SIERRA CLUB
SAN DIEGO CHAPTER

CLIMATE BASICS

Change begins at home

We hear a lot about the climate crisis, global warming, and climate change. We all want to do our part to stop the climate from warming to a level that impacts our own lives and that of future generations. But, how? Where can one person start? Sierra Club has developed this packet of information to help us start where we are—at home.

The difference between global warming and climate change.

Global warming is the accumulation of heat in the earth's atmosphere, land, and oceans resulting from increased emissions to the atmosphere. Climate change describes the broad set of changes, including rainfall patterns, heat, drought, glacial melting, and flooding caused, in part, by warming of the atmosphere.

The difference between carbon and carbon dioxide.

Carbon is an element. It makes up a large part of the earth and is vital to all life, including you! Carbon becomes a gas—carbon dioxide—when combined with two molecules of oxygen. In the atmosphere, CO_2 captures heat and leads to warming the planet. Right now, CO_2 concentration in the atmosphere is 421 parts per million (ppm). Other warming gases such as methane and nitrous oxide increase CO_2 equivalent gases in the atmosphere to about 500 ppm. Scientists have found that 350 ppm is the maximum level of CO_2 in the atmosphere that is safe for life on our planet. Higher concentrations will cause the planet to get even hotter.

What is carbon sequestration?

Sequestration is a process, like photosynthesis, that removes carbon dioxide from the atmosphere. Trees and plants are good at this and, as they take in carbon, they release oxygen into the air for us to breathe. Carbon sequestration is why planting trees and large shrubs can help improve our climate.

What can be done to reverse warming?

- REDUCE carbon emissions now and cease net carbon dioxide emissions over time.
- PROTECT and RESTORE our forests, wetlands, grasslands, marshes, oceans, and soils, which store a lot of carbon and keeps it out of the atmosphere.
- SEQUESTER CARBON from the atmosphere back to the earth through 'carbon dioxide sequestration' through activities such as planting trees and regenerative farming practices.

What is resilience?

Because we have waited too long to limit the root causes of our warming planet, society is facing significant impacts—from more frequent and severe weather, ocean warming and acidification, extended periods of drought and extreme temperatures, and other extreme negative effects of climate change. The ability to prepare for, recover from, and adapt to these impacts is called "climate resilience." Resilience efforts must be implemented at the local, neighborhood, or individual level. The actions in this fact sheet series will help you become more resilient to impacts from climate change.

For more information visit our website: www.sierraclubncg.org/home/sierra-club-at-home-resilience-project/

Taken with heavy reliance from *Regeneration: Ending the Climate Crisis in One Generation* by Paul Hawken, Penguin Books.