

Biocatastrophe: A Glossary of Terminology

ASTDR: agency... Source of the Public Health Statement: Polycyclic Aromatic Hydrocarbons (PAHs).

abiotic media:

acceleration of global warming:

acid rain:

agricultural biotechnology:

agrigenetics: For profit genetic manipulation of crops, which decrease the range of genetic variation and therefore increase crop vulnerability through genetic conformity and gene pool erosion.

albedo: a reflection of sunlight by snow pack and ice cover and ultraviolet radiation by the ozone layer in the stratosphere

aliphatic petrochemicals: organic chemicals with a chain of carbon atoms

alkylphenols:

anthropogenic petrochemicals:

anthropogenic radioactivity:

aromatic hydrocarbons:

aromatic petrochemicals: organic compounds that contain, or are derived from a benzene ring.

autism: developmental disorder characterized by impaired verbal and nonverbal communication skills, a restricted range of interests, lack of eye contact, resistance to change, obsessive body movements, social isolation, and insensitivity to the feelings of others.

avian bird flu:

bacteriophages: any of the viruses that infect bacteria.

Badge-4OH:

biodiversity:

biofuels disaster:

biogeochemical cycles: Transfer and bio-concentration of organic and inorganic materials in the biosphere manifested in the circular pulses of chemical elements moving back and forth between organisms and the environment.

biological significance: Having the capacity to cause adverse health effects or genetic modifications in biotic media, including humans.

biological spectrum of ecology: protoplasm, cells, tissues, organs, organ systems, organisms, populations, biotic communities, ecosystems, biosphere.

biologically significant isotopes:

biomass fuel:

biomagnifications: The phenomena of increasing concentration ratios of ecotoxins higher trophic levels.

biomedical technology:

biosphere:

biotechnology:

biotic media:

biotransformation: aerobic or anaerobic degradation of ecotoxins in terrestrial or aquatic environments.

bisphenol A (BPA): hormone disrupter

body burdens:

brominated flame retardant (PBDE – polybrominated diphenyl ethers):

carbofurans: class of ____ pesticides (POP – class I toxins).

carbon footprint:

chemicals as prime movers: doing work

chemosphere: The biosphere is biotic media living within the abiotic chemosphere.

chlorofluorocarbons:

cholinesterase: enzyme in avian brain and nerve cells that is a bioindicator of exposure to toxic chemicals.

contaminant pulse: The presence of biologically significant persistent organic pollutants (POPs) and other ecotoxins in abiotic and biotic media, often measured in parts per billion or parts per trillion.

contaminant signals: Traces of ecotoxins in abiotic and biotic media and in pathways to human consumption derived from local, regional, and global source points. See global contaminant signal.

cracking: A thermal decomposition above 350° (e.g. coking)

critical mass: Minimum quantity of a fissionable material, such as plutonium 239 (atomic bombs 16 kg) and tritium (hydrogen bomb +/- 4 kg) needed to initiate the *runaway chain reaction* of the splitting of atoms, which is the source of the power of atomic weapons.

crypto-fascism:

deforestation:

DDT: a synthetic, organic biocide developed during WWII for the chemical control of the environment.

dehydrogenation:

dioxin:

dioxin family:

ecology: Study of the relationship between living organisms and their biology and their interaction with the biogeochemical cycles of the environment, i.e. the dynamic interaction and interrelationships of the constituents of the biotic environment (microorganisms, plants, and animals) and the abiotic environment (atmosphere, soils, geology, and aquatic environments). That branch of biology that deals with the interrelationship of organisms and their environment.

Eco-nits: (neo-conservative Christian fascists, anti-Yucca Mountain environmentalists, least safe radioactive waste storage)

ecosystem: An interactive community of plants, animals, and microorganisms existing within the context of biomes. The biosphere as a unit is the earth's largest ecosystem and is constituted by the synergistic interaction of terrestrial, marine, lacustrine, estuarine, and riverine ecosystems (primordial ground of the life cycles of natural organisms). (rate of photosynthesis).

