



# **CARRYING CAPACITY**

## **NOTES:**

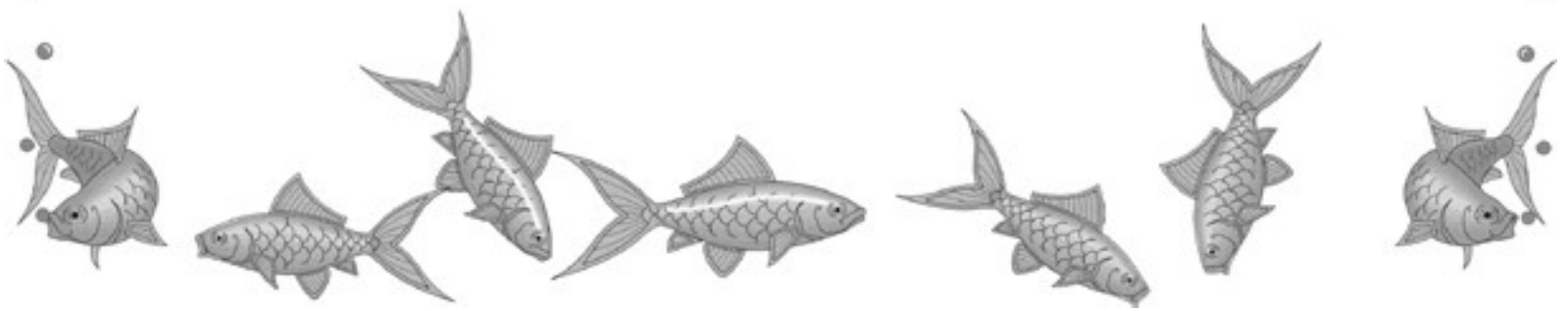
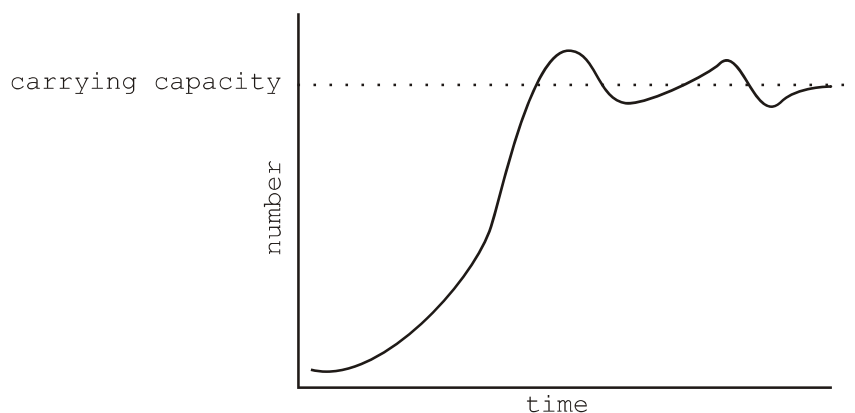
Carrying capacity is typically expressed as the number of animals of a certain type which can be supported in an ecosystem. Carrying capacity may be seen as an equilibrium or balance. However, the carrying capacity for many species is always changing due to various factors.

The carrying capacity of an ecosystem depends on three factors:

- 1) the amount of resources available in the ecosystem
- 2) the size of the population
- 3) the amount of resources each individual is consuming

Carrying capacity can also have a broader meaning. It can be defined as the number of living things (plants and animals) any area of land or water can support at any one time. Different organisms will have different carrying capacities in the same area. Thus, the carrying capacity of an ecosystem affects everything that lives in it.

The populations of most living things tend to fluctuate naturally around a certain level. That level is the carrying capacity. The following is a graph of a population at the carrying capacity of its ecosystem.





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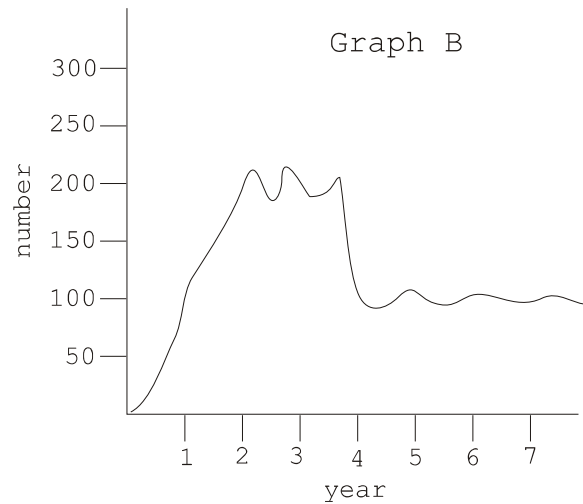
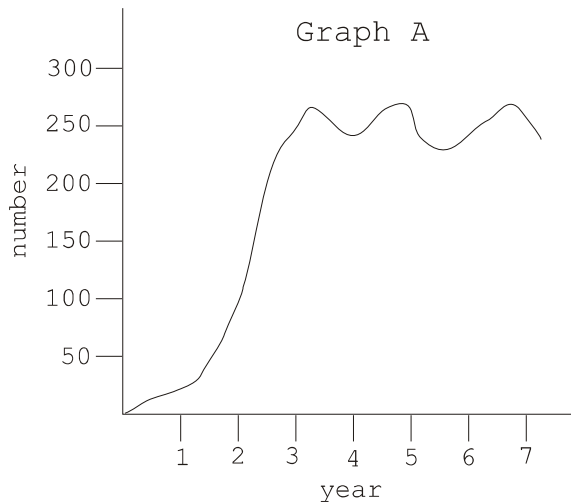
## **QUESTIONS:** (20)

- 1) Write your own definition of carrying capacity. (2)
  
- 2) On what does a carrying capacity depend? (3)
  
- 3) Can you think of other factors that may affect a carrying capacity? (2)
  
- 4) Refer to the following statement when answering the next questions. (4)  
    "The carrying capacity of this lake equals 150 minnows."
  - a) Can less than 150 minnows live in this lake?
  - b) Can more than 150 minnows live in this lake?
  - c) Let's say that there are 140 minnows in this lake when the amount of resources in this lake decreases and the carrying capacity drops from 150 to 100 minnows. What will happen to this minnow population? Why will this happen?



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5) Refer to the following graphs for the next set of questions. (9)



FOR GRAPH A:

- What is the carrying capacity (approx.)?
- Approximately during which year did this population reach the carrying capacity of its ecosystem?
- About how many years did it stay at the carrying capacity?

FOR GRAPH B:

- What are the carrying capacities of this graph?
- How many years did this population spend at the first carrying capacity?
- During which year did it reach the next carrying capacity?
- Which carrying capacity is more stable? Why do you think so?