

\* Vocabulary: Human Impact

Acid rain

Greenhouse effect

Biomagnification

Habitat Destruction

Biomes

Marine Biome

CFC's

Ozone depletion

Conservation

Pollution

Deforestation

Soil erosion

Desert

Species Exploitation

Endangered Species

Species invasion

Extinction

Taiga

Freshwater biome

Temperate deciduous forest

Global Warming

Tropical rain forest

Grassland

Tundra

## Unit 2b: Ecology Human Impact OBJECTIVES

**By the end of the unit, you should be able to:**

### Section 18-3 Biomes

- 1.) Explain how latitude and altitude affect the distribution of biomes and organisms
- 2.) Compare and contrast the different biomes of the Earth

### Section 19-1 Global Change

- 1.) Explain the causes and effects of acid rain, ozone depletion and global warming
- 2.) Discuss the causes and effects of habitat destruction
- 3.) Describe 2 examples of human exploitation of animals
- 4.) Using 2 specific organisms as examples, explain the negative impact of exotic species on an ecosystem

### Section 19-2 Ecosystem Damage

- 1.) List 3 causes and effects of pollution
- 2.) Name three nonrenewable resources and three renewable resources

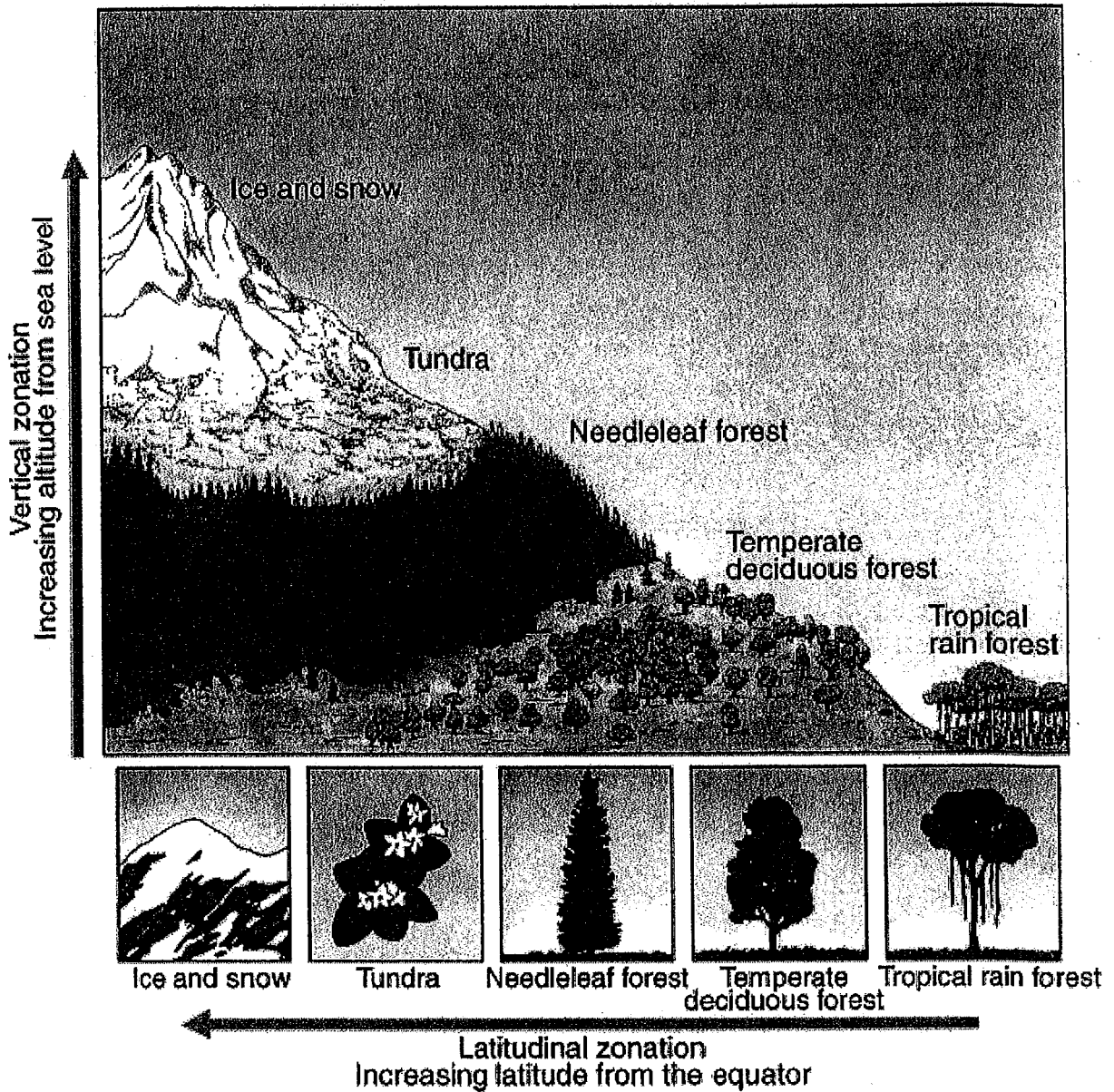
### Section 19-3 Solving Environmental Problems

