

Update Log 4 Starting March 3, 2023

March 3, 2023

- Chapter 14 – additional information on the EMIT satellite, SWOT satellite and MethaneSAT.
- Updated List of Figures.

May 8, 2023

- Table of Contents – updated to include additional chapter on AR6 Synthesis Report.
- Chapter 1 – included AR6 Synthesis Report and update.
- Chapter 21 – updated.
- Chapter 22 – updated.
- Chapter 23 – updated.
- Chapter 24 – new chapter on AR6 Synthesis Report inserted.
- Chapter 25 – updated.
- Chapter 26 – updated.
- Chapter 27 – added web site for Arctic Institute.

May 16, 2023

- Reorganized and added presentation.

September 4, 2023

- Table of Contents – updated to include new sections in Chapters 16 and 19.
- Chapter 16 – minor editing, mention of glacier melting in Chile, insurance and insurability and climate justice.
- Chapter 19 – minor editing, sections on impacts of climate change on the insurance industry and climate justice.

September 5, 2023

- Table of Contents – updated to include new section in Chapter 18.
- Chapter 16 – minor editing.
- Chapter 18 – minor editing, partial rewrite of introduction and addition of section on water management infrastructure.
- Chapter 19 – addition of legal action on climate change in State of Montana (part of section on climate justice).

September 7, 2023

- List of Figures – add Figure 18.23.
- Chapter 16 – information on global temperature record summer 2023.

- **Chapter 18 – information on how close the Earth is to achieving 1.5°C above pre-industrial temperatures.**

September 10, 2023

- **Chapter 1 – editorial and discussion concerning changing climate and the human evolutionary process.**
- **Chapter 2 – editorial.**
- **Chapter 3 – editorial and update WMO State of the Global Climate in 2022.**
- **Chapter 4 – editorial.**

September 12, 2023

- **Chapter 5 – editorial.**
- **Chapter 6 – editorial.**
- **Chapter 7 – editorial.**
- **Chapter 8 – editorial.**

September 13, 2023

- **Chapter 9 – editorial.**
- **Chapter 10 – editorial.**
- **Chapter 11 – editorial.**
- **Chapter 12 – editorial.**

September 14, 2023

- **Chapter 13 – editorial plus additional reference. All web references in text.**

September 17, 2023

- **Table of Contents – add and edit figures for Chapter 14.**
- **Chapter 14 – editorial plus updated info on satellites.**

September 19, 2023

- **Chapter 15 – editorial.**

September 20, 2023

- **List of Figures – add figure pertaining to Canadian wildfires 2023.**
- **Chapter 15 – editorial.**
- **Chapter 16 – add information on Canadian wildfires 2023.**
- **Chapter 17 – editorial.**
- **Chapter 18 – editorial.**

September 21, 2023

- **Chapter 20 – editorial.**

September 22, 2023

- **Chapters 20, 21, 22, 23, 24, 25 and 27 – editorial.**

September 24, 2023

- **Table of Contents to include section 16.25 on climate action and climate activism.**
- **Chapter 16 – new Section 16.25 on climate action and climate activism.**
- **Chapter 16 – additional web sites provided by USEPA on climate change (Section 16.20).**

September 26, 2023

- **Chapter 15 – editorial and addition of discussion on carbon offsets.**
- **Chapter 16 – editorial.**
- **Chapter 19 – editorial and addition of description of Portuguese students’ legal action at the EU court of human rights in Section 19.6 Climate Justice.**
- **Chapter 20 – editorial.**

October 1, 2023

- **Table of Contents to include section 16.6.4 on Antarctica sea ice.**
- **Chapter 16 – editorial and addition of section 16.6.4 on Antarctica sea ice and additional discussions on global sea ice in general.**
- **Chapter 15 – editorial and expanded discussion on carbon offsets and carbon credits in section 15.13.1.**

October 2, 2023

- **Chapter 15 – Section 15.13.5 update on European carbon tariff.**

October 3, 2023

- **Table of Contents to include section 17.13 on Earth Visualization Engines and edition of title of section 15.13.1.**
- **Chapter 15 – added discussion in section 15.13.1 on carbon insets.**
- **Chapter 16 – added to discussion on climate anxiety, climate pessimism and climate optimism section 16.21.3.**
- **Chapter 17 – added discussion on limitations of use of climate models and section 17.13 on Earth Visualization Engines.**
- **Chapter 18 – added section 18.10 on Earth Visualization Engines.**

- Chapter 19 – added information on legal suit against TotalEnergies, section 19.6 and Earth Visualization Engines in sections 19.3, 19.4 and 19.5.

November 28, 2023

- Chapter 2 – editorial.
- Chapter 13 – update and editorial.
- Chapter 16 – added Lancet Report, Nov 2023 to section 16.21.2 and reference to U.S. Fourth National Assessment Reports Volumes I and II to section 16.27.
- Presentation to CALL Canmore November 27, 2023.

December 3, 2023

- List of Figures – updated figures for Chapter 5.
- Chapter 5 – added discussion on carbon dioxide atmosphere – ocean exchange, acidification, carbon storage.

December 17, 2023

- List of Figures – updated for Chapter 15.
- Chapter 15 – expanded discussion on methane and satellite technology.
- Chapter 16 – updated.

January 30, 2024

- Table of Contents – updated.
- List of Figures – updated.
- List of Tables – updated.
- Chapter 10 – added information on hurricane strength, storm surges and tides and reorganized.
- Chapter 11 – added minor editing.

February 4, 2024

- Table of Contents – updated.
- List of Figures – updated.
- Chapter 7 – added information on Omega and Rex blocking.

February 5, 2024

- Table of Contents – updated.
- List of Figures – updated.
- Chapter 10 – include discussion on bomb cyclones.

February 11, 2024

- Table of Contents – updated.

- **List of Figures – updated.**
- **Chapter 8 – expanded discussions to include observations of surface and deep water current.**

February 18, 2024

- **List of Figures – updated.**
- **Chapter 12 – expanded and edited.**

February 20, 2024

- **Chapter 12 – added discussion pertaining to development and disappearance of ice ages and CO₂ concentration in atmosphere.**

February 25, 2024

- **List of Figures – updated.**
- **Table of Contents – updated.**
- **Chapter 2 – added figure on history timeline.**
- **Chapter 17 – editing and added summary and comment.**