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Module 06: Urban Biodiversity

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## Student Pages - Biodiversity Game

Center for Urban Resilience

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Name: \_\_\_\_\_ Date: \_\_\_\_\_ Class/Period: \_\_\_\_\_

### **Lesson 6: Biodiversity Game**

Task: You are responsible for the health of a community of birds and plants.

#### **How to play:**

1. You will be given a set of cards (birds or plants). Each card has information about one species of bird or plant. There is an icon in the upper right corner of each card:



tree



shrub



bird

2. You will be given a set of 25 colored markers. Each marker represents an individual member of a species. For example, if your community has 4 crows, you will place 4 counters on your blue crow card.
3. When you receive your *Community Population*, place the correct number of counters on each card.
4. **Predict:** Do you think your community will survive changes that happen in the city? Why or why not?
5. Listen for an event that occurs in your city. Reflect changes to your community by adding or deleting counters from your cards and record the changes in the table provided.

#### **Reflect:**

1. Share your results with those of your classmates. Which communities were the healthiest at the end of the game? What evidence did you use as the basis for your conclusion?
2. How did the initial species richness, species evenness, and abundance of individuals for the communities affect the results of the game? What were the characteristics of the “healthiest” communities?

Name: \_\_\_\_\_ Period/Class: \_\_\_\_\_ Date: \_\_\_\_\_

## **Biodiversity Game Round #2: Creating your own Community**

### Procedure:

- [illegible]

**Round 1**

|                       | # of each species | Number of each species after the event |         |         |         |         |         |         |
|-----------------------|-------------------|--|---------|---------|---------|---------|---------|---------|
| What happened?        | Starting          | Event 1                                | Event 2 | Event 3 | Event 4 | Event 5 | Event 6 | Event 7 |
| American Crow         |                   |  |         |         |         |         |         |         |
| Song Sparrow          |                   |  |         |         |         |         |         |         |
| Tree Swallow          |                   |  |         |         |         |         |         |         |
| Black Phoebe          |                   |  |         |         |         |         |         |         |
| Anna's Hummingbird    |                   |  |         |         |         |         |         |         |
| Bird richness         |                   |  |         |         |         |         |         |         |
| Bird abundance        |                   |  |         |         |         |         |         |         |
| Bird: Shannon-Weaver  |                   |  |         |         |         |         |         |         |
| Coast live Oak        |                   |  |         |         |         |         |         |         |
| Desert Willow         |                   |  |         |         |         |         |         |         |
| Fragrant Sage         |                   |  |         |         |         |         |         |         |
| Sycamore              |                   |  |         |         |         |         |         |         |
| Blue Gum Eucalyptus   |                   |  |         |         |         |         |         |         |
| Plant richness        |                   |  |         |         |         |         |         |         |
| Plant abundance       |                   |  |         |         |         |         |         |         |
| Plant: Shannon-Weaver |                   |  |         |         |         |         |         |         |

## Conclusions:

1. How did your community (Round #2) compare to your initial community (Round #1)? Did your changes improve the health of your community by the end of the events? Why or why not?
2. Look back at the events you recorded in your table. Which of the events were caused by the activities of people? Did you think those events were positive or negative, and why?
3. What other things might people do that could influence the biodiversity of an ecosystem? Would these actions have positive or negative effects?

**Round #2**

|                       | # of each species | Number of each species after the event |         |         |         |         |         |         |
|-----------------------|-------------------|--|---------|---------|---------|---------|---------|---------|
| What happened?        | Starting          | Event 1                                | Event 2 | Event 3 | Event 4 | Event 5 | Event 6 | Event 7 |
| American Crow         |                   |  |         |         |         |         |         |         |
| Song Sparrow          |                   |  |         |         |         |         |         |         |
| Tree Swallow          |                   |  |         |         |         |         |         |         |
| Black Phoebe          |                   |  |         |         |         |         |         |         |
| Anna's Hummingbird    |                   |  |         |         |         |         |         |         |
| Bird richness         |                   |  |         |         |         |         |         |         |
| Bird abundance        |                   |  |         |         |         |         |         |         |
| Bird: Shannon-Weaver  |                   |  |         |         |         |         |         |         |
| Coast Live Oak        |                   |  |         |         |         |         |         |         |
| Desert Willow         |                   |  |         |         |         |         |         |         |
| Fragrant Sage         |                   |  |         |         |         |         |         |         |
| Sycamore              |                   |  |         |         |         |         |         |         |
| Blue Gum Eucalyptus   |                   |  |         |         |         |         |         |         |
| Plant richness        |                   |  |         |         |         |         |         |         |
| Plant abundance       |                   |  |         |         |         |         |         |         |
| Plant: Shannon-Weaver |                   |  |         |         |         |         |         |         |