

Food Webs

- In reality– most organisms eat a variety of foods
 - Season
 - Availability
 - Habitat
- Organisms that eat many different types of foods are called generalists
 - Ex. American black bear, raccoon, skunk
- Food webs are interlocking, interconnecting food chains; present in most ecosystems
- Increased complexity=increased stability

Bioaccumulation

- The accumulation and increase in concentration of toxic substances in food chains
- A lot of toxins are fat soluble-cannot be easily removed from fat tissue “lipophilic”
 - DDT (and other pesticides), lead, PCBs, estrogen, mercury
- Concentration increases as you move up food chain
- Can be very dangerous for higher trophic levels
- Concentration can increase a million times from water to eagle

Bioaccumulation of DDT

- Dichlorodiphenyltrichloroethane
- Insecticide commonly used before being banned in 1970s
- Bioaccumulation of DDT almost wiped the Bald Eagle to extinction!
- Now being used to control mosquitoes and malaria in Africa

Bioaccumulation of PCBs

- Polychlorinated biphenyls
- Used in plastics, paints, adhesives, flame retardants
- Endocrine disruptor in humans and animals
- Fat soluble-- passed in fatty tissue, yolk in eggs, or breast milk
- Bioaccumulation of PCBs has been shown in seabirds, whales, fishes, seals, humans

Why are pregnant women supposed to avoid eating some fish?

- Mercury accumulation in predatory fish
- Avoid: tuna, swordfish, tilefish, shark, king mackerel
- Mercury bioaccumulates in a woman's fatty tissues, and is passed to baby in breast milk