DOWNLOAD PDF THE ENVIRONMENT OF LIFE

Chapter 1 : Design for the Environment Life-Cycle Assessments | Safer Choice | US EPA

Taking care of the environment is an important responsibility shared by every individual, family, and organization. While it may seem like a monumental task, there are many things you can do in your everyday life to help take care of the planet and encourage others to do the same.

Lake A lake from Latin lacus is a terrain feature , a body of water that is localized to the bottom of basin. A body of water is considered a lake when it is inland, is not part of an ocean , and is larger and deeper than a pond. Natural lakes on Earth are generally found in mountainous areas, rift zones , and areas with ongoing or recent glaciation. Other lakes are found in endorheic basins or along the courses of mature rivers. In some parts of the world, there are many lakes because of chaotic drainage patterns left over from the last Ice Age. All lakes are temporary over geologic time scales, as they will slowly fill in with sediments or spill out of the basin containing them. Pond A pond is a body of standing water , either natural or man-made, that is usually smaller than a lake. A wide variety of man-made bodies of water are classified as ponds, including water gardens designed for aesthetic ornamentation, fish ponds designed for commercial fish breeding, and solar ponds designed to store thermal energy. Ponds and lakes are distinguished from streams by their current speed. While currents in streams are easily observed, ponds and lakes possess thermally driven micro-currents and moderate wind driven currents. These features distinguish a pond from many other aquatic terrain features, such as stream pools and tide pools. Human impact on water[edit] Humans impact the water in different ways such as modifying rivers through dams and stream channelization , urbanization , and deforestation. These impact lake levels, groundwater conditions, water pollution, thermal pollution, and marine pollution. Humans modify rivers by using direct channel manipulation. Dams are good for humans, some communities need the reservoirs to survive. However, reservoirs and dams may negatively impact the environment and wildlife. Dams stops fish migration and the moving of organisms down stream. Urbanization effects the environment because of deforestation and changing lake levels, groundwater conditions, etc. Deforestation and urbanization go hand in hand. Deforestation may cause flooding, declining stream flow, and changes in riverside vegetation. The changing vegetation occurs because when trees cannot get adequate water they start to deteriorate, leading to a decreased food supply for the wildlife in an area. Lightning is an atmospheric discharge of electricity accompanied by thunder , which occurs during thunderstorms and certain other natural conditions. The remaining gases are often referred to as trace gases, [13] among which are the greenhouse gases such as water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Filtered air includes trace amounts of many other chemical compounds. Air also contains a variable amount of water vapor and suspensions of water droplets and ice crystals seen as clouds. Many natural substances may be present in tiny amounts in an unfiltered air sample, including dust , pollen and spores , sea spray , volcanic ash , and meteoroids. Various industrial pollutants also may be present, such as chlorine elementary or in compounds , fluorine compounds, elemental mercury , and sulphur compounds such as sulphur dioxide [SO2]. The atmosphere also retains heat during the night, thereby reducing the daily temperature extremes. These layers are mainly determined by whether temperature increases or decreases with altitude. From highest to lowest, these layers are: The top of the thermosphere is the bottom of the exosphere, called the exobase. It is the layer where most meteors burn up upon entering the atmosphere. The troposphere is mostly heated by transfer of energy from the surface, so on average the lowest part of the troposphere is warmest and temperature decreases with altitude. The tropopause is the boundary between the troposphere and stratosphere. Other layers Within the five principal layers determined by temperature are several layers determined by other properties. The ozone layer is contained within the stratosphere. It forms the inner edge of the magnetosphere. The homosphere and heterosphere: The homosphere includes the troposphere, stratosphere, and mesosphere. The upper part of the heterosphere is composed almost completely of hydrogen, the lightest element. Effects of global warming[edit] The Retreat of glaciers since of Aletsch Glacier in the Swiss Alps situation in , and , due to global warming. Effects of global warming The potential dangers of global warming are being increasingly studied by a wide global consortium of scientists. These scientists are increasingly concerned

about the potential long-term effects of global warming on our natural environment and on the planet. It is clear the planet is warming, and warming rapidly. The most recent report from the Intergovernmental Panel on Climate Change the group of the leading climate scientists in the world concluded that the earth will warm anywhere from 2. Some examples of recent collaboration to address climate change and global warming include: Another view of the Aletsch Glacier in the Swiss Alps and because of global warming it has been decreasing The United Nations Framework Convention Treaty and convention on Climate Change, to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. A common solution is to adapt a static view neglecting natural variances to exist. Methodologically, this view could be defended when looking at processes which change slowly and short time series, while the problem arrives when fast processes turns essential in the object of the study.

