**Lesson 4.3 D**

**Water + Land Issues-KEY**

**You will be referring to the Counterpoints textbook for this section**

**Water**

Read pages 423-429 in **Counterpoints** and complete the following:

1. Only 3% of the world’s water is **FRESH** water. 78% of that water is in the form of **ICE** **CAPS** and the remaining water is underground as **GROUNDWATER**.
2. Falling groundwater tables and **DIVERSIONS** are the main causes of water shortages.
3. 40% of the world’s agricultural harvests come from **IRRAGATED** cropland.
4. Refer to Figure 17-3. The main use of fresh water is **AGRICULTURE**
5. Many farmers tap underground water supplies called **AQUIFERS** for irrigating their crops. The major problem with this is that these underground water supplies do not **REPLENISH** quickly and can cause the water table to **FALL** causing serious environmental + heath consequences.
6. The Ogallala Aquifer under the Great Plains of the US took **THOUSANDS** OF years to fill, but has taken 50 years to be reduced by **½** .
7. List 3 ways surface water is abused in Canada

* **DISPOSAL OF SEWAGE**
* **AGRICULTURAL + INDUSTRIAL WASTE**
* **TANKER ACCIDENTS**

1. One solution to water issues is to practice **CONSERVATION** and **SUSTAINABLE** water management. Two examples of this are:

* **USING RAINWATER**
* **RECYCLE WATER**

**Land**

Read pages 434-445 in **Counterpoints** and complete the following:

**Agriculture and Soils**

1. Only 11% of the land surface of the Earth can be used for crops, yet soils are being lost and degraded through a process called **DESERTIFICATION.**
2. **OVERGRAZING** grasslands, poor **FARMING** techniques, and **IRRIGRIGATION** in arid regions are all causes of desertification
3. The increasing use, in developed and developing nations, of **PESTICIDES** and **HERBCIDES** has lead to **STERILE** soils and chemical residues in **FOODS.**
4. Agricultural CHEMICALS can be dangerous as they can seep into **GROUNDWATER + STREAMS** as well as being harmful to the WORKERS who are in contact with sprayed plants.
5. These chemicals are also harmful to **INSECTS** that are needed in agriculture.
6. **GMO’S** are plants that are altered by splicing a gene from another organism into them. These foods are controversial: Those in favour of them claim they are little **DIFFERENT** from regular crops and that have been tested and approved by **GOVERNMENT**. Those opposed to them are concerned about the lack of **LONGTERM** testing, they could **MIX** with other crops, and they will make farmers dependent on **MULTINATIONAL** seed companies.

**Declining Forests**

1. Almost **½** the forests that covered the Earth before humans began agriculture have been reduced. The rate at which forests are lost are a concern because of the loss of B**IODIVERSITY** on earth and because forests **ABSORB** carbon dioxide and give off oxygen. In this way deforestation is a cause of **GLOBALWARMING**.
2. Tropical forests are being depleted by setting up cattle **GRAZING**, building **ROADS** for oil and gas exploration, and for the E**XPORT** of hardwoods. A key effect of deforestation in tropical regions is soil **EROSION** which can cause **FLOODS**.
3. Temperate and northern forests make up **20%** of the Earth’s land cover. Canada has **¼** of the world’s temperate coastal forests, 1/3 of the world’s **BOREAL** forests, and virtually ALL of the world’s old growth pine.
4. Canada’s boreal forests are threatened by industrial **DEVELOPMENT**, climate change, **ACID** precipitation (rain), and forest **FIRES**. One of the key consequences of the decline will be wildlife **EXTINCTION**.
5. Canada’s coastal forests are also threatened largely due to the **FOREST** industry which is a key part of the province’s economy. Conservation has focused on protecting the rich, **OLD GROWTH** watersheds, but only a small portion has been protected.
6. Protecting the coastal forests can be accomplished through careful S**TEWARDSHIP** or sustainable management of the forests and by using less paper and **PACKAGING.** 1/5 of all the wood harvested ends up in **PAPER** and makes up 40% of solid waste in the world.