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#biodiversitymatters:
Facts & Figures

By
Dr. Kuntal Goswami

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#biodiversitymatters: Facts & Figures

By Dr. Kuntal Goswami, Founder of ACSDRI



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Alankar Chandra

Key words: Biodiversity Loss; Biodiversity; Wildlife Crime; Sustainable Development Goals; SDG-15; Life on Land; SDG-14; Life below water; threat to marine life; marine habitat; natural habitat; biodiversity facts and figures.

Loss of Biodiversity: A Global Crisis

Throughout the world, Biodiversity is declining at an alarming rate. The Australian Centre for Sustainable Development Research and Innovation (ACSDRI) emotionally appeals to save Biodiversity through this educational info-photographic blog. The United Nations has designed two dedicated goals to conserve and protect Biodiversity:

- SDG 15 focuses on "Life on Land": to protect, restore, and promote sustainable use of terrestrial ecosystems; to sustainably manage forests, combat desertification; to halt and reverse land degradation; and finally, to halt biodiversity loss.
- SDG 14 focuses on the "Life below water," intending to conserve and sustainably use our oceans, seas, and marine resources for Sustainable Development.

Aligning with the UN's global goals, SDG-15 and SDG-14, to protect Biodiversity, the ACSDRI has designed the #biodiversitymatters campaign to educate and make the global communities aware of biodiversity loss.

Sustainable Development depends on the quality of natural resources and Biodiversity to meet social and economic developmental needs. However, only 7.8 % of SDG targets directly quantify natural resources. 8.2% of SDG targets measure the conditions for natural resource protection. 84% of SDG targets measure socio-economic Development. In addition, a recent trend suggests that only one-third of countries are on track to achieve their national biodiversity targets.



Rate of Biodiversity Loss

Up to 1970, our ecological footprint was smaller than the Earth's regeneration rate.

Between 1970 and 2016, there has been a sharp decline in a wide range of species.

In 2020 we are overusing the Earth's biocapacity by at least 56%.

Because of the creeping development activities of Homo sapiens, the planet Earth is facing significant amounts of forest loss within such a short geological period.

Conti...





Photography by **Sivarajan**

...Rate of Biodiversity Loss...

Between 2000 and 2020, globally, the proportion of forest area declined from 31.9 percent to 31.2 percent.

This marginal decline equates to 100 million hectares of forest area.

The primary reason for this loss is due to expansion of agriculture.

At the same time, the Food Waste Index Report 2021 highlights that around one-third of food produced globally gets lost or wasted (i.e., 1.3 billion tonnes each year).



*In creating more agricultural lands,
we also destroy many
natural biodiversity hotspots.*



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***SO, DO WE NEED MORE
AGRICULTURAL LANDS?***



Causes of Biodiversity Loss

In the following section, we have highlighted the roles of different species in nature, including insects, butterflies, elephants, bees, and birds.

It is estimated that, on average, there is a 68% decrease in the population sizes of mammals, birds, amphibians, reptiles, and fish.

The main reasons are that over the last 50 years, there have been significant increases in human populations, consumption, urbanization, and habitat loss.

The rate of decline is different across the region. However, tropical areas saw the most significant decline in Biodiversity.

Between 2000 and 2020, forest area increased in Asia, Europe, and North America. However, significant decreases have been noticed in Latin America, Sub-Saharan Africa, and Southeastern Asia.

Conti...

...Causes of Biodiversity Loss ...

In the section, we have also briefly showcased how human intervention and rising wildlife crime lead to biodiversity loss and endangering many species in nature.

The data shows biodiversity loss and wildlife crime are not limited to land; the extent of biodiversity destruction due to human intervention and unchecked economic activities is happening much more in the marine habitat.



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Insects: Are they enemies? or Are they the essential POLLINATORS?

Insects are the biological foundation of all terrestrial ecosystems, and they significantly influence the nutrient recycling process, pollination, dispersion of seeds, decomposition, and improvements to soil fertility, food for other species, and supporting agriculture.

It is estimated that this planet has about 1.4 billion insects per person. Unfortunately, insects' extinction rate is eight times greater than that of mammals, birds, and reptiles. Intensified agriculture is the main cause of this decline; thus, we need to change how we undertake our agriculture.

The insect population accounts for about two-thirds of all terrestrial species. However, a 27-year longitudinal study shows that in several of Germany's protected areas, about 76% of its flying insect biomass has been lost. At the same time, the silver lining is that the insect population can be recovered quickly with little support.

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Roshan Lal



*...Insects: Are they enemies?
or Are they the essential POLLINATORS?...*

Butterflies and moths are good indicators of a healthy natural habitat as they have a high degree of host-plant specialization.

Moths are more diverse than butterflies and contribute to the food chain as prey to bats and other insectivorous species.

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Elephants -Ecosystem's Engineers

About 20,000 African elephants are estimated to be killed yearly for their tusks, and only 400,000 African elephants are left in the wild from a population of 12 million a century ago. Commercially, ivories are sold in the United States, China, Thailand, and Hong Kong.

Elephants are the ecosystem engineers. They help to maintain the savanna, disperse seeds, and create pathways in the dense forest for other animals.

