

# U.S. National Early Detection/Rapid Response System for Invasive Species

## Invasive Species Fact Sheet

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**Common Name:** Red Lionfish

**Scientific Name:** *Pterois volitans* L.

**Family:** Scorpaenidae

**Description and Biology:** *Pterois* is a genus of venomous marine fish that are commonly known as the lionfish. *Pterois* is characterized by red, white, and black, stripes, showy pectoral fins, and venomous tentacles. The Red lionfish grows up to 15 inches (0.4 meters) in length, and weighs up to 2.6 lbs. (1.2 kg). Specimens have been known to live up to 15 years.



**Image:** Red Lionfish - Image taken in 2001 about 40 miles off the coast of North Carolina at a depth of 140 feet. U-GA Forestry Images.

URL: <http://www.forestryimages.org/browse/detail.cfm?imgnum=5383110>

The genus *Pterois* is generally classified into 15 different species. But the Clearfin lionfish (*Pterois radiata*), Red lionfish (*Pterois volitans*) and the Common lionfish (*Pterois miles*) are the most commonly studied.



**Native Range:** The Lionfish is native to the South Pacific and Indian Oceans.

Map: [http://oceanservice.noaa.gov/education/stories/lionfish/media/supp\\_factc.html](http://oceanservice.noaa.gov/education/stories/lionfish/media/supp_factc.html)

**Habitat:** In its native range, the Red lionfish inhabits offshore reefs, turbid inshore areas, as well as lagoons and harbors. Lionfish have been found in water depths from 1 - 1000 feet.

**Pathways of Introduction and Spread:** Lionfish are popular in some parts of the world as food, and are also used widely in the aquarium trade. The first documented release of Red lionfish in the southeastern U.S. resulted from the destruction of a large private aquarium located on a porch at the edge of Biscayne Bay, near Miami, Florida, during Hurricane Andrew, in 1992. These fish were observed to be alive in waters near the shoreline several days later.

Between 1993 and 2002, a number of unsubstantiated sightings of the Red lionfish were reported from the Florida east coast. In 2002, three specimens were caught near St. Augustine, Florida, and positively identified by the Florida Fish and Wildlife Conservation Commission. Since then, Red lionfish have been observed and caught off the coast of Georgia, the Carolinas, New Jersey, and New York. Lionfish are presently invading the Gulf of Mexico and South America coastal waters. Recent estimates of Lionfish densities indicate that lionfish have surpassed some native species. The highest estimates report over 1,000 Lionfish per acre in some locations.

**Economic and Ecological Impacts:** The potential economic impacts of Lionfish to marine fisheries of the eastern U.S. are not yet known. It is the only non-native marine fish that is known to not only survive, but reproduce along the Eastern seaboard, the Gulf of Mexico, and the Caribbean. Such free living (naturalized) populations pose a danger to humans and could seriously impact native marine species that did not co-evolve with them.

Lionfish are capable of having a serious impact on native reef communities. They occupy the same trophic level as economically important species (e.g., snapper and grouper), and may impede native fish stock rebuilding and coral reef conservation efforts.

Lionfish generally rely primarily on camouflage to avoid predators and its fast reflexes to capture prey such as small fish and shrimp. However, it can defend itself by very potent venom, which is delivered by an array of 18 needle-like dorsal fins. A sting from a lionfish is very painful to humans. It can cause nausea and breathing difficulties, but is rarely fatal.

**Research on Development of Control Strategies for Lionfish.** The U.S. National Oceanic and Atmospheric Administration (NOAA) is currently conducting research on development of control strategies for Lionfish. This includes:

- Exploration of biotechnological solutions for Lionfish control.
- Natural Lionfish population control mechanisms that may be adaptable to the invaded range
- The potential of Lionfish as a food fish in the U.S.
- Methods for removal of Lionfish from protected area
- Development of dispersal models of larval lionfish and identification of seeding populations
- Development of Regional Lionfish Control Plans for the Southeast U.S., Gulf of Mexico, and Caribbean.

**Regulatory Status:** The Lionfish is not regulated as an invasive species in the United States.

### **Online Resources:**

Online Article - Extent and Speed of Lionfish Spread Unprecedented; Invasive Marine Fish May Stress Reefs. Science Daily. March 15, 2011.

URL: <http://www.sciencedaily.com/releases/2011/03/110314141606.htm> Lionfish Invasion.

Online Article – Lionfish Invasion: The Pacific Lionfish is Stinging the Atlantic. David Alderton.

FishChannel.Com. November 5, 2008. URL: <http://www.fishchannel.com/fish-news/2008/11/05/lionfish.aspx>

Online Blog - Lionfish Spread Unprecedented. Karan Rawlins - Bugwood Blog. Center for Invasive Species and Ecosystem Health – University of Georgia.

URL: <http://bugwood.blogspot.com/2011/03/lionfish-spread-unprecedented.html>

Invasive Lionfish. NOAA Lionfish Website. URL: <http://www.ccfhr.noaa.gov/stressors/lionfish.aspx>

Lionfish Biology Fact Sheet. NOAA National Ocean Service.

URL: <http://oceanservice.noaa.gov/education/stories/lionfish/factsheet.html>

Lionfish Profile. National Geographic. URL: <http://animals.nationalgeographic.com/animals/fish/lionfish/>

Red Lionfish (*Pterois volitans*) Profile. Smithsonian Marine Station, Ft. Pierce, Florida.

URL: [http://www.sms.si.edu/irlspec/pterois\\_volitans.htm](http://www.sms.si.edu/irlspec/pterois_volitans.htm)

Lionfish Research Program. Reef – Key Largo, Florida. URL: <http://www.reef.org/programs/exotic/lionfish>

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