- 1.) Describe 2 effective approaches that have been taken to combat the various environment problems
- 2.) State 5 ways you can take personal action to help conserve the environment

# I. Biomes

Review: What is a biome? \_\_\_\_\_

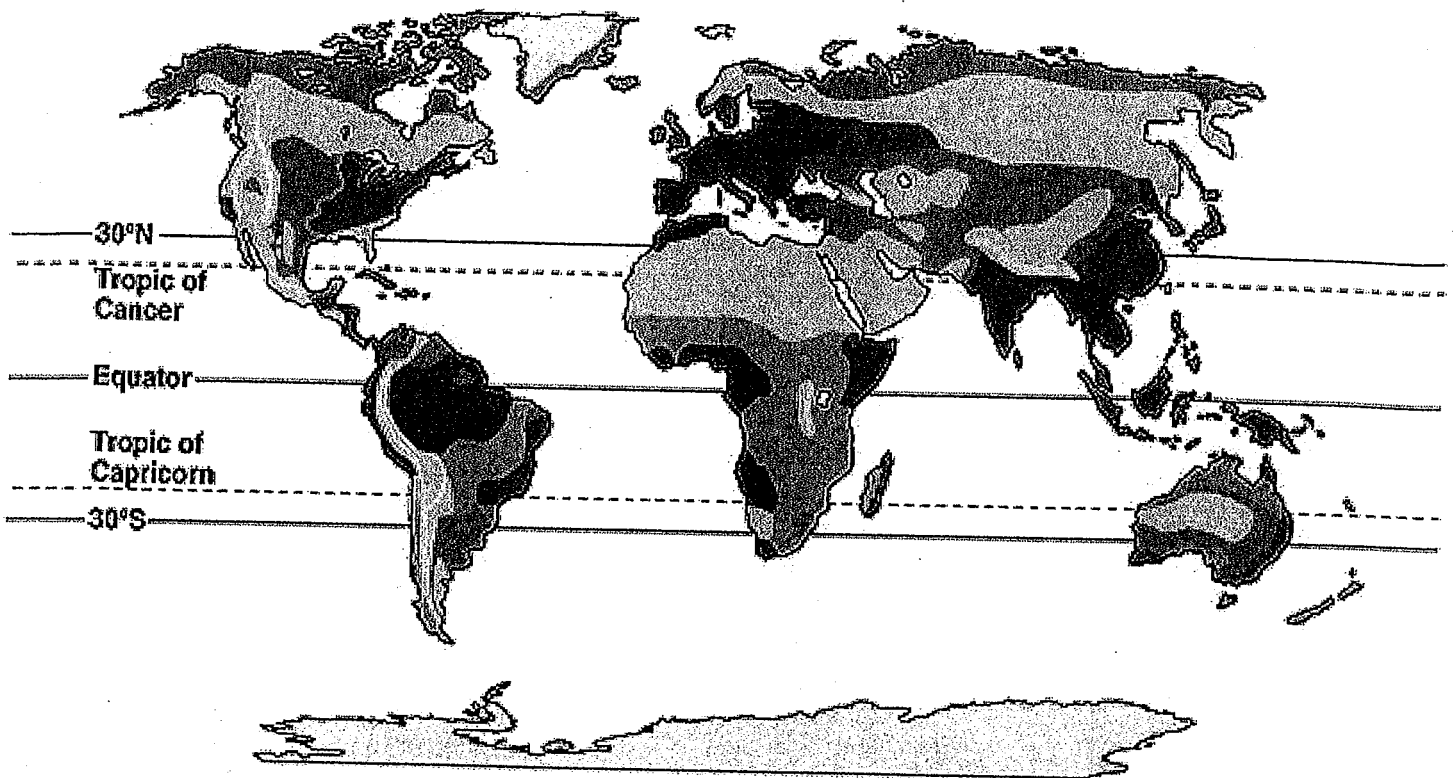
- \_\_\_\_\_ and \_\_\_\_\_ affect the climate of a biome.



