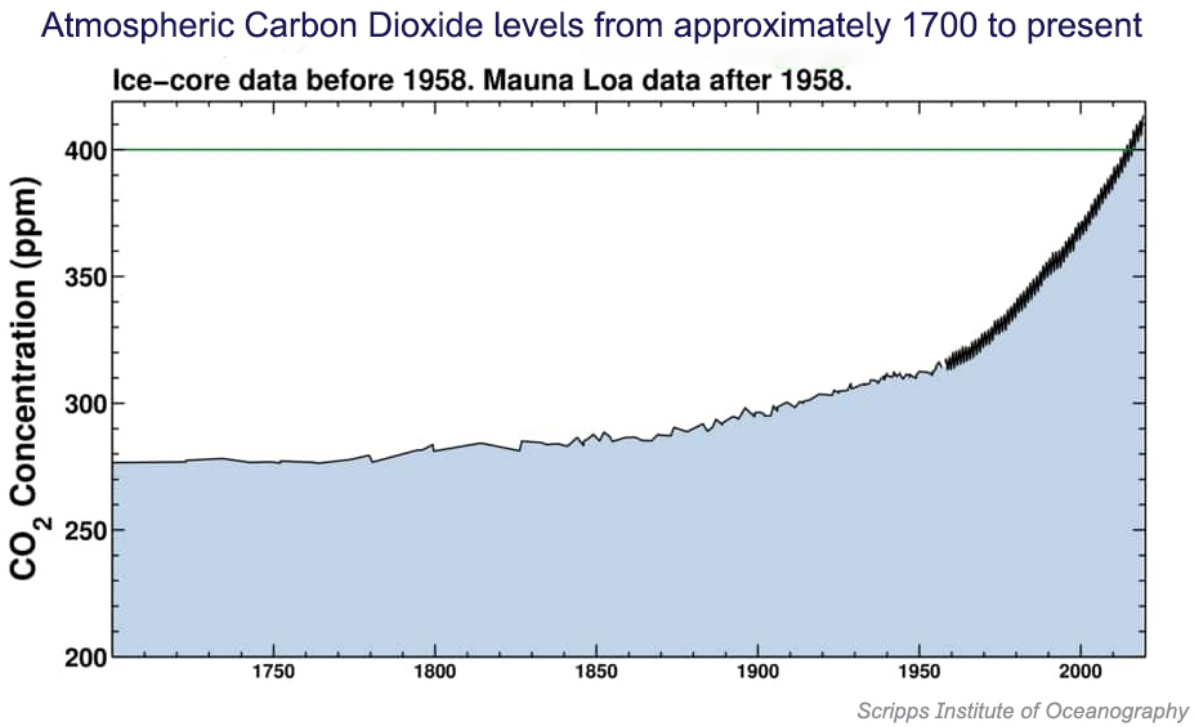
# CARBON FOOTPRINT 101 - Mindful Climate Action

Mindful Climate Action combines mindfulness meditation with climate change education to reduce carbon footprint. **Carbon footprint** is defined as the total amount of greenhouse gases required to directly (and indirectly) support daily activities, usually expressed in equivalent tons of carbon dioxide (CO2).

Carbon dioxide is a greenhouse gas that, along with the rise of several other heat-trapping gases, is the primary cause of climate warming. Carbon dioxide levels have risen by nearly 50 percent since the start of the Industrial Revolution.

The heat-trapping effects of greenhouse gases was first discovered and measured in the mid-1800s. The first projection of global warming from increased atmospheric carbon dioxide was published in 1896. By 1965, the science of global warming had progressed to the point that the U.S. President addressed Congress, warning the American people.

Sampling the atmosphere from atop Mauna Loa volcano in Hawaii, American scientists have documented the steady rise of carbon dioxide in the atmosphere.




By 1990, the top scientists on the planet put together an unprecedented international effort to learn as much as possible about global warming and climate change, to assess possible future scenarios, and to discover ways to slow the process to protect future generations. The Intergovernmental Panel on Climate Change (IPCC) released their first report in 1995 concluding that the “balance of evidence suggests discernible human influence”. By 2001, the IPCC concluded that “Most of global warming of past 50 years was likely (odds 2 out of 3) due to human activities”. And in 2007; “Most of global warming of past 50 years was very likely (odds 9 out of 10) due to greenhouse gases”.

The overarching conclusion from the 2014 IPCC report was "Warming of the climate system is **unequivocal**, and since the 1950s, many of the observed changes are unprecedented over decades to millennia".

