

Chapter 2

- # 1. a) lithosphere
 pg 68 b) cellular respiration + photosynthesis
 c) hydrosphere
 d) sustainable
 e) carrying capacity
 f) X
 g) ecosystem
 h) X
 i) photosynthesis

pg 70 #1 b) #3. b) #4. c) #6. a)

p. 68 #3. You have a comparison chart note for this.

| | photosyn. | cellular resp. |
|------------------------|-----------------------|----------------------|
| raw mat. | $CO_2 + H_2O$ | $C_6H_{12}O_6 + O_2$ |
| products | $C_6H_{12}O_6 + O_2$ | $CO_2 + H_2O$ |
| in plants? | yes | yes |
| in animals? | <u>NO</u> | yes |
| is light needed? | yes | <u>NO</u> |
| is energy released? | <u>NO</u> | yes |
| is energy needed? | yes | <u>NO</u> |
| is chlorophyll needed? | yes (in green leaves) | <u>NO</u> |

4. Sunlight is important because it is needed for photosynthesis. Photosynthesis is the only way that sun's energy is converted to food energy. This starts all ecosystems. (producers,

5. "trophic" level = food energy level.

- 1st level is always green plants
* should be able to draw simple food chain + label 4 trophic levels.

7. Food chain vs web.

* Best to draw one of each + explain how they are different.

9.

Biotic

Abiotic

stream

- algae
- snail
- fish
- frog

- temperature
- salinity
- oxygen concentration
- amount of sunlight

grassland

- grasshopper
- grass
- small shrubs
- rabbit

- wind speed
- humidity
- temperature
- amt. of rain

etc...

14. producers - phytoplankton

herbivore - zooplankton, whale, ~~mussel~~

omnivore - mussel! (look at what it eats)

carnivore - the rest!

16. overharvest large fish (\therefore their numbers \downarrow)

\therefore small fish \uparrow in population

dolphins have less to eat. Since they only eat large fish + squid + could lose large fish \therefore dolphin numbers might \downarrow

17. If there are no whales \therefore there will be lots of zooplankton

lots of zooplankton means mussels + small fish have lots to eat and \uparrow in population.

\hookrightarrow This will benefit squid + starfish. Since they have lots to eat, their #'s will probably \uparrow

Chapter 3

p. 110 #3. a) Ecosystems around equators have most biodiversity
ie: Amazon Rain forest

- #6.
- a) cultural service (recreation)
 - b) product
 - c) another service (cleaning!)
 - d) ~~product~~ product
 - e) cultural service (recreation)
 - f) product (fresh water)
 - g) product

#12 Controlling invasives — Check p. 93 + 94
sub-titles in blue — be able to briefly describe

- #13 a). There are fewer connections in food web after 200 years of European settlement.
- Prior to European settlement there is greater biodiversity.
 - beaver seems to be at top of food web now. but not 200 years ago. This is odd because it is a herbivore; not a carnivore.

#14 Think a bit here + give \oplus reasons hunting/fishing good (enjoyable, get outside, can eat or use (catch))

\ominus

why not good

- might eliminate species
- might greatly reduce species
- might damage ecosystem

Make a decision + back it up. Remember "licenses" control

p. 113 #26

| | cost | benefit |
|---------------|---------------------------------|----------------------------------|
| clear cut | changes ecosystem entirely! | easy for logging companies to do |
| shelterwood | saves some forest for ecosystem | More expensive to do |
| selective cut | great for ecosystem | Very costly (\$) method |

Chapter 4

p. 150

#1

- a) pest
- b) natural
- c) pesticides
- d) bioaccumulate (biomagnification is used when we look at increased concentration up food web)
- e) narrow spectrum
- f) organic farming

#4

- a) DDT → (v) banned....
- b) narrow spectrum → (iv) few target...
- c) piscicide → (ii) kills only fish
pisces = fish
(zodiac sign)
- d) persistent → (i) remains long time
- e) Bt → (ii) from bacteria

p. 152

- #11.
- a) → (iii)
 - b) → (i)
 - c) → (ii)
 - d) → (iv)

pg 152

#1. (c)

#2 (a)

#3 we actually did not cover this. Don't worry about

#4 (d)

p. 153

#10

Natural forest More Sustainable.

It has More biodiversity + many more connections. It is a proper ecosystem. If one species is lost the ecosystem will likely survive.

A crop is not a proper ecosystem. If an insect/disease attacks, the crop is wiped out.
low (very low) biodiversity

p. 151

#12

We need to control water, if

too little

∴ irrigate
(we add
water)

too much

∴ drain
(add drainage
tiles under
ground)