Chapter 2 : Environment | Definition of Environment by Merriam-Webster

LIFE is the EU's financial instrument supporting environmental, nature conservation and climate action projects throughout the EU. Since , LIFE has co-financed more than projects. For the funding period, LIFE will contribute approximately â‚¬ billion to the protection of the environment and climate.

However, nanotechnology may also present unintended health risks or changes to the environment. It is presumed that some of these chemicals may present new, unexpected challenges to human health, and their safety should be evaluated prior to release. These cross-cutting issues are not yet understood well enough to inform the development of systems for measuring and tracking their impact. Further exploration is warranted. The environmental health landscape will continue to evolve and may present opportunities for additional research, analysis, and monitoring. Blood Lead Levels As of , there are approximately 4 million houses or buildings that have children living in them who are potentially being exposed to lead. Nearly half a million U. Since no safe blood lead level have been identified for children, any exposure should be taken seriously. However, since lead exposure often occurs with no obvious signs or symptoms, it often remains unrecognized. References 1 World Health Organization. Preventing disease through healthy environments. Status and trends through Impact of regional climate change on human health. Climate change, air quality, and human health. Am J Prev Med. Environmental health, from global to local. Biological interactions of carbon-based nanomaterials: From coronation to degradation. Health and the Built Environment: Am J Public Health.

Chapter 3 : The Effects: Environment | Nutrient Pollution | US EPA

The LIFE (the Financial Instrument for the Environment) Regulation, which was published on 20 December , sets a budget for the next funding period, , of â‚¬ billion in current prices.

Radiation from the sun breaks certain chemical bonds, creating break down products. Microbes Bacteria and fungi can break down chemicals, creating biodegradation products. This makes removal from the body easier. Water Water breaks chemicals apart to make pieces that dissolve better in water hydrolysis. This is typically a very slow process. Dissociation Chemicals can break apart into smaller pieces dissociation products. Pesticide half-lives are often determined in a laboratory. There, conditions like temperature can be controlled and closely monitored. Soil, water, or plant material is mixed with a known amount of a pesticide. The material is then sampled and tested over time to determine how long it takes for half of the chemical to break down. Field studies are also performed for some chemicals. A known amount of the pesticide is mixed with soil, water, or plant material. It is then placed in an outdoor environment where it is exposed to various environmental conditions and tested over time. Field studies provide researchers with a more realistic idea of how the pesticide will act in the environment. However, half-life values from such studies can vary greatly depending on the exact conditions. Before a pesticide product is registered , manufacturers measure their half-lives. You can find their research results in a variety of databases , books, and peer-reviewed articles. If you need help, call the National Pesticide Information Center. What happens to pesticides after they "go away"? Instead, it forms new chemicals that may be more or less toxic than the original chemical. Generally, they are broken into smaller and smaller pieces until only carbon dioxide, water, and minerals are left. Microbes often play a large role in this process. In addition, some chemicals may not break down initially. Instead, they might move away from their original location. It all depends on the chemical and the environmental conditions. The soil half-life of five pesticides. For more detailed information about pesticide half-lives please visit the list of referenced resources below or call the National Pesticide Information Center, Monday - Friday, between 8: NPIC provides objective, science-based answers to questions about pesticides. May Please cite as: Pesticide Properties in the Environment; Springer: New York, , pp , Illustrated handbook of physical-chemical properties and environmental fate for organic chemicals; CRC Press: Boca Raton, FL, , pp Fundamentals of Ecotoxicology, 2nd ed. Boca Raton, FL, , pp , , Fate and Transport of Organic Chemicals in the Environment: A Practical Guide, 2nd ed. Rockville, MD, , Chapters Washington, DC, , Chapter 4, Table Label Review Manual; U. Washington, DC, , Chapter 5. Data Requirements for Pesticides, Product Chemistry. Code of Federal Regulations, Part , Title 40, NPIC fact sheets are designed to answer questions that are commonly asked by the general public about pesticides that are regulated by the U. Environmental Protection Agency U. This document is intended to be educational in nature and helpful to consumers for making decisions about pesticide use.

