



## **Definitions**

(A Teaching Aid)

Learning about ecological impacts of human actions (or inactions) does not have to be a boring task. Since playing Survival is so much fun, it can function as a great tool to make these relations more visible. To help you teach some of the global and environmental connections better you may want to use the following definitions.

Source: Wikipedia.org

**Survival** - A natural process resulting in the evolution of organisms best adapted to their environment. If an organism does not adapt to changes in its environment or causes changes in the environment that threaten its living conditions it may go extinct.

**Consumerism** - Equation of personal happiness with the purchase of material possessions and consumption. Also, people purchasing goods and consuming materials in excess of their basic needs. Consumerist societies are more prone to damage the environment, contribute to climate change and use up resources at a higher rate than other societies.

**Waste** - To use, consume, spend, or expend without thinking or caring much. It means spending or expending without restraint and often without creating the desired change. Waste is also an unwanted or undesired material or substance. Many different types of waste have negative impacts upon the wider environment.

**Pollution** - The contamination of air, water, or soil by substances that are harmful to living organisms. Pollution can occur naturally, for example through volcanic eruptions, or as the result of human activities, such as the spilling of oil or disposal of industrial waste.

**Overpopulation** - The population of an environment by a particular species in

excess of the environment's carrying capacity. Dense population of an area to the point of overcrowding leads to disappearance of natural resources, or environmental deterioration.

**Greediness** - Excessive want to get or have, especially wishing to possess more than what one needs or deserves.

**Ignorance** - The state or condition of being unaware, uneducated, or uninformed. It inhibits one's ability to make good decisions. Also: The condition of knowing something but refusing to take notice of it.

**Scientist** - Person who uses the scientific method. A scientist wants to discover how processes or phenomena on this planet work and can be explained.

**Science** – System of gaining knowledge based on the scientific method. The knowledge must be based on observable phenomena and needs to be repeatable by other researchers working under the same conditions.

**Engineer** - A person who uses his/her knowledge to solve practical problems often with the help of machines or mechanical devices.

**Forest Ranger** - A person charged with protecting and preserving protected park lands (national, state or

provincial parks, forests (then called a forest ranger), wilderness areas, as well as other natural resources and protected cultural resources.

**Green Activism** - Broad philosophy and social movement centered on a concern for the conservation and improvement of the natural environment. A **green activist** is a person who may advocate the sustainable management of resources and stewardship of the natural environment through changes in public policy or individual behavior. In various ways environmentalists and environmental organizations seek to give the natural world a stronger voice in human affairs.

**Endangered Species** - A population of an organism which is at risk of becoming extinct because it is either small in numbers or threatened by the change of its environment. There are predictions that up to 20 percent of all living populations could become extinct within 30 years (by 2028) and estimates that if current rates of human destruction of the biosphere continue, one-half of all species of life on earth will be extinct in 100 years.

**Polar Bear** - A large, white-furred bear living in Arctic regions. The polar bear requires the Northern Ocean to freeze to hunt, sleep, mate, etc. and may become extinct if the sea ice in the North disappears during the summer time.

**P.P.A.** – Planet Protection Agency. Fictional agency charged with protecting human health and with safeguarding the natural environment. Its (fictional) headquarter is in Nairobi, Kenya. Like so often, a global organization like this has little power and cannot do more than ask questions.

**Nairobi** - The capital and largest city of Kenya. The name "Nairobi" comes from the Massai phrase *Enkare Nyirobi*, which translates to "the place of cool waters". Nairobi is now one of the most prominent cities in Africa politically and financially. It is home to many companies and organizations, including the United Nations Environment Program and the UN Office in Africa.

**Kenya** - The **Republic of Kenya** is a country in East Africa. It is bordered by Ethiopia to the north, Somalia to the northeast, Tanzania to the south, Uganda to the west, and Sudan to the northwest, with the Indian Ocean running along the southeast border. The country is named after Mount Kenya, a very significant landmark and the second highest mountain in Africa.

**Mother Nature** - Common representation of nature that focuses on the life-giving and nurturing features of nature by embodying it in the form of the mother.

**Symbiosis** - A close, long-term partnership between two or more different organisms of different species that may result in benefits for each member.

**Genetically Modified Organism** - is an organism whose genetic material has been changed using genetic engineering techniques. Some see the creation and use of GMOs as intolerable meddling with biological states or processes that have naturally evolved over long periods of time, while others are concerned about the limitations of modern science to fully understand all of the potential negative consequences of genetic manipulation. Other controversies include the possibility of unforeseen local and global effects as a result of the uncontrolled spreading of genetically modified organisms.

