

What You Can Do

to help reduce global warming. 😊

GOESE



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Personal Environmental Action Plan

Source: https://goese.com/downloads/environment/How_to_Stop_Global_Warming-Prioritized_List.pdf

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DO NOT FEEL HOPELESS!!
Your **votes, habits, choices & activism**
all have a **real impact** on the environment & our future.

 *The livelihood of that bee you saw dying on the sidewalk is more crucial than you might think!*

About This Document

Very few people like being told what to do. So please think of this as a list of ideas that I hope you'll consider, appreciate and share. Many people are suffering from environmental anxiety, which is worsened when our federal government is marching in the wrong direction (supporting coal, fracking, and drilling for oil in parks and natural preserves). When dealing with anxiety, ***the impulse to do something proactive is a very healthy thing***. This list is provided to help anyone who wants to do something about climate change, deforestation, pollution, and the loss of biodiversity. If the list helps you think about this issue a little more often in a positive, proactive way, we're already making progress!

For an effective change to the alarming trends in...

- concentrations of atmospheric carbon dioxide (CO₂) & a long list of pollutants²
- global warming
- ocean acidification & the loss of coral reefs
- the growing loss of biodiversity (i.e. thousands of species going extinct)
- deforestation

...**dramatic change is needed ASAP** at all levels of **government** practices, policies, research funding and legislation (regulations, incentives, conservation) and the **corporate/industrial** world (environmental options like renewable energy/materials, reducing other harmful gas emissions, more effective carbon sequestration methods). However, **your individual actions can help, and certainly won't hurt!** According to the EPA, transportation and electricity generation are roughly tied for "first place" in the generation of harmful greenhouse gasses. You can personally have an impact on both of these sources of CO₂ emissions. Climate change repercussions will ultimately cause more deaths than the coronavirus COVID-19 strain, but because it is emerging so slowly over many years, getting people mobilized to fight this threat is a bigger challenge.

¹ If you must print this, please find recycled paper or paper that is made from rapidly-renewable fibers (RRF) from brands like ZeroTree.

² "Super Pollutants" like black carbon, hydrofluorocarbons (HFCs), & methane (CH₄) are much worse than CO₂.

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These ideas for an action plan (starting below)—suitable for every adult in every developed country on the planet—are listed in order of impact and practicality.³

1. **Vote for political candidates who make the mitigation of global warming a top political agenda** and are willing to turn that agenda into action and laws that force us all to make the necessary changes. Find and support those candidates and politicians here: <https://www.givegreen.com/> Governments and corporations must actively move to more environmental, carbon-negative policies. This is not always the “popular” path. Many industries lobby politicians to make laws and policies that are immutably bad for the environment...only because they’re profitable for corporations. **Individual efforts alone will not be enough to avoid a “highly probable” environmental apocalypse before the year 2150.** Research the candidates you can vote for, and make your local, state and federal choices accordingly. If you don’t have time to do the research, **it’s generally a safe bet that the Democratic candidate is more environmentally attuned** than the Republican one is. I’m very happy to have a Congressional representative (Scott Peters) who worked as an environmental attorney for 15 years and now works in Congress to fight against the terribly anti-environmental policies that Spanky Bonespurs (Donald tRump) and his cabinet members are pursuing to keep the fossil fuel industry happy. I wrote about Congressman Peters in my blog at www.EnvironmentalApocalypse.com after attending a town hall meeting where he addressed environmental concerns. He also agreed during that meeting to have a separate meeting with attendees from www.350.org to focus on solutions. Since that meeting he introduced the bipartisan, bicameral “Super Pollutants Act,” which would protect methane (CH₄) regulations that the Trump Administration is trying to roll back. (Methane is a much worse greenhouse gas than CO₂ is.) Even your local candidates can have a big impact. For example, in our local city council elections this year, one of the candidates is listening to rich constituents (with nothing but first-world problems) complain about electric scooters proliferating around town. To get their votes, he’s proclaiming that he’ll outlaw them. I’ve seen how these scooters—which will never cause the traffic congestion or pollution that cars do—help those who can’t afford a car or can’t find sufficient parking help citizens travel short distances (e.g. from mass transit depot to class). These scooters are a progressive part of an evolving transportation system that this particular politician wants to outlaw so people have to use cars to get anywhere. **Learn more about helping environmentally conscious political candidates at the website provided by the League of Conservation Voters at <https://www.lcv.org/> and review a history of how legislatures are voting on their scorecard here. <http://scorecard.lcv.org/>**
2. **Learn more & spread the word**. Read, watch, and learn more about the climate crisis and our environment. The more you learn about humanity’s environmental impact, the more you’ll want to *do* about it. **Share this list** by copying this link and sending it in emails and texts to people you know... https://goese.com/downloads/environment/How_to_Stop_Global_Warming-Prioritized_List.pdf
Become an effective environmental evangelist, but in a gentle way that won’t make

