Lecture 14 Some Environmental Concerns

I. *Marine Pollution*

A. Defined: Introduction by humans into the oceans material or energy that causes, resource harm, is a health hazard, hinders marine activity, or degrades quality of use

B. Marine Debris

C. Oil pollution

1. Largest Source:
2. Tanker Operations Contribute:
3. Tanker accidents contribute only about:
4. Cleanup of major oil spills has often caused more damage than the oil itself
   a. Use of detergents to disperse oil
   b. Hot water jets to clean shoreline
   c. Vigorous scrubbing
   d. In many cases untreated areas actually recovered faster than aggressively treated
5. Current strategies
   a. Keep the oil offshore (use booms and skimmers)
   b. Carefully scoop up from sediments
   c. When feasible add nutrients to facilitate bacterial degradation (bioremediation)
   d. Know when to stop!

D. Nutrient Pollution or _____

1. Excessive input of nutrients can stimulate excessive phytoplankton growth
2. Provides lots of organic matter to deeper waters
3. Decay of the material leads to depletion of_____
4. Animals suffocate creating _____

E. Sewage: sludge of organic and inorganic compounds, microorganisms and heavy metals. Much of it comprised of human waste loaded with bacteria and viruses (some that cause) disease

1. Sewage problems:
2. Minimal problems if treated and dispersed adequately (offshore sewer outfalls)
3. Common phrase “Solution to Pollution is Dilution”

II. *Harmful Algal Blooms*

A. Frequently called "red tides", but not the preferred term
Why?
B. A HAB is:
C. HABS caused by:
D. Contributing Factors
1.
2.
3.
E. Hazard to animal and human health through consumption of fish, shellfish
F. Types of HAB-related Shellfish poisoning
1. Paralytic – interrupt heart, breathing (death)
2. Neurotoxic – pain, aches, dizziness, tingling (death)
3. Diarrhetic – diarrhea, vomiting, nausea
4. Amnesic – permanent loss of short-term memory

III. *Bioaccumulation or Biomagnification*

A. At each successively higher trophic level, the concentration:
B. Why?