**Air** - A gas needed for humans and other air-breathing beings to live. It is a colorless, odorless, tasteless, gas mixture, containing mainly nitrogen (~ 78%) and oxygen (~ 21%) with lesser amounts of argon, carbon dioxide (CO<sub>2</sub>), hydrogen, neon, helium, and other gases.

**Water** - A clear, colorless, odorless, and tasteless liquid required for most plant and animal life. It freezes at 0°C (32°F) and boils at 100°C (212°F). Its specific gravity (at 4°C) is 1.000 gr/cm<sup>3</sup>. Depending on the temperature, humidity

and activity level, a human being can live without water for maybe 3 days.

**Energy** - The capacity or power to do work, such as the capacity to move an object (of a given mass) by the application of force. Energy can exist in a variety of forms, such as electrical, mechanical, chemical, thermal, or nuclear, and can be transformed from one form to another.

**Clean Energy** - Method of production of energy that does not pollute the air, water, and soil. Clean energy can be produced by wind power, water power, solar power, muscle power, and other sources. Zero emission vehicles do not create pollution at the location they are used. However, they may create pollution somewhere else on this planet unless the energy to operate them is made with clean energy sources.

**Ozone Layer** – Second layer in Earth's atmosphere which contains relatively high concentrations of ozone (O<sub>3</sub>). This layer absorbs 97-99% of the sun's high frequency ultraviolet light, which is potentially damaging to life on earth.

**Weather** - Common weather phenomena include such things as wind, cloud, rain, snow, fog and dust storms. Less common events include natural disasters such as tornadoes, hurricanes and ice storms. Weather is

one of the fundamental processes that shape the Earth. Inadvertent weather may pose serious threats to many aspects of civilization, including ecosystems, natural resources, food and fiber production, economic development, and human health.

**Biodiversity** - The variability among living organisms on Earth, including the variability within and between species and within and between ecosystems. There are many benefits of biodiversity in the sense of one diverse group helping another. Examples are among others: (1) controlling the spread of certain diseases, (2) providing food and medicines using natural compounds found in plants, animals, and microorganisms, (3) creating building materials, such as fibers, dyes, resins, gums, adhesives, rubber and oil, and (4) playing a part in regulating the chemistry of our atmosphere and water supply. Biodiversity is directly involved in recycling nutrients (5) and providing fertile soils (6).

**Sea Food** - Any sea animal or seaweed that is served as food or is suitable for eating, particularly seawater animals, such as fish and shellfish (including mollusks and crustaceans). Research into population trends of various species of seafood is pointing to a global collapse of seafood species in the next decades. Such a collapse would occur

due to pollution and over-fishing, threatening oceanic ecosystems.

**Algae** - are a large and diverse group of organisms, ranging from unicellular to multi-cellular forms. They are photosynthetic, like plants, and lack the many distinct organs found in land plants. It is estimated that algae are responsible for 73% to 87% of the global production of oxygen. The largest and most complex forms are called seaweeds. The various sorts of algae play significant roles in aquatic ecology. Microscopic forms that live suspended in water provide the food base for most marine food chains. Others are used as human food or harvested for useful substances such as agar, carrageenan, or fertilizer. Algae can be used to make biodiesel and bioethanol and by some estimates can produce vastly superior amounts of vegetable oil, compared to terrestrial crops grown for the same purpose.

**Fish** - Aquatic vertebrate animals that are typically cold-blooded, covered with scales, and equipped with two sets of paired fins and several unpaired fins. They are of tremendous importance as food for people around the world, either collected from the wild or farmed in much the same way as cattle or chickens. Fish is consumed as food all over the world; with other sea foods, it provides the world's prime source of high-quality protein. 14–16%

of the animal protein consumed world-wide is from fish. Over one billion people rely on fish as their primary source of animal protein.

**Plankton** – Any drifting organism that inhabits the oceans, seas, or bodies of fresh water. It is a description of life-style rather than a genetic classification. They are widely considered to be some of the most important organisms on Earth, due to the food supply they provide to most aquatic life.

**Farm Land** - Land cultivated for the purpose of agricultural production, e.g. used for the raising and breeding of domestic animals or growing of plants for food or making of materials.

