

Biodiversity

EQ: WHAT IS BIODIVERSITY
AND WHAT FACTORS AFFECT IT?





biodiversity



Biodiversity encompasses multiple levels

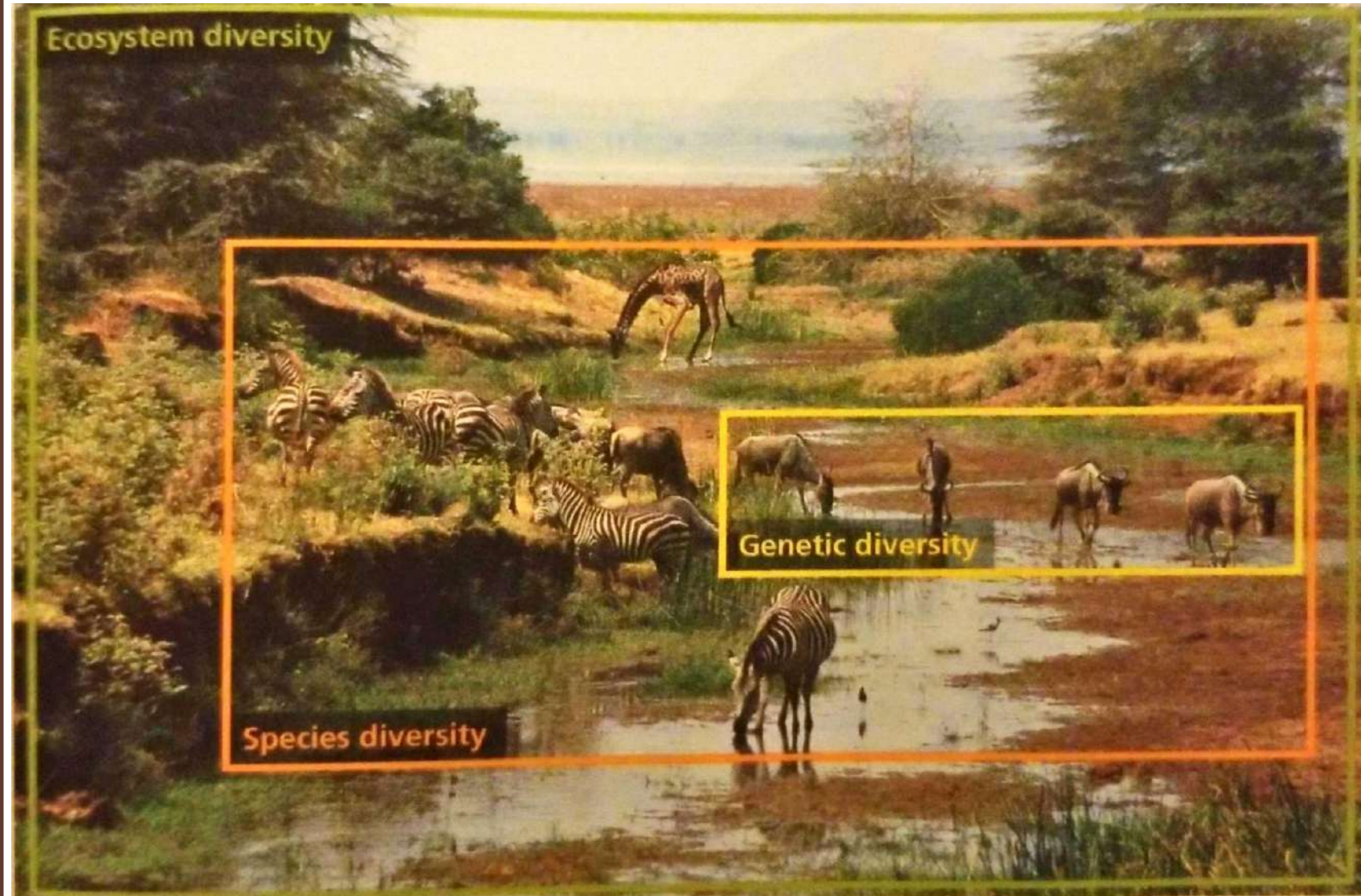
Genetic Diversity- differences in DNA composition among individuals

