Education and Research: Testing Hypotheses

Lesson Plan—Blue Mud Shrimp Mystery

Summary

Students will explore an invasive species and its prospective effect on in the environment.

Key Concepts

- An invasive species is a species that does not naturally occur in a specific area and whose introduction causes or is likely to cause economic or environmental harm or harm to human health
- Invasive species affect interactions within a food web and therefore have a negative effect on an ecosystem
- Invasive species impact ecosystems in a variety of ways, including ecological, genetic, economic and health

Objectives

Students will be able to:

- ***Hypothesize*** and ***discuss*** causes of shrimp population decline
- ***Demonstrate*** an understanding of food webs, and how invasive species impact them
- ***Communicate*** results by making a brochure, wanted poster or commercial

Materials

- Letter from Fisherman
- Blue Mud Shrimp PowerPoint presentation
- Blue Mud Shrimp Mystery *Notebook Entry Worksheet* or science notebooks
- Blue Mud Shrimp Mystery *Mini Project with Rubric*
- "Wanted" poster blank

Procedure

1. Have students read letter from fisherman.
2. Have individual students hypothesize in science notebook what they think could have caused the shrimp population to decline.
3. Have students meet with a partner to discuss their hypotheses.
4. Have partners share their hypotheses with the class.
5. Teacher presentation of Blue Mud Shrimp PowerPoint.
6. Have students complete *Notebook Entry Worksheet* or answer questions in their science notebooks, either individually or in pairs.

7. Students will then work in small groups to research an additional invasive species and complete mini project: brochure, "Wanted" poster, or commercial.

Assessment

- **Product**— Students create a Brochure, Wanted Poster, or a Commercial
- **Performance**—Did student participate in class discussion? Did student successfully complete worksheet/notebook entry questions? Did student successfully complete mini project?

Extensions

- Dissection of a local shrimp species
- Compare and contrast the effects of other invasive species such as zebra mussels, European green crabs, and the snakehead
- Have students create a food web of species in their area
- Comprehension questions dealing with the isopod population and blue mud shrimp population graphs