Crossing Corridors

Purpose:

The purpose of this lesson is to demonstrate how habitat fragmentation limits survival of the Pacific Fisher, compare habitat specialists and generalists, and describe the importance of corridors within the Cascade-Siskiyou National Monument and the surrounding region.

Objectives:

- After looking at the provided animal pelts, students will record 3 observations about each of the two pelts and use those observations to list the adaptations and habitat uses of those animals.
- Students will participate in the Crossing Corridors activity and gather data based on that activity to build a visual representation of their results.
- As a result of the Crossing Corridors activity, students will create a plan to improve a limited corridor based on in-class discussions.

Time Required: 1 hour

Appropriate grades: High School

NGSS and Common Core Standards:

HS-LS2-2: Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

HS-LS2-6: Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

Materials:

- Provided in Kit:
  - Coyote Pelt (1)
  - Fisher Pelt (1)
  - Poker chips (1 box of 100 chips)
  - Rope with knots for the island (1)
  - Corridor Set-up pages (3)
  - Coyote and Fisher data cards (2)
  - Klamath and Cascade boundary markers (2)
- Not provided:
  - Dry erase markers

ENVIRONMENTAL EDUCATION GRADUATE PROGRAM
SOUTHERN OREGON UNIVERSITY

NATIONAL SYSTEM OF PUBLIC LANDS
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Activity:

Introduction	1. Display the pelts in the classroom and have students examine each pelt and write down their observations for each pelt. 2. In pairs or table groups, students share some distinct characteristics of the two pelts and compile a list of possibilities of what animals they could be from. Remind students that the animals live in the CSNM. Share the lists as a class. 3. Discuss the coyote pelt. Highlight the identifying characteristics of the pelt and compare to a photo. Ask students what they know about coyotes and make a list on the board. Be sure they include habitat use, diet, range, and human relationship information. 4. Discuss the fisher pelt. Likely students will be less familiar with this animal, so make sure to highlight the identifying characteristics of the pelt. Use those characteristics to discern more information about the animal such as habitat use, diet, range, and human relationship information. Make a list on the board showing this information. 5. Referring to the lists, find similarities and differences between the two animals. From there, make sure the students are exploring the differences in habitat use between the two species. 6. Refer to the maps of CSNM and discuss the converging regions and land bridge corridor and why this might be important to the two species.
Body	<u>Activity Setup</u> 1. Set up the game area in a large outdoor space. 2. Look at the diagram sheet for *Round 1: Existing Corridors* as a guideline. Set up the orange rope 3. Disperse an even amount of blue chips inside the islands, and red chips outside the islands. *Keep the additional chips nearby for the following rounds. 4. Break the students up into 2 even groups: one will be the fishers; one will be the coyotes. Within each of these groups, students will divide themselves into 3 smaller sub-teams. These smaller sub-teams each participate in one round. <u>Activity Rules</u>

	1. Each large group of students will be performing 3 corridor simulations: Round 1: Existing Corridors, Round 2: Limited Corridors, and Round 3: Enhanced Corridors. 2. The goal for each round is for students to retrieve as many survival tokens as they can while crossing from the start point (Cascade Mountains) and traveling to the end point (Klamath Mountains). However, because fishers have habitat specific requirements, they can only travel within their designated habitats: the roped off islands. Thus, students must travel from island to island and cannot stray from their path. They must form chains between the islands where 1 fisher is attached to each island in order to reach the end. Students must also travel between islands by walking on the rope as their path. Fishers may only pick up tokens within their habitat islands. Coyotes may pick up any survival token and may travel freely in and out of the islands without any restrictions. 3. At the start of each round, students will make a note of the amount of connectivity the islands have. They will use this to predict how each round might play out and why they think that. 4. At the end of each round, students will add up and record the number of survival tokens gained by their sub-team. Group members waiting their turn are responsible for recording each round's data and resetting the survival tokens. <u>Round 1: Existing Corridors (8 Islands)</u> 1. Discuss the current state of corridors in the CSNM using the playing field as a model. Students will make their predictions for the round. 2. The first sub-team will cross the corridor, collect survival tokens, and record the data. <u>Round 2: Limited Corridors (6 Islands)</u> 1. Remove 2 of the fisher habitat islands by leaving them empty of chips. Have students brainstorm reasons why habitat islands might disappear. 2. Students will make their predictions and then have the second sub-team cross the corridor and collect survival tokens. Students not crossing will record the data. <u>Round 3: Enhanced Corridors (10 Islands)</u> 1. Add chips back to the fisher habitats and add 2 more. Have students brainstorm possible reasons for increase in habitat. 2. Students will make their predictions and then have the third sub-team cross the corridor and collect survival tokens. Students not crossing will record the data.

	<u>Data and Conclusions</u> 1. Each group will gather their data and create a visual representation of its population during each round, such as a graph or bar chart. 2. As a class, compare the data from each group.
Closure	1. After looking at the data, discuss some of the implications of the activity and corridors. Why are corridors important? Why might they be disappearing? 2. Each student will create a plan for how to improve a limited corridor. Why would a corridor be limited? What factors might hinder improvements to a corridor? What ideas could be implemented to realistically be able to make a corridor better?