Primarily by burning fossil fuels, but also through rain forests destruction and unsustainable agricultural practice, humans are raising the concentrations of carbon dioxide and other greenhouse gases to levels that, if left unchecked, will warm the planet's surface to dangerous levels. Since 1990, these basic facts have not changed. The projections made then have come true. The polar ice caps are melting, sea levels are rising, and a host of other climate change impacts are underway.

The heat trapping effects of greenhouse gases follow physical laws, and are known with both confidence and precision. Future global surface temperatures will follow directly from the quantity of greenhouse gases emitted.

If we burn all known fossil fuels, average temperatures will increase by more than 6 degrees Celsius, more than 10 degrees Fahrenheit. That would be catastrophic.

An average temperature gain of that magnitude would complete melting of the polar ice caps, which would raise sea levels by about 230 feet, which would destroy all coastal cities, radically reduce agricultural land, and cause the extinction of many or most of earth's remaining plant and animal species.

So far, average global surface temperatures have risen by almost 1 degree Celsius, or 1.8 degrees Fahrenheit. This has caused heat waves and droughts in earth's dry areas, and powerful storms and floods in wet areas.

It is no secret that many human activities harm the environment. Already, as many as 1 in 4 animal and plant species that existed at the beginning of the industrial revolution are now gone forever.

Because greenhouse gases remain in the atmosphere for many years, it is not possible to reverse the effects of carbon gases that have already been emitted.

However, there are two ways to slow down this warming. First by decreasing and then stopping the release of carbon into the atmosphere. Second; by supporting forests and other "carbon sinks". By taking these steps we could limit additional warming to less than one more degree Celsius, which might be enough to save human civilization and most of earth's species.

The very good news is that it can be done. We know how to stop burning fossil fuels and to transition to renewable energy. We know how to protect our forests, and we know how to transform agriculture in ways that put more carbon in the ground, rather than the atmosphere.

The cost of renewable energy generated from wind turbines and solar panels has dropped dramatically, and is now competitive with coal and gas in many areas.

Improvements in batteries and automobile hybrid technology have made new cars and trucks much less carbon intensive.

If you've read about the Green New Deal or any discussion of the large scale transformation of societal infrastructure needed to meet challenges posed by climate change it may seem overwhelming and beyond your control.

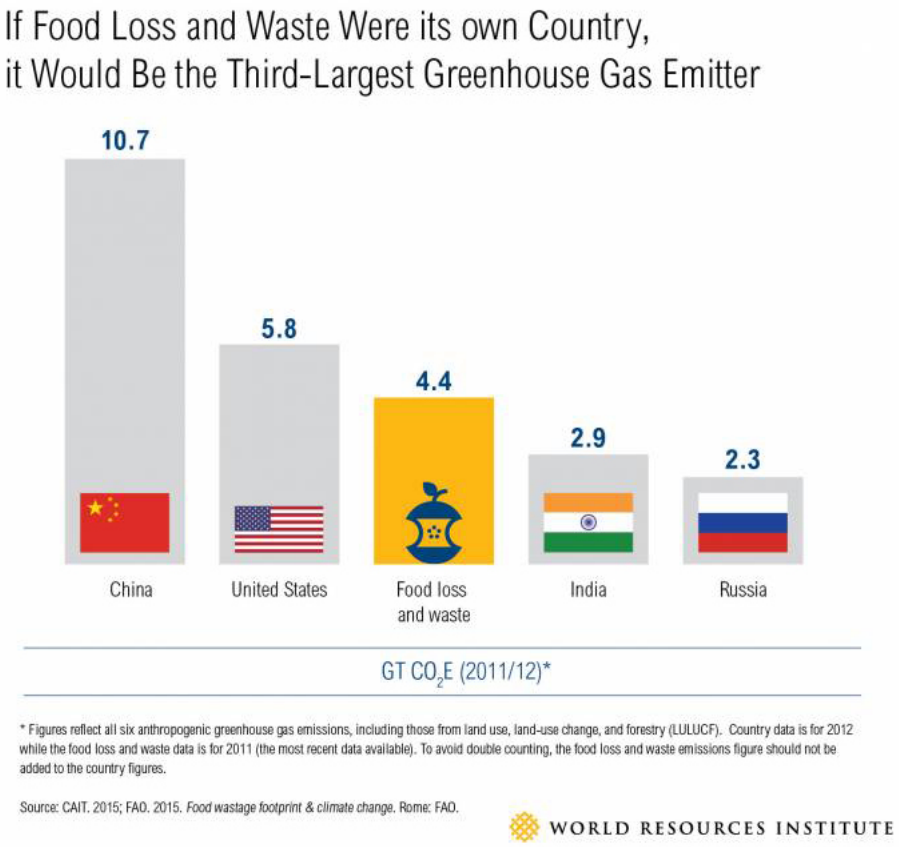
However, much is in your control. Personal choices and habitual behaviors of individuals drive the processes leading to large-scale greenhouse gas emissions.

