**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_**

**Biodiversity Issues Notes**

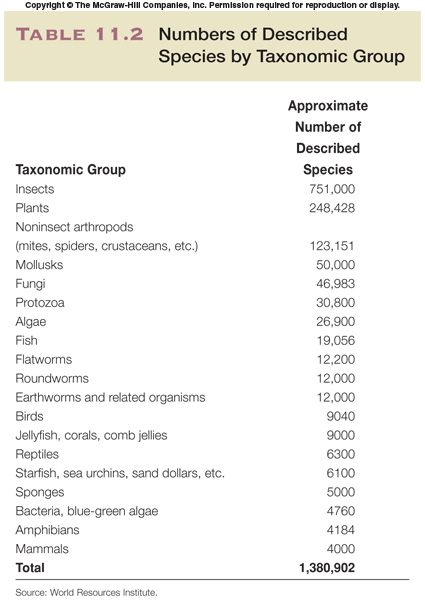
You will be responsible for knowing this information. Please fill it out carefully.

As a class let’s watch a Howard Hugh’s Institute video <https://www.youtube.com/watch?v=mcM23M-CCog>. Answer the questions as you watch the video.

|  |  |  |
| --- | --- | --- |
| Finch | Beak type | Food Source |
| Warbler |  |  |
| Woodpecker |  |  |
| Cactus |  |  |
| Ground |  |  |

1. To the right you can see 12 different finches found on the Galapagos Islands. Next to the name of the finch, describe its beak and what it eats.
2. Who is the common ancestor of the Galapagos finches?
3. How did one common ancestor give rise to many different finch species?
4. What evidence did the scientists gather to show natural selection?
5. What drives natural selection?
6. What is a species?
7. What 2 features attract finches to their own species?
8. Draw geographic isolation by drawing islands and beak sizes. Don’t forget to draw the mainland (Ecuador) as well.

Now, on your own research the rest of the questions below.

1. **Define** the following terms:

|  |  |
| --- | --- |
| Term: | Definition: |
| Biodiversity |  |
| Genetic diversity |  |
| Species diversity |  |
| Habitat diversity |  |

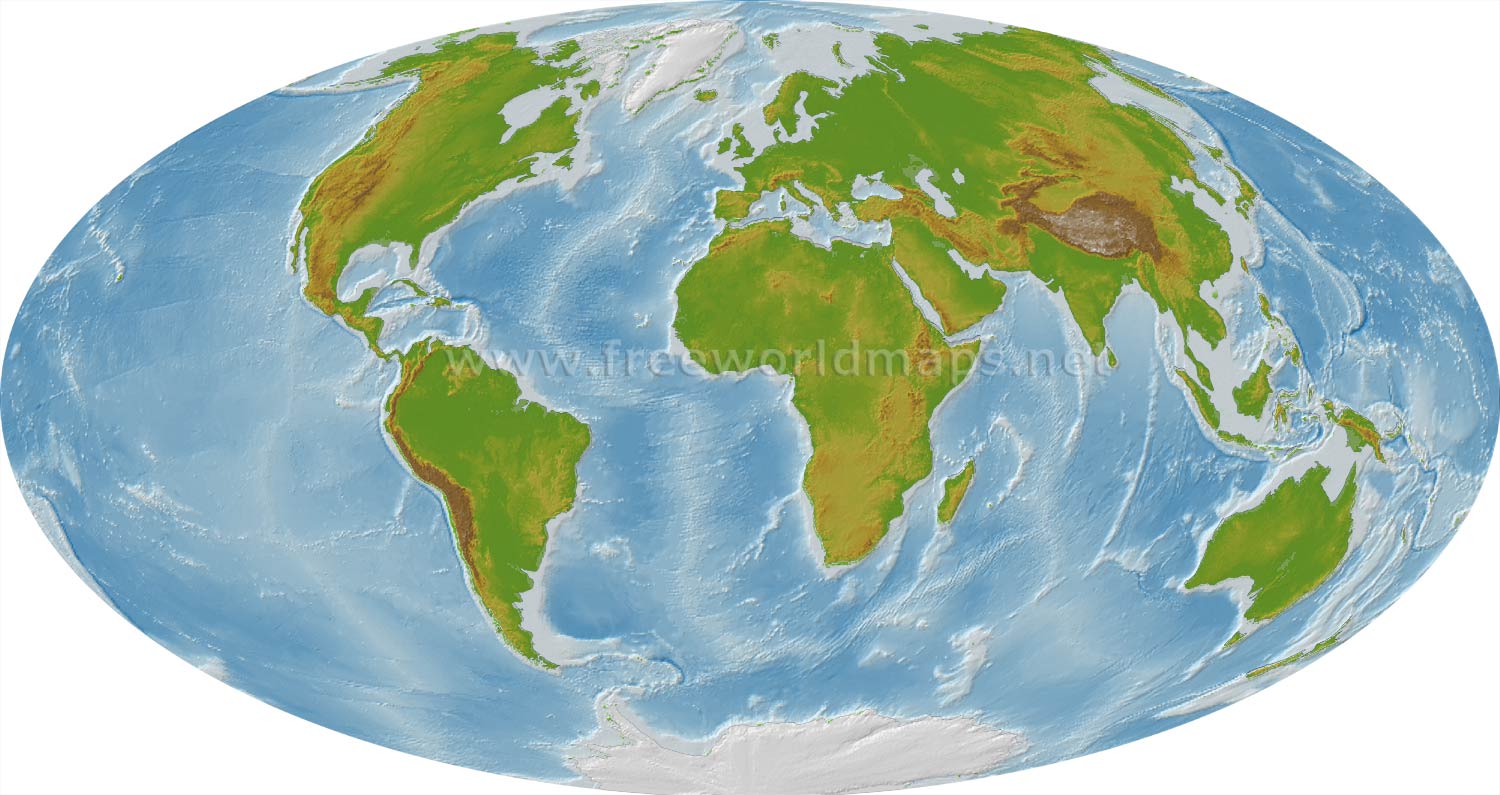
1. **Graph**. Using the information in the species diversity table to the right fill in the graph.

