

# Aquatic Invasion!

**Purpose:** To familiarize students with aquatic invasive species in the West.

**Game Objective:** To receive the **most points** before you reach the finish line.

## Materials:

- Game board
- Question cards
- Moveable game pieces
- 1 die

## Before you start:

- A copy of the game cards will need to be printed out. It is recommended the cards be printed on durable, card-stock paper or laminated.
- Students should be given an appropriate introduction to the subject-material. The teacher may want to review the game's question cards ahead of time to ensure each questions' information is covered in class.

## How to Play:

1. Each player will roll the die to determine who will go first. The player who rolls the largest number will go first.
2. At his/her turn, the player rolls the die and moves his/her game piece the number of spaces shown on the die (e.g. if the player rolls a 5, they will move their game piece 5 spaces).
3. After moving the game piece, the player will draw a card. The player to the left of them will ask them the question on the card.
4. If the player that drew the card answers the question correctly, they will receive the number of points indicated on the card. If they do not answer the question correctly, they do not receive any points.
5. The person to the left rolls the die and the game continues.
6. The game is over when each player has reached the finish line. The winner is the player who received the greatest number of points.
7. If during the course of the game the players use every question card, they should shuffle the cards and continue playing.

## Aquatic Invasion! Question Cards

<p>Native Plants and animals are those</p> <p>A. That are naturally found in an ecosystem <i>2 points</i></p> <p>B. Are imported to an ecosystem <i>0 points</i></p> <p>C. Make you sick when you eat them <i>0 points</i></p>	<p>How could you gain information about invasive species in your area?</p> <p>A. Contact the local Department of Wildlife Resources <i>3 points</i></p> <p>B. Ask your neighbor <i>0 points</i></p> <p>C. It isn't important to know about invasive species <i>0 points</i></p>
<p>How many of these species are considered invasive to Utah: purple loosestrife, common carp, green frog, New Zealand Mudsnaill?</p> <p>A. One <i>0 points</i></p> <p>B. Two <i>0 points</i></p> <p>C. Four <i>4 points</i></p>	<p>The resources that organisms use to survive are limited in any ecosystem. If an invasive species is doing well, it usually means the native species</p> <p>A. Is getting more resources <i>0 points</i></p> <p>B. Is getting equal resources <i>0 points</i></p> <p>C. Is getting less resources <i>4 points</i></p>
<p>The role an organism has in its environment is its niche. Exotic species</p> <p>A. Try to take the niche of a native species <i>3 points</i></p> <p>B. Have no niche <i>0 points</i></p> <p>C. Create their own niche without affecting other organisms <i>0 points</i></p>	<p>To prevent the transfer of invasive species from one water body to another, you should</p> <p>A. Pull your boat quickly from one lake to another <i>0 points</i></p> <p>B. Inspect and properly clean your boat, trailer, and equipment carefully <i>4 points</i></p> <p>C. Wash your boat in cold water <i>0 points</i></p>
<p>You find a lovely plant while on a vacation to the Caribbean. You should</p> <p>A. Take a picture <i>2 points</i></p> <p>B. Dig it up and take it home <i>0 points</i></p> <p>C. Pick the flowers <i>0 points</i></p>	<p>While traveling through another part of the country you encounter a small tortoise, do you</p> <p>A. Put it in an aquarium <i>0 points</i></p> <p>B. Sell it to a pet store <i>0 points</i></p> <p>C. Leave it alone <i>2 points</i></p>

