What are Ecosystem Services?

Worksheet

Ecosystem services are natural benefits - pollination, water filtration, climate regulation, food production. Losing biodiversity reduces these services, harming human society.

Questions

1. Bees pollinating crops is an example of which ecosystem service?

A) Provisioning
B) Supporting
C) Regulating
D) Cultural

2. Why do ecosystem services often have 'market price = $0'?

A) They are worthless
B) They are free from nature, not sold in markets
C) Technology replaces them
D) Only supporting services have value

3. Which is a supporting ecosystem service?

A) Recreation in parks
B) Pollination of crops
C) Soil formation & nutrient cycling
D) Oxygen production

4. If mangrove forests are cut down, which service is lost?

A) Coastal flood protection only
B) Fish nursery habitat only
C) Both flood protection & fish production
D) No services are lost

5. Bees pollinate 75% of global crops. What ecosystem service is this, and what happens if bee populations collapse?

6. A forest absorbs CO and releases O. What service does this provide, and why is it undervalued?

7. A wetland naturally filters water. If we drain it for farmland, what do we lose?

8. Define: What are ecosystem services?

9. Define: Name four types of ecosystem services.

10. Define: Why are ecosystem services often undervalued?

Answer Key

1. C) Regulating - Pollination is a regulating service - it maintains conditions (reproduction) necessary for crop production.

2. B) They are free from nature, not sold in markets - Ecosystem services are freely provided by nature, so markets don't price them. This makes them seem valueless when actually they're worth billions.

3. C) Soil formation & nutrient cycling - Supporting services (nutrient cycling, soil formation) are the base on which other services depend.

4. C) Both flood protection & fish production - Mangroves provide regulating services (flood buffer) & provisioning services (fish nursery), plus cultural value.

5. Pollination is a regulating ecosystem service - bees provide free crop fertilization. Without bees: crop yields drop food prices rise food security threatened humans suffer economic loss. Service value: estimated $15-$20 billion/year globally. Market price: $0.

6. Carbon sequestration is a regulating service. Forests store carbon, slowing climate change. Market price: $0 (carbon credit markets are new & incomplete). True value: ~$2,000/hectare/year (avoided climate damage). Logging pays $100/hectare once.

7. The wetland provides: water filtration (regulating) + fish habitat (provisioning) + recreational value (cultural). After draining: we must build artificial treatment plants ($millions), lose fish harvests & lose nature-based recreation. True cost of losing the wetland: $millions/year 50 years. Farmland gain: $thousands/year.

8. Benefits that humans receive from nature, including food, water, climate regulation, pollination and recreation.

9. Supporting (nutrient cycles), regulating (pollination, climate), provisioning (food, water), cultural (recreation, beauty).

10. They are free gifts from nature, not priced in markets, so their economic value is invisible.