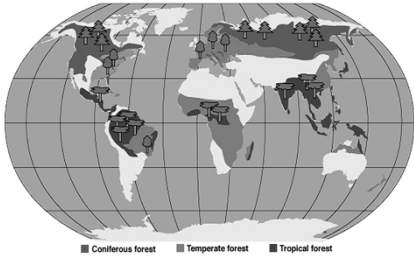


Sadly all of the world's forests are under attack...



Sustainability is the Answer

- ▶ Forestry is going to take place – the question is whether or not we will manage our forests so that they will last for generations to come
 - ▶ Ecotourism-profit for keeping our environment in tact
 - ▶ PAS (1993)-Protected Areas Strategy preserve 12% of our lands for parks, recreation, and wildreness
 - ▶ Great Bear Rainforest-Spirit Bear
- <http://www.youtube.com/watch?v=E2His2vVIBg>







First nations lead the way

- ▶ Tlinglit First Nation switched from diesel to run-of-the river power
- ▶ Haida Gwaii-Wind Turbines
- ▶ T'Sou-ke Nation-largest system of solar power in BC

Doing our part

- ▶ Canadians lead the way:
 - ▶ Waste recycling programs
 - ▶ Sewage-into fertilizer
 - ▶ Energy efficient homes and cars
 - ▶ Reduce pesticide and herbicide use
 - ▶ Cutting back paper and water consumption
- BUT
- ▶ However, our forests, groundwater, and other resources are being depleted at a concerning rate
- ▶ Canada has also opted out of **Kyoto**.

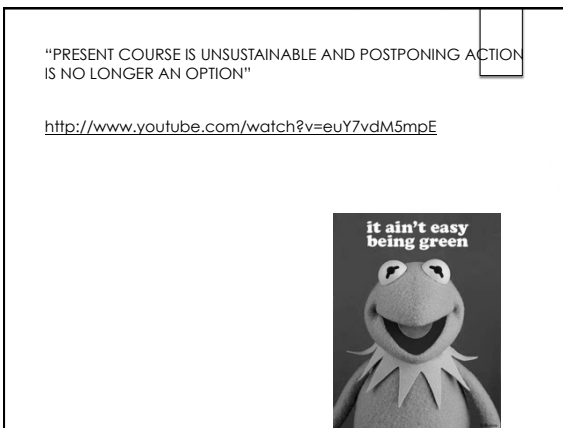
Individuals make the difference:

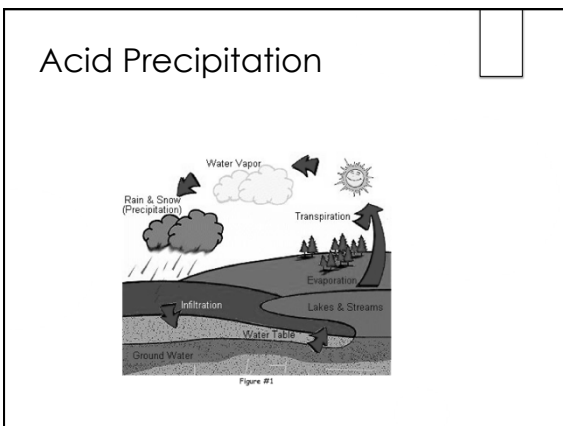
- ▶ We consume 15 times more energy than those in developing world

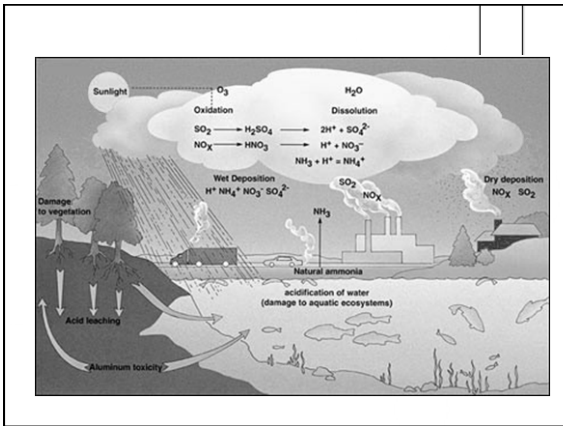
Do:

- ▶ Recycle
- ▶ Compost
- ▶ Buy local
- ▶ Use energy efficient appliances
- ▶ Low-flush toilets
- ▶ Shorter showers
- ▶ Drink tap instead of bottled water
- ▶ <http://www.youtube.com/watch?v=InUjHBlvM>
- ▶ Reusable shopping bags









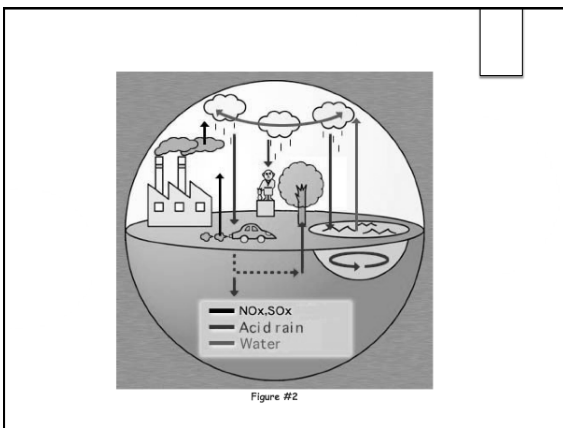


Figure #2

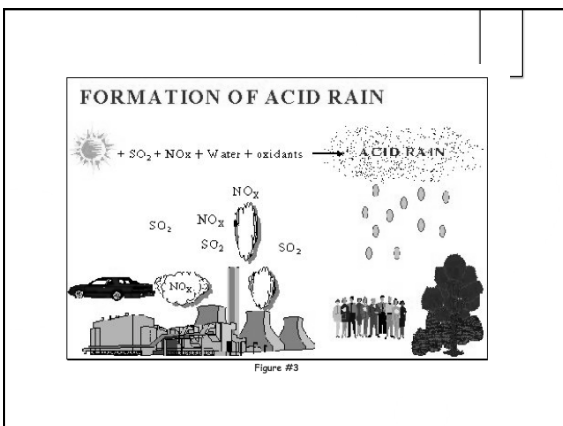


Figure #3

Acid Precipitation Information Chart:	
Sources	<ul style="list-style-type: none"> - coal burning plants - cars and trucks - metal smelters - oil refineries
Formation	<ul style="list-style-type: none"> - fossil fuels and metal under combustion - sulphur dioxide (SO₂) and nitrogen oxide (NO_x) are released - these poisonous gases enter the atmosphere and combine with water droplets to form acids - water cycle returns them to the surface of the earth in the form of rain or snow
Distribution	<ul style="list-style-type: none"> - winds in the atmosphere can distribute the gases for many kilometres
Impacts	<ul style="list-style-type: none"> - kills fish, soil, bacteria, aquatic and terrestrial life - can cause a variety of health problems - corrosion of many metals → e.g., buildings

