



Water: Our Most Valuable Resource (Besides You Students)

Ch. 13 (p. 432-436)

The Indispensable Resource

- We require at least 5 litres of fresh water each day to remain in good health
- Also, much fresh water is needed for agriculture and industry
- Only 3% of the world's water is fresh water
 - Most fresh water is frozen in ice caps and glaciers, the rest is in liquid form underground (groundwater) and on the surface (lakes and rivers)
- Canada has a large amount of fresh water
 - 20% of the world's fresh water

Underground Water

- Fresh water underground is called groundwater and is stored in aquifers, areas deep beneath the Earth's surface that can be accessed by wells
- Much groundwater is used for agriculture to irrigate farmland
 - 70% of all fresh water use
 - Herbicides and other chemicals can seep into and pollute groundwater
- Groundwater is more cheap to access than surface water and does not need to be stored in reservoirs

Underground Water

- Unfortunately, aquifers are slow to refill, unlike rivers and lakes
 - Groundwater in aquifers comes from surface water slowly seeping into the Earth through permeable (ie. porous) rock
- Water Table
 - The top level of groundwater (ie. closest to the surface) – see p. 433
 - Overpumping of groundwater leads to falling water tables and makes the water harder to get
 - Major farming nations, such as the US, China, and India, are experiencing this problem

Surface Water

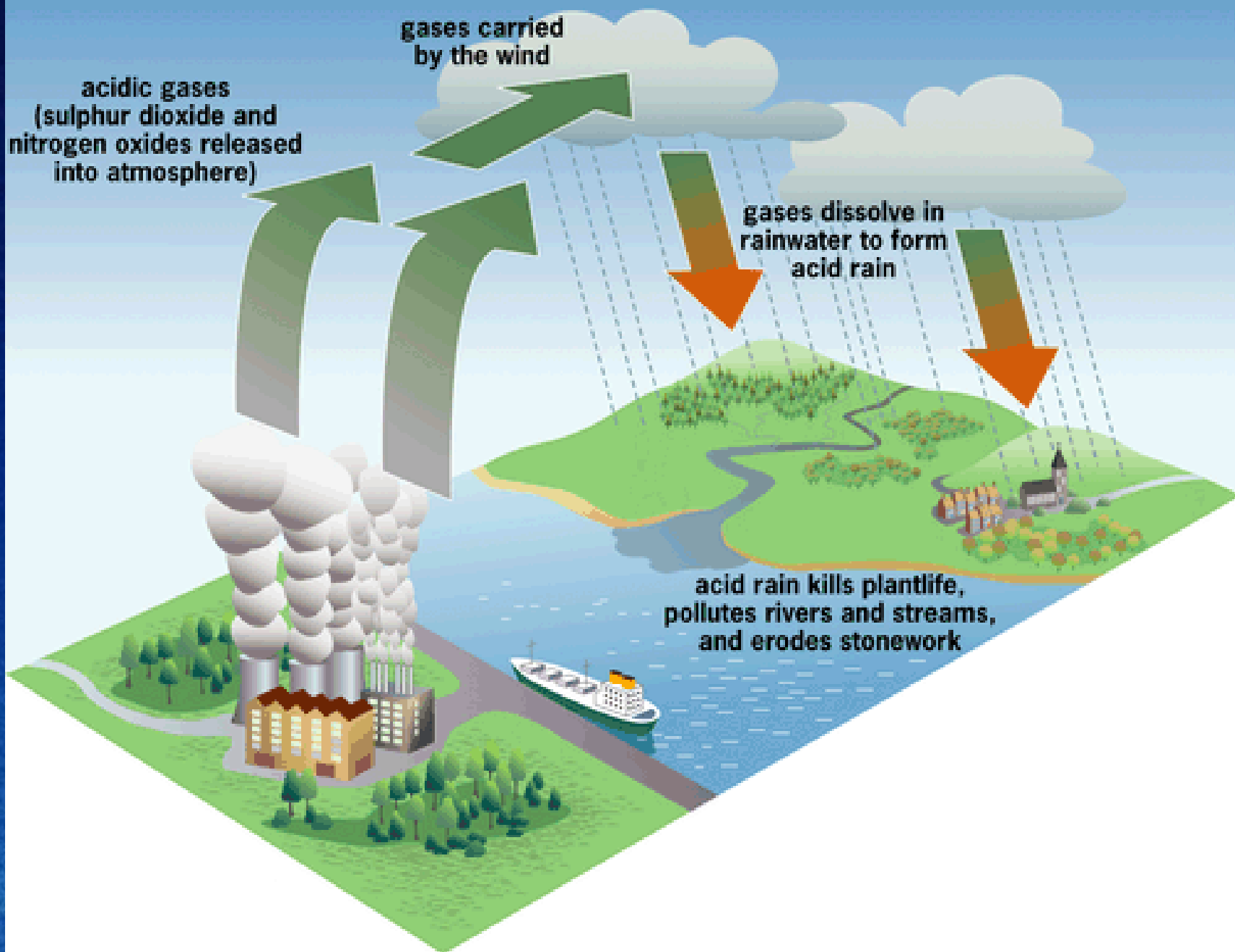
- Surface water (lakes, rivers, coastal waters) is very vulnerable to pollution
 - Municipal pollution (sewage, household chemicals) and agricultural chemicals
 - Industrial pollution has the largest impact on the quality of Canada's fresh water
 - Industrial waste often dumped into rivers and oceans
 - Industrial emissions are the main cause of acid precipitation in Canada
 - Acid precipitation damages vegetation and the soil, and also decreases the quality of fresh water

acidic gases
(sulphur dioxide and
nitrogen oxides released
into atmosphere)

