

IPCC Sixth Assessment Report: “Climate Change 2022: Impacts, Adaptation, and Vulnerability”

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change.

A new IPCC report says that increased heatwaves, droughts and floods are exceeding plants’ and animals’ tolerance thresholds. Mass mortalities are happening in species such as trees and corals. These weather extremes are occurring at the same time. The impacts are increasingly difficult to manage.

IPCC Chair Hoesung Lee states the report ...” emphasizes the urgency of immediate and more ambitious action to address climate risks. Half measures are no longer an option.”

Key Points

Observed & Projected Impacts and Risks

- Observed increases in the frequency and intensity of climate and weather extremes. These include high temperatures (land, ocean), heavy precipitation events, drought, and fire
- Impacts are larger than estimated in previous assessments
- Our understanding of climate science is sound and strong. Changes we are seeing now are unprecedented, and will affect every region of the globe
- Vulnerability of ecosystems and people varies within and among regions
 - Significant impacts on human health (physical, mental) and livelihoods
 - Adverse economic impacts (e.g., to agriculture, forestry, fishery, energy, tourism)
 - Reduced food and water security
 - Loss of biodiversity and shifts in species distributions
 - Global hotspots of high human vulnerability are found in Africa, South Asia, Central and South America, Small Island Developing States, and the Arctic
- Sea level rise threatens coastal settlements, infrastructure, and habitats
- Many risks can be moderated with adaptation

Adaptation

- Progress in adaptation has been observed across all sectors and regions
- Many initiatives prioritize immediate and near-term climate risk reduction, which can reduce the opportunity for transformational adaptation
- Adaptation to water-related risks and impacts make up the majority of documented adaptation actions
 - Enhancing natural water retention (e.g., restoring wetlands and rivers, upstream forest management) helps reduce flood risk
 - On-farm water management, water storage, soil moisture conservation and irrigation provide economic, institutional, or ecological benefits and reduce vulnerability
- Conservation, protection, and restoration of ecosystems, along with targeted management to adapt to the impacts of climate change, reduces the vulnerability of biodiversity

- Resilience of habitats and species increases with size of natural area, restoration of degraded areas, and by reducing non-climatic stressors
- To be effective, conservation and restoration actions will increasingly need to be responsive and plan for future changes
- All solutions are not equal; some might worsen resilience (ex: hard coastal defenses like seawalls)
- Focus less on reacting and responding to current and near-term risks and impacts and focus on environmentally friendly, long-term strategies
- Protecting and restoring ecosystems is essential for maintaining and enhancing resilience
- Safeguarding and strengthening nature is key to securing a livable future
- Nature-based Solutions (NbS; also referred to as Ecosystem-based Adaptation in the report) are mentioned over 450 times in the report
 - Nature-based solutions to climate change involve conserving, restoring, or better managing ecosystems to remove carbon dioxide (CO₂) from the atmosphere and adapt to the effects of climate change. Examples include allowing forests to regrow, restoring coastal wetlands, and using agricultural strategies that support healthy soils.

REPORT LINKS

Summary for Policymakers:

https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_SummaryForPolicymakers.pdf

North American Fact Sheet:

https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_FactSheet_NorthAmerica.pdf

Biodiversity Fact Sheet: https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_FactSheet_Biodiversity.pdf

Human Settlements Fact Sheet:

https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_FactSheet_HumanSettlements.pdf

Chapter 2. Terrestrial & Freshwater Ecosystems and their Services:

https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_FinalDraft_Chapter02.pdf