<p>Zebra mussels ___ water intake pipes.</p> <ul style="list-style-type: none"> <li>A. Help rebuild <i>0 points</i></li> <li>B. Clog <i>3 points</i></li> <li>C. Clean <i>0 points</i></li> </ul>	<p>You are visiting Lake Powell and find Zebra Mussels on the beach. You should</p> <ul style="list-style-type: none"> <li>A. Leave them there <i>2 points</i></li> <li>B. Take them home <i>0 points</i></li> <li>C. Put them in a pond near your house <i>0 points</i></li> </ul>
<p>Your aquarium is no longer working. What should you do to get rid of the fish?</p> <ul style="list-style-type: none"> <li>A. Flush them down the toilet <i>0 points</i></li> <li>B. Find them a new home in another aquarium, or donate them to a pet store <i>4 points</i></li> <li>C. Drop them in a local pond <i>0 points</i></li> </ul>	<p>Invasive species are also referred to as</p> <ul style="list-style-type: none"> <li>A. Native species <i>0 points</i></li> <li>B. Exotic species <i>2 points</i></li> <li>C. Endangered species <i>0 points</i></li> </ul>
<p>Exotic species are</p> <ul style="list-style-type: none"> <li>A. Rare organisms <i>0 points</i></li> <li>B. Organisms brought into an environment that is not their own <i>2 points</i></li> <li>C. Worth a lot of money <i>0 points</i></li> </ul>	<p>Tamarisk is a woody shrub from Europe. It is a serious threat to riparian areas because</p> <ul style="list-style-type: none"> <li>A. It eats fish <i>0 points</i></li> <li>B. It displaces native species <i>4 points</i></li> <li>C. It isn't a threat <i>0 points</i></li> </ul>
<p>A female Zebra Mussel can produce up to</p> <ul style="list-style-type: none"> <li>A. 10,000 eggs per year <i>0 points</i></li> <li>B. 100,000 eggs per year <i>0 points</i></li> <li>C. 1,000,000 eggs per year <i>4 points</i></li> </ul>	<p>Viruses and other pathogens can be invasive species</p> <ul style="list-style-type: none"> <li>A. True <i>4 points</i></li> <li>B. False <i>0 points</i></li> </ul>
<p>There have been 185 species of invasive fishes found in US lakes, rivers and streams. What percent of these invasives are due to the release or escape of aquarium fish?</p> <ul style="list-style-type: none"> <li>A. 5% <i>0 points</i></li> <li>B. 25% <i>0 points</i></li> <li>C. 50% <i>5 points</i></li> </ul>	<p>Exotic species</p> <ul style="list-style-type: none"> <li>A. Are always good for the environment that they enter <i>0 points</i></li> <li>B. Are always bad for the environment they enter <i>0 points</i></li> <li>C. Can be either good or bad, and some have no effect on the environment they enter <i>5 points</i></li> </ul>

<p>Bringing in natural predators may be a way to handle invasive species. What is a potential problem with this method?</p> <ul style="list-style-type: none"> <li>A. The invasive species numbers would decrease <i>0 points</i></li> <li>B. The predators may become invasive species <i>4 points</i></li> <li>C. Native species would repopulate <i>0 points</i></li> </ul>	<p>Utah is the only state that has problems with invasive species</p> <ul style="list-style-type: none"> <li>A. True <i>0 points</i></li> <li>B. False <i>2 points</i></li> </ul>
<p>Purple Loosestrife is an invasive species that is invading North American</p> <ul style="list-style-type: none"> <li>A. Deserts <i>0 points</i></li> <li>B. Forests <i>0 points</i></li> <li>C. Wetlands <i>3 points</i></li> </ul>	<p>How many species are estimated to be transported by ballast water each day?</p> <ul style="list-style-type: none"> <li>A. 3,000 <i>4 points</i></li> <li>B. 20 <i>0 points</i></li> <li>C. 500 <i>0 points</i></li> </ul>
<p>Purple Loosestrife was brought to the US for</p> <ul style="list-style-type: none"> <li>A. Harvesting <i>0 points</i></li> <li>B. Landscaping <i>4 points</i></li> <li>C. Feeding large herbivores <i>0 points</i></li> </ul>	<p>A geographical barrier is an environmental feature such as moisture availability or soil pH.</p> <ul style="list-style-type: none"> <li>A. True <i>0 points</i></li> <li>B. False <i>4 points</i></li> </ul>
<p>Invasive species are</p> <ul style="list-style-type: none"> <li>A. Rocks <i>0 points</i></li> <li>B. dirt <i>0 points</i></li> <li>C. Plants, animals, viruses and pathogens <i>3 points</i></li> </ul>	<p>How many of the following are human activities that could potentially spread invasive species: ornamental rocks, illegal fish stocking, ice skating, improperly cleaned equipment?</p> <ul style="list-style-type: none"> <li>A. 3 <i>0 points</i></li> <li>B. 2 <i>4 points</i></li> <li>C. 1 <i>0 points</i></li> </ul>
<p>Exotic or invasive species are also sometimes referred to as alien species</p> <ul style="list-style-type: none"> <li>A. True <i>3 points</i></li> <li>B. False <i>0 points</i></li> </ul>	<p>Invasive species are usually introduced to an environment on purpose.</p> <ul style="list-style-type: none"> <li>A. False <i>3 points</i></li> <li>B. True <i>0 points</i></li> </ul>

<p>Boaters or anglers can prevent the spread of zebra mussels</p> <ul style="list-style-type: none"><li>A. By wearing gloves while fishing <i>0 points</i></li><li>B. By using their boat or equipment really fast <i>0 points</i></li><li>C. By washing their boat and equipment in hot water <i>3 points</i></li></ul>	<p>What are the three primary methods for controlling invasive species?</p> <ul style="list-style-type: none"><li>A. Mechanical, numerical, chemical <i>0 points</i></li><li>B. Chemical, mechanical, biological <i>3 points</i></li><li>C. Biological, numerical, sensational <i>0 points</i></li></ul>
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***Aquatic Invasion!*** has been adapted from the *Rival for Survival* game with permission from the Illinois-Indiana Sea Grant Program at the University of Illinois. This game and other classroom resources may be found at [www.iisgcp.org](http://www.iisgcp.org) (click on Education).