Chapter 4 : 10 Ways Humans Impact the Environment

10 Ways Humans Impact the Environment. Take a look at 10 ways humans have left a footprint that has forever changed the environment and the planet.

Asian Development Bank We as humans have become dependent on luxuries such as cars, houses, and even our cell phones. But what does our love for manufactured metallic and plastic goods do to the environment? Human activity can be directly attributed to the cause of hundreds of extinctions in the last two centuries, versus the millions of years that extinctions naturally occur. Human impact on the environment has become one of the main topics for university staff all over the world. While they search for the answer, the public needs to do its part. At least, you need to be aware of all the factors that contribute to this state and share the knowledge. Here are 10 ways that humans have impacted the environment, and what that could mean for the future. Overpopulation Survival used to mean repopulating. That, however, is quickly becoming true for the opposite as we reach the maximum carrying capacity that our planet can sustain. Overpopulation has grown into an epidemic since mortality rates have decreased, medicine has improved, and methods of industrial farming were introduced, thus keeping humans alive for much longer and increasing the total population. The effects of overpopulation are quite severe, with one of the most severe being the degradation of the environment. Humans require space, and lots of it whether it is for farmland, or industries which also takes up tons of space. Another issue is our dependency on coal and fossil fuels for energy, the larger the population, the more fossil fuels will be used. Although processed materials are necessary to power the cities, the previous assessment tells us that the planet can only sustain so much damage until it will begin to damage us. Pollution Pollution is everywhere. Pollution is so bad that to date, 2. Humanity is continuously polluting indispensable resources like air, water, and soil which requires millions of years to replenish. Air is arguably the most polluted with the US producing million metric tons of air pollution each year alone. People thought they were under foreign attack as the smog burned their eyes and left an odor of bleach in the air. That is when the devastating effect of aerosols was discovered. While air quality in the US has slightly improved, the quality in developing countries continues to plummet as smog continuously blocks out the sun in a dense shroud of pollution. This is just one of the issues we have to tackle in near future. Global Warming Global warming is arguably the greatest cause of impact to the environment. As the Temperature increases, arctic land ice and glaciers melt which causes the ocean levels to rise at a rate of 3. Climate Change Climate change is closely connected to historical developement of industry and technology. While some areas will experience longer growing seasons, others will become barren wastelands as water will deplete in vast areas, turning once floral regions into deserts. The increase will impact weather patterns, promising more intense hurricanes in both size and frequency, as well as intensifying and prolonging droughts and heat waves. But air pollution does not just affect the environment. The evidence is mounting that poor air quality and rising temperatures are ruining delicate ecosystems, even leading to increased asthma and cancer rates in humans. Genetic Modification Genetically modified organisms GMOs have been a major contributor to the survival and prosperity of humans. However, just as humans have a learning immune system, certain weeds have developed a resistance to 22 of 25 known herbicides, with species of weeds completely immune according to the latest scientific report. One of the only solutions is to till the land, turning over the soil to kill the weeds and give an early advantage to the planted crops. The disadvantage of tilling, however, is that it causes the soil to dry faster and kills off good bacteria, making its fertile lifespan significantly shorter. To replenish the depleted soil, fertilizer is used, which introduces a whole new set of problems to the environment and can be disastrous for local agriculture in the long run. The acidity depletes the calcium concentrations, making it difficult for crustaceans to build their shell, leaving them vulnerable without their armor. However, acidification is not the only watery threat as there are other human activities causing severe changes. Not only is garbage introduced into the oceans, but also the excessive amounts of fertilizer that finds its way into the ocean through rains, floods, winds, or dumped in excess right into the largest producer of oxygen we have. MrThomson Phytoplankton and algae thrive off of nitrogen, causing excessive growth in what is known as " red tides" or "brown tides" in

