

# Essay #6 - Living In A Time Of Climate Chaos

## Introduction

Before we move into a deeper discussion about living in a world affected by dramatic global warming, I need to apologize – I've been wrong about climate change in two ways.

For more than three decades I've studied anthropogenic climate change, and advocated action to stop it. I've written and talked about its origins and impacts – that the production and use of most of what we consume emits greenhouse gases, and that those gases are changing our world – threatening the environment that sustains us to the point where ultimately our civilization is at risk.

I have voiced my view that we in the United States (and in industrialized nations in general) are the ones causing the problem, and we have a moral obligation to stop it by changing our consumption patterns. I have also tried to make the case that we need to make amends for the damage our consumption (and the resulting greenhouse gas emissions) have brought and will continue bringing to the world – particularly to the poor and vulnerable.

Over the years, as I and other activists have become aware of the climate change problem and have come to understand its implications, we have advocated government action. It would be immensely helpful if our governments, particularly the Federal government, committed whole-heartedly to effective climate programs. After all, a solid majority of Americans believe climate change needs to be stopped, so as constituents we should expect our governments to respond to our will. We activists have also pushed for changes in industry, hoping the leaders of the most polluting companies would recognize their moral obligations to cut and eventually eliminate their climate emissions. We are their constituents as well and theoretically those companies only exist to provide us with their goods and services. But expecting either of these areas of action is tantamount to fantasy in today's political and economic environment.

And so year after year its the same pattern – we concerned citizens militate for climate action from government and industry that is not forthcoming, while we ourselves continue to be responsible for significant greenhouse gas emissions. We want someone to do something, but have personally done little beyond shifting from the most polluting products to ones that only marginally reduce our overall climate footprint.

I have long believed we can change this pattern – that an aggregation of individual actions could begin to make dramatic changes in our culture – that a mass movement could begin a process that would lead to significant reductions in greenhouse gases; that such a movement could shift the political and economic environment to make it truly possible that all of this together could arrest climate change. But we haven't taken those individual actions and that mass movement has yet to emerge.

So I have grappled with the basic question: why don't we quit nibbling on the fringes and get to real action. I have contended that we greenhouse gas emitters would change our personal consumption patterns if only... If only we had workable alternatives to the dominant lifestyles embedded in our industrial society... If only those alternatives were attractive enough to draw in significant portions of our population.

And so I have spent considerable effort exploring lifestyle alternatives and pushing others, including participants in our current seminar series, to do the same. I was thinking this lack of alternatives was stalling a broad-based movement of personal action. I was sure that if we could just come up with the right alternative dream, we would rush into in a flurry of actions that would cut our climate footprints to the quick.

But I now realize I was wrong – not about the science of climate change and the seriousness of the problems it's causing. Rather, about my concept that finding the right lifestyle alternative was a magic bullet – a pathway to our salvation.

I want to explain below how I came to this conclusion and, more important, what I think is really holding us back. Ultimately, I want to connect this fairly narrow focus on personal morality to the broader subject of living in a time of climate chaos.

## **The alternative dreams**

My first error was thinking we have no workable alternative lifestyle related dreams. I discovered this shortcoming when I searched and found information on a plethora of alternatives that have been tried or at least proposed in the United States and around the world.

First are the Utopian dreams. These include the Shakers, Oneida communities and other offshoots of the 19<sup>th</sup> century Utopian movement. More recently were the Back-To-The-Land and related Hippy movements in the latter 20<sup>th</sup> century. All of these were largely based on various threads of idealism. As a whole they largely failed, but there is a wealth of inventive ideas contained within the histories of these efforts.

In the area of politics, despite the dominant and longstanding focus of our state and national governments on Pluralistic (political) Capitalism, our country has a history of alternative political dreams, which ultimately would have translated to lifestyle changes. At various times, interest groups have seriously pursued libertarianism, democratic socialism, and Christian theocracy. Through the years we have also toyed with communism, various forms of agrarian populism, and other political isms.

It is worth noting that the stability or our country's focus on political capitalism has, at times, been shaken by economic disruptions. A series of sharp depressions in the late 1800s and the Great Depression of the 1930s generated significant interest in political alternatives. The recent Great Recession, along with our growing wealth gap, has generated renewed interest in socialist alternatives. It seems to me there is an open question as to whether this interest would intensify if we were to experience another significant economic downturn, or political turbulence – particularly as a result of climate impacts. The bottom line though is there are many alternative political concepts, and again great gobs of alternative ideas embedded in their histories. While these movements focused on frank political change, the all had strong elements that did or would have resulted in changing individual lifestyles.

