Flower Preferences of Bees: Phenomenal Images and Data Play

Introduction: Do you prefer some foods over others? At a buffet do you take more of some foods than others? Bees appear to be the same way. "Preference" is an observed behavior, measured by the choices an individual makes. In the case of bees, observers notice that a given species of bee visits some species of flowers more often than others. The flower species visited the most is called the bee's preferred flower.

1. What are some aspects of food that affect your personal preferences? Think about the appearance, textures, and smells you prefer for your food? Consider your favorite foods and what, if anything, they have in common.

2. What do you think a bee is considering when finding and choosing its preferred flower?

Phenomenal Image Comparison: Look at these flowers and note 3 differences. Then for each trait, hypothesize how that trait might influence a bee's preference (or interest) in that flower.

Observed Trait	Trait's influence on bee preference/interest

Compare and Analyze Two Wild Bumble Bee Species: Compare the two bumble bee images below. Write 3 observations about their appearance. Be detailed about the differences you see.

Rusty patched bumble bee (*Bombus affinis*)	Two formed Bumblebee (*Bombus Bifarius*)

Now examine these photos of two types of wildflowers (shown from two different angles).

Senna hebecarpa   *Eurybia integrifolia*

1. Can you match the bee to their preferred flower? Circle yes/no

2. Why or why not? What information would you need to know to make a match?

**Map it to Explain:** Different species live in different places. One way of showing this is a range map.

Read these descriptions of where each of the above flowers live.
- *Senna hebecarpa* is found from the Great Lakes region and Maine southwards through the Eastern United States
- *Eurybia integrifolia* - native to the western United States where it grows primarily in the Rocky Mountains and the Sierra Nevada in Washington, Idaho, Montana, Wyoming, Utah, Oregon, Nevada, and California.

1. Using where the flowers live, draw the range you predict for each bee species on the map below. Use a different color for each of the predicted ranges.

2. Now observe the range maps for the two of the bees and two flowers. What do you notice about the range maps? How do they compare to your range map?

B. impatiens

B. bifarius
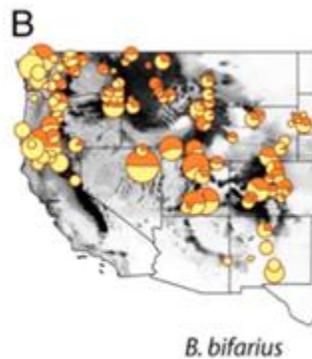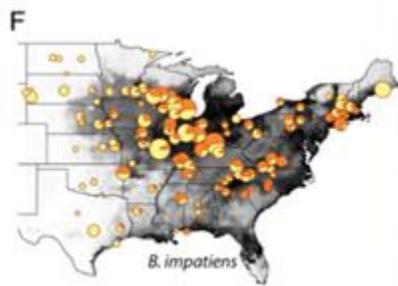
3. Given that there is likely no geographic obstacle keeping these bees on a particular coast, what can we hypothesize about the geographic range of these particular wild bees based on the data above? Use the data to support your hypothesis