areas with high concentrations of nitrogen. The brown tide is caused by the rapid growth of billions of algae, which deplete water bodies of oxygen and cause poison to accumulate in all life that consumes it, including fish and birds. But water pollution does not end there. Steven Guerrisi Year after year, millions of tons of garbage is dumped into the ocean. Since the garbage mainly consists of plastics, it is largely indissoluble. The garbage accumulates in large vortexes across the ocean. Marine life, including the loggerhead sea turtles, are tricked into thinking they are eating food when really it is only a floating plastic bag or other poisonous plastic that will cause starvation or suffocation to any unfortunate animal that mistakenly ingests it. Pollution is the number one threat to all aquatic life and is lead cause of reduced biodiversity. This is really sad given that water and water life-forms are some of the most important natural resources at our disposal. Deforestation With an exponential expansion in human beings, more food, materials, and shelter are being manufactured at stupendous rates, mostly stemming from forestry. Forests are cleared to make way for new humans, which in turn, makes more humans, you can see the problem. With trees being one of the largest producers of oxygen, clearly that is not a good thing for humans- and especially not for the animals that call the forest home. With millions of different species that live in forests, deforestation is a major threat to their survival and a big conservation issue. It also increases the greenhouse gases within the atmosphere which leads to further global warming. Such human activities need to stop if we wish to survive. When the rain falls, it accumulates in water bodies which is especially harmful for lakes and small bodies of water. The ground surrounding the water soaks up the acid, depleting the soil of essential nutrients. Trees that absorb the acid accumulate toxins that damage leaves and slowly kills large areas of forest. Acid rain has also been known to completely eliminate entire species of fish, causing a snowball effect of damage to the ecosystem that relies on diverse organisms to sustain the environment. Ozone Depletio The ozone layer is renowned for its ability to absorb harmful UV rays that would otherwise be detrimental to the health of all walks of life. Without an ozone layer, walking outside would be unbearable. The human impact is devastating for plants that are extremely sensitive to UV light including wheat and barley , two indispensable crops to humans. Until then, slap on that sunscreen and be safe out there. Clara Don It is imperative that we support the earth that we live on, but no matter what, the earth will live on. Human impacts the natural habitat in so many ways and we need to be aware of our personal environmental input. Whether we live with it or not solely depends on the decisions and actions we make next. Mother nature is an unrelenting, unforgiving force, so it is probably best if we treat her well, and maybe, just maybe we can make up for the damage that has already been dealt. The best time to act, was yesterday, the best we can do is today, but if we wait for tomorrow, it may just be too late. Society needs to help itself in order to survive. Written by Maverick Baker.

Chapter 5 : Caring about the environment essay life

It is the common understanding of natural environment that underlies environmentalism â€" a broad political, social, and philosophical movement that advocates various actions and policies in the interest of protecting what nature remains in the natural environment, or restoring or expanding the role of nature in this environment.

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Chapter 6 : Life - Wikipedia

Meanings of Environment. Descending from the Middle French preposition environ "around," environment, in its most basic meaning, is "that which surrounds."When preceded by the and unmodified, it usually refers to the natural world ("please don't litter if you care about the environment").

Organism The characteristics of life Since there is no unequivocal definition of life, most current definitions in biology are descriptive. Life is considered a characteristic of something that preserves, furthers or reinforces its existence in the given environment. This characteristic exhibits all or most of the following traits: Living things require energy to maintain internal organization homeostasis and to produce the other phenomena associated with life. A growing organism increases in size in all of its parts, rather than simply accumulating matter. A response is often expressed by motion; for example, the leaves of a plant turning toward the sun phototropism , and chemotaxis. These complex processes, called physiological functions , have underlying physical and chemical bases, as well as signaling and control mechanisms that are essential to maintaining life. Alternative definitions See also: Entropy and life From a physics perspective, living beings are thermodynamic systems with an organized molecular structure that can reproduce itself and evolve as survival dictates. One systemic definition of life is that living things are self-organizing and autopoietic self-producing. Virus Adenovirus as seen under an electron microscope Whether or not viruses should be considered as alive is controversial. They are most often considered as just replicators rather than forms of life. However, viruses do not metabolize and they require a host cell to make new products. Virus self-assembly within host cells has implications for the study of the origin of life , as it may support the hypothesis that life could have started as self-assembling organic molecules. Biophysicists have commented that living things function on negative entropy. These systems are maintained by flows of information, energy , and matter. Some scientists have proposed in the last few decades that a general living systems theory is required to explain the nature of life. Instead of examining phenomena by attempting to break things down into components, a general living systems theory explores phenomena in terms of dynamic patterns of the relationships of organisms with their environment. Gaia hypothesis The idea that the Earth is alive is found in philosophy and religion, but the first scientific discussion of it was by the Scottish scientist James Hutton. In , he stated that the Earth was a superorganism and that its proper study should be physiology. Hutton is considered the father of geology, but his idea of a living Earth was forgotten in the intense reductionism of the 19th century. Nonfractionability The first attempt at a general living systems theory for explaining the nature of life was in , by American biologist James Grier Miller. Specifically, he identified the "nonfractionability of components in an organism" as the fundamental difference between living systems and "biological machines. Morowitz explains it, life is a property of an ecological system rather than a single organism or species. Robert Ulanowicz highlights mutualism as the key to understand the systemic, order-generating behavior of life and ecosystems. Mathematical biology Complex systems biology CSB is a field of science that studies the emergence of complexity in functional organisms from the viewpoint of dynamic systems theory. A closely related approach to CSB and systems biology called relational biology is concerned mainly with understanding life processes in terms of the most important relations, and categories of such relations among the essential functional components of organisms; for multicellular organisms, this has been defined as "categorical biology", or a model representation of organisms as a category theory of biological relations, as well as an algebraic topology of the functional organization of living organisms in terms of their dynamic, complex networks of metabolic, genetic, and epigenetic processes and signaling pathways. The underlying order-generating process was concluded to be basically similar for both types of systems.

Chapter 7 : Pesticide Half-life

Humans interact with the environment constantly. These interactions affect quality of life, years of healthy life lived, and health disparities. The World Health Organization (WHO) defines environment, as it relates to health, as "all the physical, chemical, and biological factors external to a.

These issues often feel so vague and distant that we loose sight of them in our daily lives. But our actions today have a tremendous impact on the earth, its sustainability, and our future. We take our planet for granted. The Earth has always been here for us and we expect that it will always be, regardless of how we treat it or how we care for the life that inhabits it. But we know now, more than ever, that what we do has an impact. As humans, we have a responsibility to do right by the animals, plants, natural resources, and wonders of nature that surround us. It is up to us to protect our planet. Unfortunately, facing these issues can be overwhelming at best. At worst, our environmental issues are so intricately intertwined that solving any one of them, let alone all of them, can feel impossible. Our environmental issues are woven into a giant web that could take years of hard work to untangle. We know that, if we come together, these issues are not insurmountable. Through the strength of our community and by coming together to take action, we can turn the tide on climate change. Our lives depend on it. Our petitions cover a wide range of environmental issues, from protecting endangered wildlife to advocating for sustainable energy policy; from requesting better funding for climate change research to urging states to ban the use of pesticides. We partner with environmental and conservation organizations so that, together, we can create change. Together, we can speak out about pollution in our communities. We can urge our elected officials to consider the environment when they create policy. We can save the places we love on this earth and ensure that they are here for future generations to enjoy. When we stand together, anything is possible. When you create or sign a petition, you join a community united for good. Your signature conveys your support for the environmental issues that plague us today and your voice will be heard. When we stand together, our actions have an impact. When we unite for good, we can contribute to the solution.

Chapter 8 : Environmental Health | Healthy People

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Chapter 9 : Nature and the Environment in Amish Life

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