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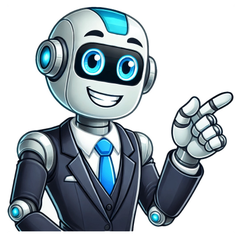

Online customers support the Terrapass Global Portfolio, a diverse mix of projects guided by Oxford Principles for Net Zero Aligned Offsetting. Spanning North America, Asia, and South America, the portfolio includes six project typesReforestation, REDD+, Landfill Gas Capture, Orphan Oil Well Closure, Industrial Emission Reduction, and Residential Solar Installation. It incorporates both carbon removal and reductions (avoidance) credits through a blend of nature-based and engineered solutions. 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Thats why we make it easy for you to offset the carbon emissions created by your everyday activities.With actionable sustainability solutions and flexible and convenient offset packages that support verifiedcarbon reduction projects, we can restore the planets carbon balance and create an environment where future generations can live and thrive. We provide a wide range of carbon offset products to meet diverse needs, including flexible monthly subscriptions, one-time purchases, and offsets for everyday activities like air travel, making it simple and convenient to incorporate climate action into daily life. Use our advance carbon calculator to identify where CO2 emissions occur in your daily activities. We offer a range of affordable products and subscription plans designed to offset your impact. Your purchase of carbon credits funds projects that reduce CO2 and offset your remaining carbon footprint. 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ShareAlike If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. A key element of life on Earth is biodiversity this is the term used to explain the wide variation of life on Earth. It goes beyond the various types of plant and animal species. Biodiversity is responsible for the healthy function of our worlds ecosystems. It contributes to human well-being and the health of our planet as a whole.This article will explain biodiversity and why its important. Well also detail the three different kinds of biodiversity. Now is the time to understand biodiversity, as we see life on Earth threatened by climate change and other factors. The human population has definitely affected Earths biodiversity, but its not too late to stop biodiversity loss.What Is Biodiversity?Biodiversity is an abbreviated form of the term biological diversity. It was first used by scientists in the 1980s. It refers to all variations of life on Earth, from the variety of life found within a single ecosystem to the differences between life across the entire planet.Biodiversity involves the study of animals, plants, fungi, and bacteria. It explores the differences between vertebrates, invertebrates, microorganisms, and other life on Earth. It looks into their evolution, how they function within ecosystems, and how they are spread around the Earth.All organisms are important to Earths biodiversity and contribute to maintaining healthy environments around the world.What Are the 3 Types of Biodiversity?sourceThere are three classifications of biodiversity: species diversity, genetic diversity, and ecosystem diversity. To better understand the types of biodiversity, lets look at each category using trees as our example.1) Species DiversitySpecies diversity studies the variations of biologically defined species. It looks into how many species are found worldwide and the number of organisms within each classification of species. Keeping an eye on how species respond to the changes they face in the wake of climate change is essential to understanding what we can do to preserve life on Earth moving forward.There are around 1.75 million confirmed species on our planet. However, many ecosystems have not yet been thoroughly studied, and estimates indicate that our world could have anywhere between 3 million and 100 million individual species.Species diversity in trees: There are many types of trees around the globe. In North America alone, there are 8,646 known, different species of trees, with an estimated ~2,400 species still to be discovered. The biodiversity of tree species is essential because different trees contribute to the overall ecosystem in various ways. Some trees bear fruit, providing food for animals and insects. Other trees have root systems that stabilize the soil. Each tree plays a unique role in the ecosystem where it exists.2) Genetic DiversityGenetic diversity observes variations of the genetic composition within a classified species. It seeks to understand gene variation amongst individual organisms within a species and general variations amongst groups of organisms within a species.Genetic diversity is beneficial, since it represents a better opportunity to adapt to changes in the environment. When a species has a diverse gene pool, it is more likely to successfully reproduce and survive in the long term. The individual organisms that have a genetic makeup that improves their chance of survival will prosper and pass these ideal genes onto their offspring. The ideal genetic makeup within individual organisms occurs as part of the process of evolution, in which the fittest organisms will survive. Genetic diversity provides species with the best opportunity for surviving climate change and other human-related transformations to the environment.Genetic diversity in trees: While trees of the same species have nearly identical genetic compositions, they are composed of slightly different genes that improve their chances of survival. Just like how humans have mild genetic variations that determine traits like our eye color, predisposition for illnesses, and other phenotypes and biological functions, trees also have gene codes that are inherited through a reproductive process. These genes are responsible for characteristics such as how a tree grows and how a tree reproduces. Genes also play a crucial role in how trees respond to environmental changes or disasters, such as flooding, fires, or drought. Genetic diversity within a tree species can increase the chances that a tree species will survive despite increased extreme weather and droughts caused by climate change.3) Ecosystem DiversityEcosystem diversity looks into the variations of ecosystems around the globe. Different organisms have evolved out of Earths many different environments, and therefore, our planet has a diverse set of ecosystems and diverse life within these ecosystems.Ecosystem diversity studies how life interacts with its environment and the other life forms around it. Ecosystems can be compared to each other, allowing us to better understand how species interact with one another around the planet. This also provides us an opportunity to understand which ecosystems are most affected by climate change and other environmental alterations.Ecosystem diversity in trees: Trees create the foundation of forestland ecosystems. Forests, however, are very different all around the world. The three primary types of forests are temperate, tropical, and boreal. Each of these forestlands are an entirely different ecosystem. For example, boreal forests consist primarily of conifer, spruce, fir, and pine trees and are located in cooler climates. On the other hand, tropical forests are warm and have a vast array of tree species (the Amazon rainforest has around 16,000 tree species). Different climates and the various tree species that have evolved in those climates have created different ecosystems full of diverse life.Why Is Biodiversity Important?Not only is biodiversity important to human life on Earth, but its essential to all life that calls this planet home. Diverse life around the globe provides for functioning ecosystems and, in turn, the most fundamental aspects of life, including food, clean water, oxygen, good air quality, soil fertility, and more.Lets take a closer look at how biodiversity plays an important role in sustaining life.How Does Biodiversity Contribute to the Sustainability of an Ecosystem?Biodiversity is essential to the sustainability of ecosystems worldwide. The greater the species richness (or the number of species) in an area, the greater the chance for life to persist through adversity.When an ecosystem contains many types of organisms, that ecosystem can more easily adapt to changes. If temperatures increase, some plants and animals may not fare well, but in a diverse ecosystem, many species will survive and adapt to the changes. The species that survive will pass their successful genes to their offspring so the ecosystem can continue to exist and evolve over time.How Does Biodiversity Affect Human Health?sourceHumans rely on functioning, biodiverse ecosystems to maintain good health. Many of the natural resources we depend on come from the environment around us, including food, clean water, fertile soil, medicine, and clean air. Ecosystems that are not protected can become nonfunctioning and cause humans around the world to lose access to these natural resources.Healthy ecosystems provide food, water, and fertile soil to communities worldwide. Water is purified through natural processes such as soil purification and vegetation purification in wetlands. Food comes in the form of native plant and animal stocks within ecosystems. Humans also depend on fertile soil generated from rivers and forestlands to grow crops.Much of the world depends on the medicinal value of plants for well-being. If these plants struggle in an ecosystem due to a lack of biodiversity, many people around the world will be without medicine. According to the World Health Organization, 60% of the worlds population relies on traditional medicines. Many of these medicines come in the form of plants that are harvested from natural stocks. Some of these plants are cultivated, however, cultivation could become a challenge without access to fertile soil.Ecosystems like forests, oceans, and wetlands aid in air purification. Exposure to poor air quality can result in respiratory illnesses, heart disease, and lung cancer. Protecting the biodiversity of ecosystems that filter toxins from the air will contribute to improving human health around the world.If an ecosystems biodiversity is harmed, it will cease to function properly and result in a loss of natural resources. One example of an ecosystem that has been disrupted is coral reefs. When a coral reef is exposed to stressors like climate change and water pollution, these ecosystems become harmed and the coral dies. Without the coral present the entire ecosystem collapses, resulting in a loss of food supply for humans and other wildlife in the ocean.What Do Scientists Learn From Biodiversity?Charles Darwin is credited with being the first to recognize elements of biodiversity. He believed all species could be traced back to a common ancestor. His discoveries laid the groundwork for future scientists to explore the idea of diversity amongst living things and how those variations affect ecosystems and life on Earth.Scientists study biodiversity to try to estimate the risk of extinction of various living things.. Scientists explore whether older genetic lineages are more likely to survive than newer genetic lineages.Scientists also look into how species evolve differently based on where they live. For example, they might study the life of birds near the sea, as compared to birds that live in cities. Alternatively, scientists might compare the life of birds near the equator versus birds closer to the poles.The more scientists understand the origins of life and the nature of its diversity, the closer theyll be to understanding how climate change and other environmental changes will impact life.What Is the Human Impact on Biodiversity?Humans have a large impact on biodiversity and ecology. The more we continue to alter the natural state of our planet, the greater our risk for harming biodiversity. The primary ways humans impact biodiversity are through land use changes, climate change, invasive species, exploitation, and pollution.Land Use ChangesLand use changes due to agriculture or urban development can negatively impact biodiversity due to habitat loss. Deforestation and the alteration of waterways for irrigation are examples of harmful human activities. The reduction of forestland creates greater competition amongst life in those ecosystems and displaces animals. Dams and the redirection of water cause fish to lose access to their spawning grounds, harming their reproductive cycles.Climate ChangesourceHuman reliance on fossil fuels for energy and the effects of large-scale industry have increased carbon levels and are causing global warming and climate change. This is placing a tremendous strain on many species around the globe. The changing climate has resulted in ocean acidification, leading to the devastation of delicate ecosystems like coral reefs.Invasive SpeciesHuman activity has contributed to the spread of invasive species worldwide. These plants or animals strain the natural life of an ecosystem by consuming resources more quickly, and once they are present in an environment, it can be difficult to eradicate them. One-sixth of Earths land surface is vulnerable to these species.Resource ExploitationHumans participate in the excessive exploitation of natural resources. One example is fish stocks in the ocean that have become increasingly put under pressure due to overfishing. Another example is deforestation due to excessive logging. In the past 50 years, 17% of the Amazon rainforest has been lost.PollutionPollution in rivers, oceans, lakes, and on land creates poor living environments in ecosystems worldwide. Chemicals, plastic wastes, and other human products can harm animals and plants. Pollution also contaminates fresh water and soil, making it difficult for life to flourish.Is Biodiversity Decreasing?Biodiversity is decreasing across the globe due to human-related activity.Currently, we are in the middle of a sixth mass extinction, and one study found that we could see three-quarters of Earths animal species become extinct within 300 years.The study looked at the mammal extinction rate over the past 65 million years. It found that the extinction rate was two species per one million years. However, in the past 500 years, 80 mammals have gone extinct out of 5,570 total mammal species. If this rate continues, and if all the mammals that are currently on the endangered species list go extinct in the next century, it means that 75% of mammals will have gone extinct 334 years from now.However, this accelerated extinction rate can be prevented if humans take care to preserve our planet and reduce the consequences of our actions. If we seek to protect endangered species and work toward reducing greenhouse gas emissions that cause rapid climate change, we can slow the rate of extinction.What Are Biodiversity Hot Spots?Biodiversity hot spots contain 44% of Earths plants and 35% of Earths land vertebrates on only 2.3% of the planets land. These unique zones of concentrated biodiversity present very vulnerable ecosystems that can become severely impacted by human activity.There are 30 hot spots around the globe. These include a tropical region of the Andes mountains that contains one-sixth of all plant species on Earth. Another region is New Zealand, where 90% of the insects are endemic to the islands, meaning they cant be found anywhere else. Then theres the Amazon rainforest, which is one of the most biodiverse places on Earth, boasting more than three million species.The preservation of these hot spots worldwide is essential to Earths overall biodiversity.What Can We Do to Preserve Biodiversity?sourceThe best way for humankind to preserve biodiversity is to limit our actions that strain ecosystems around the world. Changing the way we use land and resources can allow ecosystems to recover naturally. Switching to cleaner energy sources will reduce carbon emissions and slow global warming, allowing species around the world a better chance at overcoming climate change.You can take steps to preserve biodiversity by keeping track of what resources you consume. Look for labels like USDA Organic, Fair Trade Certified, and Energy Star to help reduce your impact on biodiversity.Another great option is to purchase carbon offset credits to reduce your carbon footprint. Carbon offset credits are a carbon finance opportunity where your purchase of the credit represents a real reduction of carbon from the atmosphere. Offsets are backed by clean energy projects that help slow climate change and reduce biodiversity loss.Help the Earth Be Diverse So It Can HealBiodiversity is the foundation of our planets health. We have a responsibility to honor and respect the complex nature of our diverse world. By protecting species, genetic diversity, and ecosystems, this is our best opportunity to preserve our planet and restore its natural state of abundance. Humans depend on healthy ecosystems to maintain our well-being and for our basic needs like food, water, and medicine. We all must play a part in reducing the human impact on our planet.Terrapass has solutions for reducing your carbon footprint and ways to participate in slowing our planets loss of biodiversity.Brought to you by terrapass.comFeatured image: 0 ratings0% found this document useful (0 votes)520 views1 pageEcosystem diversity deals with the variations in ecosystems within a geographical area and how this impacts humans and the environment. Ecosystem diversity is a form of biodiversity, which rAI-enhanced title and descriptionSaveSave ecosystem diversity For Later0%0% found this document useful, undefined0 ratings0% found this document useful (0 votes)520 views1 pageEcosystem diversity deals with the variations in ecosystems within a geographical area and how this impacts humans and the environment. Ecosystem diversity is a form of biodiversity, which refers to the different ecosystems found in a region or around the world. Maintaining biodiversity is important as ecosystems provide clean water, affect climate, and supply food. Examples of ecosystems that demonstrate high diversity include deserts, forests, coral reefs, tundra, and oceans, each containing unique plant and animal life adapted to the environmental conditions.0 ratings0% found this document useful (0 votes)520 views1 pageEcosystem diversity deals with the variations in ecosystems within a geographical area and how this impacts humans and the environment. Ecosystem diversity is a form of biodiversity, which rAI-enhanced title and descriptionEnjoy sharper detail, more accurate color, lifelike lighting, believable backgrounds, and more with our new model update. Your generated images will be more polished thanever.See What's NewExplore how consumers want to see climate stories told today, and what that means for yourvisuals.Download Our Latest VisualGPS ReportData-backed trends. Generative AI demos. Answers to your usage rights questions. 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Our original video podcast covers it allnow ondemand.Watch NowThis chapter provides an overview of ecosystems and biodiversity, highlighting the structure and function of various ecosystems including grassland, forest, and aquatic environments. It explains the concepts of food chains and food webs, ecological pyramids, and the process of ecological succession. Additionally, it discusses the levels of biodiversity: genetic, species, and ecosystem diversity, and emphasizes the values of biodiversity in terms of consumptive, productive, and social aspects. Challenges such as poaching, human-wildlife conflicts, and illegal trade that threaten biodiversity are also addressed. Harmony with nature and sustainable development! " !"The National Biodiversity platform annual meeting was heldA greenhouse study evaluating the impact of PGPR on two Sorghum varieties BBI 3 BESNET Phase II Project Annual NBP Ethiopia Plenary Workshop

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