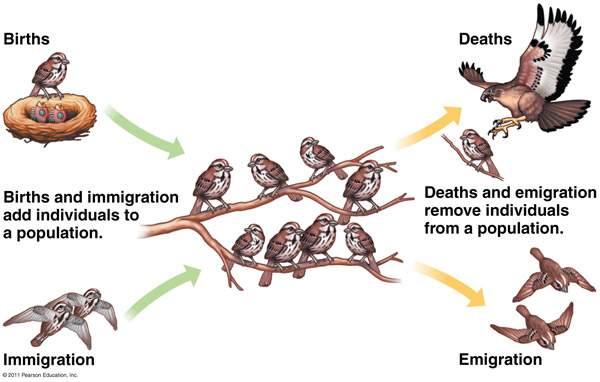
**POPULATION DYNAMICS**

**Population**

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a species in a given area

**Factors that affect population size:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (natality) +
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (mortality) -
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ +
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -

**Population Growth**

Growth = ( \_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) - ( \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

Ex.)  A moose population experiences 15 births and 5 deaths. 7 moose move into the area and 9 move out.  What is the population growth?

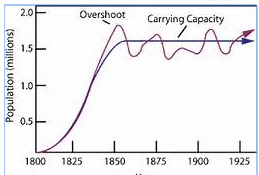
**Population Types**

**Open Population:**

* All \_\_\_\_\_\_\_\_\_\_ factors affect (living things can \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_)
* Eg: humans in Canada

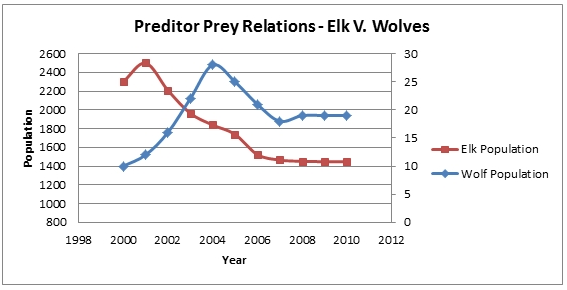
**Closed Population:**

* Only \_\_\_\_\_\_\_\_\_\_ factors affect (birth/death)
* Living things \_\_\_\_\_\_\_\_\_\_ come and go
* Eg. Humans on earth

**Graphing Population Growth:**

* **Carrying Capacity:** the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ number of individuals an ecosystem can support
* **Determined by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Limiting Factors**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the size to which a population can grow
* **Density Independent Factors** 
  + Abiotic
  + \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ depend on population size
  + Ecosystem’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Ex: temperature, precipitation, sunlight, weather, living space, nutrients, water, oxygen
* **Density Dependant Factors** 
  + Biotic
  + Depends on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Ex:
    - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 food, water, space
    - Disease
    - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - parasites

**Predator Prey Relationships**

What was the effect of killing off wolves in Yellowstone National Park?

How did re-introducing wolves affect Yellowstone National Park?