

# FACTSHEET LIONFISH INVASION



## SPECIES

20 native in Indo-Pacific, 2 non-native in Western Atlantic

## SIZE

Up to 49 cm in length

## HABITAT

Coral reefs, artificial structures, mangroves, and seagrass beds; Near surface to 300 m deep

## TAXONOMY

Species in Atlantic: *Pterois volitans*, *Pterois miles*

## LIFE SPAN

Captivity: decades; Wild: unknown

## GEOGRAPHIC DISTRIBUTION

*Native:* Indo-Pacific, Red Sea  
*Non-native:* Caribbean, Atlantic, and Gulf of Mexico



## DESCRIPTION

Reef fish with white and reddish-brown to black vertical bars and large fan-like pectoral fins. Venomous dorsal, ventral, and anal spines.



## BEHAVIOR

Slow moving fish, typically found in groups or alone under ledges and overhangs during the day.



## REPRODUCTION

Fast-growing and fast reproducing. Females produce 10,000-20,000 eggs every 3-4 days year-round. Populations can jump from 89,000 to 335,000 in just one year. Currently there are as many as 1300 lionfish per hectare in the Caribbean.



## DIET

100+ species of reef fish such as snappers, grunts, grouper, and parrotfish, as well as juvenile lobster. One lionfish can reduce the recruitment (new individuals) of reef fishes by 79% in just five weeks.



## PREDATORS

None known in their invaded Atlantic habitat.



## HANDLING LIONFISH

Avoid dorsal, ventral, and anal spines. If stung, soak in non-scalding hot water and seek medical attention.

## WHY ARE LIONFISH A PROBLEM?

**Lionfish are an invasive (non-native) predator that can decimate economically and ecologically important reef fish.**

- No natural predators controlling lionfish populations.
- Coupled with coral bleaching, overfishing, pollution, and disruptive algal growth, lionfish may cause significant negative changes to reefs.
- Capable of removing forage fish from some Caribbean reefs.
- Fishing (42 million people's livelihood) and tourism (US \$2.1 billion dive revenue) industries in the Caribbean may be severely reduced from fallout following lionfish invasions.



## SOLUTIONS

- ✓ Remove lionfish on the reef: Can't eliminate, but can control populations
- ✓ Report lionfish sightings: [www.reef.org/programs/exotic/report](http://www.reef.org/programs/exotic/report)
- ✓ Eat lionfish – they are delicious! Development of seafood market
- ✓ Tourism operations that focus on removal
- ✓ Increase monitoring efforts and region-wide collaboration of research, management approaches, successes, and failures



The invasion of lionfish may prove to be one of the greatest threats of this century to Atlantic reefs."

Dr. James A. Morris, Jr., NOAA

---

## KEY WEBSITES

### **Invasive Lionfish Web Portal**

[lionfish.gcfi.org/](http://lionfish.gcfi.org/)

### **U.S. Geological Survey (USGS) | Lionfish Factsheet**

[nas.er.usgs.gov/queries/factsheet.aspx?speciesid=963](http://nas.er.usgs.gov/queries/factsheet.aspx?speciesid=963)

### **Oregon State University | Hixon Laboratory**

[hixon.science.oregonstate.edu/content/highlight-lionfish-invasion](http://hixon.science.oregonstate.edu/content/highlight-lionfish-invasion)

### **REEF | Lionfish Research Program**

[www.reef.org/programs/exotic/lionfish](http://www.reef.org/programs/exotic/lionfish)

### **NOAA | Lionfish Research**

[coastalscience.noaa.gov/research/pollution/invasive/lionfish](http://coastalscience.noaa.gov/research/pollution/invasive/lionfish)

## VIDEO

### **BBC Oceans | Phillip Cousteau Jr. Investigates Invasive Lionfish**

[www.youtube.com/watch?v=XqGhsMhZtF0](http://www.youtube.com/watch?v=XqGhsMhZtF0)