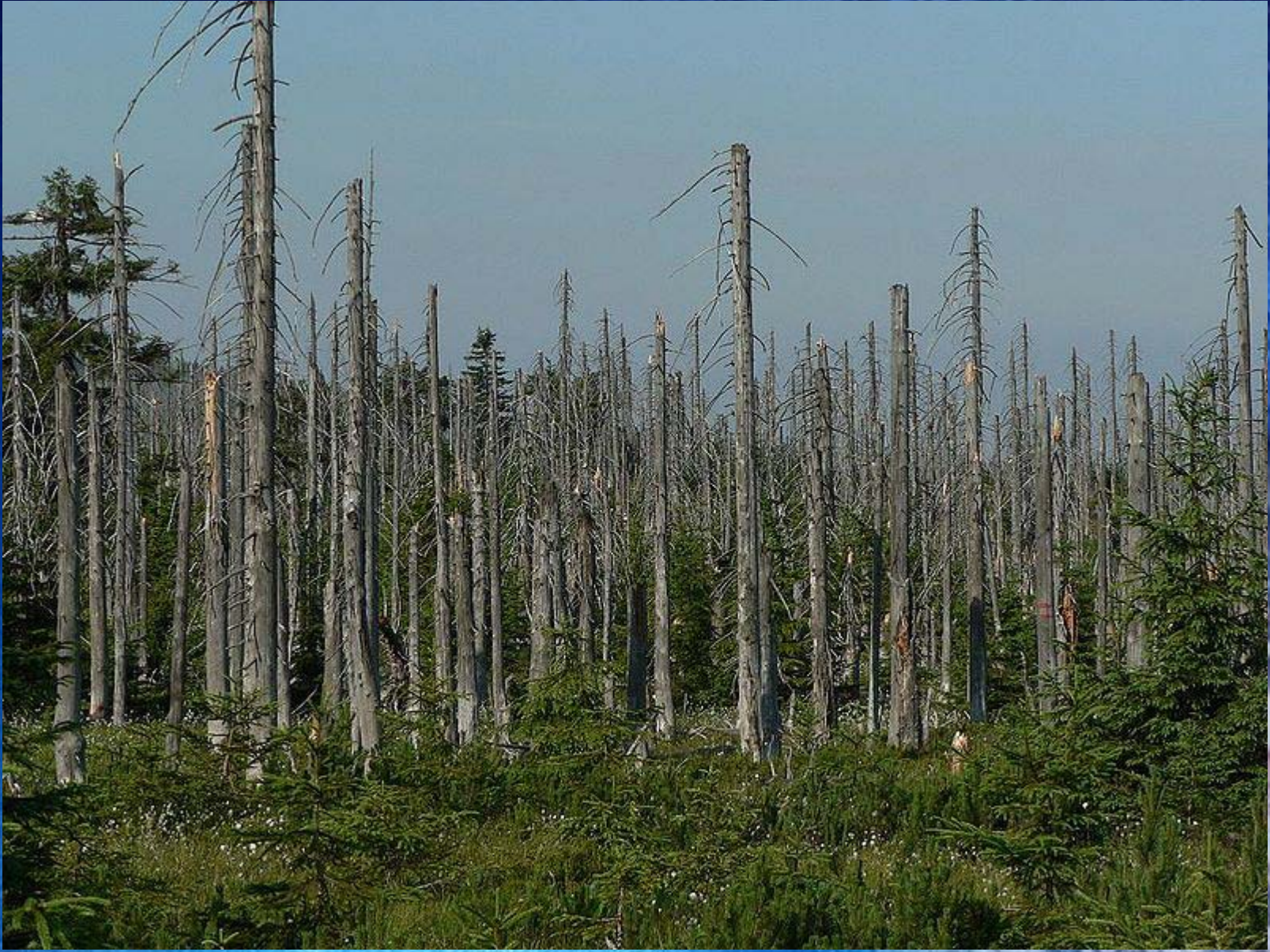
gases carried
by the wind

gases dissolve in
rainwater to form
acid rain

acid rain kills plantlife,
pollutes rivers and streams,
and erodes stonework



Acid Precipitation



Protecting Fresh Water

- Conservation (Using Less)
 - Residential: low-flow and efficient appliances
 - Agriculture: low-energy sprinklers and drip irrigation
 - Industrial: using reclaimed or recycled water
- Stricter pollution controls
 - Ban on damaging agricultural chemicals and herbicides
 - Reducing harmful industrial emissions
- Water Tax?

CD Animation