³ A subjective, proprietary method of sorting the items was used and the exact order is not crucial. Try it all.



people avoid you. (Remember that it's not everyone's #1 concern...yet.) With friends and family who will listen, share what you're learning about our ecosystem and biodiversity. Share your ideas on how we can all have an impact. We can do more with a larger army. You can decide for yourself where you stand on the causes of global warming if you keep an open mind while exploring films and publications. No matter what contributes the most to the current warming trend, the fallout from ongoing climate change has been observable for decades. Here are my current recommendations:

► **WATCH: Chasing Coral**, a Netflix documentary. <https://www.chasingcoral.com/>

As a scuba diver I've noticed the death of coral reefs over the decades, but I didn't realize how widespread the issue is. This film discusses the cause and ultimate effects of this global loss. Coral reefs are like the "canary in the coal mine" of our entire ecosystem.

► **READ: The Uninhabitable Earth**, by David Wallace-Wells. Time will tell if the dire predictions in this book are exaggerated, but so many of the "climate change" effects of global warming described by the author are self-evident and already covered in the news. The "alarmist" accusations by some critics⁴ of the book may turn out to be valid, but the author acknowledges the multidimensional complexity and controversies surrounding the topic. I hope the predictions about what the world will look like in the year 2100 are way too pessimistic. If not, millions if not billions of lives will be lost, and our great grandchildren will be fighting for their lives, wondering why we didn't do more to reverse the current warming trend...even if it was entirely caused by nature! No matter the cause of the warming, the warming has been the cause of four out of the five mass extinctions that have taken place on earth.⁵

► **STUDY IN DEPTH: Biodiversity and Climate Change: Transforming the Biosphere (2019 edition)**, by Thomas E. Lovejoy, Lee Hannah, and Edward O. Wilson. If you care about the plants and animals and don't mind reading a textbook-like tome, this is for you. Wilson adheres to non-alarmist (but still very scary), dry, peer-reviewed scientific review of what has already happened and what is very likely going to happen to all the species in our ecosystem as the climate continues to change. If you're studying the effects of climate change, this reference work should be in your library.

3. **Minimize waste.** This is an overriding theme to keep in mind if you don't read any further down this list. If you're mindful of the energy, material and water you consume, you'll be doing future generations a favor. Examples include:
 - a. Food — Don't buy or cook more than you consume. It takes a great deal of energy and water to deliver that food to your kitchen. Compost food byproducts (e.g. eggshells, banana peels, apple cores) to use in your garden if you're fortunate enough to have one.

⁴ My "follow the money" investigations into people on both sides of the climate-change debate find more fault with climate-change deniers. While many of them are legitimate scientists, some have ties to the energy industry or other economic interests that can be hurt by efforts to reduce CO₂ emissions, and others have not stayed current on the latest scientific findings most pertinent to the topic.

⁵ Interestingly, only the mass extinction that the dinosaurs died in appears to have been caused by a massive asteroid. The others appear to have been caused by big swings in global warming and cooling.



- b. Water — Don't leave the water running when you're not using it, even if you live where there is no water shortage. It takes energy to filter, process and deliver your cold water, not to mention the energy that goes into your hot water.
 - c. Electricity — Turn the lights/AC/heat off when you're not directly using them.
 - d. Gasoline — If you can turn your car off when you're waiting for someone or reading messages on your phone in a parking lot, please do.
4. **Eat less meat.** Meat of all kinds requires a lot of energy and water to produce, and beef is the heftiest offender. I highly recommend watching two movies that have had a profound effect on what I consume for environmental and health reasons:

■ **Forks Over Knives** (2011) <https://www.forksoverknives.com/the-film/#gs.mjxmrq>