Species Diversity- the number of variety of species found in a particular region

- Species richness: # of different species
- Species evenness: measure of the comparative abundance of all species

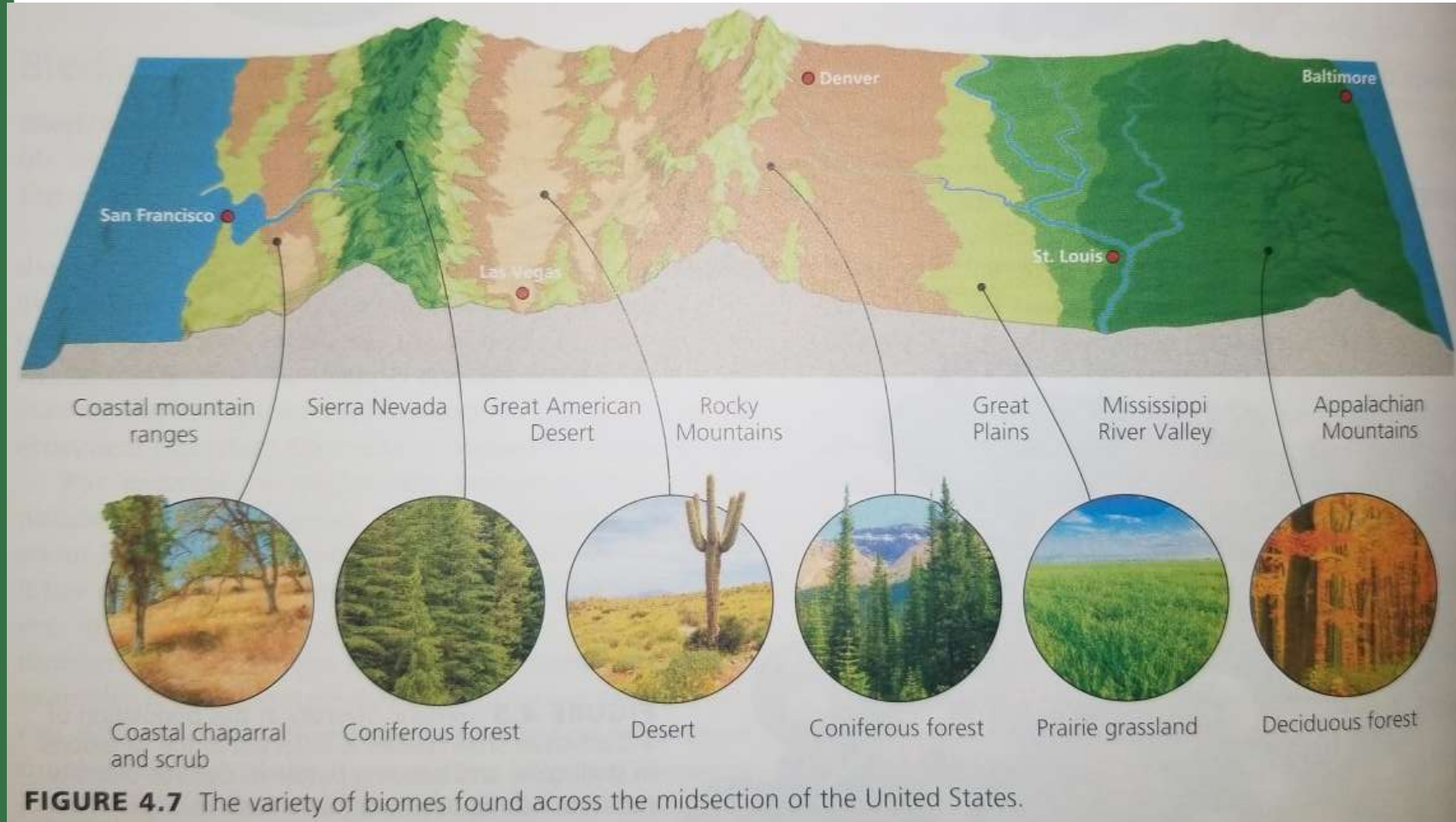
EX: if an ecosystem has only 3 species, its species richness is low. If there are roughly equal #'s of ea. of the 3 species, its species evenness is high.