Figure #4

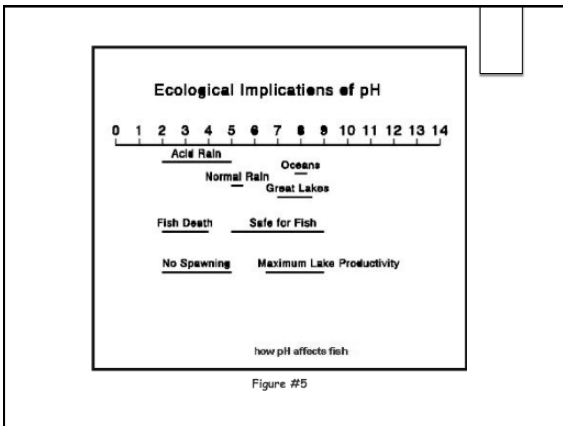
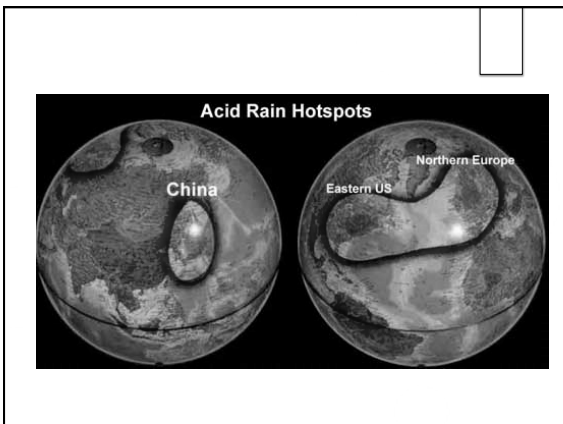
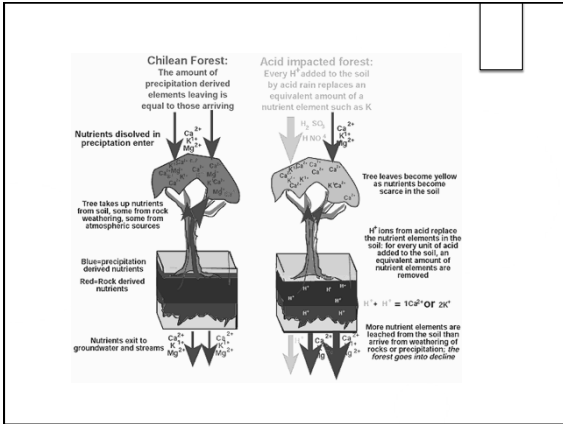


Figure #5





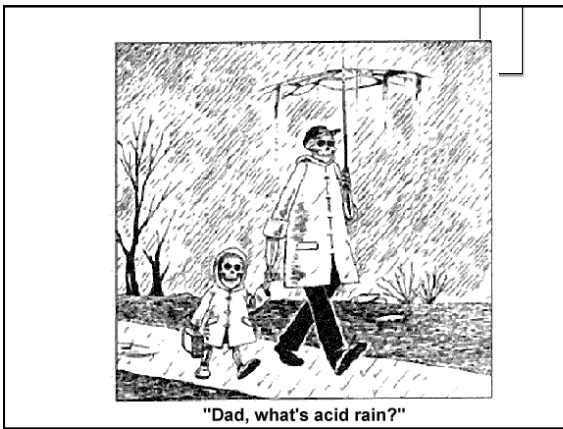
Effects of Acid Rain

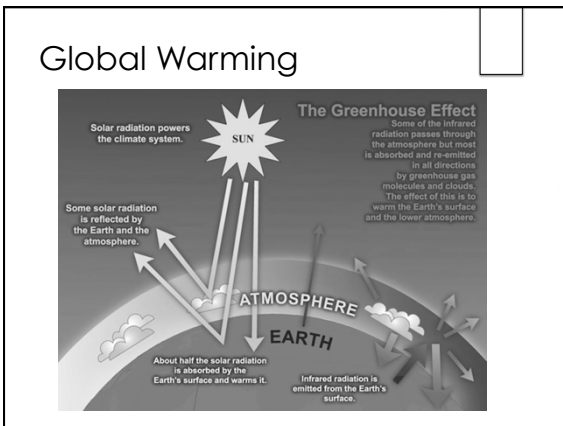
- ▶ In Japan, acid rain with acidity akin to lemon juice has been observed at Mount Tsukuba in 1984 (ph 2.5) and at Kagoshima in 1987 (ph 2.45).
- ▶ The problem is even more serious in North America and Europe. In those regions, forests are withering and lakes become uninhabitable to fish
- ▶ Stone structures such as buildings and bronze statues are being damaged by corrosion