■ **The Game Changers** (2018) <https://gamechangersmovie.com/>

Due to the huge cow population required to satisfy the world's demand for beef, cows are a huge source of methane.⁶ Atmospheric⁷ methane (CH₄) is 21 times more potent at trapping heat from the sun than carbon dioxide (CO₂) is. While methane is less prevalent in the atmosphere than CO₂, it is—per unit—the most destructive of the so-called “greenhouse gases,” which is a term used to describe the heat-trapping pollution we have added to our atmosphere, accelerating earth's radiative forcing. Radiative [or “climate”] forcing is the difference between insolation (sunlight) absorbed by the Earth and energy radiated back to space.

To add to the water/energy/emission faults, global demand for beef has caused large parcels of the Amazon and other forests/jungles to be sold to ranchers to raise beef cattle, taking away our second-largest (after the oceans) source of oxygen generation and CO₂ collection. Without accounting for this horrible deforestation, USDA and other data show a vegetarian diet leaves about half the carbon footprint of a “meat lover” diet. Many people think we need animal protein to function properly. That doesn't appear to be the case. There are even professional bike racers who are vegan⁸ and those guys/gals are subjected to insane levels of stress and exertion. If you want some animal protein in your diet you can get that from eggs and cheese. (V) **After watching Game Changers** (the movie), I decided to switch to a vegan (herbivorous) diet for multiple reasons. If you have a vegetarian in your family, you probably already know there are countless, delicious vegetarian recipes and ready-to-heat meals that can make you and the planet healthier.

5. **Donate to family planning organizations** that help men and women around the world [who do not want to conceive] obtain family planning (birth control) products & assistance. A 2017 World Health Organization (WHO) study found that **about 214 million women of reproductive age in developing countries who want to avoid pregnancy are not using a modern contraceptive method.** In some countries, this topic brings us back to the “vote” action item above. Some religious fundamentalist

⁶ Cow burps and manure contribute more methane gas than their farts do. Cows, sheep, goats, giraffes, and deer belong to a class of mammals called ruminants, which have more than one stomach chamber. The first chamber (division) is the rumen. Microbes in the rumen create methane gas as a byproduct, which ruminants burp out.

⁷ Earth's atmospheric methane concentration has more than doubled since 1750. The largest reservoir of naturally-occurring methane is under the seafloor in the form of methane clathrates.

⁸ It should be noted that Vitamin B₁₂ (cobalamin) supplements are required in the vegan diet.



politicians would like to outlaw birth control of any kind, which makes no sense to any thinking person who is interested in ever having sex. Birth control is the most profound way a woman can retain control of her body and her life. Capitalists who want a “bigger economy” (read: more customers) also find ways to fight family planning.

- a. **Population growth is the #1 contributor to our destruction of the environment.**
- b. Countries, states and cities that make it easy for people of all ages to purchase low-cost condoms obviously have a much lower level of unwanted pregnancies.
- c. Read more here: <http://populationgrowth.org/>

6. **Reduce, Reuse, Recycle.** ♻️ This suggestion is heavily tied to the “minimize waste” recommendation. The bottom line of this whole problem goes like this:

❖ **TOO MANY PEOPLE CONSUMING TOO MUCH**

Our material recycling processes—whether that of metal, paper, plastic, electronics, or whatever—are very inefficient. This is why **the “reduce” and “reuse” mantras should be heavily emphasized** so there is less for us to recycle. Just the same, recycling (when done properly) can save energy and reduce the amount of new material production required. Not only that, but most paper is still being produced from “virgin” pulp that does not include any recycled material, which means CO₂-reducing trees are being cut down to make your paper. Do your best to reduce consumption and reuse items that can help displace the production of more stuff that consumes energy and fills methane-generating landfills. Granted, the funding and status of many municipal recycling programs are abhorrent and the countries we’ve dumped our “recycled” plastic on have been overloaded, but that doesn’t mean we shouldn’t try. These factors just emphasize how much more important the “reduce” and “reuse” aspects of this are. Be mindful when you sort your recyclables. Don’t toss dirty items or items they don’t recycle into the bin. ***If the recycling batch is too spoiled with non-recyclable items, the screeners may put the whole batch into a landfill,*** negating all those recycling efforts. And remember, all those little receipts printed on “thermal” paper are NOT recyclable.