The higher the altitude \_\_\_\_\_

The farther away from the equator \_\_\_\_\_

## The World's Biomes



Tropical forest	Polar and high-mountain ice	Temperate deciduous forest
Savanna	Chaparral	Coniferous forest
Desert	Temperate grassland	Tundra (arctic and alpine)

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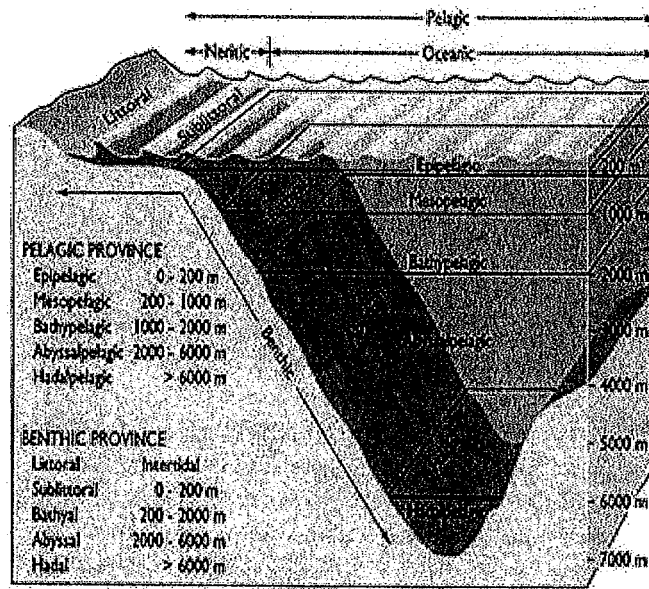
### Types of biomes:

- |           |           |
|-----------|-----------|
| 1.) _____ | 2.) _____ |
| 3.) _____ | 4.) _____ |
| 5.) _____ | 6.) _____ |
| 7.) _____ | 8.) _____ |
| 9.) _____ |           |

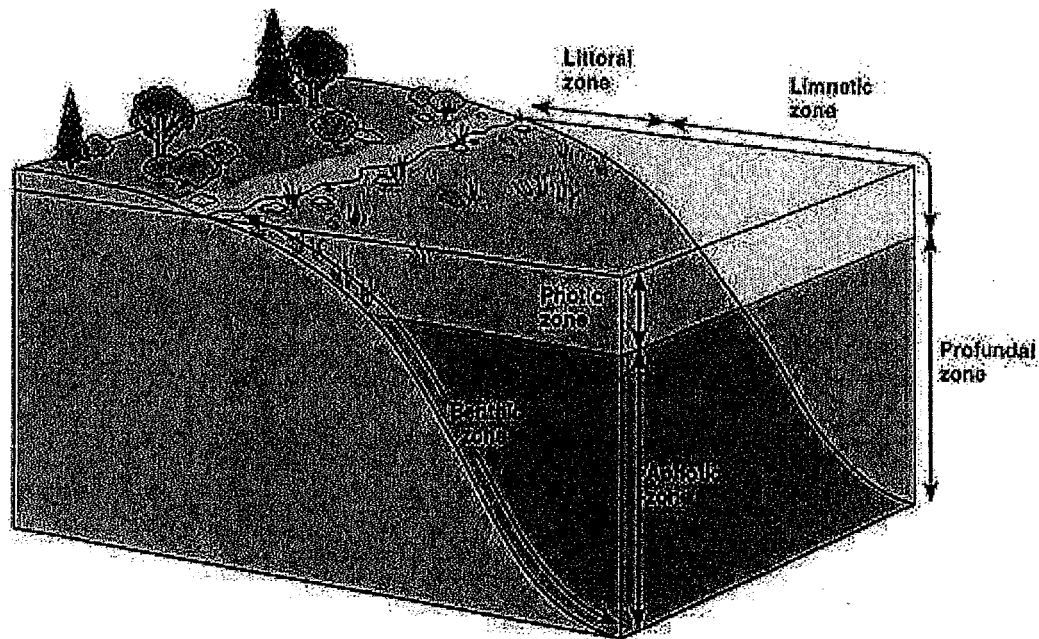
<u>Biome</u> (Add pictures here!)	<u>Climate/Statistics</u>	<u>Flora and Fauna</u>
Tundra		
Taiga		
Temperate Deciduous Forest		
Tropical Rain forest		
Temperate Grasslands		