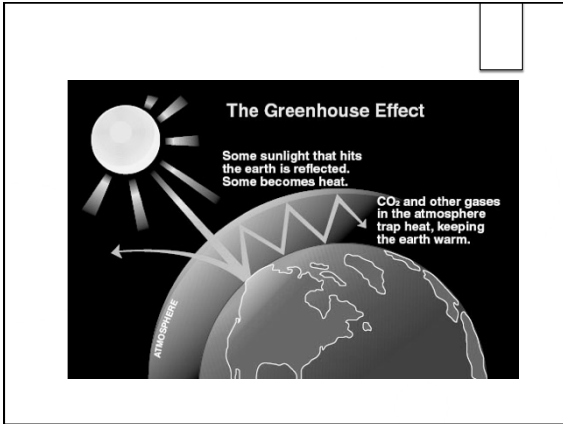
Picture on L = 1908
Picture on R = 1968

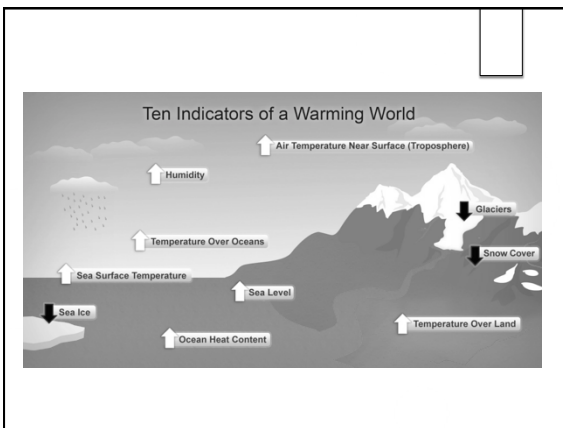






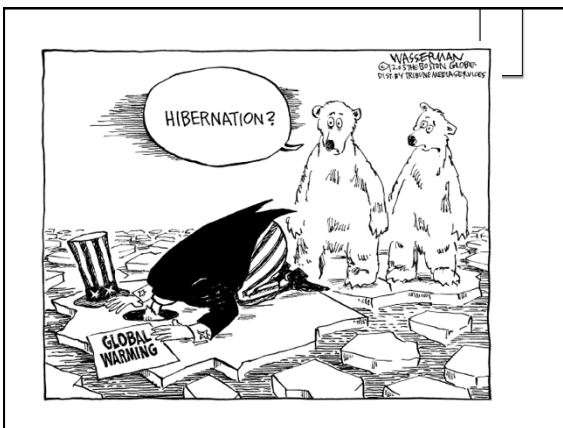






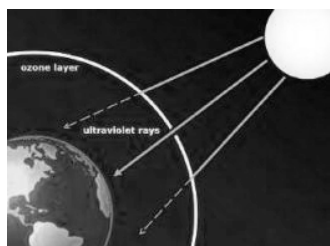


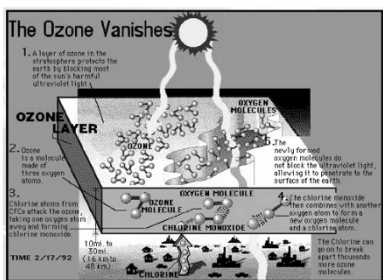






Ozone Depletion





Ozone Depletion

- ▶ Also at risk is the safety of the world's food chain
- ▶ UV rays adversely affect the growth of staple crops like rice
- ▶ UV rays also adversely affect phytoplankton which serve as the base of the ocean food chain

Primary Document: Fixing the problem

In 1979, many countries, including the U.S., banned CFCs from being made or used. This was a big step toward fixing the problem. Today, no spray cans contain CFCs. Other chemicals are gradually replacing the CFCs in air conditioners.

But the CFCs already in the atmosphere can take up to 50 years to reach the stratosphere. Once there, they hang around in the stratosphere for many years, doing damage.