7. **Donate to environmental organizations** that are doing something about global warming.⁹ They help raise awareness of environmental abuse issues, and many of them work through the legal system and by other means to get governments and large corporations to shift in a direction that will make bigger improvements than we can as individuals. NOT all environmental organizations are created equal. If you’re looking at one that supports biofuels or biomass¹⁰ energy production, it probably has connections to “new energy” tycoons that want to control the “beyond coal” market

⁹ Are you currently making donations to feed the poor and heal the sick? In the long run, these environmental organizations will have a greater effect on wellness and safe food production for humanity through their work to keep our environment healthy and stable. Also, some of them (like RAN) work for the people affected, too.

¹⁰ As you probably know, biomass energy’s environmental value is dubious, whether the source is peat, timber, or more quickly “renewable” sources like agriculture or sugarcane.



without particular regard for the environmental impact.¹¹ I recommend donating to one of the organizations below rather than buying carbon offsets.¹² Unfortunately, some of these organizations send you lots of paper through the mail after you donate—which isn't congruous with the environmental cause—but you can ask them to stop.¹³ (If they don't stop, cut them off.) If you don't feel you have the spare change to donate, there are NO-COST ways to contribute, like switching your default search engine to Ecosia, which contributes ad revenue to tree-planting efforts around the world. (see <https://www.ecosia.org>)

- a. **Give Green** (<https://www.givegreen.com/>) offers an easy, strategic way to support environmental candidates and accelerate action on climate change. Corporations change their polluting behavior when laws and lawsuits **force** them to. Otherwise they'll do whatever is most profitable for them while they weave a "green story" for you. The laws won't change if we keep electing politicians who do not make the survival of our environment a priority.
 - b. Rainforest Action Network (RAN), (<https://www.ran.org>) who were among the first environmental organizations to call out the extensive fraud surrounding biofuel and dubious biomass energy projects.
 - c. Union of Concerned Scientists ("UCS" at <https://www.ucsusa.org>) constantly exposes politicians and corporations for practices that are bad for our health and our environment.
 - d. Natural Resources Defense Council (NRDC; <https://www.nrdc.org>)
 - e. Environmental Defense Fund (EDF; <https://www.edf.org>)
 - f. 350.org (<https://350.org/>) has put feet on the streets and voices in political and corporate meetings to raise awareness of environmental issues and legislation.
 - g. Conservation International (<https://www.conservation.org>) buys up land to keep it out of the wrong hands (e.g. governments & mining companies) and advises many corporations on how they can be better stewards of our planet.
 - h. Greenpeace (<https://www.greenpeace.org>) has been pursuing a multifaceted approach to advocacy for biodiversity and the environment.
8. **Adopt** instead of making more humans. This recommendation meets criticism¹⁴ but there's no getting around the fact that the root cause of our problem has been the population explosion over the past two centuries (~7.8B in 2020 vs. ~1.1B in 1820). So if you want to have children but aren't 100% committed to producing all your own, consider adoption. The environmental benefits of adoption over creating more humans is undeniable, and the societal benefits resulting from you giving that child a loving home are tremendous.

¹¹ The movie "Planet of the Humans" by Jeff Gibbs (2020; Michael Moore, executive producer; free on YouTube) leans heavily into them with some partially outdated/inaccurate insinuations/accusations while issuing a mortifying wakeup call to all of us.

¹² See this brief article to learn why: https://grants.ran.org/hrf_faq/whats-wrong-with-carbon-offsets/

¹³ The Nature Conservancy—while a respectable organization with an attractive charter—is an especially egregious user of paper mailings to solicit more money after you donate to them. The more paper they mail to me, the less likely I am to continue to donate, especially if they continue to do so after I ask them to stop.

¹⁴ My wife thinks this suggestion is terribly "out of line," but I have to disagree with her since overpopulation is the #1 cause of the climate crisis. Just study the history of overpopulation of any species and you'll find we're hitting the "wall" right now. Remember, this is a list of ideas. We didn't adopt.



