

# MY COMMUNITY, OUR EARTH

## MIAMI

## Investigating the Impact of Lionfish on Florida's Marine Ecosystems

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Source: [http://www.noaa.gov/features/03\\_protecting/images/lionfish.jpg](http://www.noaa.gov/features/03_protecting/images/lionfish.jpg)

### **Problem Statement:**

**What effect do Lionfish have on Florida's marine ecosystems?**

### **Background**

The introduction and spread of invasive species around the world is a major threat to ecosystems and native species within those ecosystems. Historically, South Florida has become home to several nonnatives that have changed the local flora and fauna. Although some deliberately introduced species have proved beneficial, many can cause ecological and economic harm. Whether deliberately or accidentally introduced, nonnative populations are able to grow exponentially. This is due to the fact that there may be no natural predators, competitors, or parasites that would usually control their populations in their native homes. As their

populations increase, invasive species can crowd out populations of many native species, trigger ecological disruptions, cause human health problems, and lead to economic losses (Miller and Spoolman, 2012). Identifying invasive species, evaluating their impact, and attempting to limit their expansion is key to protecting ecosystems around the world.

Lionfish (*Pterois volitans*), members of the Scorpionfish family, are native to the Indo-Pacific region and widely distributed throughout the western Pacific from southern Japan to Micronesia, Australia, and the Philippines. No one knows for sure how the fish arrived, but it is believed that they might have come from a fish tank near the ocean filled with exotic species of fish that was smashed in 1992 when hurricane Andrew tore through the southern region of Florida allowing the fish to escape into local waters. Another possibility is that

they were imported as an aquarium curiosity and were later released into the bay. Lionfish are thriving in South Florida waters because prey fish are plentiful on reefs and few, if any, fish consume Lionfish due to the presence of their venomous spines.

Lionfish invasions have been well documented in the Caribbean, where autopsied fish have revealed more than 50 species of prey fish in their stomachs. Baby spiny lobsters, wrasses, parrotfish, blennies, and other ecologically and economically significant species are in danger of being consumed. Parrotfish are ecologically important in controlling algae populations that may otherwise overcrowd and deplete coral populations. The loss of these fish would have a devastating impact on the balance of the already fragile coral reef ecosystems. Lionfish also consume grouper and snapper, two commercially important fish species in South Florida. In

a region that relies heavily on commercial fishing and recreational diving, the loss of these and other reef species could have a devastating effect on South Florida economy.

## Implications and Conclusions

Though it is unlikely that Lionfish will be eradicated, some efforts are being made to control their numbers. Local fisherman spear and net the fish when they come across them, and organizations host competitions during which hundreds of Lionfish are caught and removed from the reefs they are invading. In several restaurants in the Caribbean, Lionfish is now appearing on the menu as a method of mitigation. This has a twofold positive impact by removing the invasive Lionfish, and reducing the catch of other fish, allowing commercial fish populations to rebound from potential overexploitation.