Species Diversity Table

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

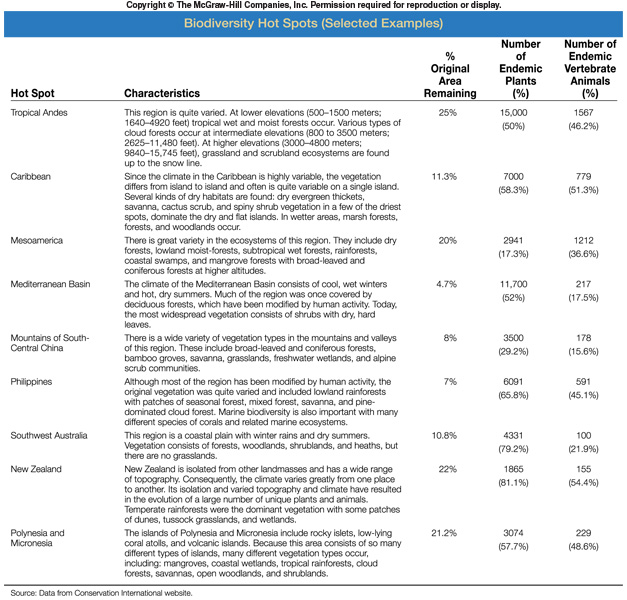
1. Many of the finch species live on different islands and thus adapted to the food type and habitat of that island. Isolation can to lead to different species. **Different species are unable to interbreed and produce fertile offspring.** It is believed that all of these finches evolved from an ancestral finch from the mainland of South America. Go to <https://www2.estrellamountain.edu/faculty/farabee/biobk/BioBookEVOLII.html> to find out the name of the original and copy and paste the finch family tree in the space below.

12. What is a biodiversity hotspot?

[](http://www.freeworldmaps.net/download/maps/free-world-map.jpg)13. On the map below shade in the areas on the planet that are biodiversity hotspots.