Ecosystem Diversity- the number and variety of ecosystems. Ex: BIOMES



Variety of Biomes

- Across the United States



Most species are animals

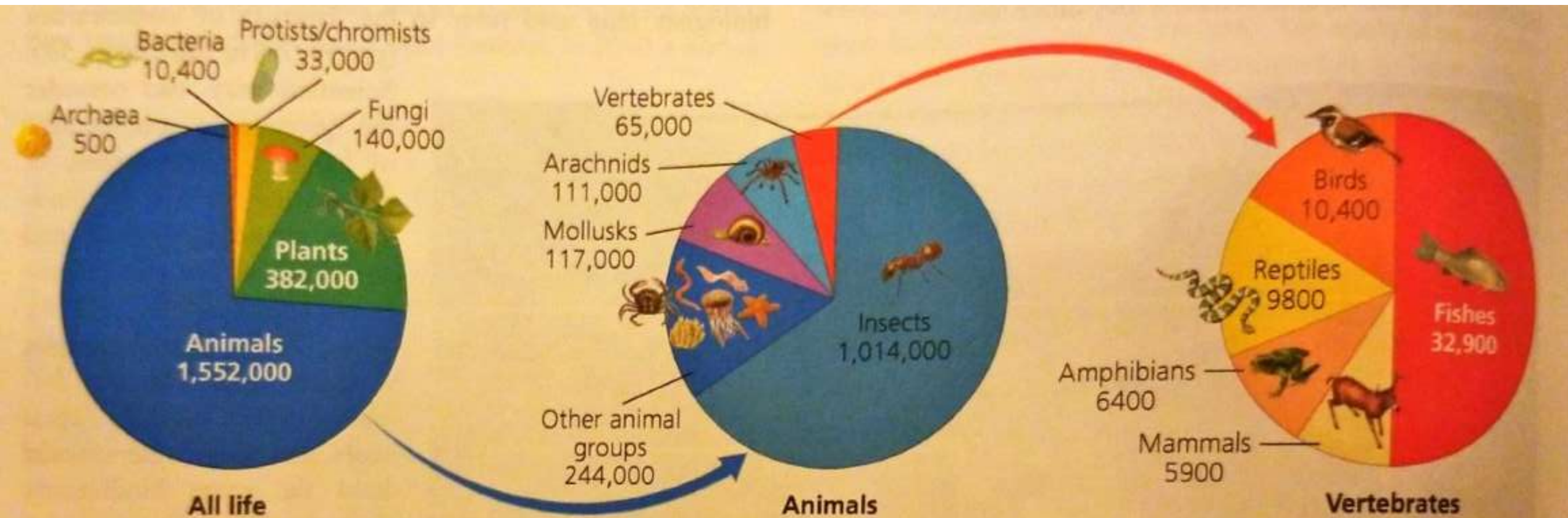
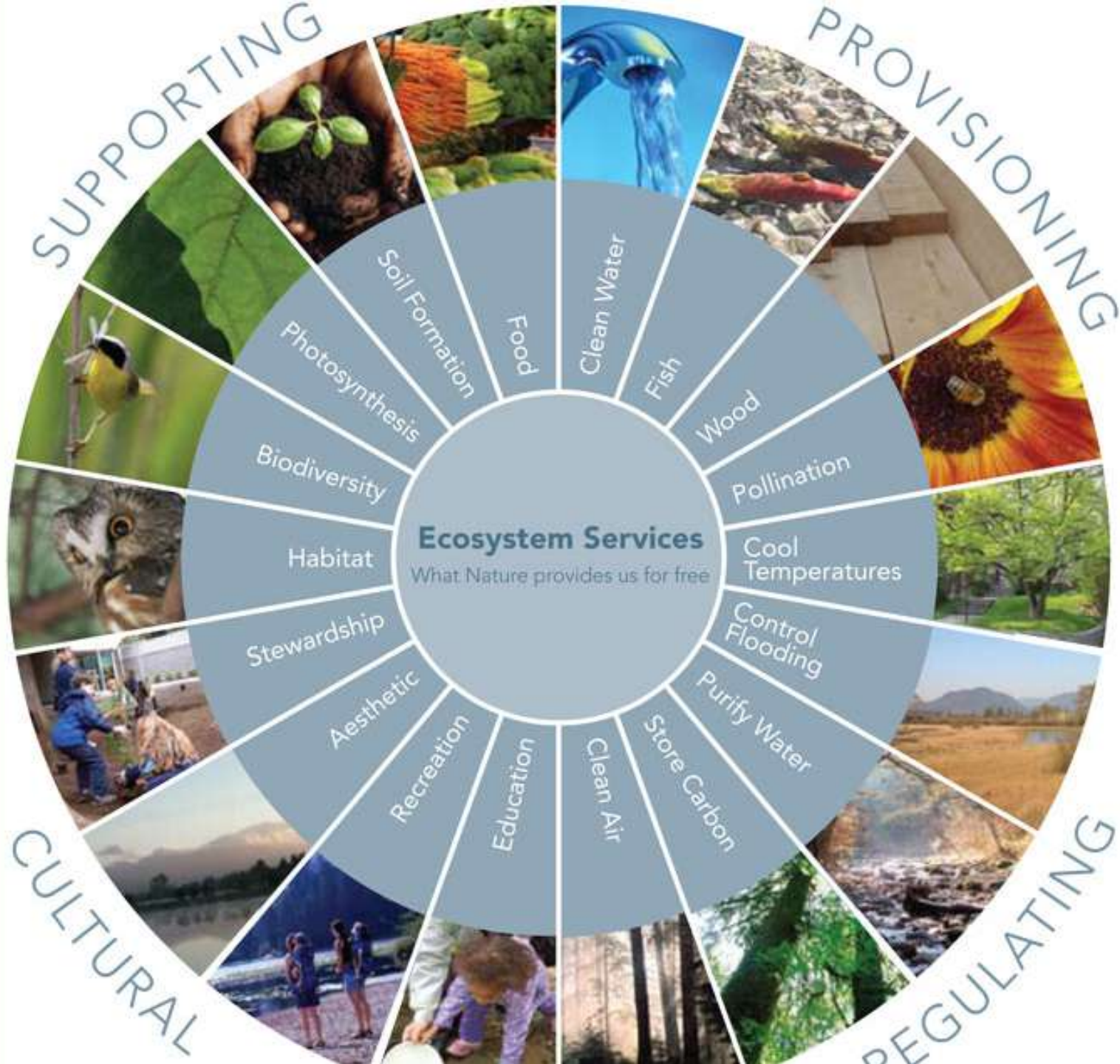


