

Focus on resources: Water, Soil, Minerals, and Forests (*Environment* chs. 14, 15, 16, 18—passages)

Chapter 14: Water (6th: 311-317 and 321-325, 7th: 304-310 and 314-319)

- What is **surface water**? How is it different than **groundwater**? (see Figure 14.5)
- Where do **aquifers** exist, and why are they so important for the world's water supply?
- Is groundwater a renewable or nonrenewable resource, and in what sense?
- What accounts for the large majority of the world's water use?
- How does urban development affect **runoff** and groundwater absorption? (see 14.6)
- What are the causes and effects of **aquifer depletion** and **saltwater intrusion**?
- How is climate change predicted to alter the hydrological cycle in different parts of the world?
- What are the dangers to the world's **water tables** as more and more groundwater is used for global agriculture, etc – India is especially vulnerable in this regard. What can happen when the water table is depleted?
- Why are water resources presented as classic 'public goods' resources requiring international cooperation?
- What happened to the **Aral Sea**, and how could it have been prevented? (Figure 14.17, 14.18 in 7th)
- Why would a view of private property that extends 'to the center of the earth' present a problem here?

Chapter 15: Soil (6th: 335-340 and 344-349, 7th: 328-333 and 337-342)

- Why did the Chinese government build millions of trees along its Northern border?
- What is soil? How do **topography** and geological events like receding glaciers contribute to soil fertility?
- Soil is made up of: mineral particles, organic matter, water, and air... What is **humus**? **Soil organisms**?
- What happens to water that is neither absorbed soil nor expelled as runoff?
 - How does **leaching** contribute to the different **soil horizons** in a given patch of land?
- What are the various causes of **soil erosion**?
- How do certain agricultural practices contribute to **mineral depletion** (Figure 15.12)
- Why do tropical rainforests have nutrient-poor soils?
- In what climactic regions does soil **salinization** occur most frequently?
- What is **desertification**? What region of the world is at the greatest current risk for large-scale desertification?

Chapter 16: Mineral Resources (6th: 355-357, 7th: 349-352)

- What was the **General Mining Law of 1872**? What were its effects on the American landscape?
- What are some different kinds of minerals, how are they formed, and where are they found?
- Are minerals distributed evenly throughout the world? Are they consumed evenly? What social and political effects does this disparity in production and consumption create? (read this chapter's section on international issues if you're interested)

Chapter 18: section on Forests (403-407)

- What is **transpiration**? What are some of the various **ecosystem services** trees provide?
- How is an old-growth forest different from a tree plantation?
- What are some of the tenets of **sustainable forestry**, and what are some of the causes of **deforestation**?
- Methods of harvesting trees (Figure 18.7)
 - Selective cutting
 - Shelterwood cutting
 - Seed tree cutting
 - Clearcutting