### **Carl Safina | Scourge of the Lionfish**

[chedd-angier.com/savingtheocean/Season1/Episode10.html](http://chedd-angier.com/savingtheocean/Season1/Episode10.html)

### **Associated Press (Tracy Brown) | Lionfish Invasion**

[www.youtube.com/watch?v=Ar0CX8dj948](http://www.youtube.com/watch?v=Ar0CX8dj948)

### **How to fillet a lionfish**

[www.reef.org/programs/exotic/lionfish/resources](http://www.reef.org/programs/exotic/lionfish/resources)

### **Alien Invaders | Changing Seas**

[stephaniejgreen.com/news/](http://stephaniejgreen.com/news/)

## EXPERTS

### **Lad Akins**

*Director of Special Projects, REEF*

### **James A. Morris, Jr., Ph.D.**

*Marine Ecologist, Center for Coastal Fisheries and Habitat Research, National Ocean Service, NOAA*

### **Mark A. Hixon, Ph.D.**

*Professor and Sidney & Erica Hsiao Endowed Chair in Marine Biology University of Hawaii – Manoa*

### **Stephanie Green, Ph.D.**

*Department of Zoology Oregon State University*

---

## REFERENCES

- Albins, M. A. and M. A. Hixon. 2008. Invasive Indo-Pacific lionfish (*Pterois volitans*) reduce recruitment of Atlantic coral-reef fishes. *Marine Ecology Progress Series* 367: 233-238.
- Barbour A. B., M. S. Allen, T. K. Frazer, and K. D. Sherman. 2011. Evaluating the potential efficacy of invasive lionfish (*Pterois volitans*) removals. *PLoS ONE* 6(5): e19666.
- Darling, E. S., S. J. Green, J. K. O'Leary and I.M. Côté. 2011. Indo-Pacific lionfish are larger and more abundant on invaded reefs: a comparison of Kenyan and Bahamian lionfish populations. *Biological Invasions* 13(9): 2045-2051.
- Burke, L., K. Reytar, M. Spalding, and A. Perry. 2011. *Reefs at Risk Revisited*. 130 (World Resources Institute: Washington D.C.).
- Green, S. J., L. Akins, A. Maljkovic, and I. M. Côté. 2012. Invasive lionfish drive Atlantic coral reef fish declines. *PLoS One* 7:e32596.
- NOAA: Press Release: [http://sero.nmfs.noaa.gov/news\\_room/press\\_releases/2012/lionfish\\_publication\\_2012\\_final\\_2\\_.pdf](http://sero.nmfs.noaa.gov/news_room/press_releases/2012/lionfish_publication_2012_final_2_.pdf)
- Morris, J. A., Jr. (ed.). 2012. *Invasive Lionfish: A Guide to Control and Management*. Gulf and Caribbean Fisheries Institute Special Publication Series Number 1, Marathon, Florida, USA.
- Morris, J. A., Jr. and P. E. Whitfield. 2009. Biology, ecology, control and management of the invasive Indo-Pacific lionfish: An updated integrated assessment. *NOAA Technical Memorandum NOS NCCOS 99: 1-57*. NOAA.
- Whitfield P. E., J. A. Hare, A.W. David, S. L. Harter, R. C. Munoz, and C. M. Addison. 2007. Abundance estimates of the Indo-Pacific lionfish *Pterois volitans*/miles complex in the Western North Atlantic. *Biological Invasions* 9: 53-64.
- Wilkinson, C. and D. Souter. 2008. Status of Caribbean coral reefs after bleaching and hurricanes in 2005. *Global Coral Reef Monitoring Network, and Reef and Rainforest Research Centre, Townsville, Australia*. p.152.

Updated: February 2015

## RELATED FACTSHEETS



**Invasive Species, Blue Economy, Tourism, Coral Reef, Sustainable Seafood**

Available: [WaaittInstitute.org/factsheets](http://WaaittInstitute.org/factsheets)