- Wholesale prices for illegal ivory in China over the years were US\$ 750 per Kg in 2010, US\$ 2100 per Kg in 2014, US\$ 1100 per Kg in 2015, and US\$ 728 in 2018.***
- Ivory prices paid to poachers in Kenya and Tanzania were between US\$148 to 95 per kg in 2014, US\$ 88 to 78 per Kg in 2016, and US\$ 54.5 to 40 per kg in 2018.***



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Bees– Essential Pollinators

***Bees are the most essential pollinators:
over 16,000 known bee species worldwide.
Bees pollinate about 70 of the 100 crop species.***

***About 90% of the world's population depends on bees.
Hence bees are essential to human life.***

***It is estimated that honeybee pollination
contributes four to AUS\$ six billion
to the Australian economy.***

Conti...



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Dr. Kuntal Goswami

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Chidambar Javoor



...Bees – Essential Pollinators...

Unfortunately, globally, the bee population is declining at an alarming rate.

Between 2006 and 2016, Australia lost 100 thousand commercial honeybee hives, and among the Australian states and territories, New South Wales, Victoria, and Queensland lost the most.

Exposure to pathogens, agrochemicals, and habitat loss and degradation are the main causes of decline in the bee population.



Growing Bird population equates to improved biodiversity quality of the region.



Photography by **Prateek Agarwal**

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International Wildlife Crime: Facts & Figures

Wildlife crime endangers animal species and increases the chances of spreading unknown and deadly diseases.

The data shows that seventy-five percent of emerging infectious diseases, such as Bird flu, Ebola, and COVID-19, are zoonotic.

Habitat encroachment and land degradation are primary pathways for new infectious disease transmission.

Globally, one-fifth of the Earth's land area (equivalent to the combined land mass of Russia and India) is degraded, and land degradation is affecting the well-being of 3.2 billion people.

What is wildlife crime?

Wildlife crime is defined as harvesting and trading contrary to national law.

Between \$48 to \$153 billion of resources are lost due to the illegal Wildlife Trade.

Photography by
Anuj Mukherjee

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Trade of Rhinos Horns – The Greatest Wildlife Crime

Today, only about 27,000 rhinos remain in the wild, whereas in 1973, this figure was 70,000.

Nowadays, very few rhinos can survive outside national parks and reserves because of poaching and habitat loss.

***The average wholesale price of whole rhino horn is about US \$ 18,881 per Kg.
The average wholesale price of whole rhino horn is about US \$ 18,881 per Kg.***



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Anuj Mukherjee

Trade of Animal Bone – A Wildlife Crime

Only 23,000 African lions are left in the wild. Wild lions are mostly found in Africa, except for a small population in the Gir Forest National Park in India.

In China, lion bones are used for medicinal purposes or as a tonic (in the form of bone-strengthening wines). Lao, Thailand, and Viet Nam legally import Lion Skeletons from South Africa.



Illegal Trade of Big Cats – A Wildlife Crime

Illegal trade and Habitat loss are the biggest threats to Cheetahs. About 6,674 of the adult Cheetah population is left in the wild. The Maasai Mara ecosystem is home to approximately 25% of Kenya's wildlife.

It hosts over 95 mammal species and is a recognized Important Bird Area (IBA) with 550 bird species.



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- ***In the United States, no federal law prohibits possessing and selling big cats and exotic pets, including tigers and lions.***
- ***In the US, privately owned commercial facilities crossbreed big cats, with some generating over US \$ 1 million per year.***

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Cheetah *the endangered* *BIG Cat*

The Cheetah population is declining at a rate of 2.26 % annually. Illegal trade and Habitat loss are the biggest threats to Cheetahs.

About 6,674 of the adult Cheetah population is left in the wild.



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Different Actors of the Wildlife Crime Network:

- **COORDINATOR:**
*controls or organizes a
trafficking network.*
- **COURIER:**
*physically sends parcels
or transports animals.*
- **DOMESTIC TRADER:**
*deals in the domestic trade
of animals.*
- **TRANSPORTER:**
*transports animals
domestically for a fee.*
- **MONEY MULE:**
*receives funds on behalf
of the coordinator.*
- **OVERSEAS TRADER:**
illegal exporter.
- **POACHER:**
*hunts and traps live animals
on behalf of the coordinator.*



Cause of marine life destruction: Facts and Figure

Globally, Key Marine Biodiversity Areas are included under the MARINE PROTECTED AREAS.

In 2000, the figure was 30.5%, and in 2019 the figure increased to 46%.

Ocean acidification increasing from 10% in 2015 to 30% in 2019. Ocean acidification, coral reef loss, and loss of marine habitat all have a direct link.

Modern industrial fishing techniques, including damaged fishing nets left out in the marine habitat, are some of the biggest threats to marine life.

Every year, more than 300,000 small whales, dolphins, and porpoises die from entanglement in fishing nets.

What is Bycatch?

Bycatches are unintentional or incidental capture of non-targeted species.

More destruction of marine life happens every day due to Bycatch



Significant effect of Bycatch on the ocean environmental

- ***Dolphins, marine turtles, seals, seabirds, sharks, juvenile fish, fish with little commercial value, corals and billions of unwanted animals are caught annually by fishing boats then discarded dead into the ocean.***
- ***Bycatch is a waste. Many millions of marine life get wasted every year as Bycatch.***

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Ratnadeep Khan



...Loss of Biodiversity is
one of the TOP EXISTENTIAL
THREATS for mankind...

Source: Global Risk Report

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Our Campaign



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