

## A Primer on Climate Change and Sustainability

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### Part One: Climate Change

#### PURPOSE

This primer is to give members of Eagle Audubon Society who are not scientists information about climate change and the related topic of sustainability. Climate change is certainly in the news, as drought, wildfires and flooding are increasingly connected to climate change. Some members may be familiar with this material, but others may find information that is new to them. Part One focuses on climate change. Part Two revisits the topic of sustainability, which is one way of framing the ideas about how something could be done about climate change. Part Two also explores the concept of Earth consciousness—being aware of how humanity is connected to the Earth and other living beings, and how we can all learn to survive together.

#### SUMMARY

- Scientists have for the past several decades reported on the increased warming of Earth. While the term, global warming is often used, scientists prefer the term, climate change.
- *“Climate change refers to long-term shifts in temperatures and weather patterns. Since the 1800s, [human activities have been the main driver of climate change](#), primarily due to burning fossil fuels like coal, oil and gas.”* (United Nations Climate Change, 2020)
- After the sun's radiation enters the atmosphere and warms up the Earth, carbon dioxide, methane, nitrous oxide gases, and particulate matter such as dust prevent some of the heat from escaping back into space. This is like the way the glass panes of a greenhouse can trap heat.
- The annual mean global near-surface temperature for each year between 2022 and 2026 is predicted to be between 1.1 °C and 1.7 °C higher than preindustrial levels (the average over the years 1850-1900).
- Now, scientists predict that in 30 years there will be a heat belt in the middle of America in which 107 million people will experience heat index days of 125 degrees. (FirstStreet, 2022)
- There's more Carbon Dioxide (CO<sub>2</sub>) in our atmosphere than at any time in human history.
- *“The [consequences of climate change](#) now include, among others, intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity.”* (United Nations Climate Change, 2020)
- *Because the Earth is a system, where everything is connected, changes in one area can influence changes in all others.”* (United Nations Climate Change, 2020) This can include areas subject to colder temperatures than in the past.

- *“Ecosystems are resilient and adaptive, but the climate is changing at a rate that makes it difficult for plant and animal species to keep up. Many species of birds and other animals face extinction.”* (Audubon, 2020)
- The steps needed to limit climate change and hopefully reverse its course are to become conscious of what is a healthy relationship of humans, the earth and other living beings, switch from fossil fuels to renewable energy, sequester carbon in plants and soil, and switch to regenerative agriculture.

## References

Audubon. 2020.

(<https://fl.audubon.org/conservation/climate#:~:text=Audubon%20Florida%20is%20working%20to,to%20expand%20renewable%20energy%20sources.>)

United Nations Climate Change. 2020 <https://www.un.org/en/climatechange/what-is-climate-change#:~:text=Climate%20change%20refers%20to%20long,like%20coal%2C%20oil%20and%20gas.>