Tropical Grasslands		
Desert		
Ocean/Marine		
Freshwater		

## Ocean Zones:



## Freshwater Biome Zones:



Question 1: Describe how the abiotic conditions vary: Freshwater biome vs. Ocean/Marine

Question 2: In both biomes, how do the abiotic conditions vary based on depth?

***Our HUMAN IMPACT – What we think we know – and some possible misconceptions***

**Instructions:** Ask your partner the following questions and write down the thoughts that come out as a result of your discussion. Next, read the information sheet and use the provided space to reflect on concepts you knew well, and perhaps some concepts that were clarified for you.

*Global Warming Discussion – Interview Questions*

1. What is global warming?



2. How does human activity contribute to global warming?

3. In what ways is the warming of the earth a man-made phenomenon? Can warming also be a natural phenomeon?

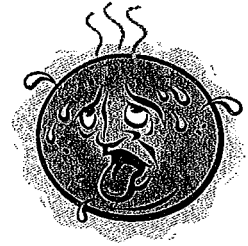
4. Why is global warming sometimes “controversial?”

5. What are practical ways to slow down human-caused global warming?



## Global Warming Reflection Sheet

Pick up the information sheet on global warming and actively read it. Take notes here:  
NOTES/SUMMARY



1. What are 2 things you read that you already knew?
  
  
  
  
  
  
  
  
  
  
2. What was 1 thing you were wrong about?
  
  
  
  
  
  
  
  
  
  
3. Explain 2 new things you learned.

### Acid Rain Discussion – Interview Questions

1. What is acid rain?



2. How does human activity cause acid rain?

3. Which gases specifically cause acid rain and which acids are formed?

4. How do we measure acidity and what counts as acid rain?

5. What are ways to combat acid rain?

## Acid Rain Reflection Sheet

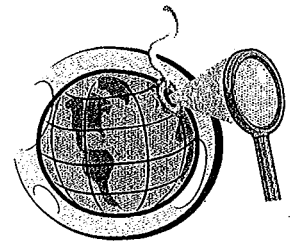
Pick up the information sheet on acid rain and actively read it. Take notes here:  
NOTES/SUMMARY



1. What are 2 things you already knew about acid rain?
  
  
  
  
  
  
  
  
  
  
2. What was 1 thing you were wrong about?
  
  
  
  
  
  
  
  
  
  
3. What are 2 new things you learned?

Ozone Depletion Discussion - Interview Questions

1. What is ozone and what is ozone depletion?



2. Where do we find ozone and what does it do?

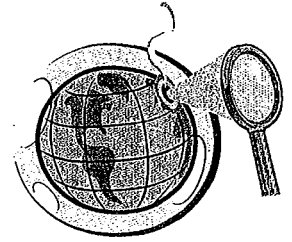
3. How are causes of ozone depletion different from causes of global warming?

4. If we deplete ozone, is there a process to replace ozone?

5. What can humans do to halt ozone depletion?

### *Ozone Depletion Reflection Sheet*

Pick up the information sheet on ozone depletion and actively read it. Take notes here:  
NOTES/SUMMARY



1. What are 2 things you already knew about ozone depletion?
  
  
  
  
  
  
  
  
  
  
2. What was 1 thing you were wrong about?
  
  
  
  
  
  
  
  
  
  
3. What are 2 new things you learned from the reading?

How might humans CAUSE the following conditions. List as many ways as you can.

