

Mystic Seaport for Educators
Science on the 38th Voyage of the *Charles W. Morgan*
Lesson 6 of 6: North Atlantic Aliens- A Study of Marine Bioinvasions
Teacher Introduction

MSE Lesson Plan 6: North Atlantic Aliens – A Study of Marine Bioinvasions

Grade Level: 6-8 grade

Time Frame: 45 minutes

NGSS Science Standards:

1. MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
2. MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Learning Objectives:

- Students understand the concept of bioinvasions, and are able to determine different vectors of transportation for invasive species
- Students are able to compare and contrast historical and modern shipping technology as vectors of transportation for bioinvasions
- Students are able to create and compare multiple solutions to minimizing the spread of invasive species
- Students can predict the impact of human population increase on the spread of marine bioinvasions

Materials/Resources:

- Worksheet with introductory reading and questions

Instructional Strategies:

- **Part 1** (15 minutes): To begin the lesson, ensure that every student has a worksheet. Ask students to read the "Introduction" component of the worksheet, either individually or as a group. Students may also reenact the interview.
- **Part 2** (30 minutes): Working in groups or individually, have the students fill out the corresponding questions on the answer sheet

Further Resources:

- Instructors may extend the lesson further, either within class or as a homework assignment, by asking students to examine the ecosystem in their local communities. Students can then compare their observations to online field guides in order to identify any invasive species. A "Hitchhikers Guide to Exotic Species" can be found and printed from the MIT Sea Grant Coastal Resources website: <http://massbay.mit.edu/exoticspecies/hitchhikers/index.html>