

MUSICAL (PLANT) CHAIRS

Overview

Students will discover the difference between a native plant and invasive plant and learn just how easily an invasive plant (tamarisk) can invade an area and crowd out native vegetation (cottonwoods)

Time

30 minutes or more depending on number of scenarios used

Grades

2-8

Materials

Chairs, carpet squares, or chalk

Set Up

- Select a playing area and set up chairs back-to-back in a curving line to represent a stream, similar to setting up for a game of musical chairs.
- Use as many chairs as there are students.
- If you do not have access to movable chairs, you can use carpet squares or if outside, use chalk to draw a stream and circles surrounding the stream to represent habitat.

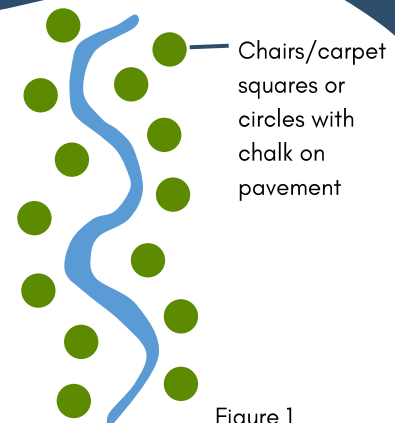


Figure 1

Before You Begin

- Explain to the students that they will be playing a game similar to musical chairs. When you play or hum music, students will circle the chairs. When the music stops, each student must find a seat.
- The chairs/carpet squares/circles on pavement (figure 1) represent available habitat along a river and contain everything that a tree needs to survive.
- Review with the students what cottonwood trees (*native plants*) need to survive (*sun, soil, water, room to grow*) and talk through the benefits that native trees like cottonwoods provide to riparian ecosystems (*native plants are important for a healthy riparian ecosystem, providing food and shelter for wildlife*).
- Give each student one green post-it note and explain that they will pretend to be seeds blowing in the wind.

Healthy Riparian Habitat (ROUND ONE)

- Start the music, or hum a song. Instruct students to walk around the circle and when the music stops, ask students to find a seat.
- *Since there are the same number of seats as there are students, all the students will find a seat, signifying that they have enough water and habitat resources to grow into a cottonwood tree.*
- Instruct students to place their green post-it note on their chair.
- Count the number of native plants (cottonwoods). Record this number so you can graph it later.

Tamarisk Invades (ROUND TWO)

- Next, tell the students that you are a settler in the 1800s and you brought a plant called tamarisk over from Asia where tamarisk originates. Choose one student to be the tamarisk plant, taking away their green post-it note and handing them two red (or a color different than green) post-it notes.
- Ask students what it means to be an invasive, non-native species. Discuss how the tamarisk student needs the same resources as the cottonwood tree and has many advantages over native plants that allow it to outcompete cottonwoods for available resources (refer to the *Riparian Areas and Invasive Species* resource).

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Tamarisk Invades (ROUND TWO, CONTINUED)

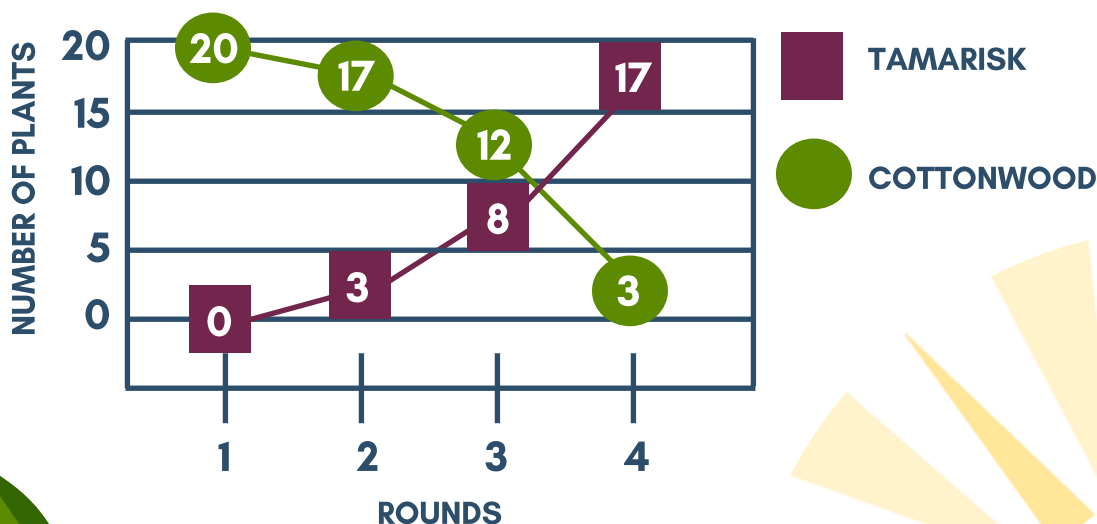
- Instruct the tamarisk student to place one of the red post-it notes on the chair they're sitting on (have them hand you the green note), and place their second red post-it note on the seat they find in the next round.
- Explain to students that from now on, any student that lands on a chair with a red post-it note becomes a tamarisk.
- Record the number of cottonwoods and the number of tamarisk for each round.

The Takeover (FOLLOWING ROUNDS)

- After the music stops, find the student sitting in the chair with the red post-it note and declare that they have now become a tamarisk tree.
- Hand the invasive species students red post-it notes to mark their chairs, replacing the green notes (cottonwoods) when they take over (populate) those spots (habitat).
- In each of the following rounds, discuss one of tamarisk's advantages over native plants e.g. tamarisk have a larger tap root and can survive in times of drought better, they can survive in salty soils and make the soils saltier.
- As the game progresses, more and more chairs will be taken over by invasive tamarisk, leaving less and less habitat for the native plants (as well as the animals, birds, and insects that have evolved to depend on those plants).
- Play enough rounds so that almost all the chairs are taken by tamarisk students.

Making the Graph and Connection

- Using the data from each round, make a line graph showing the number of non-native and native plants present at the beginning of each round. Use a red marker to represent invasive plants and a green marker to represent native plants. Students will see that the non-native line will start low and rises as the rounds progress, while the native plants will start high and decline.
- Explain that the data they graphed is similar to the types of data that a biologist would collect and plot. That data can be used in restoration and management efforts.



- Refer to the *Riparian Areas and Invasive Species* Resource for background information.
- Lesson adapted from Project WET.

