

THE IMPACT OF CLIMATE CHANGE

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HARSH REALITIES ...

- **Here are some harsh realities related to Climate Change:**
 1. **The global average surface temperature in 2024 was 1.5°C which makes 2024 the hottest year on record;**
 2. **The total global Carbon Emissions in 2024 were 37.4 Billion Tonnes and projections for 2025 are 41.6 Billion Tonnes;**
 3. **The configuration of Carbon Emissions:**
 - **46% Remains in the atmosphere;**
 - **23% is absorbed by the oceans; and**
 - **31% is absorbed by terrestrial ecosystems (Forests, Soils, and Plants).**

IMPACT OF CLIMATE CHANGE ...

- 1. Rising Temperatures;**
 - 2. Extreme Weather Events;**
 - 3. Melting Ice and Rising Sea Levels;**
 - 4. Ocean Changes;**
 - 5. Biodiversity Loss;**
 - 6. Agriculture and Food Security;**
 - 7. Human Displacement; and**
 - 8. Economics Costs.**
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1. RISING TEMPERATURES ...

- **Global Warming:**
- Average global temperatures have increased by approximately 1.2°C since the late 19th century, with the most significant warming occurring over the past few decades; and
- This has led to more extreme heatwaves, longer hot seasons, and warmer winters.
- **Health Risks:**
- Prolonged heat can lead to heat-related illnesses, especially in vulnerable populations such as the elderly, children, and people with pre-existing health conditions.

1. RISING TEMPERATURES ...

- **VIDEO:**

- **This video was produced by National Geographic and the duration is: 2:53 minutes.**
- Warmland - See effects of rising temperatures | Deutsche Telekom
 - **1.56 Minutes**

2. EXTREME WEATHER EVENTS ...

- **More Intense Storms:**
 - **Higher sea surface temperatures fuel stronger hurricanes, cyclones, and typhoons, which can lead to more frequent and intense storms.**
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- **Flooding and Droughts:**
 - **Increased evaporation and altered precipitation patterns are causing both droughts in some areas and flooding in others. Coastal areas are particularly vulnerable to storm surges and sea-level rise.**

2. EXTRIMELY WEATHER EVENTS ...

- **VIDEO:**

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- Extreme Weather (Trailer) | National Geographic

- **1.20 Minutes**

3. MELTING ICE AND RISING SEA LEVELS ...

- **Glacier and Ice Sheet Melting:**
 - **Glaciers in the Arctic, Antarctic, and mountain regions are retreating at alarming rates, contributing to rising sea levels; and**
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- **Thawing Permafrost:**
 - **In Arctic regions, permafrost is melting, releasing trapped greenhouse gases like methane, which can further exacerbate climate change.**

3. MELTING ICE AND RISING SEA LEVELS ...

- **VIDEO:**

- Ice Melt From Land To Sea Causes About Two-Thirds Of Global Sea Level Rise
 - **1.06 Minutes**

4. OCEAN CHANGES ...

- **Ocean Acidification:**
- As the atmosphere absorbs more CO₂, oceans become more acidic which harms marine life, particularly organisms like coral reefs, shellfish, and plankton; and
- **Coral Bleaching:**
- Warmer ocean temperatures lead to coral bleaching, where corals expel the algae living in symbiosis with them; and
- This weakens the corals and can cause widespread damage to coral ecosystems.

4. OCEAN CHANGES ...

- **VIDEO:**

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- [Ocean Acidification](#)
 - [Oceans 101 | National Geographic](#)
 - **2.53 Minutes**

5. BIODIVERSITY LOSS ...

- **Species Extinction:**
- Many species are unable to adapt to rapidly changing climates and are facing extinction, especially in areas like the Arctic or high-altitude ecosystems; and
- This leads to a loss of biodiversity, which weakens ecosystem resilience.
- **Shifting Habitats:**
- As temperatures rise, many species are moving to cooler regions, disrupting existing ecosystems. This can create new challenges for conservation efforts.

5. BIODIVERSITY LOSS ...

- **VIDEO:**

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- [What is Biodiversity? | Eco Facts | One Tree Planted](#)
 - **2.30 Minutes**

6. AGRICULTURE AND FOOD SECURITY ...

- **Crop Yields:**
- Changes in precipitation patterns, extreme temperatures, and shifting growing seasons are affecting crop yields; and
- In some regions, agriculture may become less viable, threatening food security.
- **Pests and Diseases:**
- Warmer temperatures and changes in humidity provide favorable conditions for pests and diseases, which can devastate crops and livestock.

6. AGRICULTURE AND FOOD SECURITY ...

- **VIDEO:**

- State of Food Security and Nutrition in the
World 2024
 - **3.20 Minutes**

7. HUMAN DISPLACEMENT ...

- **Climate Refugees:**
- **Rising sea levels, extreme weather events, and resource scarcity are forcing people to migrate, creating climate refugees;**
- **This can lead to increased conflicts and strain on resources in receiving areas.**
- **Water Scarcity:**
- **Changing precipitation patterns and overuse of water resources are leading to water scarcity in many regions, which impacts agriculture, drinking water supplies, and sanitation.**

7. HUMAN DISPLACEMENT ...

- **VIDEO:**

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- World Migration Report 2024: Climate impacts will force 216 million people to move by 2050 - YouTube

- 3.10 Minutes

8. ECONOMICS COSTS ...

- **Infrastructure Damages:**
 - **Extreme weather events and rising sea levels are causing damage to infrastructure, such as roads, bridges, homes, and energy systems; and**
 - **Rebuilding costs and disruptions to local economies can be massive.**
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- **Global Markets:**
 - **The effects of climate change on agriculture, fisheries, and energy production can destabilize global markets, leading to price volatility, trade disruptions, and economic inequality.**

8. ECONOMICS COSTS ...

- **Video:**

- The Cost to Reduce Global Warming?
\$131 Trillion Is One Answer | WSJ
 - 4.38 Minutes

Global Population ...

- The following demonstrates the speed of growth in global human population:

- 1 Billion Year 1804;
- 2 Billion Year 1927 (In 123 Years);
- 3 Billion Year 1960 (In 33 Years);
- 4 Billion Year 1974 (In 14 Years);
- 5 Billion Year 1987 (In 13 Years);
- 6 Billion Year 1999 (In 12 Years);
- 7 Billion Year 2011 (In 12 Years);
- 8 Billion Year 2022 (In 11 Years);
- 9 Billion Year 2037 (In 14 Years); and
- 10 Billion Year 2058 (In 21 Years).

GLOBAL POPULATION ...

- **VIDEO:**

- How population growth impacts the planet
 - 1.56 Minutes

QUESTIONS/ANSWERS