And then there are the lifestyle alternative dreams driven by religious belief. These vary, but are generally centered on dictates that come from various religious prophets and teachers. Examples include the Christian new testament teaching to reject the trappings of wealth and serve the needy, as exemplified by Mother Teresa; Anabaptist lifestyles as best represented by Amish and Hutterite communities; society-wide ethical behavior models taught and lived by Gandhi and Martin Luther King; and Buddhist models of non-exploitative lifestyles as exemplified by the Sri Lanka farmers' movement. Other examples abound as intact lifestyle concepts and aggregations of lifestyle ideas.

Finally, there are alternative lifestyle concepts from secular sources. A notable fictional example is found in the book Ecotopia. More reality grounded concepts can be found in the writings of Wendell Berry and others. There is also the well-documented experiences from the Israeli Kibbutz communities – where groups of people migrated to Israel during the turbulent early and mid 20<sup>th</sup> century, and settled and thrived in a harsh physical and social environment. And there is the broad spectrum of back-to-the-land writings – both testimonials and how-to information.

My search proved to me that we don't lack information and inspiration relating to alternative lifestyles. Why then have the majority of Americans who are concerned about climate change, including the we members of the climate chaos seminar, been so reluctant to step away from our pursuit of the American Dream – the engine that drives our climate emissions – and start down the pathway toward an alternative dream?

## Are their political solutions?

But exploring this question begs another one: do we really need an alternative lifestyle? Perhaps we activists truly believe that government will solve the problem. After all, several carbon tax proposals were introduced in congress this year, or are circulating around Washington DC. In addition, the Green New Deal was proposed a year ago, and has gained great popularity among Democratic Presidential candidates. Won't these proposals or similar ones solve the climate problem and allow us to keep living as we now do?

First lets look at the **carbon tax proposals**. The most aggressive of these is the “Raise Wages, Cut Carbon Act of 2019”. It would impose a \$40/ton CO<sub>2</sub> equivalent tax and would increase this rate by 2.5% per year until emissions drop by 20% relative to those in 2005. Most of the taxes collected would go back to taxpayers – 84 % would be used to reduce payroll tax and 6% would go to helping low-income families.

The reimbursements are laudable although they do make the greenhouse gas reduction impacts iffy. But setting that aside, a \$40/ton tax on CO<sub>2</sub> translates into tax of about 3 cents per gallon of gasoline. Really! 3 cents a gallon? Is this enough to encourage anyone to stop using gasoline for transportation?

And would even this limp proposal pass into law? Keep in mind that in 2009, with Democrats in control of the House and Senate and White House, Congress considered a proposal that would have started at a carbon tax at just \$15/ton CO<sub>2</sub>. The Senate rejected it. Do we think this new proposal (or any of the similar ones) would have a prayer of passage in the current political environment?

Second, the **Green New Deal**: this ambitious proposal has elements that would try to arrest climate change, as well as other provisions for rebuilding our crumbling infrastructure, making our health care system more accessible, and addressing various other economic and social inequities. It has lofty goals but few specifics. Estimates of the costs vary from \$10 or \$20 trillion over the next ten years, to over \$90 trillion. There is nothing in the current proposal describing how it would be funded.

I applaud this program despite its vagueness. It strikes me as a breath of fresh air in comparison to the wimpy carbon tax proposals now circulating in Washington. But none of us should confuse aspirations with reality. The Green New Deal has, in my opinion, zero chance of passage without at debilitating modifications at a minimum. More likely, it has virtually no chance of enactment without revolutionary changes in American politics.

And another crucial point here – political proposals imagine government policies that would force changes in society that would ultimately fix the climate problem. They do not, as yet, imagine how we would need to change our lives in response. For example, they might impose a carbon tax that would push us away from our gasoline cars, but what then? Electric cars are not zero emissions. Neither are buses or rail. Zero emission transportation is something out of 19<sup>th</sup> century Nebraska, or today's Irrawaddy river delta. Those models won't likely work here, but no one seems to be inventing ones that will.

So, sadly, I don't believe we currently can turn to anyone's dreams of a political alternative as a viable approach to arresting climate change. I believe any real climate change solution would need to start with us. But are we up to the task – starting a grass-roots movement, or even just initiating expressions our moral values?