ecosystem collapse:

ecosystem degradation:

ecotoxin:

emerging technologies:

emerging viral infections:

endocrine hormone system:

essential nutrients:

essential fatty acids (linolenic, linoleic)

essential amino acids (histidine, isoleucine, lysine, methionine, phenylalanine, threonine, tryptophan, valine, arginine)

vitamins (biotin, choline, folate, niacin, pantothenic acid, riboflavin, thiamine, vitamins A, B6, B12, C, D, E, K)

dietary minerals (calcium, chloride, cobalt, copper, iodine, iron, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, selenium, sodium, sulfur, zinc)

ethoxylates alkylphenols:

ethylene: the most important chemical building block (produced during the intermediate stages of refinement operations)

flashover event: the unexpected incineration of highly populated urban or suburban areas on an environment characterized by extensive anthropogenic and natural combustibles, such as gas pipelines, motor vehicles and their fuels, consumer products, industrial and commercial complexes, and natural vegetation. In the case of

the Los Angeles basin an earthquake occurring during a Santa Ana wind event could result in a flashover event over much of the basin within +/- 30 minutes.

formaldehyde:

functional habitat: physical and chemical environment of an ecosystem.

furans:

GMO:

gene pool erosion:

genetic technology: Biotechnology that alters the genetic constituents of biotic media by gene splicing, embryo engineering, controlled crossbreeding, genetic implants, or the use of micro-chemicals. Genetic technology poses a risk to biological diversity through the production of genetically altered organisms and persistent microbes, which have the potential to colonize and disrupt ecological niches.

global climate change:

global contaminant signal: Ecotoxins in abiotic and biotic media, which are subject to global transport mechanisms. Their deposition is often associated with rain and snow fall events and their contaminant events are magnified in the biotic media in which they bioaccumulate.

global transport: Hemispheric transport of ecotoxins by evaporation, solubilization, or particulates in the troposphere or in terrestrial or aquatic ecosystems.

global warfare:

greenhouse gas: Gasses that initiate global warming. The principal greenhouse gasses are water vapor, CO₂, and methane. Other greenhouse gasses include a variety of chlorofluorocarbons and other chemicals.

growth hormone:

hallogenation: introduction of chlorine or bromine into molecules of hydrocarbons.

heavy metal:

hemispheric transport mechanism:

homeostatic mechanism: Stabilize and integrate.

Human Toxome Project:

ISFSI (independent spent fuel storage installations):

incineration:

inventories and profiles:

Limits of Growth: An important report produced by the Club of Rome in 1972 postulating the future limits of population and industrial society growth (citation needed).

lipophilic: fat loving.

lipophilic synthetic contaminants: Fat loving ecotoxins, which, due to their solubility in living tissues, bioaccumulate in pathways to human consumption.

list of lists: (EPA)

lithosphere: solid, outermost layer of the geosphere (on Earth, the crust and top layer of the mantle).

MASA:

macrocommunity:

macroenvironment: The larger biomes and ecosystems of the biosphere.

mesopelagic: middle – area of the ocean that is not close to the bottom or to the surface.

methamidophos: class of _____ pesticides (POP – class I toxins).

methane: CH₄, an odorless, gaseous hydrocarbon derived from the decay of plant and animal matter, the chief component of natural gas and a common source material for the production of solvents and freon.

methylmercury:

microcommunity: interrelationship of microorganisms in an ecosystem.

microcosmo: interrelationship of communities of microorganisms living in a microenvironment.

monocrotophos: class of _____ pesticides (POP – class I toxins).

naphthalene: polyaromatic hydrocarbon with two fused benzene rings with the chemical formula of C₁₀H₈.

natural gas: source of chloromethanes, including chlorofluorocarbons, for refrigerants, aerosols, solvents, cleaners, grain fumigants, and degreasers.

neurotoxin:

niche: location of a particular organism within the ecosystem hierarchy.

nitrogen cycle:

nuclear waste legacy:

nuclear weapons-derived plume:

oceanic dead zone:

olefins:

organic petrochemical: contain carbon.

organochlorine contaminant:

organochlorine insecticides (DDT, chlordane):

organophosphate insecticide:

organophosphate insecticide metabolites – breakdown products of chlorpyrifos (malathion, nervous system toxicants):

ozone: a highly toxic gas.

ozone depletion:

ozone layer: Ozone concentrations are greatest in the upper troposphere between about 15 and 40 km, where they range from about 2 to 8 parts per million.

PAH (polyaromatic hydrocarbon): polycyclic aromatic hydrocarbon

PBB:

PBDE - poly-brominated diphenyl ethers:

PBT: persistent bioaccumulative toxin

PCBs:

PCN (polychlorinated naphthalene):

PFC (perfluorinated chemicals): Perfluorates are the main ecotoxin in Teflon (PFOA).

