



# Basics of Climate Science

Here is a very brief summary of the way climate change works. You can use this as a starting point for understanding climate science and discussing it with people in your household and community. See the [“Further Resources” section](#) for more in-depth information.

- 1) The sun warms the earth every day.
- 2) Most of that heat is reflected back into space.
- 3) Greenhouse gases (like carbon dioxide and methane) in our atmosphere now block some of the reflection. The result is that more heat stays here on earth.
- 4) As greenhouse gases increase (due in significant part to our use of fossil fuels like coal, oil and natural gas for power), so too does the heat of the planet overall.
- 5) The added heat in our atmosphere is causing areas of ice on our planet to melt more often and sooner, sometimes making them disappear entirely. This means we reflect less heat back into space (dark surface instead of a brighter surface). As the ice

decreases, we absorb more heat. When the ice that melts is on land (glaciers, Antarctica), the increased amount of liquid water also leads to sea level rise.

6) This warmth also melts parts of the soil or the ocean floor that have been frozen, releasing even more greenhouse gases trapped there for thousands of years. These gases enter the atmosphere and trap more heat.

7) The warming of the planet leads to more moisture evaporating into the air, which in turn means stronger rain events than in the past in some places, and more drought in others.

8) Even if we stop all fossil fuel use tomorrow, the planet will continue to warm up because of the greenhouse gases that are already holding in heat. Stopping fossil fuel use in the next 15 years—the goal of this manual—may help us avoid temperature and weather extremes that will make human survival difficult or impossible.



## Further Resources

This section is organized by topic and will continue to expand. If you have a suggestion for a good resource, please leave it in the comments and we'll look it up!

## EXERCISE AND EXPLORATION

[Explore Rhode Island](#) (including a list of [walking trails by town](#))

[Rhode Island Parks](#) (lists state parks, forests and beaches)

[Woonasquatucket River](#) (by [foot](#), [bike](#) or [canoe/kayak](#))

## IMPROVING OUR SUPPLY OF ELECTRICITY

[Burrillville Against Spectra Expansion](#)

[Burrillville Land Trust](#)

[Climate Action RI • 350 RI](#)

[Conservation Law Foundation](#)

[Energize RI](#)

[The FANG Collective](#)

[Fossil Free RI](#)

[Nature's Trust RI](#)

[People's Power and Light](#)

## ELECTRIC VEHICLES

[California Clean Vehicle Rebate Project](#)

[Delaware Clean Vehicle Rebate Program](#)

[Massachusetts Offers Rebates for Electric Vehicles](#)

## COMPOST, GREASE RECYCLING AND FOOD WASTE

[Composting for the Homeowner](#)

[Composting 101 for City Dwellers](#)

[Southside Community Land Trust Composting](#)

[URI - Starting a Compost Pile](#)

## WOODLAND PRESERVATION AND RESTORATION

[Audubon Society of Rhode Island](#)

[Burrillville Land Trust](#)

[Grow Smart RI](#)

[Providence City Forester](#)

[Rhode Island Forest Conservators Organization](#)

[Rhode Island Land and Water Partnership](#)

[South Kingstown Land Trust](#)

## BASICS OF CLIMATE SCIENCE

[From NASA](#)

[From NOAA](#)

[From the Intergovernmental Panel on Climate Change](#)