Which brings me back to our individual actions. I think it's possible, however unlikely, that a moral movement focused on taking individual responsibility for our greenhouse gas emission could grow and spread to the point where it would have real impact on our nation's climate emissions. More important, I believe such a movement could have a major impact on national politics, much like the abolition movement in the 18<sup>th</sup> and 19<sup>th</sup> centuries – which also started as an aggregation of individual taking responsibility for their moral actions. That movement ultimately came to dominate national

politics.

But even if that lofty aspiration is never reached (and I fully realize it's unlikely) – even if our actions never become more than our actions – is it worth the effort to live our lives consistent with our moral better selves rather than cast those values aside and rush on to climate oblivion with the rest of the crowd?

If we think we want to do this, we face the question: Can we really dramatically reduce our personal climate footprints and still live a satisfying life? This gets to my second error – I once believed we needed to have a canned alternative, a well demonstrated and vividly attractive alternative lifestyle, right there in front of us, before we would step away from the standard American dream.

I recently tested this belief. But as I explored the literature on lifestyle alternatives, it became clear to me that these alternatives are largely, if not wholly, unrelated to our focus on climate change and living in a time of climate chaos. Climate activists and climate researchers have been much more focused on government policy and mass action than on individual efforts. And so I found little information about how much alternative lifestyles might affect personal climate emissions.

To make up for this lack, I stepped into an analysis of the climate footprint impacts of several lifestyle alternatives. My objective was to imagine sets of lifestyle alternatives to the American dream, then ask the question “how effective they might be in reducing climate footprints (personal greenhouse gas emissions)?”.

## **Lifestyle tests using climate footprint calculators**

Fortunately, a few research centers have put considerable effort into helping individuals quantify their climate footprints, including the CoolClimate Network at UC Berkeley. And so, I used the CoolClimate calculator to assess the impacts of my various emissions reduction scenarios. While this tool not perfect, it is relatively easy to use and allows considerable flexibility.

I ran a four categories of scenarios – actually I ran nearly two dozen separate scenarios, but I will briefly describe the four main ones below.<sup>i</sup> These scenarios start with a standard American lifestyle, then move toward near-zero emission cases.

**Baseline scenario:** I first set up the calculator for a two-person household in Auburn CA. I wanted this case to look at the standard American lifestyle (as representative as possible of seminar participants). I assumed a retired couple with a total family income of \$80,000/year (career retirement + social security + investment income). This hypothetical couple was average in every way for Auburn in terms of the calculator. The result was a household footprint of 54 tons CO<sub>2</sub>eq/year, or 27 tons/per person.<sup>ii</sup>

**CoolClimate's "Take Action" scenario:** Here I took all the relevant suggestions from the CoolClimate network (offered at the end of my two-person household baseline run). They included more than a score of actions, from changing light bulbs to installing rooftop solar to buying an ev and a hybrid vehicle. These actions reduced the household footprint from 54 tons CO<sub>2</sub>eq to 32.59 tons for the couple, or to 16.3 tons/person/year. While this reduction is dramatic, it still only took the household per-capita emissions down to approximately the US average, which is about 2 1/2 times the global average of 6.8 tons/person/year.

**A scenario to reach the United Nations reduction goals for 2030:** In late 2018, the UN climate program published a report stating that in order for the world to stay below 1.5 degrees C of warming, global greenhouse gas emissions need drop 45% from 2010 emission levels by 2030 and to zero by 2050 -- which, as a result of emissions growth since 2010, means we need to reduce current emissions more 50% from today's levels to meet the 2030 goal. The global average climate emissions in 2018 were 6.8 tons/person/year, so citizens of the world need to cut that to 3.4 tons in ten years. Since I'm

assuming we in Auburn want to be responsible citizens of the world, this would mean that we too should cut our emissions to 3.4 tons. So in this scenario I modeled cuts in transportation, housing, and purchase of goods & services that took the footprint of the two-person retired couple down to that level (actually to 3.2 tons/person/year if you want to be picky). These particular cuts are aggressive but I believe they are achievable – they are in line with descriptions of active frugality (minimalism, simplicity) that have recently become popular in the media. Since there are other approaches to achieving the same level of cuts, I now believe that achieving this goal just takes a little thinking and a lot of action.

**Near-Zero emission scenarios:** I made two additional runs to see how difficult it would be for a dedicated group working in cooperation (as opposed to a couple working by themselves), to achieve very low per-capita emissions. One of these cases assumed the group was based in the town of Auburn, the other was based at a farm (I used my forest farm as background for this model). Both scenarios achieved approximately one ton/person/year emissions.

