Environmental Law

What is Environmental Law?

Humanity has been aware of its environment far longer than there have been laws to protect environments. Environmental law, or sometimes known as environmental and natural resources law, is a term used to explain regulations, statutes, local, national and international legislation, and treaties designed to protect the environment from damage and to explain the legal consequences of such damage towards governments or private entities or individuals **(1)**. As we will explain in the next section, it covers many areas, all with the same purpose already described here. However, the term “environmental law” does not just cover government legislation. It can also describe a desire by businesses and other organizations, and their regulators to work towards improving ethical principles by setting regulation and industry standards for operating licenses. These are not “laws” per se but act as such within a regulatory framework. It can also apply a method of land management on a kind of understanding of acting responsibly and ethically.

Similarly, impact assessment is not always legally required, but the permission to develop, construct, modify or engineer can often be refused if one is not carried out. These are voluntary regulations rather than law conducted for the good of the environment and the local population. For various reasons, environmental law has always been a flashpoint of controversy. Debates often center on cost, the necessity of such regulations, and the age-old friction between government regulation and encouraging the market to self-regulate and do the right thing for the good of everyone. For example, the ongoing debate over the impact of certain pesticides in agriculture, greenhouse gas emissions are often a battle between the science and industry's attempts to muddy the science and government lobbying to roll back legislation **(2)**. The other side of the debate is that current industry regulations and legislation are insufficient. Both sides regularly hold conferences to discuss aspects of environmental law and how they should go about getting them changed in their favor.

Whichever way we look at it, environmental law affects all of us - individual health, business activity, geographical sustainability, and the importance of preserving those for the future generations and economy.

Useful Environmental Law Terms

Abatement: The process of reducing the quantity, intensity, or saturation of a pollutant or other harmful substance by way of treatment.

Acidification: Reducing the pH rating of a substance making it more acidic in nature, for example, increased carbon emissions lead to the oceans absorbing more of it, increasing acidification and damaging ecology such as coral bleaching.

Active ingredient: Also used in medicine, the "active ingredient" in a chemical compound is the one that has the intended effect. In medicinal use, it's the substance that attacks the bacteria/virus/tumor. In pesticide use, it's the substance that kills or repels pests.

Air emissions: Any gas emitted into the atmosphere from industrial or commercial activity. Typically used in conjunction with "greenhouse gas" but some emissions are not GHGs.

Biodegradable: Used to describe substances and the ability of microorganisms (bacteria, algae) to break it down.

Biodiversity: The range of species in an ecology, examining population numbers of each species, number of species, the balance between predator and prey, and the food chain.

Biomass: The sum total of vegetation in a given ecological area.

Brownfields site: Land that has been developed in the past but is now underused or disused **(3)**. In some cases, they are risky due to potential contamination that may require investigation and treatment before construction or to simply protect the local environment.

Catalyst: A chemical compound that alters another to render it inert, less harmful, or less intense without removing some of its parts - usually adding to it.

Chlorofluorocarbons (CFCs): A group of inert chemical used in many industrial and everyday processes such as our refrigerators that are not broken down at lower atmospheric levels and rise to the upper levels, destroying ozone.

Climate change: The process by which the climate changes due to "forcings". These can be natural events or, as is the case at present, the result of industrial age actions in increasing greenhouse gases and reducing carbon sinks.

Commercial Waste: Any waste material produced as a byproduct of commercial or industrial activity.

Conservation: The preservation or restoration of a natural environment for the social, ecological, or even economical benefit. For example, a program of river conservation will increase biodiversity while making the surrounding environment and people who live there healthier.

Decontamination: The removal of toxic or other harmful substances from an environment. The substance may be harmful to wildlife, people, biodiversity or the overall ecology.

Drainage: The process of removing excess moisture from land - typically wetlands or saturated agricultural land.

Dredging: The removal of silt, mud, or other sold material from the bed of a body of water. Too much of this material can cause flooding.

Emission: Any pollutant discharged into the atmosphere that will contribute to overall chemical change as it will not be broken down or otherwise removed.

Endangered species: Any species whose numbers and diversity is so low that they are at danger of becoming extinct.

Erosion: The process of land wearing away over time.

Energy Efficiency: The amount of energy harnessed from the combustion process (burning fuel). Machinery, motor vehicles, and our homes are said to be energy efficient the more energy that is extracted from lower or smaller volumes of the source.

Filtration: Removing solid waste and material from water in the process of wastewater treatment.

Fossil fuel: Any mineralized formerly organic material extracted from the ground and used in energy production: coal, natural gas, oil.

Greenfields site: The opposite of brownfield sites, it is typically land that has been used only for agricultural use, or forested area, that has never been developed for residential, commercial or industrial use (4).

Greenhouse gas: A group of gases known to be responsible for increasing the “greenhouse effect” - that is, gases that absorb infrared radiation and increase atmospheric density. They are water vapor, carbon dioxide, methane, nitrous oxide, ozone, CFCs, and hydrofluorocarbons.