FIGURE 11.4 Most species are animals. Nearly two-thirds of animals are insects (whereas vertebrates make up only 4%). Data from Roskov, Y., et al. (eds.), 2016. Species 2000 & ITIS catalogue of life, 26 May 2016. Digital resource at www.catalogueoflife.org/col. Leiden, the Netherlands: Species 2000: Naturalis.

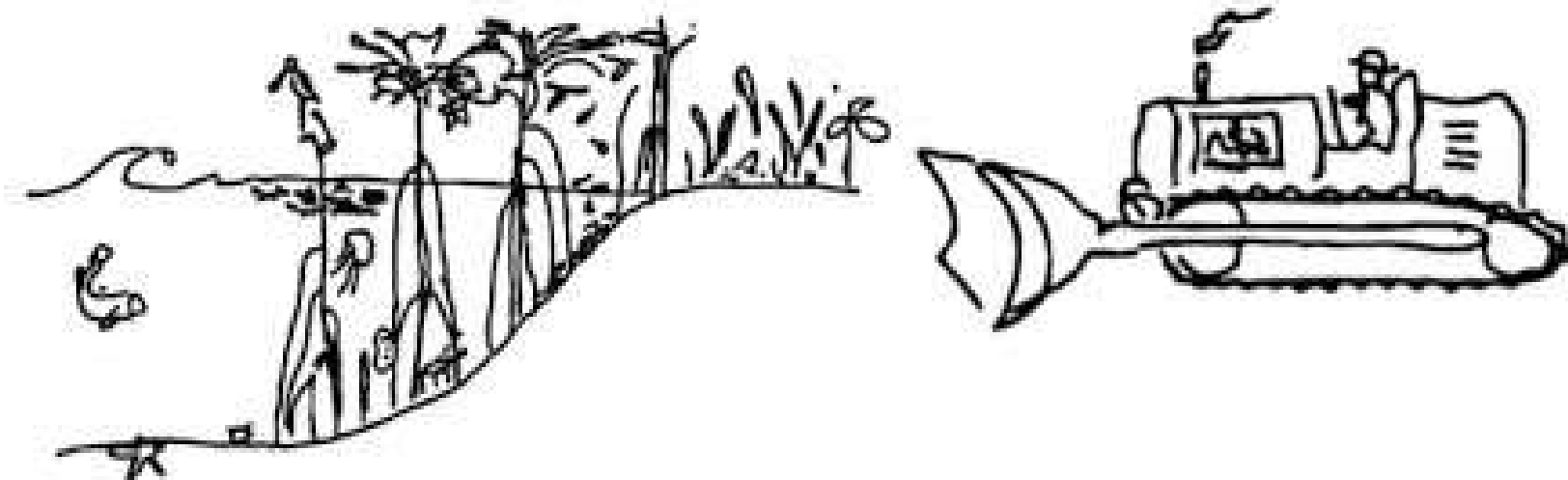


Ecosystem Services

EQ: How can we protect and sustain biodiversity and ecosystem services?

Video:

WATCH FOR HW.



Activity: Ecosystem Services Jigsaw

The benefits people obtain from ecosystems. These include:

1. **provisioning services** such as food and water;
2. **regulating services** such as flood and disease control;
3. **cultural services** such as spiritual, recreational, and cultural benefits
4. **supporting services** such as nutrient cycling that maintain the conditions for life on Earth.

Part 1- Break into your Expert Groups.

With your expert group of 3 or 4, read the information and take notes on your assigned ecosystem service.

<http://www.fao.org/ecosystem-services-biodiversity/en/>

YOU WILL HAVE ABOUT 5 min

Ecosystems provide four types of services to the world



Provisioning Services are the material benefits people get from ecosystems for e.g. supply of food, water, fibers, wood and fuels.



Regulating Services are the benefits obtained from the regulation of ecosystem processes e.g. the regulation of air quality and soil fertility, control of floods or crop pollination.



Supporting Services are necessary for the production of all other ecosystem services, for e.g. by providing plants and animals with living spaces, allowing for diversity of species, and maintaining genetic diversity.



Cultural Services are non-material benefits people gain from ecosystems, for e.g. aesthetic and engineering inspiration, cultural identity and spiritual well-being.



<http://www.fao.org/ecosystem-services-biodiversity/en/>

Part 2- Jigsaw

Each member is going to be assigned a number. Then, go to join the 1s, 2s, 3s, etc. groups and share your Expert group notes with your new group members.

Type of Service	Supporting	Provisioning	Regulating	Cultural
Description				
Examples				

You will have 6 minutes to share notes. (1 ½ min ea. To talk)

Part 3- Complete the card sort activity.

1

Set out

- Set out the **Ecosystem Service cards** on your table.

2

Match

- Match the **Example cards** to the Ecosystem Service cards.