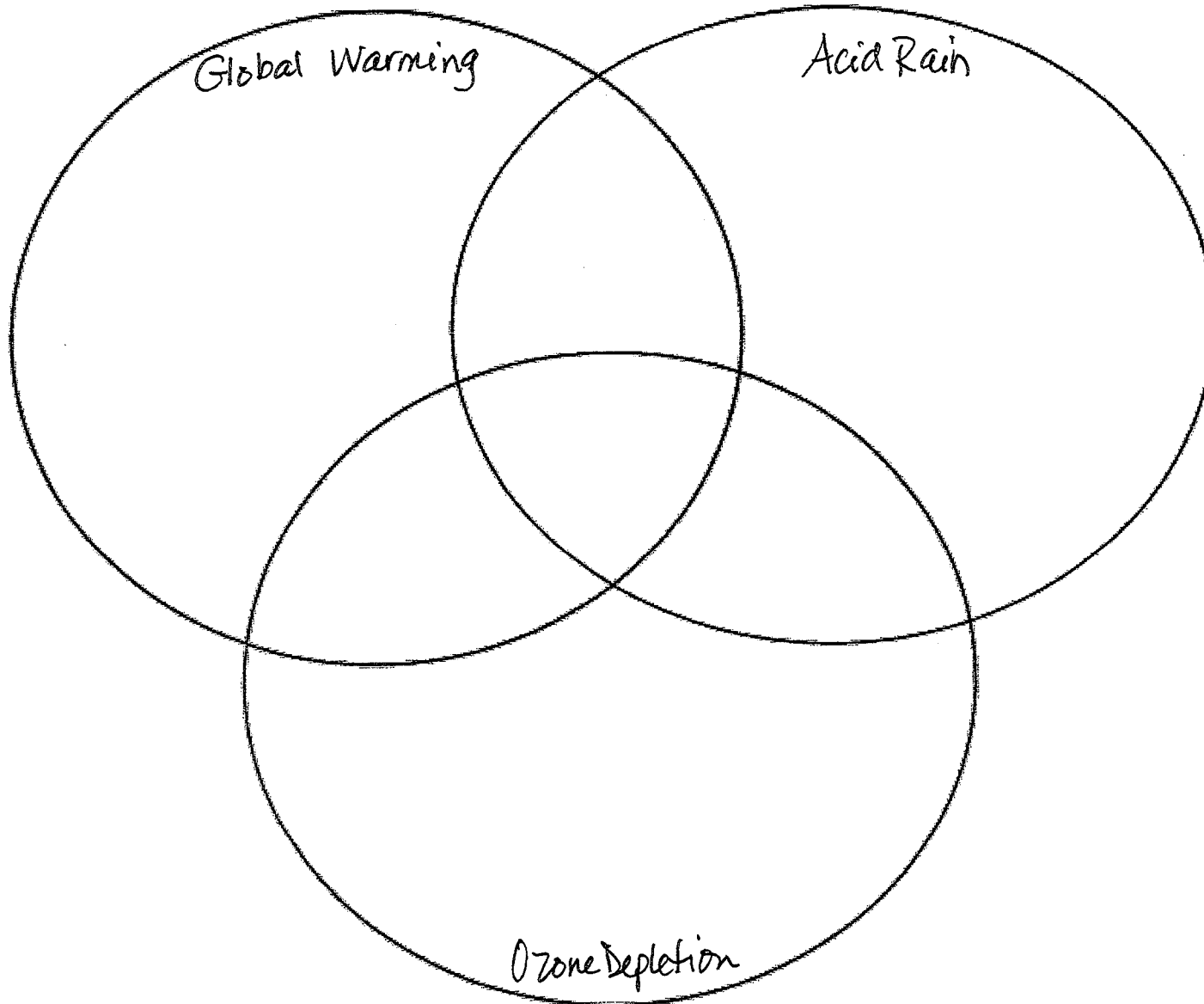
Global Warming	Acid Rain	Ozone Depletion
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.
7.	7.	7.
8.	8.	8.
9.	9.	9.
10.	10.	10.

How can humans PREVENT the following conditions? List as many PRACTICAL ways as you can.

Global Warming	Acid Rain	Ozone Depletion
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.
7.	7.	7.
8.	8.	8.
9.	9.	9.
10.	10.	10.

