

## WHAT CAN YOU DO TO HELP?

Whether you are a local or a visitor who enjoys the magic of our waters, you can help be a part of the solution.

**Aquarists:** Never release pet fish into the wild. Even small, seemingly insignificant critters may severely impact the native marine ecosystem.

**Scuba Divers and Snorkelers:** Learn to recognize exotic species and report any suspicious animals to **REEF** [www.reef.org/exotic](http://www.reef.org/exotic).

**We need your help to preserve the natural balance of the marine environment.**

**Help us fight the introduction of non-native species by reporting sightings.**

*"The number of exotic species can quietly accumulate in an ecosystem, forever changing its composition and ability to resist disturbance."*



Sailfin Tang  
(*Zebrasoma veliferum*)



Orbicular Baffish  
(*Platax orbicularis*)



Emperor angelfish  
(*Pomacanthus imperator*)



Red lionfish  
(*Pterois volitans*)

**Dr. Steve Gittings**

*Science Coordinator, National Marine Sanctuary Program*

**Reef Environmental Education Foundation (REEF)** is a grassroots, non-profit organization founded in 1990. Volunteer divers and snorkelers are becoming actively involved in saving the marine environment gathering information in the form of fish population surveys. These data are used by the research community to protect and preserve the marine ecosystem of our own backyards and beyond.

For more information or to report a sighting please contact:

**Reef Environmental Education Foundation**

Post Office Box 246  
Key Largo, Florida 33037

305.852.0030

[www.reef.org](http://www.reef.org)

[exotic@reef.org](mailto:exotic@reef.org)



All fish images are exotic species spotted in Florida waters by **REEF** members. Photographs compliments of Joe Froelich (red lionfish), Jason McCullough (emperor angelfish), Denise Mizell (sailfin tang), and Shannon Lyday (orbicular baffish). Cover photo by Laddie Akins.

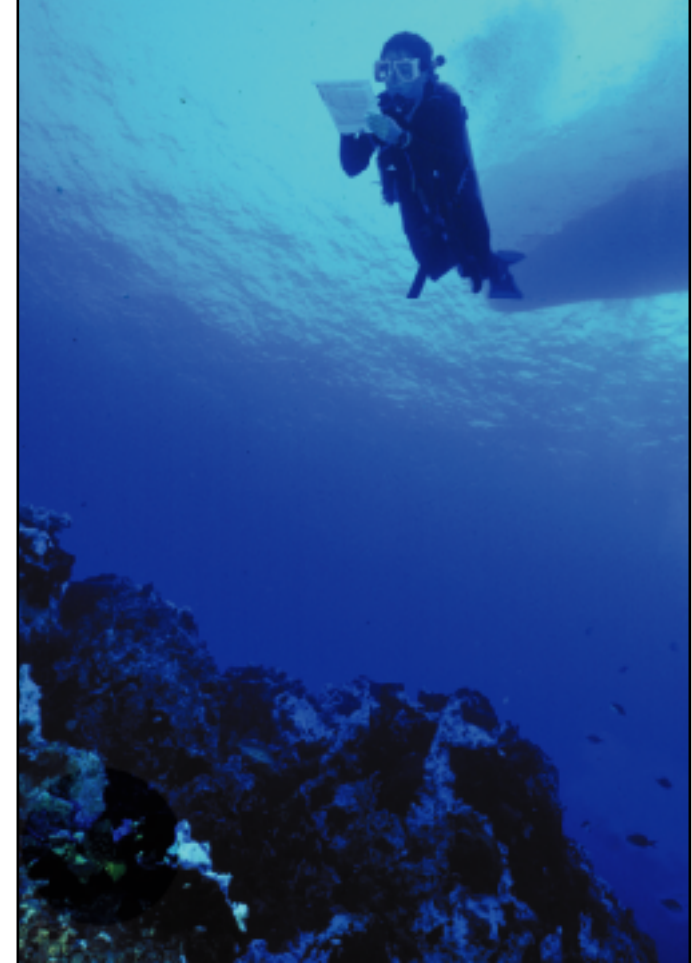


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# WANTED EXOTIC SPECIES

HAVE YOU SEEN ANY INTRUDERS?



# NEEDS YOUR HELP

# WANTED EXOTIC SPECIES

**INTRODUCED = INVASIVE = NON-NATIVE = ALIEN = NON-INDIGENOUS = EXOTIC**

## WHAT IS AN EXOTIC SPECIES?

These are all terms used to describe organisms living in areas beyond their natural range whose introduction was caused directly or indirectly by humans. It is illegal to release non-native species into state waters. Despite this, exotic species are on the rise throughout the state. This includes several species of non-native reef fishes, such as those pictured here. While they may look pretty, these fish are not welcome additions to our reefs.



*Emperor angelfish, native to the Indo Pacific has been sighted off Pompano Beach, FL.*

## WHY ARE EXOTIC SPECIES HARMFUL?

Exotic species are widely regarded as one of the top threats to the maintenance of ecosystem health. They thrive in their "new" home because of a lack of predators and an abundance of prey that are ill-suited to defend themselves against the invader. When an exotic species thrives, it often competes with native species for resources such as food and shelter. This competition can result in the decline of native populations. Exotics can also introduce new parasites and diseases to the ecosystem. The U. S. Geological Survey places exotic species as the third most responsible factor for



*The red lion fish native to the Indo Pacific, has been sighted from New York to Florida.*

dramatic declines in biodiversity. It is important for these species to be detected early because once established, they are difficult to remove without further damaging the ecosystem. The cost of removing an exotic species can be quite high; it is estimated that it costs the U. S. economy \$1 billion a year to remove and mitigate the effects of exotic species on aquatic ecosystems (*College of Agriculture and Life Sciences, Cornell University*).

## EXOTIC APPREHENDED

On April 27, 2000, two orbicular batfish (*Platax orbicularis*) were collected from Molasses Reef off the coast of Key Largo, Florida.



*Orbicular batfish*

Normally found in the Pacific Ocean, these fish were most likely released into the wild by home aquarium owners after they grew too large for their tanks. The batfish are often seen with the native Atlantic Spadefish. In removing these intruders, REEF, the Florida Keys National Marine Sanctuary, Dynasty Marine, Inc., and the New England Aquarium launched a cooperative effort to preserve reef health in the Florida Keys. The batfish are now on exhibit in the New England Aquarium as "poster fish" for the dangers of exotic species in coral reef environments.



**SPREAD THE WORD  
KEEP OUR MARINE  
ECOSYSTEMS  
HEALTHY.**

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**VISIT [www.reef.org/exotic](http://www.reef.org/exotic) TO REPORT AN EXOTIC SPECIES SIGHTING**