3

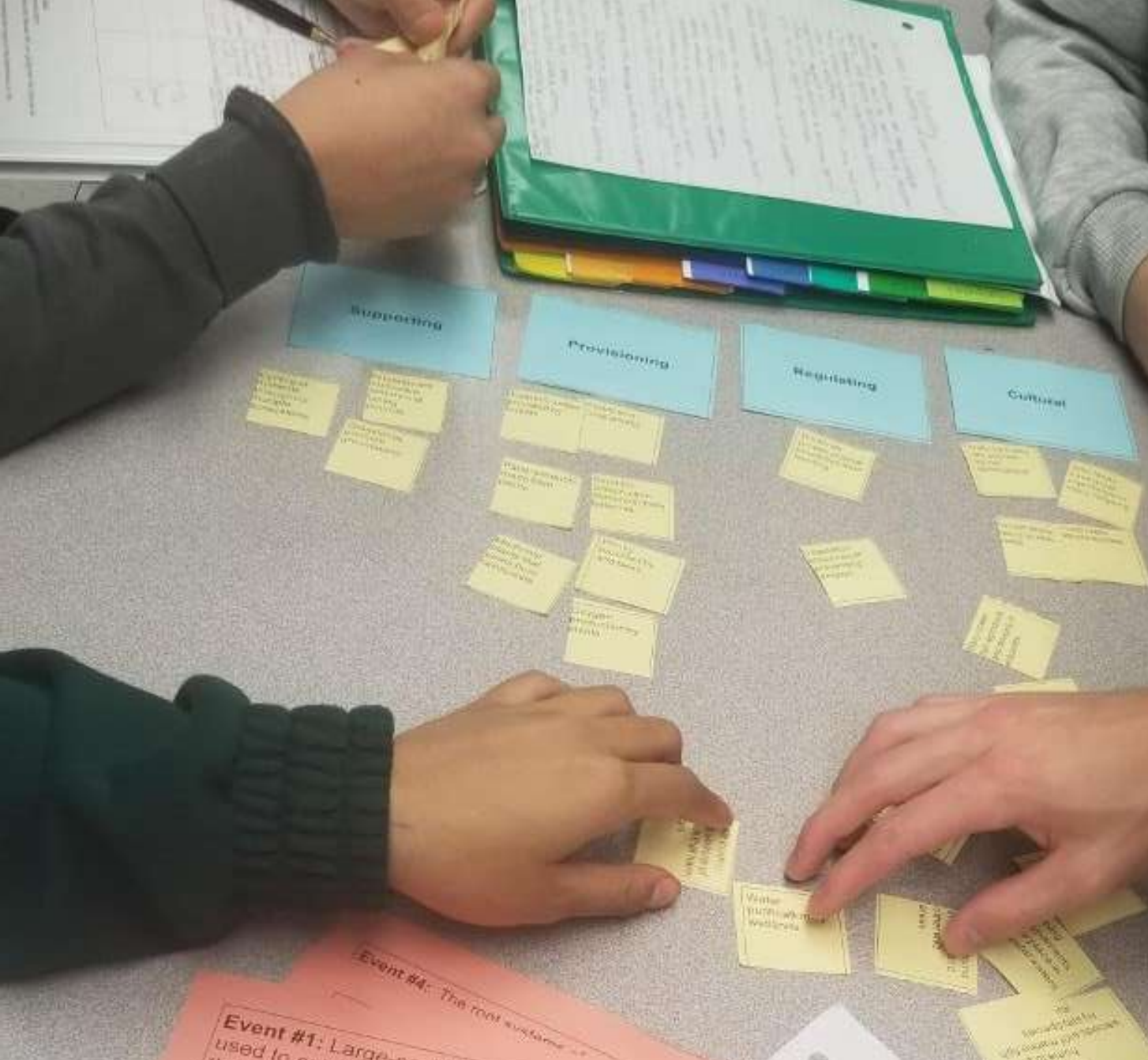
Pick

- Pick up a **Disruption/Event Card** Read the scenario and discuss with your group how this disturbance would impact the services you've identified.

4

Propose

- Propose a solution that can be implemented to minimize the impact of the disturbance on the ecosystem services
- Free response to **ONE** disturbance on your own.



Set up

Make sure to have enough space and the EVERYONE can participate by having access to cards.