

The Fish That's Eating the World

How two invasive species of fish are causing big problems

About the Story

Lexile: 980L (combined)

For qualitative complexity factors, go to Scope Online.

Learning Objective:

to compare the problems that lionfish and goldfish are creating as invasive species and how those problems are being addressed

Key Skills:

author's craft, cause and effect, author's purpose, compare and contrast

Essential Questions:

- How do ecosystems become unbalanced?
- What responsibility do humans have to protect and restore ecosystems?
- How are environmental problems solved?

Standards:

The articles and lesson support these Common Core anchor standards: **R.1, R.2, R.3, R.4, R.5, R.9, W.2, SL.1, SL.2, L.4, L.5, L.6.** For more standards information—including TEKS—go to *Scope Online*.

Your Teaching Support Package

Find your full suite of materials at scope.scholastic.com.

Audio:

- The articles
- Vocabulary

Literature Connections: ideas for connecting to curricular texts

Activities to print or project:

- Fish Invaders: Causes and Effects
- Close Reading and Critical Thinking
- Core Skills Workout: Text Structures, Text Evidence*, Tone
- Quiz*
- Contest Entry Form

* Available on two levels

Step-by-Step Lesson Plan

Close Reading, Critical Thinking, Skill Building

1 Preparing to Read

Do-Now: Preview and Predict

(5 minutes)

Write on the board: *Open your Scope magazines to page 10. Read the headline and subheading, study the photograph, and read the captions. Then write down one sentence predicting what the article will be about.*

Give students three minutes to complete the Do-Now, then invite a few volunteers to share their predictions.

Preview vocabulary.

(10 minutes, activity sheet online)

Project or distribute the **Vocabulary Words and Definitions**. Complete the activity as a class or assign it as homework. Highlighted words, first article: *ecological, ecosystems, humanely, insatiable, invasive species, native, regulations, vigilant*; second article: *aquatic, imperative, sediment, spawn*

2 Reading and Discussing

"The Fish That's Eating the World"

(30 minutes, activity sheets online)

- Invite a student to read aloud the As You Read box on page 11.
- Read the article as a class. Optionally, play the audio from Scope Online while students follow along in their magazines.
- Invite students to share any immediate reactions.
- Break students into groups to discuss the following questions.

Close-Reading Questions

Describe the introduction. How does the author use it to pull you into the article?

(author's craft) *The introduction uses the*

second-person point of view, casting the reader as the lionfish. The author describes the lionfish in dramatic language, comparing it to a king and detailing its power as a hunter. The author also writes that the lionfish has caused a disaster in the seas but does not provide any details. This cliffhanger, combined with the dramatic language, draws you into the story.

What effects is the lionfish having on the Atlantic Ocean? (cause and effect)

The lionfish is an invasive species in the Atlantic Ocean, and it's causing an ecological disaster. It eats fish that corals and other sea creatures depend on for survival. Coral reefs are important for ocean health, and aquatic life depends on them for food and shelter. The lionfish also hurts local businesses by eating the fish that fishermen catch for human consumption.

Why might the author have included information about other invasive species?

(author's purpose) *The author likely included information about other invasive species to help the reader understand more broadly why invasive species are a problem and how they affect various ecosystems. The author may also have wanted to help readers understand that lionfish are not the only invasive species.*

"Invasion of the Giant Goldfish"

(20 minutes, activity sheets online)

- Read the article as a class.
- Discuss the following questions in groups, some of which draw on both articles.

Close-Reading Questions

Why does the author compare goldfish in the wild to a horror movie? (author's craft)

The author compares goldfish in the wild to a horror movie to make the point that invasive goldfish cause horrific damage to the bodies of

water they invade. She may also be using the comparison to draw in the reader with a bit of humor because the idea of a goldfish in a horror movie is so unlikely.

► **Compare goldfish and lionfish as invasive species. How are they similar? How are they different?** (compare and contrast) *Both lionfish and goldfish are invasive species that were introduced by humans releasing unwanted pets into the wild. Both species are doing tremendous damage to the ecosystems into which they have been introduced—the Atlantic Ocean for lionfish and lakes and rivers for goldfish. The ways in which the fish are causing harm differ: Lionfish are throwing the ecosystem out of balance by eating up all of the native fish, while goldfish are harming native fish by stirring sediment and disturbing plants. They also eat eggs of native fish. Both species owe their success in part to how quickly they reproduce.*

Critical-Thinking Questions

► On page 13, Dr. Stephen Beatty is quoted as saying, “Once you introduce something into a new environment—even if it’s a cute, cuddly aquarium fish—it can have quite unexpected, serious biological consequences.” How does this quote relate to the problem of the lionfish?

This quote relates to the problem of lionfish because lionfish probably began invading the Atlantic after they were dumped into the water by pet owners. Like goldfish owners who released their goldfish, people who released their lionfish likely did not realize the serious effects the fish could have on the environment.

► **Why should people care about the effects of invasive lionfish and goldfish?** *Answers will vary. Some students may point out that these species are affecting the fishing industry. Other students may guess that the impact of these two species will continue to expand because as one part of an ecosystem is affected, so are all of the other parts. And ultimately, humans are part of the same ecosystem—Earth—that the oceans are. Still others may argue for the intrinsic value of the oceans and the creatures that live in them.*

3 Skill Building

Featured Skill: Cause and Effect

(15 minutes, activity sheet online)

Have students work in groups to complete the **Fish Invaders: Causes and Effects** activity. This activity will prepare them to respond to the writing prompt on page 13. *For alternate culminating tasks, go to Scope Online.*

Differentiate and Customize

For Struggling Readers

In a well-organized paragraph, compare the problem of lionfish with the problem of goldfish. Support your answer with evidence from both articles.

For Advanced Readers

Explain the problem of invasive species and how the problem should be addressed. Use information from both articles as well as one additional source to support your ideas.

For Researchers

Choose one of the other invasive species mentioned in the article and research the damage it causes and the solutions being explored. Present your findings in the form of an essay, video, or slideshow.

For Artists

Create an infographic that shows the impact that one invasive species can have on an ecosystem.