

Lecture 8 Feb 15, 2012.

Environmental science FFY471, Env physics FYP350

Lecture on Water and, brief in the end, on Air pollution

The shortage of pure water is one of the major environmental and health problems in the world. Maybe it is in a near future of the same magnitude as the climate issue.

The lecture on water is a preparation before the final written exam

In the lecture, the following material was shown as OH and has the character of headlines, which were discussed.

To prepare for the exam, study the two water chapters, on Water resources and on Water pollution.

The water resources

Useable water

Less than 1% (some say 0,024%) of the water on the earth is readily available to us as liquid freshwater in accessible groundwater deposits and in lakes, rivers, and streams.

but

the world's freshwater supply is continually recycled in the hydrologic cycle.

Freshwater from groundwater and surface water.

Groundwater:

- close to the surface
- zone of saturation
- water table
- aquifers

Surface water

- surface runoff
- reliable surface runoff
 - the reliable surface runoff is the fraction of surface runoff to be counted as a freshwater source

Water shortage

Factors causing water scarcity are

- a dry climate
- drought
- too many people using a supply of water
- wasteful use of water

How to have more freshwater

- extract groundwater
- build more dams
- transfer water from one place to another
- convert salty seawater to freshwater

Desalination. Two principal methods
Distillation
Reverse osmosis

(Study these methods more closely.)

Water consumption in the world

agriculture	70%
industry	20%
domestic use	10%

Reducing water waste

Water wasted through evaporation, leaks, and other losses
Water for irrigation.

Water pollution

Leading causes of water pollution

- 1) agricultural activities
- 2) industry
- 3) mining

Water pollutants

Water pollution in streams and lakes
Eutrophication

Groundwater pollution

Ocean water pollution

How to deal with water pollution?