As a side note, I determined during my analysis that the CoolClimate model did not incorporate emissions from government operations in their calculations of personal emissions. For example, in the calculator, auto travel emissions include only the life-cycle emissions of an individual's car but none of the government operations emissions related to building and maintaining the road and highway system that car travels on. So as a supplement to these last scenarios, I searched the literature for analyses on the portion of US greenhouse gas emissions attributable to all levels of government operations. I was not able to find such a number, so I coarsely derived it myself -- taking the operating costs of all levels of US government (minus transfer payments) as a fraction of GDP, and multiplied that times the national climate footprint. This analysis implies that government operations at all levels are responsible for approximately one quarter of total national climate emissions. It also then implies that even if an individual took personal emissions to zero, the government emissions attributable to him or her would still be over 4 tons/year.

What does this mean aside from the fact that our governments emit a bunch of greenhouse gases? It strongly implies that if we want to be responsible citizens of the world and at the same time citizens of the US; and we fail in whatever efforts we may take to get our governments to cut climate emissions, we must then find a way to offset 4 tons/year of government emissions. (I hope to discuss the implications of this in later seminars.)

I went through all of these scenarios in order to backward-engineer examples of lifestyle models for people to consider at the next seminar (and also because I am an unabashed numbers nerd). My perception during the first two seminars was that participants were stalling on the question of how much we should and could cut our greenhouse gas emissions because we didn't have a clear image of a low-emissions lifestyle dream that could replace the standard American Dream.

However, as I proceeded through the analysis, it became clear that there are many readily conceivable and (while perhaps difficult) achievable options for substantially reducing our individual climate footprints. This led me to the conclusion that the problem stalling people is not the lack of alternative lifestyle models (dreams), but rather (for a variety of reasons) the lack of will -- the lack of an overarching belief that we need to and can dramatically reduce our emissions. And my conclusion from all this is that I can offer dreams, but belief? Not so much.

And so the question I now want to pose to seminar participants is not “what is the alternative lifestyle dream that will take us to ultra low climate emissions?”. Rather, it is “what will it take for us to believe we need to find such a dream and step into it?”

## **Moving on**

My proposition at the beginning of the seminar and essay series was that climate change and

climate chaos was coming regardless of government programs, political protests, industry deployment of new technologies, and collective personal action. (I don't think this should be the case, I just think it is.) In the first seminar, we discussed this proposition, and there seemed to be strong agreement. We also briefly touched on the likelihood of climate chaos, (with consensus that it is probably in our future) but I have always expected to explore this in more depth.

As a next step, I wanted to pose questions on the moral responsibility and climate emissions. I still think questions are interesting and important, but as some point we need to expand the discussion to an exploration of personal responsibilities and morality in a time of climate chaos – after all, “Living In A Time of Climate Chaos” is the title of the seminar series.

In the years to come, I believe climate change is likely to cause the world around us to degrade, and devolve into chaos in one or more of several ways, including but not limited to the following:

- immigrant related social and political disruptions
- storm related social and political disruptions
- wildfire related social and political disruptions
- food disruptions and food riots, and consequent social and political disruptions
- plague related social and political disruptions
- climate policy related social and political disruptions

And so, my next question to seminar participants and other essay readers becomes: Is this belief on my part of the coming of climate chaos valid? Because if these or similar catastrophes were to visit our world, we, and the people around us, are likely to experience considerable misery and risk of personal tragedy.

The companion question is: How then should we respond? Should we wait until chaos comes in earnest, then wing it? Or should we recognize that the future is shifting in dramatic ways, and plan accordingly? And within that planning should we only focus on meeting our individual needs for sustenance and security, or should we feel a moral obligation to serve our fellow humans and the environment around us?

In the February 1 seminar, I expect us to discuss the question about whether significant personal effort to reduce climate footprint requires a strong belief in the need for climate action, or simply an attractive alternative lifestyle model. I also hope we can begin exploring the questions above about climate chaos. In further seminars and essays, I expect we will explore these latter two questions in great depth.

Respectfully,

Allen Edwards

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- i I am in the process of compiling the assumptions embedded in each scenario. If this work is completed in time, I will make it available at Saturday's seminar. If it's not completed, I will email it to participants at a later date.
  - ii I also ran a scenario for an average 4 person household for Auburn with two working adults which had a footprint of 19.75 tons CO<sub>2</sub>eq/person/year.