Half-life: the time it takes for any pollutant (usually refers to radioactive material but also includes other toxic material) to halve its effect on the environment.

Hazardous material/substance: Any organic on inorganic material that can damage human health or the environment. This can include corrosive, toxic, explosive, flammable, or chemical reactants. Anything with this designation, of spilled in US waters, must be reported to the EPA.

Hazardous Waste: Similar to above, but waste material produced as a byproduct of any commercial or industrial activity that has the same dangerous attributes. As it is a waste, it serves no purpose on its own.

Indigenous species: A species of flora or fauna recognized as being native to a certain area. Often subject to specific environmental protections, especially when "endangered" (see above)

Indoor air (pollution): coming under OSHA rather than EPA, there are laws in place to ensure that employees work in a clean and safe environment with good ventilation. Indoor air is anything contained with a building. Indoor air pollution is any chemical or other substances contributing to an imbalance that could affect the health of the building's inhabitants.

Invasive species: A species of flora or fauna not native to a certain area, but one that has colonized it - usually presenting problems for native wildlife. Invasive species are sometimes subject to active control and deliberate removal

Landfill: An area of land set aside for the disposal of waste - usually commercial or residential of non-toxic waste although in the case of where they might contain such, treatment may be required to prevent pollution.

Margin of Safety: The designated upper limit of exposure to a potentially harmful substance before it becomes harmful. This can apply to human health and to environmental exposure.

Material Safety Data Sheet: An international standard form containing information relevant to a substance's toxicity, hazardousness, and potential environmental damage. It also explains proper protection equipment and what to do in the result of exposure (First Aid)

National Ambient Air Quality Standards (NAAQS): A set of EPA standards applying to the quality of outside air in the US.

National Emissions Standards for Hazardous Air Pollutants (NESHAP): A set of EPA standards on air pollutant emissions of chemicals that could cause serious permanent harm to wildlife or people or kill organic matter.

National Pollutant Discharge Elimination System (NPDES): Set up by the EPA to determine standards for clean water (part of the Clean Water Act). It prohibits the discharge of polluting chemicals into US waters unless a special permit is granted.

National Priorities List (NPL): The EPA keeps a registered list of sites in the US that have been abandoned due to the presence of hazardous waste and require long-term remedial action. They use a hazard ranking system and a fund is made available for remediation.

National Response Team (NRT): This is a team from 13 different Federal agencies that come together to coordinate federal responses to incidents such as natural disasters, oil spills, significant pollution emission, chemical releases and so on.

National Strike Force (NSF): an area of responsibility for the US Coast Guard, the NSF has three teams - one in the Atlantic area, one in the Pacific area, and the third in the coast area. Their job is to back up the federal On-Scene Coordinators in responding to the events mentioned in the NRT listing.

Ozone layer: A protective layer of gas in the upper atmosphere that absorbs the sun's must harmful radiation. Its depletion was one of the major problems of the 1980s.

Pollutant: A substance or material introduced into an environment that has negative or harmful effects to the ecology or specific biological species, or one that reduces the efficiency or safety of a resource.

Radiation: The transmission of energy through space. It can be ionizing or non-ionizing. The former is powerful enough to break bonds (x-rays) the latter is not (radio frequency)

Remediation: The process of removing toxic materials from an environment and the attempt to restore it to a previous state. This can be anything from asbestos, lead and other heavy metals, and radioactive isotopes.

Risk Assessment: An official investigation, usually required legally, to examine risk exposure and potential consequences under any scenario.

Sanctions: This legal term also exists outside of environmental law and it means the same thing. It's the application of measures against a polluter or other entity or person who breaks environmental law. Often, measures will include a ban on government contracts.

Sewage: Solid and liquid waste removed from residential properties, typically human waste but also includes anything that uses water to take it away. Sometimes called “wastewater”.

Smog: a portmanteau of “smoke” and “fog”. Smog is not natural, It is the direct result of emissions from industrial processes.

Toxic: A substance is labeled “toxic” if it is poisonous or otherwise harmful to the health of biological organisms or an ecology.

Vulnerable Zone: During a chemical leak, it will be necessary to track its most likely path based on meteorological data. The vulnerable zone is the area where the airborne pollutant or chemical might because problematic.

Water budget: What is the difference between the water stock and the water used? Increasingly important in drought-hit areas, it's important to monitor and manage water supplies to ensure we don't use more than is available.

Water table: The “typical” level of water beneath solid ground. It's higher during wet periods and lower during drier spells.

Wetlands: A wetland is an area of land that has a high water table or one that is typically flooded for most of the time. It can be tidal or non-tidal and includes marshes and floodplains. The Everglades National Park is one such example. They are often a haven for wildlife and subject to protections to preserve their unique profile.