

The Synodontidae — Lizardfishes

Some say the fish has the head of a lizard, pointy and ending in a substantial snout and a mouth lined with sharp canine-like teeth, so long that they stick out when the fish closes its mouth. The scientific name acknowledges this resemblance — *Synodus* means “teeth meeting.” Do lizard teeth stick out? Not typically as it turns out; the fish are apparently more protective of them. Lizards do have snake-like tongues that test the air. But lizardfish keep their toothy tongues safely tucked in their mouths.

Like the lizards, however, these fish typically like it warm, relatively speaking. The one member of the family that wanders into the Strait is arguably off course. Maybe most wanderers turn around and head back south, having realized their mistake. Yet the Lizardfish is common enough to have been noted by those who survey the waters, sometimes as anglers, sometimes for scientific purposes.

Whatever vagaries of weather and sea, or perhaps as an old fish looking for a new place, the bottom of the Strait offers a habitat similar to its more southerly home. Sand and gravel, a place to bury itself, and lots of good food — what more could a lizardfish need!

As the common name implies, the California Lizardfish (*Synodus lucioceps*) is a fish of southwestern waters, particularly those of southern California and Baja. There are approximately 47 species in the lizardfish family — the Synodontidae — divided into four genera. Fishes of shallow seas in tropical to warm temperate waters, they are native to the Atlantic, Indian, and Pacific Oceans.

These are long, slender fish, cylindrical in cross-section with large mouths, lots of scales, small pectoral fins, and heavy-duty pelvic fins. The fins serve the lizardfish as elevating appendages. For although the lizardfish often buries itself in sand, it is also inclined to raise itself above the substrate, rather like a lizard that employs its short legs to push up above the heated ground.

Lizardfishes belong to the Aulopiformes Order, a group of over 230 species that share specific morphological features, such as their gill arches. Many are deep water fishes, and some are hermaphrodites. Considered to have both primitive and advanced features, the name *Aulopus* is Greek for “pipe” referring to the elongated shape of many members. An old order, consisting of 15 families, lizardfish fossils dating to 125 million years ago (mya) have been identified. The lizardfish



California Lizardfish (*Synodus lucioceps*)

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family itself, the Synodontidae, probably originated during the Eocene, 50-45 million years ago. An extinct species, *Argillichthys toombsi*, dated from that time, is considered closely related to extant lizardfish. The genus dates to about 15-20 mya, with a 100,000-year presence in California.

The California Lizardfish is one of the largest of its family, measuring up to 25 inches (64 cm) in length. They are brown above with barring and broad “saddles.” Found on sandy bottoms near rocky reefs or gravelly slopes, when brought to the surface they typically lose the dark pattern. The tail fin is forked and often yellow, particularly after capture. The lizard-like mouth is fortified with canine-like teeth; smaller recurved teeth are present on the floor of the mouth and palate. The large teeth lining the jaw protrude when the mouth is closed. Lizardfish are voracious fish eaters and are also known to dine on squid and krill. In turn they are prey for halibut, sea lions, and dolphins. Although not typically targeted for their edibility, lizardfish are taken by humans as well, and sometimes used as bait for a more palatable catch, or as a ground up fish meal. Populations tend to fluctuate widely.

California Lizardfish mature at about 12-14 inches (30-36 cm) and typically spawn during the summer. Living to an old age of nine years, the young are pelagic, often forming huge schools near the surface far offshore. These are tiny, transparent fish with little black spots beneath the skin on the underside. They settle to the bottom, often at lengths of less than an inch; here they join the adults at depths to 750 feet (229 m) although typically less.

Eating a Lizardfish

Not surprisingly, lizardfish recipes are available on the Web, but to decide if the fish are truly edible is a different question and without doubt dependent on the diner. One way to determine if you want to go fishing for these tubular fish is to check online videos for cooking experiences and advice. These endeavors are often undertaken by stout young anglers who make a living as charter boat operators, or sometimes just people with a passion for fishing. Apparently, a California Lizardfish is not particularly hard to catch, although it is reported that offering a wriggling bait, either plastic or organic, is best. With the fish landed, the fisher returns to the kitchen, ready for the experiment. Fileting the lizardfish reveals a white flesh, a blanched appearance often taken as a positive sign for edibility (who doesn't like a nice white flounder). Small bones are present, as most often the California Lizardfish is less than a foot in length, and frying does not take long. At least one demonstration emphasizes the inclusion of a side dish of appealing stir-fried vegetables, an excellent backup if the fish invokes a gag reflex.

But reportedly it is quite palatable. Judged just bland to tasty, the filets, which are fortunately small (just in case) are readily consumed as the lizardfish more or less passes the human taste test. What does it mean for the future of lizardfish cuisine? Probably not much, and so the California Lizardfish can for the most part live without much disturbance on the quiet sandy sea bottom.

The Bombay Duck

Lizardfish might not rank as the most desirable human food fish of North American warm seas, but family members have been historically exploited in other places, particularly in the Indian Ocean. There, at least one, also a member of the Synodontidae family, has been ranked a delicacy in Bengal. The scientific name of this species is *Harpadon nehereus* — the designation of “Bombay Duck” is derived from “Bombay” and “Daak”, a Bengali word. The name dates to the early 19th century.

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Smelly, and served dried or fresh, the protein-rich Bombay Duck was at one time imported by the ton to the United Kingdom, until regulations stopped easy transport, and the fish disappeared from European markets. Today, it is imported once again, with a market in Asia, Europe, and North America.

What does this increased consumption mean for this 10-inch lizardfish? Sadly, the result was easy to forecast. The Bombay Duck is approaching the overfished status, with a 25% decline reported from the city of Mumbai, the capital of India. Thousands of boats fish the coastal waters there; such an impact seems inevitable. The impact of climate change is also difficult to predict. As with most lizardfish, the Bombay Duck dwells in warm waters, but it also ranges into estuaries, an environment finely tuned to the balance of freshwater and saltwater.

The Bombay Duck is now listed as “Near Threatened” by the IUCN. Clearly, it is better to be a lizardfish that lacks both appeal and publicity.

California Lizardfish in the Salish Sea

Hardly the best environment for a fish that thrives in the warmth of the southern California coast, the California Lizardfish nevertheless makes occasional forays into the Salish Sea, possibly when El Nino events warm the chilly waters. Small numbers attract little interest, and it is doubtful that the taste, bony flesh, and odor of this lizardfish would make it a target fish for anglers or commercial interests alike. Nevertheless, it occasionally ends up, bones and all, on someone’s plate.

Relatives are caught and consumed with enthusiasm on other continents, but in the early decades of the 21st century the California Lizardfish remains more of a curiosity than a meal in American waters. Some say it tastes like iodine, a report that evokes visions of medicine bottles and makes you wonder who has actually consumed iodine. That image aside, lizardfish probably aren’t going to be as popular as a yummy rockfish or a delicious flounder. That, of course, is always the hope if not necessarily the expectation. In the meantime, it is possible that the California Lizardfish will enter the waters of the Strait when conditions are at their warmest. And there an encounter with a rare fish in the Pacific Northwest (although common in more southerly waters) would be like seeing a Black-footed Albatross glide by. The albatross would definitely attract attention while the lizardfish would swim carefully along the bottom of the sea where it is safe from view, definitely a good place to be.