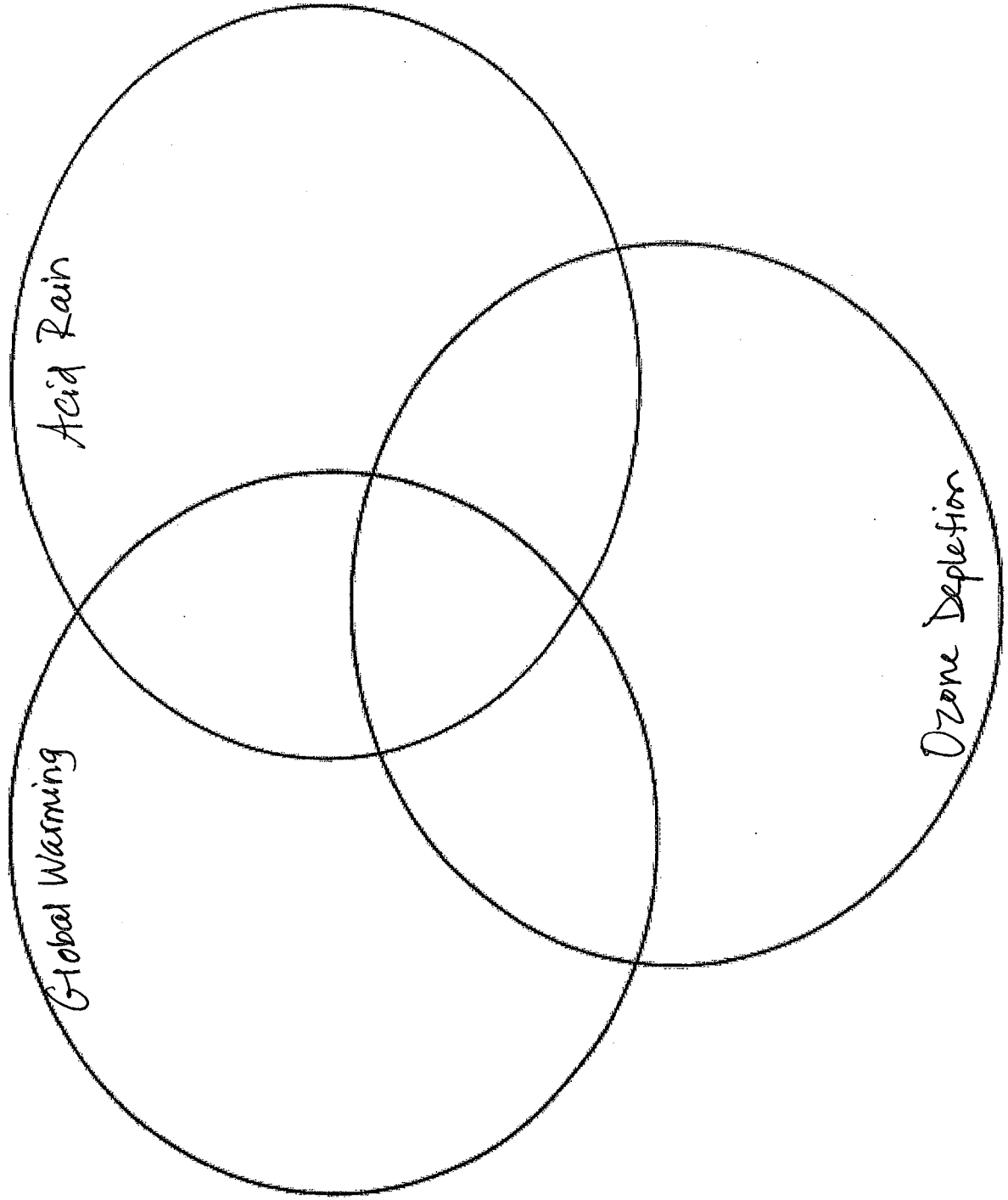
### CAUSES of Human Impact

Use this diagram to fill in the similarities and differences in the **causes** of human impact we learned about.



**WAYS TO PREVENT Global Warming, Acid Rain, Ozone Depletion**

Use this diagram to fill in the similarities and differences in the ways to prevent of human impact we learned about.





## Human Impact Continued

We learned about 3 ways that humans can affect the earth

1. Global Warming
2. Acid Rain
3. Ozone Depletion

Other ways that we impact the earth's ecosystems include

4. Habitat Destruction
5. Soil Erosion
6. Species Exploitation
7. Invasive Species
8. Pollution

For each of these human impacts . . .