Also, the products that still contain CFCs need to be treated with care. One example of this is a car air conditioner. When the air conditioner breaks, or the car is taken to a junkyard, the CFCs need to be carefully taken out and recycled or stored so that they don't leak into the air.

Figure #5



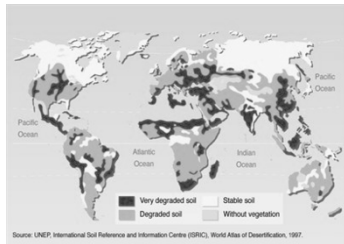


Soil Erosion

► Remember the dust bowl?



Still Happening

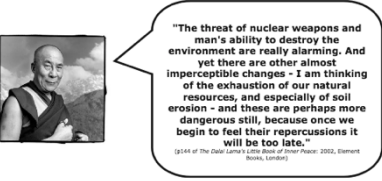


SOIL EROSION

SODU - An excellent acronym to remember the way farmers cause soil erosion. Farming practices which cause soil erosion:

Problems	Description	Solution
Soil exhaustion	Too many crops are grown on the same area of land. Nutrients are exhausted. Vegetation will no longer grow. Soil exposed to wind and rain.	Crop rotation - farmers should grow different crops from year to year. Fields should be taken out of production to allow the recovery of nutrients.
Overgrazing	Too many animals are kept on an area of land, vegetation cover is removed, wind and rain erode the soil.	Rotate animals on different fields.
Deforestation	Farmers remove woodlands and hedgerows. Less protection from the wind and rain lead to increase in erosion.	Afforestation - planting trees.
Up and down ploughing	This is when farmers plough up and down hills. Rainfall flows down furrows removing top soil.	Farmers should plough following contours.

