

Synodus saurus (Atlantic Lizardfish)

Family: Synodontidae (Lizardfish)

Order: Aulopiformes (Lizardfish and Grinners)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Atlantic lizardfish, *Synodus saurus*.

[http://www.fishbase.org/images/species/sysau_u1.jpg, downloaded 6 April 2015]

TRAITS. It is a dioecious species (with separate sexes), with rows of normal shaped scales between the dorsal fin base and the porous scales located on the lateral line of which there are three rows (Esposito et al., 2009). The young are transparent, with black spots along the body (Anderson et al., 1965). The length of the Atlantic lizardfish varies from 10-31cm with a weight of 10-270 g (Manasirh et al., 2008), and it has a cylindrical body shape (Sousa et al., 2003) and a large mouth (Fig. 1). The species does not show any sexual dimorphism (Soares et al., 2002), and has an otolith which is triangular to rectangular in shape (Parisi-Baradad et al., 2010).

DISTRIBUTION. The Atlantic lizardfish occurs in the eastern Atlantic, the Mediterranean Sea, and the western Atlantic from Bermuda, The Bahamas and the Leeward Islands of the West Indies (Anderson et al., 1965) to Trinidad and Tobago.

HABITAT AND ACTIVITY. Found in the sandy sea bed (Fig. 2) of shallow waters most commonly around islands (Sousa et al., 2003), the Atlantic lizardfish is commonly found at less than 20m (Soares et al., 2002), with record depths of 400m also being recorded (Esposito et al.,

2009). Buried beneath the sand, the species exhibits immobile camouflaged behaviour, although it is quite capable of swift movement. As it is not very active the Atlantic lizardfish does not exhibit a preferred time period for activity, moving as feeding and breeding dictates (Esposito et al., 2009).

FOOD AND FEEDING. In its habitat on the shallow sandy sea bottom, the Atlantic lizardfish is a predator. Camouflaged beneath the sand and immobile the majority of the time the Atlantic lizardfish exhibits a strategy of sitting and waiting for its prey. It is quite swift when it does move and can capture pelagic fish in midwater. The species is almost completely piscivorous (Fig. 3), feeding mostly on pelagic fish that travel in schools, but is also known to feed on small crustaceans and cephalopods with its diet being heavily dependent on the availability of prey at any given time. The Atlantic lizardfish uses a size-based strategy where, regardless of its length, it consumes creatures that are young or 35% smaller than itself and therefore has a positive significant relationship between the size of the prey and the size of the predator (Esposito et al., 2009)

POPULATION ECOLOGY. The species is considered rare, but increasing in numbers. It occurs frequently in the area it is known to inhabit (Edwards and Russell, 2010). Typically solitary, sometimes seen in pairs (Soares et al., 2002). The natural mortality rate of male Atlantic lizardfish is 0.26, while the natural mortality rate of the female is 0.23 (Manasirh et al., 2008).

REPRODUCTION. The Atlantic lizardfish has characteristic eggs, larvae and young stages (Marine Species Identification Portal, 2015). The reproduction period occurs in the spring and summer seasons, peaking in July. Sperm production in males is continuous (Sousa et al., 2003). The female lizardfish lays her eggs along reefs, after which the following males fertilizes them. Atlantic lizardfish do not nest, or provide security for their young; the young of Atlantic lizardfish are basically left on their own. Larval and young stages characterized by transparent bodies, with spots along its length (All at Sea, 2009).

BEHAVIOUR. Juvenile Atlantic lizardfish float freely in water columns (All at Sea, 2009). The adult is usually immobile, resting on its pelvic fins or with its head and the ventral portion of its body on the sandy/rocky surface where it remains hidden. The species exhibits rapid movement from its position on a surface, quick movement from the middle of the water body towards prey and the stalking of prey. Antagonistic behaviour is exhibited with other members of the species when claiming territory or prey. The Atlantic lizardfish are a solitary species, staying far from each other, only briefly interacting under reproductive and antagonistic conditions (Soares et al., 2002).

APPLIED ECOLOGY. According to IUCN the Atlantic lizardfish is a species of least concern. There are currently no conservation measures specific to the species being enforced, however the species inhabits a wide range of marine protected areas. The species has been recommended for monitoring of its harvest levels. The species is not targeted, however the species is captured during commercial trawling but this is not considered a major threat to the species (Edwards and Russell, 2010). They are becoming popular as pets, which can potentially be a danger to the Atlantic lizardfish (All at Sea, 2009).

REFERENCES

- All at Sea. 2009. *Synodontidae or Lizardfish lie in Wait*. Accessed April 4, 2015. <http://www.allatsea.net/synodontidae-or-lizardfish-lie-in-wait/>.
- Anderson, William W., Jack W Gehringer, and Frederick H Berry. 1965. *Field Guide to the Synodontidae (Lizardfishes) of the Western Atlantic Ocean*.
- Edwards, and Russell. 2010. *Synodus saurus*. Accessed April 8, 2015. <http://www.iucnredlist.org/details/155213/0>.
- Esposito, Valentina, Pietro Battaglia, Luca Castriota, Maria Finola, Gianfranco Scotti, and Franco Andaloro. 2009. *Diet of the Atlantic lizardfish, Synodus saurus (Linnaeus, 1758) (Pisces: Synodontidae) in the central Mediterranean Sea*. Barcelona: Scientia Marina.
- Manasirh, Meltem, Dursum Avsar, Hacer Yeldan, and Erdogan Cicek. 2008. "Population Dynamical Parameters Of The Atlantic Lizardfish (*Synodus saurus*) From The Babadillimani Bight (Silifke-Mersin) In Turkey." *Journal of Fisheries Sciences.com* 8.
- Marine Species Identification Portal. 2015. *Fishes of the NE Atlantic and Mediterranean*. Accessed April 8, 2015. http://species-identification.org/species.php?species_group=fnam&id=2118.
- Parisi-Baradad, Manjabacas, Lombarte, Olivella, Chic, Piera, and Garcia-Ladona. 2010. "Automated Taxon Identification of Teleost fishes using otolith online database- AFORO." *Fisheries Research* 8.
- Soares, Marta, Barreiros Joao, Sousa Luis, and Santos Ricardo. 2002. "Agonistic and predatory behaviour of the lizardfish *Synodus saurus* (Linnaeus, 1758) (Actinopterygii; Synodontidae) from the Azores."
- Sousa, Luis, Joao Barreiros, Marta Soares, Mauricio Hostim-Silva, and Richard Santos. 2003. *Preliminary notes on the Reproductive Biology of The Lizardfish, Synodus saurus (Actinopterygii: Synodontidae) in the Azores*. Cybium.

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Fig. 2. Common sandy sea bottom habitat of Atlantic lizardfish, *Synodus saurus*.

[<https://encryptedtbn1.gstatic.com/images?q=tbn:ANd9GcQXtn0endkg5p4W2Qci5ZJ7L3OuI95ZNPwzoqohsaxuS04YY-0i>, downloaded 8 April 2015]



Fig. 3. Atlantic lizardfish (*Synodus saurus*) feeding.

[<http://cache3.asset-cache.net/gc/128933846-lizardfish-feeding-on-his-prey-synodus-sp-gettyimages.jpg>, downloaded 8 April 2015]