1. Describe what the actual term means
2. List human activities that contribute to this crisis
3. Why the crisis is dangerous to humans
4. Positive human activities that could help solve the crisis

### Habitat Destruction

Define:

Human causes:

Why crisis is dangerous to humans:

Positive ways to solve crisis:



## Soil Erosion

**Define:**

**Human causes:**

**Why crisis is dangerous to humans:**



**Positive ways to solve crisis:**

## Species Exploitation

**Define:**

**Human causes:**



**Why crisis is dangerous to humans:**

**Positive ways to solve crisis:**

## Invasive Species

**Define:**

**Human causes:**

**Why crisis is dangerous to humans:**

**Positive ways to solve crisis:**



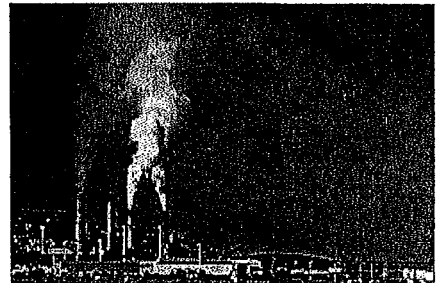
## Pollution

**Define:**

**Human causes:**

**Why crisis is dangerous to humans:**

**Positive ways to solve crisis:**



## Pollution: Biomagnification

Definition:

The pictures below demonstrate the concept of biomagnification.

1. In Diagram 1, If the algae contains a certain concentration of a pollutant, and the mayfly nymph eats a lot of algae – where does the sum of all the algae pollutant go? Then the sunfish eats a lot of mayfly nymphs - the sum of all the pollutants is now where? As you move up the food pyramid, what happens to the total concentration of pollutant?