**Farm Animal** - Domesticated animal intentionally raised in an agricultural setting to produce such as food or fiber, or for its labor. Farm animals may be raised for subsistence or for profit. Raising animals is an important component of modern agriculture. While farm animals increase the wellbeing of many humans in many areas, the livestock sector (primarily cattle, chickens, and pigs) emerges as one of the top two or three most significant contributors to our most serious environmental problems, at every scale from local to global. Farm animals are responsible for 18% of the world's greenhouse gas emissions as measured in CO<sub>2</sub> equivalents. By comparison, the world's entire

transportation sector emits 13.5% of the CO<sub>2</sub>.

**Edible Plant** - Any plant with parts that are safely edible by humans. Although about 80% of humans' food supply comes from just 20 kinds of plants, humans use at least 40,000 species of plants (and animals) a day.

**Insects** - Most diverse group of animals on the Earth, with over a million described species - potentially representing over 90% of the life forms on the planet if estimates for yet not discovered insects are considered. A serious environmental problem today is the decline of populations of pollinator insects, and a number of species of insects are now raised for pollination management in order to have sufficient pollinators in the field, orchard or greenhouse at bloom time.

**Pollination** - Trade between plants that need to reproduce and pollinators (often insects) that receive rewards of nectar and pollen. The largest managed pollination event in the world is in Californian almond orchards, where nearly one million hives (= half of the US honey bees) are trucked to the almond orchards each spring.

**Fungi** - Human use of fungi for food preparation or preservation and other purposes is extensive and has a long history: yeasts are required for fermentation of beer, wine and bread;

some other fungal species are used in the production of soy sauce and tempeh. Mushroom farming and mushroom gathering are large industries in many countries. Although often inconspicuous, fungi occur in every environment on Earth and play very important roles in most ecosystems. As decomposers, they play an indispensable role in nutrient cycling, degrading organic matter to inorganic molecules, which can then be metabolized by plants or other organisms.

**Bacteria** - (or microorganisms) are vital to humans and the environment, as they participate in the Earth's element cycles such as the carbon cycle and nitrogen cycle, as well as fulfilling other vital roles in virtually all ecosystems, such as recycling other organisms' dead remains and waste products through decomposition. Microorganisms are used in brewing, winemaking, baking, pickling and other food-making processes, as well as to control the fermentation process in the production of yogurt and cheese. Microbes are used in the biological treatment of sewage and industrial waste.

**Soil Fertility** - Characteristic of soil that supports abundant plant life. In particular the term is used to describe agricultural and garden soil. **Fertile soil** is rich in nutrients necessary for basic plant nutrition. It contains organic

matter that improves soil structure and soil moisture retention. It has a good soil structure, creating well drained soil. It contains a range of microorganisms that support plant growth, as well as large amounts of topsoil.

**Soil contamination** is the presence of man-made chemicals or other alteration in the natural soil environment. This type of contamination typically arises from the rupture of underground storage tanks, application of pesticides, leaching of wastes from landfills, or direct discharge of industrial wastes to the soil. The most common chemicals involved are petroleum hydrocarbons, solvents, pesticides, lead and other heavy metals.

**Immune System** - Collection of mechanisms within an organism that protects against disease by identifying and killing pathogens and tumor cells. In developed countries, obesity, alcoholism, and illegal drug abuse are common causes of poor immune function. However, malnutrition is the most common cause of immunodeficiency in developing countries.

**Antibiotics** - Chemotherapeutic agent that inhibits or abolishes the growth of micro-organisms. The term originally referred to any agent with biological

activity against living organisms; however, "antibiotic" now refers to substances with anti-bacterial, anti-fungal, or anti-parasitical activity. Antibiotic resistance has become a serious problem in both developed and underdeveloped nations. Antibiotics may not to be removed through normal sewage processing and there are growing concerns about the fate of antibiotics in the environment and their possible effects on the aquatic ecosystem.

**Intelligence** - The ability to comprehend; to understand and profit from experience. Intelligence is needed to make good decisions.

**Knowledge** - the psychological result of perception and learning and reasoning. Familiarity, awareness, or understanding gained through experience or study.

**Human Rights** - Basic rights and freedoms to which all humans are entitled. Examples of human rights include the right to life and liberty, freedom of expression, and equality before the law; and social, cultural and economic rights, including the right to participate in culture, the right to food, the right to work, and the right to education. Human Rights have impact on the environment because people whose human rights are not respected have more important things to worry

about than the protection of the environment.

**Peace** - State of harmony or the absence of hostility. If peace is not present, the environment turns irrelevant. People living during times of war (= the opposite of peace) are forced to focus on their short-term survival and cannot worry about their long-term impact of their actions on the environment. Even worse, to gain an advantage it is often desired by the fighting parties to damage or destroy the enemy's living environment (which of course is your environment as well unless you live on a different planet).