9. **Volunteer** at any of the many environmental and family planning organizations.
10. **Go Paperless with almost everything.** Your printed newspapers, magazines & bills often kill¹⁵ trees—including those in virgin, old-growth¹⁶ forests that have been developing for thousands of years—for virgin wood pulp. Oceans and **forests** are our best bets for reducing greenhouse gasses until we discover more efficient, synthetic means of carbon capture. Deforestation accelerates the destruction of our ecosystem. Pulp/paper manufacturing is one of the greatest sources of pollution and greenhouse gas emissions. Get your news, entertainment, bills and catalogs *online*. Read the news on your computer, phone, or tablet (rather than having fossil fuel-burning cars and trucks deliver them to your home). **Remember the “reduce” and “reuse” parts of the environmental mantra are more important than the “recycle” part.** Use real plates, cloth napkins and a handkerchief to stop killing trees to make disposable products.
11. **Buy recycled paper or paper from non-tree sources.** OK, so we can't always go paperless with *everything*. If you're not using recycled toilet paper, paper towels and printer paper, chances are you are contributing to the unbridled deforestation conducted by the lumber and paper industries due to the demand for cheap, virgin pulp paper. Those fancy paper napkins that don't use any recycled paper are literally causing the death of trees that should remain standing to help sequester CO₂. **There are so many recycled and tree-free “rapidly-renewable fiber” paper options available...just look for them.** I'm finding that they are not necessarily more expensive anymore. *Unfortunately*, when this paper is shipped from Asia, the delivery of this "green" product on cargo ships is burning heavy bunker fuel (aka “black yogurt” for its consistency), which emits soot that captures heat when it settles on ice, accelerating the melting of the polar ice caps. The USA needs to get its hemp, sugarcane and bamboo production up to help make paper from more readily-renewable resources and byproducts. Finally, minimize your use of colored paper, as that adds a greater bleaching challenge to the recycling process as the most in-demand recycled paper color is white.
12. **Think before you print.** Do you really need to make a paper copy of that? Make your “default printer” a PDF file generator and share your output electronically via email rather than in “hard copy,” which is more of a pain to archive than electronic files are anyway. Fortunately, generations after the baby boomers are naturally migrating to mobile devices and computers as “paper replacements” more than the boomers have.
13. **Replace** your incandescent lightbulbs. LED bulbs use a small fraction of the energy.

¹⁵ Paper advocates claim that if we stop using paper then there will be no motivation to plant new trees to make more paper. Here's a catch: We can plant new trees then just let them grow and collect CO₂ without us cutting them down. We need all the forests and healthy oceans we can get to maximize CO₂ reduction.

¹⁶ An old-growth, primary or late seral forest is one that has reached advanced age without significant disturbance (e.g. cultivation or harvesting by humans). Demand for virgin paper pushes the logging industry into old-growth forests for a new supply of wood and virgin wood pulp, while environmentalists desperately try to communicate the importance of leaving these forests untouched for the maintenance of biodiversity, water regulation and nutrient cycling, which includes CO₂ capture.



14. **Install solar panels** on your home and business. Install much more than you anticipate needing to assure that your home's contributions to the reduction of CO₂ emissions go beyond your energy usage. Most areas of the country allow you to actually contribute energy to the power grid when your solar panels generate more than you're using, even if you don't include a battery system. Tell your representatives in government that you believe in government incentives to get more people to install solar panels on their homes.
15. **Commute by bike.** This is even better than an electric car, and in some cities it might get you there faster. I'm so happy to see the booming electric bike market in San Diego getting commuters out of their cars and onto electric bikes, bypassing traffic jams in the bike lane. Try it. You'll be healthier and happier.
16. **Buy an electric, plug-in hybrid (PHEV), or hybrid car.** If you drive often in stop-and-go traffic and you have a conscience, you know how terrible it feels to be spewing toxic gases into the atmosphere while getting nowhere. Many gas/diesel models now stop the engine when the vehicle is stopped for a few seconds. That's a start, but kluge at best. **I can't tell you how much more comfortable I feel having a car that isn't spewing fumes when it's stuck or rolling slowly in heavy traffic.** If you install enough solar panels on your home to charge your EV/PHEV and power everything in your home, you'll feel even better, knowing that the sun is powering your car instead of the natural gas or coal that's burned to deliver electrical service to your home. The available selection of EV/PHEV cars is growing every year. If you can afford to put up enough solar panels and you drive an electric car, your commute and errands can all become carbon neutral or possibly even carbon negative. Donate your old car to an eco-centric charity (for the tax deduction). If you can't afford an electric vehicle, make fuel efficiency a major decision factor in your next purchase and a part of your driving habits.¹⁷
17. **Use mass transit when you can.** Have you explored the bus and train options available for your commute and travel plans? Flying consumes a great deal of energy by comparison. What is the most environmentally sound way to travel on vacation? Assuming that your travel is fully booked, the diesel bus comes out on top, followed by the high-speed train, then a car with three people in it, then the medium-sized aircraft, followed in last place by the cruise ship. But trains and buses have an average occupancy of only 40%, *which would go up if we all used them.* Ideally, we'd all have electric cars that are charged entirely by environmentally-produced energy, like solar panels on our roofs and charging stations powered by the wind and the sun.
18. **Carpool.** It's not always an option, but look into it! Try the eRideShare phone app. You could save a ton of money, make new friends who live and work near where you do, and greatly reduce your contribution to the problems we're facing.
19. **Consolidate your travel.** So you live in America and have always wanted to see Dublin and Paris? Combine your trips to reduce the fossil fuels burned to fly you over the ocean. If you're not already donating to one of the organizations I listed on