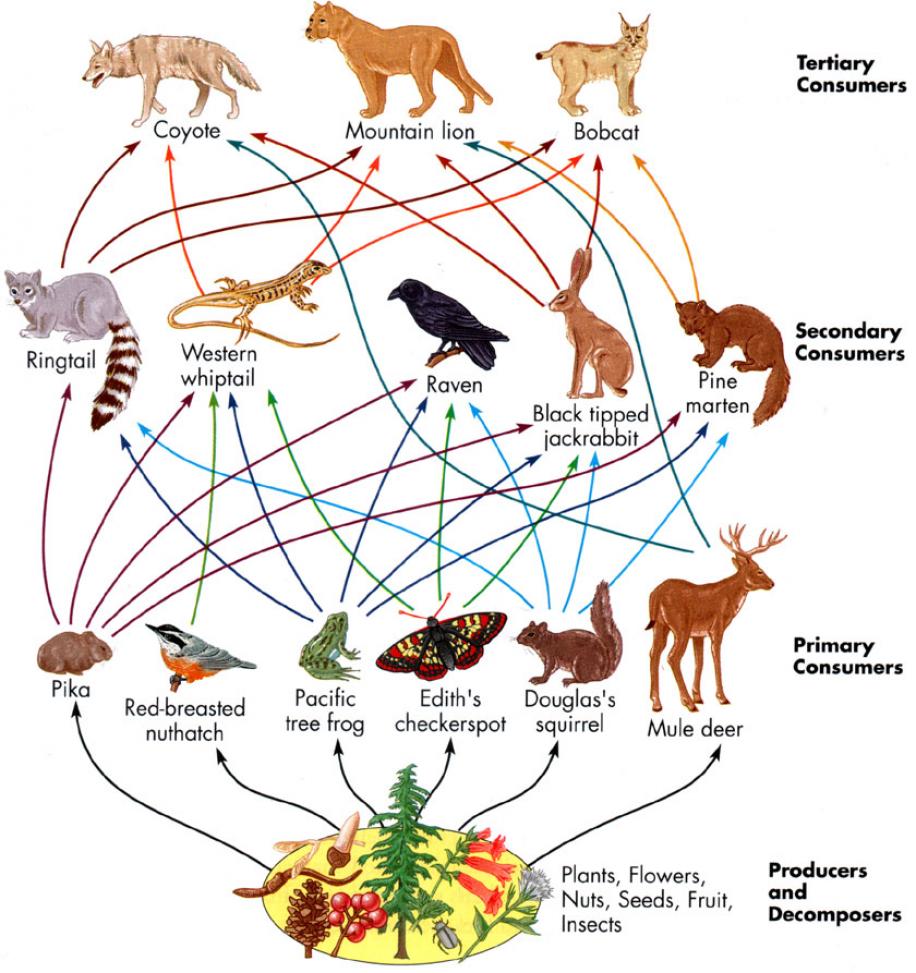
14. In general, where on the planet do hotspots exist? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Study the chart to the right for some examples of biodiversity hotspots. Look at the % original area remaining.

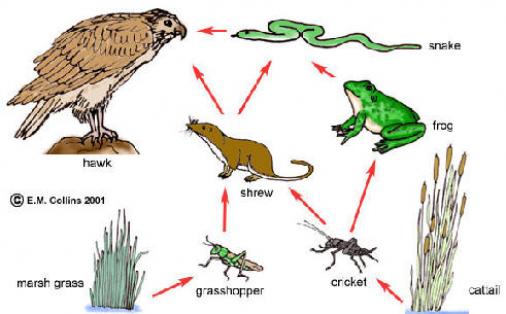
15. Calculate how much area has been degraded in each hotspot

|  |  |
| --- | --- |
| Hotspot Location | % of area degraded |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**Resiliency**

**[](http://www.rainseason.net/wp-content/uploads/2012/01/Temperate-Rainforest-Food-Web1.jpg)**16. Study the food web on the right.

1. Hoe many different types of organisms are in this food web?
2. If the western whiptail went extinct what would the mountain lion eat?
3. If the western whiptail went extinct what would the coyote eat?
4. If the western whiptail went extinct what would the bobcat eat?
5. Would the population of tree frogs and pikas grow out of control? Why or why not?

[](http://www.rainseason.net/wp-content/uploads/2012/03/Rainforest-Food-Web2.jpg)17. Now study the second food web and answer the questions below.

1. Besides the fact that there are different species in each of the 2 food webs and that their arrangements are a little different, how are the 2 food webs *not* similar?
2. If the shrew went extinct what would the hawk eat?
3. If the snake AND the shrew went extinct, what would the hawk eat?
4. What would happen to the population of tree frogs?
5. The grasshopper?
6. The marsh grass?

18. a.Out of the two food webs, which one would be able to cope best with a catastrophe, such as a disease that wipes out a particular population of species (i.e. which one would be more resilient)?

b. Why do you think this?