

**Biology 20**  
**Community & Ecosystem Ecology**

What is a community?

**Community structure:**

**1) Diversity:**

- a)
- b)

Community 1: A = 30; B = 30; C = 30

Community 2: A = 50; B = 5; C = 5

Which is more diverse?

**2) Prevalent form of vegetation:**

**3) Feeding relationship or trophic structure:** what eats what

**4) Disturbances & community stability:**

Stability:

Resilience:

**Factors that structure communities:**

**1) Competition:**

Intraspecific competition:

Interspecific competition:

**Competitive Exclusion Principle:**

**Ecological niche:**

Fundamental niche:

Realized niche:

Biological constraints:

If 2 similar species want to coexist in the same community, what has to happen?

## 2) **Predation:**

Includes:

Predator:

Has:

Prey:

## **Coevolution:**

### Plant defense mechanisms:

1) Mechanical defense:

2) Chemical defense:

### Animal defense mechanisms:

1) Mechanical defense:

2) Chemical defense:

3) Coloration

Cryptic coloration:

Aposematic coloration:

4) Mimicry:

Batesian mimicry:

Mullerian mimicry:

Why would two unpalatable species want to resemble each other?

Could predators use mimicry to lure prey? If so, what are some examples?

## **Keystone predator:**

Prevents:

Ex.

## **Symbiosis:**

1) **Parasitism:**

Endoparasite:

Ectoparasite:

Brood parasitism:

2) **Commensalism:**

3) **Mutualism:**

### 3) **Environmental patchiness:**

More heterogeneous the habitat, the more diverse the community =>  
Heterogeneity is affected by:

- a) vegetation structure (spatial heterogeneity)
- b) temporal use of habitats

### **Succession:**

#### **Ecological succession:**

a) **Primary succession:**

b) **Secondary succession:**

#### **Climax community:**

Which type of species would tend to colonize a “new” environment? R or K-selected and why?

What is a facilitator and what role do you think they have in primary succession?

### **Ecosystems**

#### **Trophic structure:**

Trophic levels:

a) primary producers:

b) primary consumers:

c) secondary consumers:

d) tertiary consumers:

e) decomposers (detritivores):

Food chain: (p. 725, fig. 36.9)

Food web: (p. 726; fig. 36.10)

#### **Biomass:**

**Primary productivity:**

Gross primary productivity (GPP):

**Net primary productivity:**

**Secondary productivity:**

**Ecological efficiency:** (p. 727; fig. 36.11)  
Ratio

Efficiencies varies:

Why is this so?