¹⁷ Slower acceleration provides cleaner emissions and gives you better gas mileage.



page 2, you can help offset your travel carbon footprint by buying carbon offsets at websites like <https://www.carbonfootprint.com/calculator.aspx>.

20. **Minimize your travel by cruise ship.** Do you need to burn fuel to literally move your resort or amusement park with you as you travel? The International Council on Clean Transportation estimates that even the most efficient cruise ships emit 3 to 4 times more CO₂ per passenger-mile than a jet. Also, most cruise ships run on dirty, heavy fuel oil. Some have begun using “scrubbers” to remove toxic sulfur oxides from their exhaust, but the scrubbers discharge the pollutants into the ocean.
21. **Buy local.** This isn't just about supporting your local economy. **If your food, drinking water, wine, beer, and other routine items can be sourced locally, less energy is consumed in delivering those goods to you.** Your choice of type of food (e.g. no meat) may have a bigger environmental impact than the shipment does, but flying food from distant countries rarely makes sense from an environmental standpoint. **I love Germany, the Netherlands, France, Spain, New Zealand, Australia, and Chile...but nowadays I try to buy all of my beer and wine from California and Oregon because I'm aware of how much CO₂ and pollutants are put into our atmosphere to ship those items from other countries to us here in California.** Buying local also helps boost our local economy. California produces some of the best beer and wine on the planet! Vodka from Russia? NFW, for two obvious reasons. Tito's vodka is better than all the others and it's made in the USA.
22. **Plant trees.** Or donate to an organization that does. Or volunteer with an organization that does...which can be good, mood-lifting outdoor exercise. After the oceans, forests are our biggest source of clean air best available means of CO₂ greenhouse gas reduction.
23. **Turn it off.** Turn off your lights and appliances when you're gone for any length of time. It will save you money and reduce wasted combustion of fossil fuels. Turn off your car when you're sitting in a parking lot or waiting for someone unless the weather indicates a need for AC or heat. Open a window and get some fresh air.
24. **Widen your comfort zone.** If you make an effort to *climatize and dress accordingly*, you can lower your heat in the winter and use less AC in the summer, saving what is probably the largest portion of your energy bill. Just a couple degrees difference can save thousands of pounds of carbon emissions each year.
25. **Try a space heater** at night in your bedroom. If you're heating your whole home at night, you're probably using a *lot* more energy than necessary.
26. **Turn your water heater temperature down.** You can still enjoy your same hot shower...it will just have less cold water mixed in. Your water heater will last longer and you'll save money. Despite your water heater's insulation, it takes more energy to raise the temperature higher and store [about 60 gallons of] the hotter water.
27. **Use less water.** Even if your town isn't experiencing a water shortage, remember that the gathering, treatment, and delivery of your water requires a lot of **energy** (especially when you're using hot water). Minimize the use of sprinkler timers that water your yard even on rainy days. Convert to plantings that require less water.