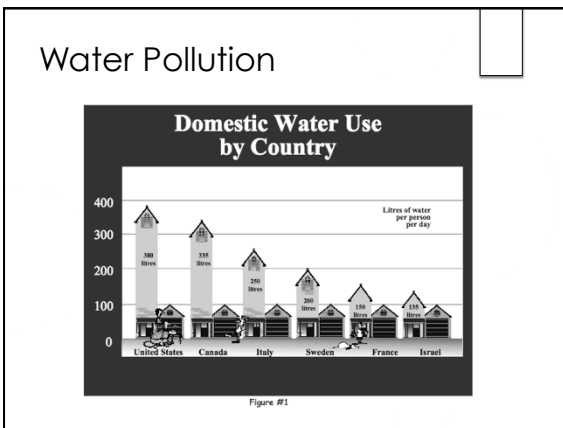
Figure #6

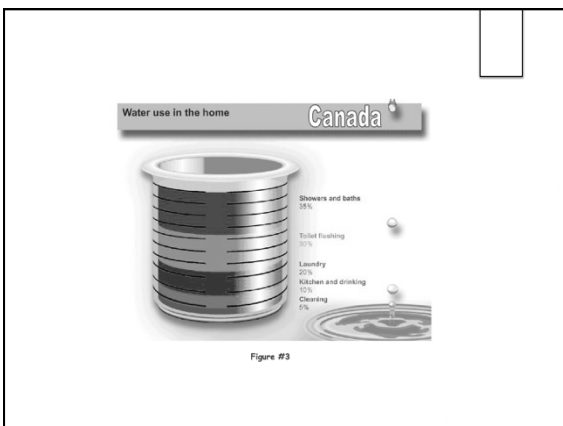


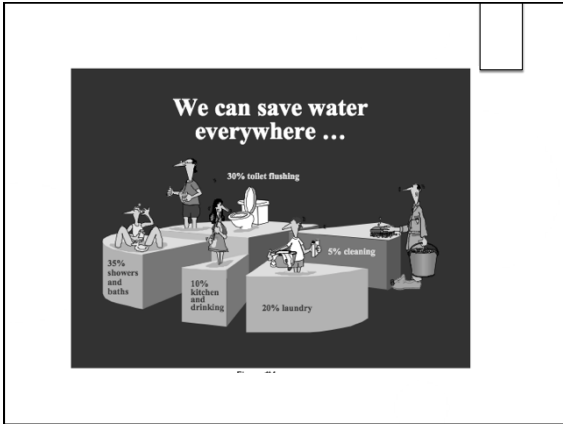
"The threat of nuclear weapons and man's ability to destroy the environment are really alarming. And yet there are other almost imperceptible changes - I am thinking of the exhaustion of our natural resources, and especially of soil erosion - and these are perhaps more dangerous still, because once we begin to feel their repercussions it will be too late."

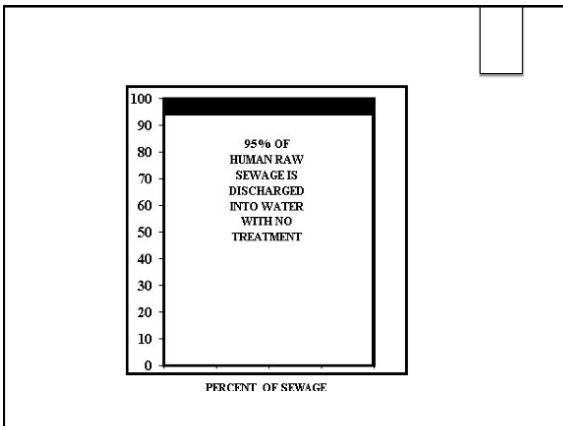
(p144 of The Daily Mirror's Collection of Great Quotes 2002, Element Books, London)

Figure #12







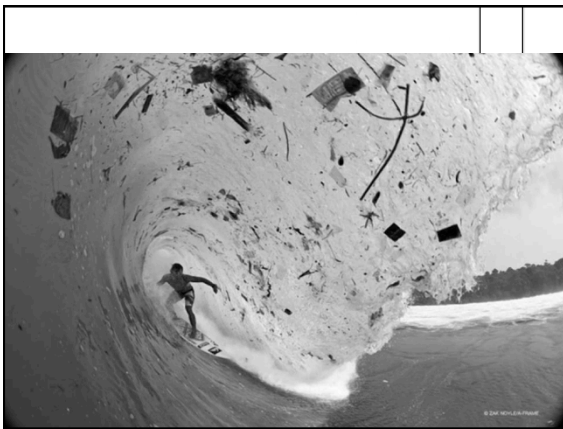


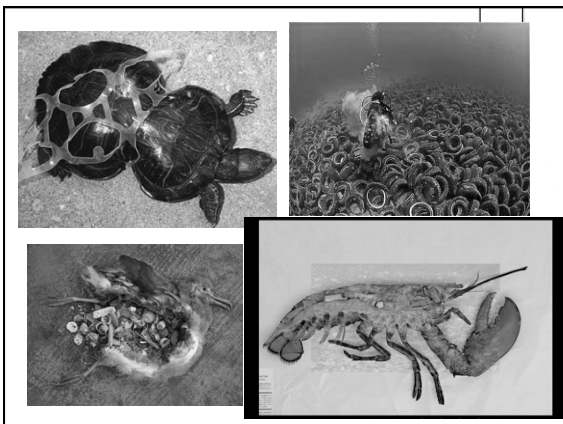
Global Water Pollution

- ▶ Estimates suggest that nearly 1.5 billion people lack safe drinking water and that at least 5 million deaths per year can be attributed to waterborne diseases
- ▶ With over 70 % of the planet covered by oceans, people have long acted as if these very bodies of water could serve as a limitless dumping ground for waste
- ▶ Raw sewage, garbage, oil spills overwhelm the diluting capabilities of the oceans
- ▶ Most coastal waters are now polluted
- ▶ Beaches around the world are closed regularly because of high amounts of bacteria from sewage disposal
- ▶ Marine wildlife is beginning to suffer

