

2.3 Effect of Bioaccumulation on Ecosystems – Student Notes

- Amphibians are valuable _____ of environmental health because they're sensitive to chemical changes.
- Since the 80s the world amphibian population has _____ & birth deformities have _____.
- This may be due to: _____, increased UV rays, _____, habitat loss, _____.
- _____: a slow build up of chemicals in the bodies of organisms.
 - If bioaccumulation occurs in a _____, it can affect every other organism in its far reaching _____.
- Eg. Bioaccumulation of PCBs in the B.C. Orcas.
 - PCBs will affect the reproductive cycles of Orcas until at least 2030, even though they were banned in '77.
- Chemicals like _____ and _____ & other insecticides are called _____.
 - _____ contain _____, & remain in water & soil for many years (like all organic comp)
 - _____, even at low levels (5 _____) causes nervous, immune & reproductive system disorders in animals. [ppm = parts per million]
- _____ also _____.
 - Lead, cadmium & mercury are the most dangerous.
 - _____ is not considered safe at any level, it can cause anemia, nervous & reproductive system damage.
 - _____ is toxic to earthworms & causes many health problems in fish.
 - Cadmium causes _____, _____, _____ damage in humans (exposure to cigarette smoke).
- _____ enters ecosystems through burning of fossil fuels, waste incineration, mining & the manufacture of batteries.
 - Coal burning adds _____ of the mercury released.
 - Mercury _____ in the brain, heart & kidneys of many animals (Fish _____ mercury, adding risk for any organisms eating fish).
- Reducing the effects of chemical pollution
 - If chemicals are trapped in the soil, they cannot enter the _____ as easily.
 - _____: micro-organisms or plants are used to help clean up, and are then removed from the ecosystem.Eg. The oil industry will often use bacteria to “eat” oil spills.
- _____: the consumers in each _____ receive larger doses of accumulated chemicals than the one before it.

The bioaccumulation of PCBs begins with the absorption of the chemicals by microscopic plants and algae.