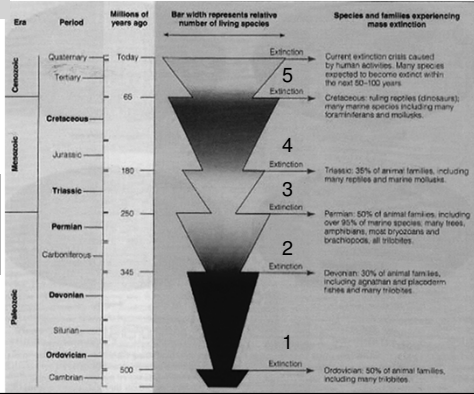


ECOSYSTEMS AND EVOLUTIONARY CHANGE

Miller Chapter 4

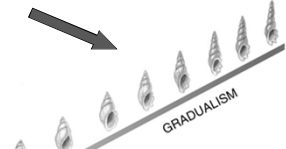
Mass extinction

Generally followed by a period of



Evolution can be seen as two different processes

A slow continuous process-



Quiet with brief period of rapid change-



Selection by the Environment

- Genetic variation: genetic differences that exist among individuals
- Gene pool:
- Differential reproduction:

Change Through Natural Selection

- Factors of
- Individuals which possess certain traits produce more viable offspring than individuals lacking those traits

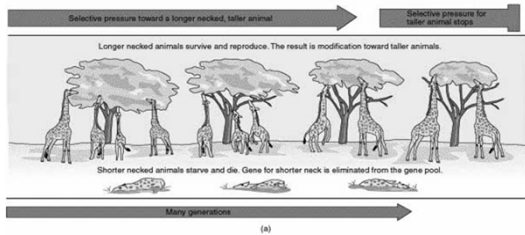
Recipe for Change

GENES ENVIRONMENT



ADAPTATIONS
NATURAL SELECTION:
For? or Against?

Selective Pressure



Genetic Variation

- **Mutation**: any inheritable change in the DNA molecule.
- **Lethal mutation**: results in death of organism.
- Mutations are rare and random events.
 - Spontaneous
 - Induced

Speciation

- Process by which separate populations of a single species develop into distinct species.
- **Selective pressures**

Populations of a given species become **reproductively isolated** from each other, no interbreeding.

The Limits of Change

- New selective pressures require species to:

The Limits of Change

- Factors affecting species' adaptation to environmental change:
