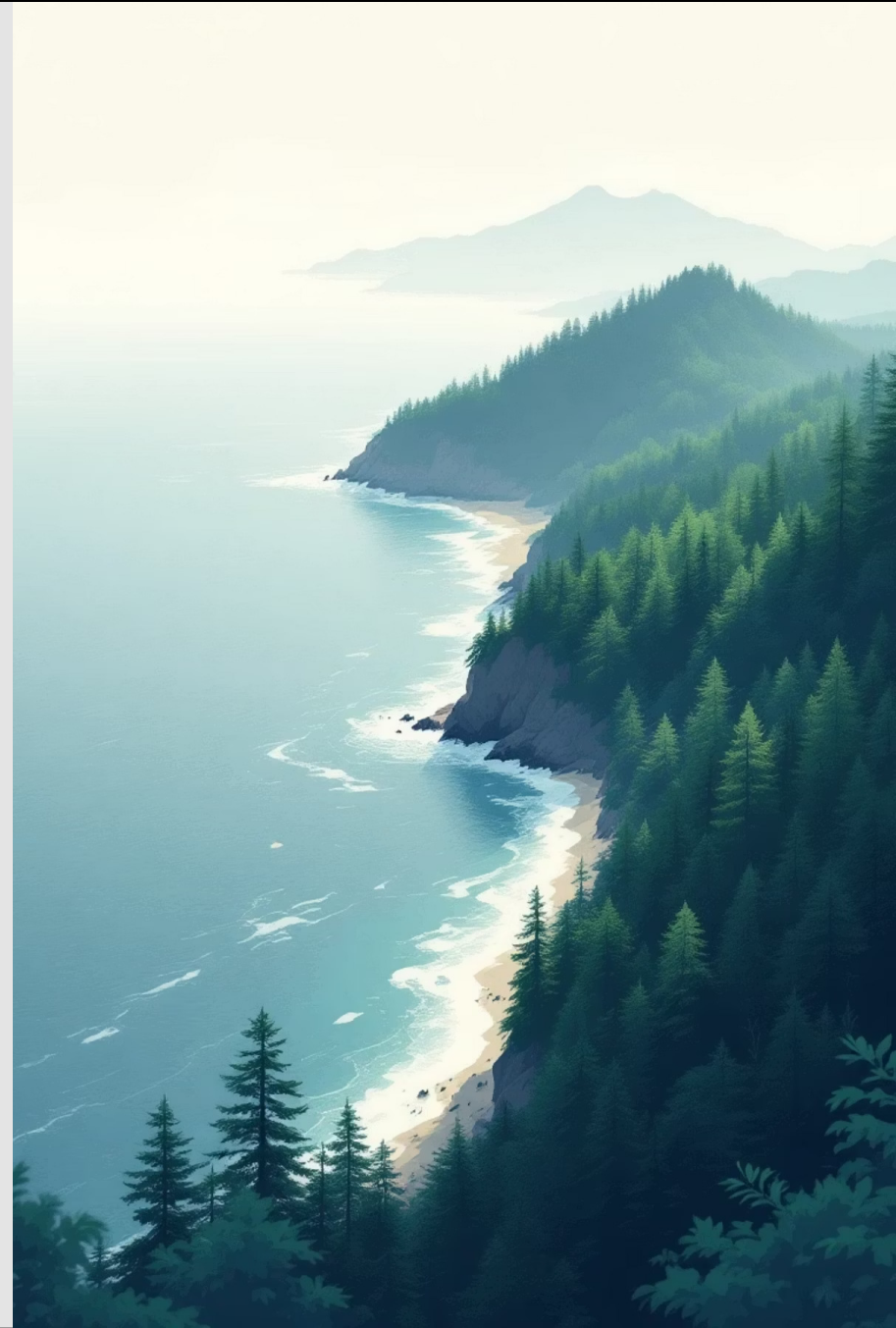


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Biodiversity: The Invisible Force That Governs Life

A journey through 3.7 billion years of
evolution that transformed a sterile planet
into a symphony of interconnected life.



The Miracle of 3.7 Billion Years



Biodiversity is much more than a simple count of species. It is the **genetic variability** that makes each individual **unique**, the **diversity of species** that populates every corner of the planet, and the **variety of ecosystems** that are intertwined.

Ecosystems rich in biodiversity can be up to **50% more productive** and store enormous amounts of carbon, acting as true lungs of the planet.

The Birth of an Ecosystem

How does a complex world emerge? Through ecological succession, a fascinating process that transforms inhospitable environments into vital systems.



The Pioneers

Lichens, mosses, sun, wind, and ice break down the rock. Bacteria fix nitrogen from the air, creating the first grains of fertile soil.



Growth

Pioneer grasses consolidate the soil. Humus forms: 1 cm requires 100 years! Microbial biomass explodes from 1 to 7 tons per hectare.



Maturity

The trees complete the miracle. A single tree hosts 400 insect species. A perfect cycle of life is created.

Every Living Being: A Fundamental Gear



Plants

Primary energy producers and architects of the environment, they shape flows of water, nutrients, and climate.



Earthworms

Soil engineers: they process 30 tons of earth per hectare each year, reducing erosion by 30%.



Mycorrhizae

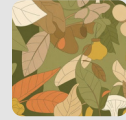
They extend roots by 100 times, creating an underground network that transfers nutrients and chemical information.

Every Living Being: A Fundamental Gear



The Bats

They control harmful insects, saving agriculture over 20 billion dollars a year in pesticides.



The Decomposers

They recycle life itself: processing 90 billion tons of carbon annually.

The Power of Diversity

Wheat Field



Identical individuals: one disease can destroy the entire field.

Ancient Beech Forest



Trees of different ages, roots at different depths, genetic variability: at least part of it always survives.

The Power of Resilience



The Fire

A field of sunflowers is reduced to dust. But in the Mediterranean scrub, something magical happens.



Rebirth

Resilient trees sprout from deep roots. Dormant seeds awaken: heat and smoke compounds interrupt dormancy.



The Queen Returns

One example above all is wild sage, with roots like invisible anchors; it resists and regrows before others. With no competitors, it dominates the ecosystem for the first few years.

Cooperation, Not Competition



Beans

Enrich the soil with nitrogen



Corn

Provides support for climbing plants



Cabbages

Attract pollinators and keep pests away



Zucchini

Protects the soil from drought



The Wood Wide Web

Underground, mycorrhizal networks - the "Wood Wide Web" - allow plants to communicate and exchange nutrients. A system of mutualism where everyone contributes to collective well-being.



The Sixth Extinction

A Threat Without Precedent



The Impact of the Crisis



Extinction Rate

100-1,000x higher than
natural



Ongoing Threat

Growing and irreversible



Selective Impact

Affects large and specialized
species



Deforestation, urbanization, and pollution fragment habitats, preventing recolonization and accelerating losses.