2. In Diagram 2, explain why the Herring Gull ends up with such a large concentration of PCB's?

3. In Diagram 2, Why might it be a problem to eat trout caught in Lake Ontario?

Diagram 1

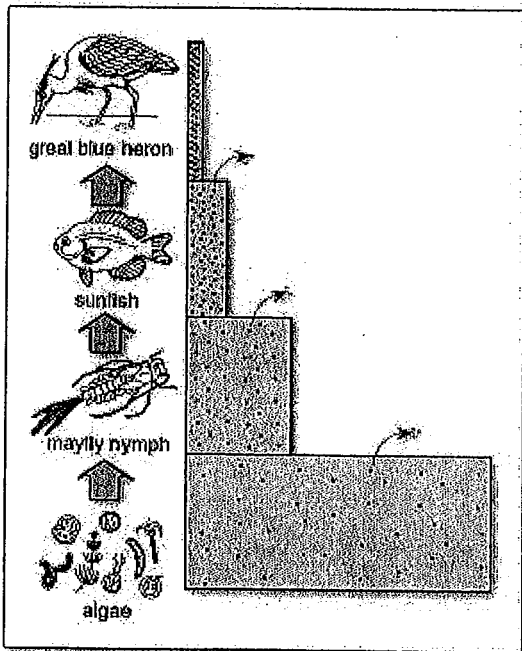
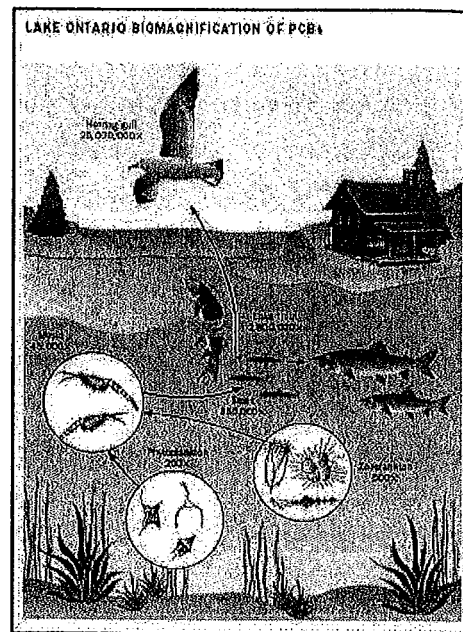
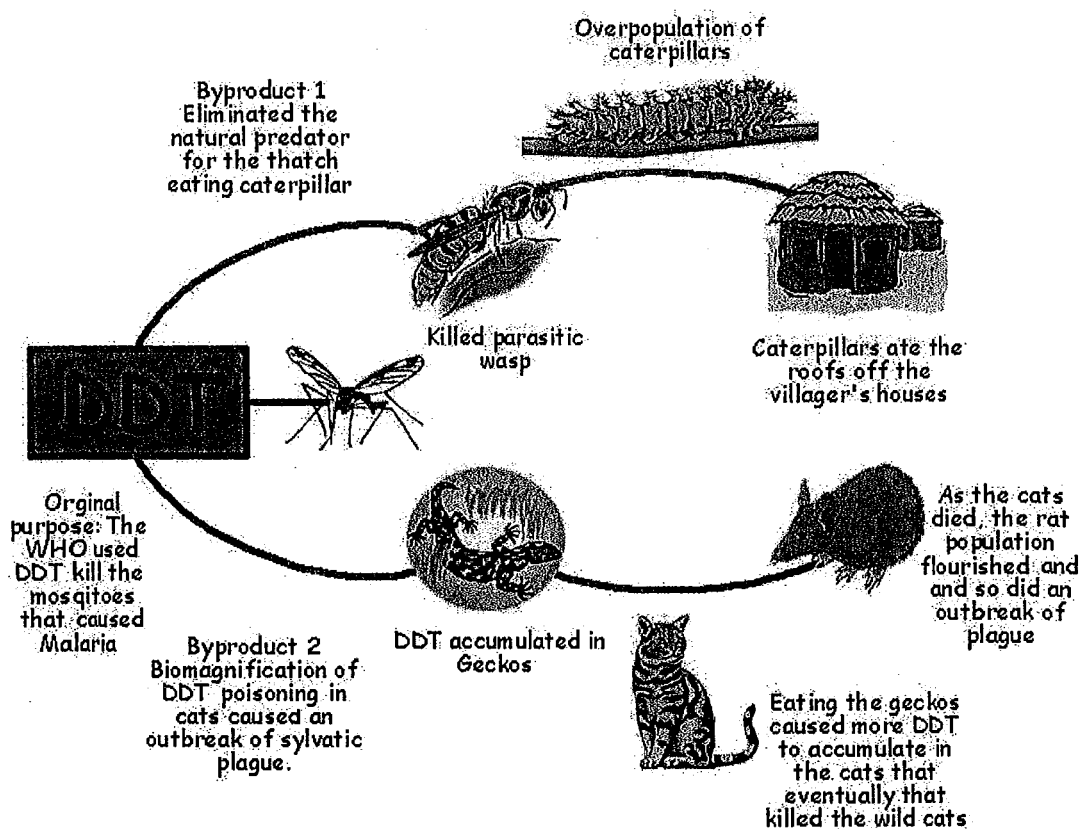


Diagram 2



### Effect of DDT Use in Borneo

In the early 1950's the people in Borneo, suffered from Malaria the World Health Organization had a solution, kill the mosquitoes with DDT. This is what happened.



Short Essay:

How did biomagnification of DDT in Borneo in 1950 lead to an outbreak of the plague?

Name: \_\_\_\_\_

Directions: Please search online for magazine or newspaper articles involving "Acid Rain". Once you find one that you like, print it out, complete the chart and attach the article to this sheet. (It helps to type in "Acid Rain ARTICLES"!)

- Make sure you only use: .org .edu .htm or magazing/newspaper websites. NO WIKIPEDIA articles!

<u>Summarize the article using YOUR OWN words!</u>	<u>Ways HUMANS affect Acid Rain from Article</u>
	<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li><li>•</li><li>•</li><li>•</li><li>•</li></ul>

Reflection: How do YOU contribute to Acid Rain? \_\_\_\_\_

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Name: \_\_\_\_\_

Directions: Please search online for magazine or newspaper articles involving "Global Warming". Once you find one that you like, print it out, complete the chart and attach the article to this sheet. (It helps to type in "Global Warming ARTICLES"!)

- Make sure you only use: .org .edu .htm or magazing/newspaper websites. NO WIKIPEDIA articles!

<u>Summarize the article using YOUR OWN words!</u>	<u>Ways HUMANS affect Global Warming from Article</u>
	<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li><li>•</li><li>•</li><li>•</li><li>•</li></ul>

Reflection: How do YOU contribute to Global Warming? \_\_\_\_\_

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