

APES Chapter 9 and 14 Review Items

List the tests that are run on DRINKING water...what are we testing for?...What does a bad test tell us/what does it mean if its above or below some acceptable level?

List the tests that are run on STREAM or RIVER HABITAT water...what are we testing for?...What does a bad result mean?...What are some possible sources of contamination that is found?

List and briefly describe the steps involved in modern (best available technology) wastewater treatment. What processes are involved? What is being removed...how?what becomes of those materials?

What laws protect water resources (discuss surface waters, wetlands, and groundwater) in the US? What are the key provisions/tenets of those laws, and what group(s) is/are responsible for enforcing them?

List and describe some of the (at least 3) specific and immediate threats to the Great Lakes. How are these threats being addressed?

Review information on Wetlands including laws protecting.

More Chapter 9 and 14 test items

Chapter 9

Water uses in the US? Trends? Gray water vs. wastewater? Global uses of water?

Pluses and minus of desalination?

Water uses in agriculture: various types of irrigation...what is hydroponics?

Water diversions...aqueducts...effects on other waters (estuaries)...downstream issues.

Dams...uses of the water...impacts...problems to ecosystems downstream...salmon?

Levees and dikes...basic structure and functions

Nutrient impacts on lakes...oligotrophic, mesotrophic, eutrophic

Groundwater...aquifers ...confined vs unconfined...wells...artesian springs...water table.

Problems for groundwater...salinization...over-pumping at wells...cone of depression?

Recharge and pollution issues for groundwater resources/aquifers.

Freshwater as % of total global water...where those freshwater resources are located?

Chapter 14

Chesapeake Bay issues...effects of nutrients.

Cultural eutrophication...what happens to aquatic ecosystems?

Point and non-point sources of pollution...challenges and examples

Wastewater sources...hazards and problems...what is BOD...what it does?

What is a deadzone? What are the causes and impacts?

Dealing with wastewater...septic systems...manure lagoons...risks of coliforms.

Wastewater treatment plants...various stages of treatment...dealing with sludge

Various roles of bacteria in the process? And the affects of sewage overflows in the US?

Other pollutants and their sources:

Lead, phosphate, mercury, arsenic, impact of sulfates (formation of acid rain)

Synthetic chemical pollutants and their sources, uses...etc.

Hormones, Pharmaceuticals, DDT, Perchlorates, PCB's, Pesticides, Phosphates, Nitrates.

Oil spills and oil contamination...Deepwater Horizon...how much spilled...day...total?

Oil spill response...methods?

Solid waste in water...litter...plastics...North Pacific Gyre.

Impacts of thermal and noise pollution in water

Legislation:

Clean Water Act...what is protects...doesn't protect

Safe Drinking Water Act...establishing MCL's...what are they?

How much is allowed (Giardia, Fecal Coliforms, Arsenic, Mercury)

What does "green" wastewater treatment work? What are the components?