PVC (polyvinyl chloride):

pallisaded elite:

permafrost:

perchlorate:

pathway:

petrochemical classification:

pesticide resistant pathogen:

phosphorus cycle:

phthalates (plasticizers):

point source: The specific source of an ecotoxin, which then may have local or regional dispersion or may be distributed globally by hemispheric transport mechanisms.

polyaromatic hydrocarbons (PAH):

polychlorinated naphthalenes (PCNs):

population decline: (bobolinks, barn swallows, eastern kingbird).

post-apocalypse:

prime mover:

Animal/human power: <1350 AD

Sailing ships/water mills: 1350 – 1775

Steam engine/railroads: 1775 – 1890

Electric power grid/internal combustion engine: 1890 – 1945

Petrochemical/nuclear: 1945 – 1986

Post-industrial era/electronic media: 1986 – 2010

Cataclysmic climate change: 2010 -

Chemical fallout

pyrotechnic society: Communities that use fire to make glass, terra cotta (pottery), cement (lime), iron, and other metals; the primordial industrial basis for civilized society. Given the environmental consequences of pyrotechnic societies, (including climate change, resource depletion, and biologically significant chemical fallout) after five millennia of the growth and evolution of pyrotechnology and 250 years of the massive productivity and emissions of a full blown Industrial Revolution, pyrotechnological consumer societies may be sailing close to the wind, i.e. approaching a rubicon, after which biocatastrophe is inevitable.

RORSAT: Name for Russian radar ocean reconnaissance satellites launched between 1967 and 1988, powered by RTGs (nuclear power electrical generators) and used for surveillance of NATO and US merchant vessels.

RTG (radioisotope thermoelectric generator): Generators powered by the decay heat of radioisotopes. The decay heat is converted to electricity by thermocouples. Plutonium 238 is often used as a power source in US satellites. Uranium and Polonium 210 is often used in USSR spacecraft. In 1964, a SNAP 9A RTG power source disintegrated 50 kilometers above the earth's surface and released 17,000 ci of Pu₂₃₈, tripling the world wide inventory of this isotope and increasing the world's total inventory of all plutonium by 4%.

regional biocatastrophe:

SARS:

Safe Drinking Water Act: ...sets maximum contaminant levels for ecotoxins in drinking water e.g. 5 – 50 µgl for TCE, PCE, and tetrachloride.

salinization:

saprobe: Bacteria and fungi, the fundamental food producers of all ecosystems.

saturated paraffin hydrocarbons: (non-reactive)

sea level change:

stratosphere:

sustainable economies:

terrestrial dead zones:

terrestrial ecosystem: totality of the interaction of climate, soil, vegetation, saprobe communities, and animal communities.

tragedy of the commons:

trichlorine:

triclosan:

toxic content profile (TCP):

drinking water
agricultural runoff
Atmosphere
Soil
Fish (fresh and salt water)
Birds
Mammals, including humans

toxic emissions profile (TEP) – pathways (inhalation, absorption, ingestion)

Internal combustion engine profile

toxic input profile (TIP):

toxic release inventory (TRI) program: EPA database that contains “information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990” (<http://www.epa.gov/tri/>). See the EPCRA section 313 for a listing of toxic chemical categories.

trophic levels: Taxonomic classification of the nutrition levels (hierarchical strata) in which organisms feed in the food chain, i.e. bald eagles as well as humans feed at the top of the food chain. Fungi and other microorganisms are food producers at the bottom of the food chain.

troposphere:

unexpected events:

flashover (e.g. LA Basin)

washover (Long Island, Florida, Katrina)

volatile and semi-volatile organic chemicals: (benzene, etc.)

WEEE (waste electrical and electronic equipment): directive issued by the European Parliament and the Council of the European Union establishing the controlled management and disposal of waste electrical and electronic equipment by member states of the European Union. See Appendix ___ for a complete listing of all the electrical equipment and consumer products regulated by this directive.

Wall Street ecotoxins:

washout events (Chernobyl):

washover events: Unexpected coastal flooding due to hurricanes or other weather events.

water cycle:

world ecosystem: The totality of ecosystems in the environment, i.e. the biosphere.

zoonoses: diseases in microorganisms and animals that have the potential to infect humans.