



IN ITS NATIVE HABITAT IN THE PACIFIC OCEAN, the lionfish (genus *Pterois*) has evolved unique adaptations, such as its warning coloration and fin shape, to play an important role in coral reef ecosystems. However, in the 1980s a few lionfish were released from aquariums in Florida into the Atlantic Ocean. Without any natural predators, the lionfish numbers increased drastically, and within just a few short decades it has become one of the top predatory fish in the Atlantic Ocean.

Unfortunately, invasive species, such as the lionfish, often have a detrimental influence on the ecosystems that they invade. In the case of the lionfish, they have decimated over 50 species of fish normally found on Caribbean coral reefs, and disrupted the very foundations of the coral reef food webs.

Through careful genetic analysis and dedicated scientific studies, biologists have been able to trace the origins of the Atlantic lionfish to just six individuals. Additional studies are focusing on how to manage lionfish populations by understanding their evolutionary history and exploring the fish in their native environment in the Pacific Ocean.

This text focuses on these same three themes:

- Evolution
- Nature of Science
- Biological Systems

These themes form the threads that connect the content of the chapters together. Throughout the text, the authors have used a combination of engaging readings, digital assets (videos and animations), and “big-picture” unit-level learning outcomes to demonstrate how the seemingly complex world of biology is actually based on fundamental principles. This approach, refined by the teaching experience of the authors, focuses on making the content relevant to the student.

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