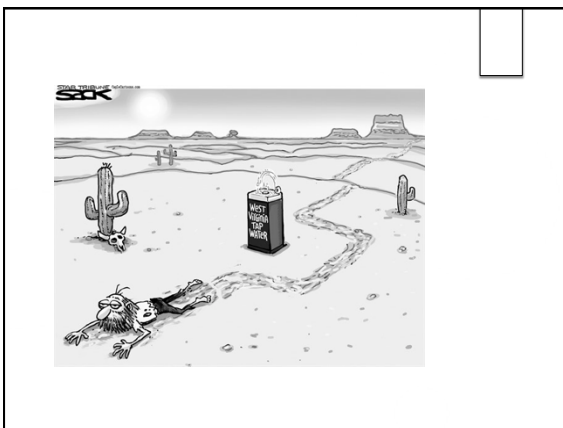
Garbage Patch

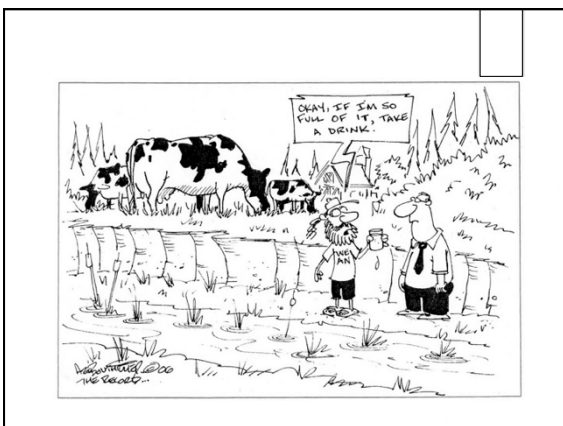


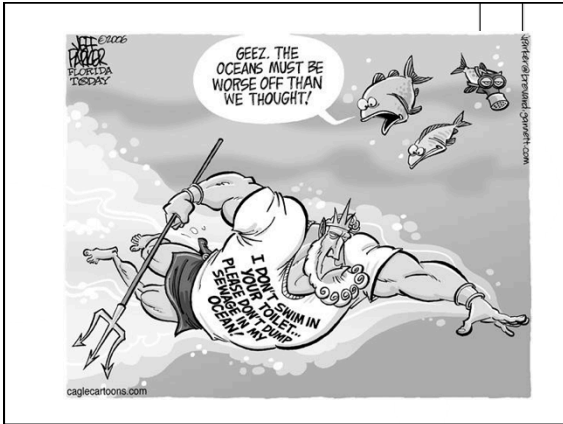














Provincial Exam – Help Solutions???

“GET R.E.A.L.”

- ▶ The following acronym can be used to organize information when answering government exam questions that focus on solutions and/or management strategies to environmental problems.

- R. Reduce, Reuse, Recycle
- E. Educate people about the dangers or consequences of the problems
- A. Alternatives. Provide people with alternatives to help solve problems
- L. Legislate laws to enforce rules that would help to solve the problem at hand

EXAMPLE:
Using your understanding of geography solutions that would help slow down global warming that is currently threatening northern ecosystems.

- R. Reduce the number of cars on the road. This would limit the amount of CO₂ in the atmosphere.
- Reuse and Recycle solid waste and other garbage from private house holds and industries. This would also limit the amount of greenhouse gases emitted.
- E. Educate citizens about the dangers of global warming like increased violent storms and rising sea levels that would impact their lives. Having an understanding of the dangers of global warming might change people's behaviour to slow down this process.
- A. Provide alternatives like public transportation for people to use to limit the amount of cars on the road and the amount CO₂ emitted. Development of alternative energy sources like wind and solar power would decrease CO₂.
- L. Legislate laws that require industries to find alternative energy sources. Legislate and enforce laws to decrease the number of cars on the road by providing tax incentives to people. (Carbon Tax)