28. **Boycott** corporations and organizations that cause the greatest damage our ecosystem. If you're brave and have the time, feel free to shame them on social media (e.g. Twitter) for their horrible practices. Here is a sampling of the worst culprits who waste energy, promote population growth, and cause deforestation on a massive level.
- Bitcoin — Because of the algorithms they use, Bitcoin causes computers around the world to consume about as much energy as the entire country of Ireland. Other cryptocurrencies have the same problem, which can be reduced with a change in their algorithms.
 - Fiji Water — Buying water from overseas is just plain silly, and Fiji Water is the worst because they like to pretend they are environmentally oriented while their customers fund the shipping of plastic bottles from China to Fiji, then shipping full bottles from Fiji to nations around the world. For every sip of that water, the customer is supporting the combustion of more than that amount of fuel just to deliver it.
 - The Catholic Church — I was raised Catholic, so I'm pretty familiar with their efforts to boost the population and shun birth control. In case you haven't already boycotted them for the thousands of sexual abuse cases that finally came to light, look again at the church's long history of missionaries that spread the idea that birth control is evil. (Why? To make more evangelists, of course...to win the stupid religion game.) Remember that population growth is the #1 "engine" behind our unprecedented CO₂ emissions.
 - Johnson Controls — The building industry is one that has so many opportunities to choose strategies and products that have a big impact on the environment, which makes blatant "anti-environmental" moves especially despicable from a key vendor like Johnson Controls. In February 2019, a federal court ruled the Trump administration acted unlawfully in rolling back an energy efficiency rule in favor of one manufacturer of central air conditioners, Johnson Controls International, to the detriment of consumers, the environment, and other manufacturers. The U.S. District Court for the Southern District of New York declared the rollback "arbitrary and capricious." Builders will be doing us all a favor if they chose alternative vendors for HVAC systems.
29. **Don't buy purebreds.** As with the "adoption" suggestion above, choosing to have your next pet be a "rescue" instead of financially supporting the breeding of more pets—while thousands of unwanted ones are being euthanized—makes sense on more than an environmental level. Pet population control can help just as human population control does, albeit to a lesser extent since pets aren't driving cars and buying Fiji water.
30. **Move** to a more temperate climate. I know...easier said than done, but the amount of energy you'll save by not having to use heat and/or AC nearly as often can put a big dent in your CO₂ emissions. Plus, you'll probably be outdoors more often and live a healthier lifestyle.



31. **Don't use aerosol sprays.** Use “pump” sprays instead of pressurized cans, if you must use a spray.¹⁸ After chlorofluorocarbons (CFCs) were banned in most countries because of their negative effect on Earth's ozone layer, replacement propellants in products like hair spray and sunscreen spray have included volatile, flammable hydrocarbons (e.g. propane, n-butane and isobutane), dimethyl ether (DME), and methyl ethyl which are all very bad for the atmosphere. Food stuffs (e.g. whipping cream, cooking spray) typically use nitrous oxide (N₂O, aka “laughing gas”) & carbon dioxide (CO₂). Nitrous oxide was recently found to be a major scavenger of stratospheric ozone, with an impact comparable to that of CFCs. Even medicinal aerosols (e.g. asthma inhalers) use hydrofluoroalkanes (HFA) which deplete the ozone layer. While a **pump spray is environmentally preferable to any propellant-based aerosol**, some propellants aren't as bad as others. Liquid Hydrofluoroolefin (HFO) propellants are gaining some acceptance due to their relatively low vapor pressure, relatively low global warming potential (GWP), and non-flammability.

Final Comment:

According to the National Oceanic & Atmospheric Administration (NOAA), human activities since the beginning of the Industrial Revolution (around 1750) have produced a 40% increase in the atmospheric concentration of carbon dioxide (CO₂), from 280 ppm in 1750 to 406 ppm in early 2017. We are “snuffing out” our planet as we know it with excess greenhouse gasses, which in turn cause the “greenhouse effect” that gives us global warming. We must turn this around. Most of the responsibility for making big changes rest on your elected government officials and large corporations. But you can help by not exacerbating the problem with careless waste.

CONTACT ME: Have feedback? Share your comments and corrections with me (Dan Goese) at my environmental blog at www.EnvironmentalApocalypse.com.

THANK YOU!

Thanks for joining me in my effort to postpone
the looming environmental apocalypse.

¹⁸ Using spray sunscreen at a public beach? Look downwind for people annoyed at you for your disregard of their right to clean air. Why not just wipe a non-spray lotion on? That worked for decades when I was growing up.