Change starts with you! Many things you can do to improve your own health, both physical and mental, will also contribute to a sustainable future for all.

On average, the carbon footprint of an American is about 20 tons of carbon dioxide per year. What if you could be healthier and happier *and* have a carbon footprint closer to 10 tons of CO2 per year? If millions could cut their carbon footprint in half, we could begin to tackle climate change.

There are several simple ways to reduce carbon footprint, and improve health and happiness. Most have an added benefit of reducing household bills. Bonus benefits from reducing carbon footprint are called '**co-benefits**', saving money is a common co-benefit. Improving personal and planetary health is priceless.

- To start: eat lower on the food chain, with more vegetables, fruits, nuts and whole grains, and fewer meats and dairy products. This will help you achieve and maintain a healthy body weight, provide an almost unlimited set of delicious foods and recipes, and help you to reduce your dietary carbon footprint by as much as 50%.
- Next, stop wasting food. Every year, the average family of four in the U.S. tosses roughly $2,000 in food; 30 to 40 percent of food produced in this country ends up discarded.



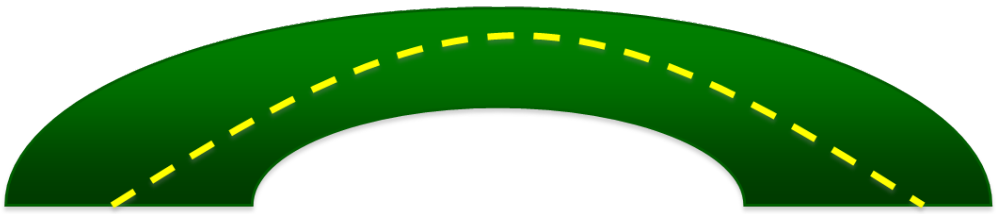
When we waste food, we waste the energy required to grow and transport food. Reducing waste also avoids the deforestation for additional farmland. According to Project Drawdown[1], the food we waste is responsible for roughly 8 percent of global emissions. After taking into account the adoption of plant-rich diets, if 50 percent of food waste is reduced by 2050, avoided emissions could be equal to 26.2 gigatons of carbon dioxide.

- Reduce your personal use of gas guzzling automobiles, and increase the use of your legs and lungs to get you around. Walking, running and biking are great ways to get exercise, and while you will likely still need a car for some purposes, you will be amazed at how much of your past and current driving was really unnecessary, and did not really contribute at all to your health or happiness.

- Conserve water. Across the planet, water demands are increasing, but our water resources are not. Water has a LARGE carbon footprint - energy is required to extract, treat and distribute water, AND collect and treat wastewater. Even if you live in a water-rich region like the Great Lakes, water conservation reduces your carbon footprint.

- Become mindful of your household energy use. By learning to be nonjudgmentally aware of feelings of warmth and coolness, you can then decide what to do about it – ranging from adding or subtracting layers of clothing to adjusting air conditioning or heating. Exploring energy efficiency options for your home can further help reduce your energy footprint.

- Learn to buy less stuff, and to enjoy the satisfactions that accompany mindful self-control. From the time we were children, we were taught to desire toys, clothes, and a host of consumer goods. And yet, while the initial purchase of a desired object can bring a burst of satisfaction, these pleasures are short-lived. Most of us end up with a mountain of stuff that we don't need, and many of us fill closets, attics, basements, and even expensive storage facilities with things we don't need, paying first for the stuff, and then for its storage.



[1] https://www.drawdown.org/solutions/food/reduced-food-waste

Experts agree that climate change is real, caused by humans, dangerous, and – solvable. But there is no single solution. Slowing or reversing climate change requires a multi-faceted response. Technology and policies are part of the fix, but not enough. Because climate change is largely driven by human behaviors related to transportation, diet, and energy use, modifying habits associated with these activities must be part of the solution. Fortunately, these behavior changes all produce a co-benefit of better health.

Mindful Climate Action is an 8-week mindfulness-based wellness and education program for personal and planetary health. Mindfulness, the essence of MCA, is the nonjudgmental awareness of bodily sensations, thoughts, and emotions as they are happening in the present moment. We can begin to slow climate change starting right now.

The objectives of Mindful Climate Action are to empower people to practice healthier lifestyles, to make new choices, and to change habitual behaviors towards health, happiness, and sustainability. Join us!

***FOR MORE INFORMATION, PLEASE VISIT https://www.fammed.wisc.edu/mca/***

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