

# **Limiting Factors Worksheet**

- 1. Population size is a balance between \_\_\_\_\_ and \_\_\_\_\_.**
- 2. Environmental resistance is the total of all the \_\_\_\_\_ factors which prevent an (increase, decrease) in population size.**
- 3. The two main types of limiting factors are density \_\_\_\_\_ and density \_\_\_\_\_ factors.**
- 4. Population density is the \_\_\_\_\_ of individuals per \_\_\_\_\_.**
- 5. TRUE/FALSE Density dependent limiting factors affect populations with low population densities.**
- 6. Complete the following statements with one of these types of density dependent limiting factors:**

**Space  
Food**

**Parasitism  
Disease**

**Stress  
Predation**

- \_\_\_\_\_ - plants are more limited by this factor than animals
- \_\_\_\_\_ - in a crowded situation, this factor spreads quickly
- \_\_\_\_\_ - this factor affects 2 populations: as one increases, the other decreases
- \_\_\_\_\_ - this is only a limiting factor when it is scarce
- \_\_\_\_\_ - this factor is frequently caused by overcrowding

**7. TRUE/FALSE Density independent limiting factors affect populations regardless of their density.**

**8. Give an example of weather as a limiting factor**

\_\_\_\_\_  
\_\_\_\_\_.

**9. Can humans be considered a density independent limiting factor?**

**\_\_\_\_\_ Explain.**

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**10. Consider the following situations. Then decide which type of factor (density independent or density dependent) is responsible for the situation. Finally, name the specific factor that you believe is responsible.**

**A. Isle Royale is a 2,150 square mile island in Lake Superior which is able to be reached by large animals when the lake is frozen. Before 1900, no moose lived on it. However, by 1935, the population of moose had grown to about 3,000. In this process, they ate almost all of the vegetation. When this edible vegetation was no longer available, almost 90% of the moose population starved to death. In 1948, they again populated the island at about 3,000 and repeated the cycle with 90% of the individuals starving to death.**

**Circle one: (Density Dependent or Density Independent)**

**Name the factor responsible: \_\_\_\_\_**

**B. The Hudson Bay Company purchases animal pelts from trappers. They have kept records of the pelts of snowshoe hare and Canada lynx since colonial times. They have observed a trend over this long period of time which indicates that changes in the number of hare skins brought in by trappers is soon followed by similar changes in the number of lynx skins brought in by the trappers.**

**Circle one: (Density Dependent or Density Independent)**

**Name the factor responsible: \_\_\_\_\_**

**Now draw a graph representing the predator-prey relationship between the snowshoe hare and the lynx. Label the x-axis "TIME" and the y-axis "NUMBER OF INDIVIDUALS." Be sure to include both species on the same graph.**

**C. This summer we experienced a very hot, dry period of time followed by a very wet period of time. The mosquito population was not very noticeable until the end of summer. At that time, the mosquitoes became so noticeable that the sales of “Off” went way up as people tried to enjoy the outdoors without being bothered by these insects.**

**Circle one: (Density Dependent or Density Independent)  
Name the factor responsible:**

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