**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?