

# Lionfish!

*Jill A. Olin, U.S. Fish & Wildlife Service  
Student Temporary Employment Program,  
Long Island Field Office*

The lionfish's (*Pterois volitans*) spines are spectacular but very painful

The summer of 2001 was beginning to wind down, and the abundance and diversity of fishes in the waters of Long Island were characteristically high for that time of year. Our fish surveys begin in June and, regrettably, end in November when the air is too frigid for working in the water. Collecting season is mid-summer to mid-fall when the Gulf Stream brings with it a variety of exotic gifts.

Armed with an assortment of collecting gear including nets, buckets, thermometers, measuring boards, and neoprene booties, we head for our favorite locations along the south shore of Long Island. Our quest for interesting fishes takes us to eel grass beds, dock pilings, submerged cement blocks—essentially any underwater object that can provide shelter for marine life. A typical day brings our well-known native fishes: killifishes, pollock, flounders, silversides, seahorse, pipefish, bluefish, cunner and tautog. Mingled in with the native fishes are the tropical vagrants that enter the estuary as larvae or juveniles. These include snappers, butterfly fishes, big eyes, surgeonfish, jacks, lookdown, groupers and angelfishes.

Still, nothing could have prepared us for what we found that September day in the Great South Bay. Nestled up against a dock piling, thousands of miles from their native range were two tiny lionfish (*Pterois volitans*). Measuring only about an inch each, these tiny organisms were nevertheless adorned with venomous dorsal, anal and pelvic spines. We wondered how they ended up in our nets here on the south side of Long Island.

The lionfish is a popular aquarium inhabitant typically exported to the United States from the Philippines and Indonesia. Lionfish are quite capable of outgrowing the average home aquarium. A predator native to the western Pacific and Indian Ocean, the lionfish reaches approximately 17 inches in length and is best known for its venomous spines, which deliver a painful sting.

Investigating recent sightings along the northwestern Atlantic, we found that the first lionfish was reported off south Florida over 10 years ago. At the recent American Academy of Underwater Sciences meeting in Greenville, North Carolina, a researcher with the National Centers for Coastal Ocean Science noted

that in August 2000, only two lionfish were sighted in two locations along the east coast. By October 2002, however, 49 lionfish had been reported in 16 different locations. Shortly after our find came to light, two other post-larval lionfish were collected in Shinnecock Inlet by a scuba diver. In 2003, at least 10 juvenile lionfish were captured around Long Island, and one was reported from Corson's Inlet in Cape May County, New Jersey. These sightings suggest that the lionfish is the first venomous Pacific reef fish to be established along the east coast of the United States. As with other fishes, the juveniles were probably carried north by the Gulf Stream and deposited along the way; therefore, juvenile lionfish will likely occur in New Jersey waters every summer.

We donated the individuals we found that day to an exhibit of Long Island-caught lionfish at the Atlantis Marine World Aquarium in Riverhead, New York, but the story is far from over. Now fisheries biologists are trying to figure out how lionfish arrived in the Atlantic. It has been reported that during Hurricane Andrew six lionfish were released into

Photo John Morrissey

Photo John Morrissey

Photo John Morrissey



A lionfish explores a bit of coral

Biscayne Bay, Florida. If this is true, then accidental or intentional release by aquarium suppliers or hobbyists is a likely explanation. Another plausible hypothesis is that lionfish larvae were transported from the Indo-Pacific in the ballast water of a ship. But perhaps there are more important questions. For example, what, if any, ecological impact will the species have in the Atlantic Ocean? Also, how can we prevent future releases of nonnative fishes?

Further Reading:

Whitfield, P.E., T. Gardner, S. Vives, M. Gilligan, W. Courtenay, G. Ray, J. Hare. Biological invasion of the Indo-Pacific lionfish (*Pterois volitans*) along the Atlantic coast of North America. Marine Ecology Press Series. 235: 289-297.

A lionfish's stripes camouflage its eye

