015]