If the weather man said the next 10 days were going to be 80 degrees and but all we got was rain. Would you ever believe him again?

Interesting example since it is quite possible to have ten days of rain at 80 degrees, so the weather forecast could have been correct. But, let's assume that it was cold instead. In that case, I would probably be suspicious for some time, until a track record of accuracy became evident.

For the past 50 years we have been told of climate crisis after another starting with that we wouldn't last through the 80s.

You seem to be conflating warnings. While the first inklings of a global warming problem were suggested 50 years ago, they were not widely disseminated. You may be confusing population growth warnings with climate warnings. While we may not be in quite the serious hole the predictions back then suggested, I think the global problems caused by population level and food/water shortages are sufficient to suggest the warnings were not totally off base.

Why should I believe anything that so-called climate scientists say?

I suspect that you are expressing doubt about the accuracy of the climate model projections. If I am wrong, please correct me. There has been much questioning of climate models. This is reasonable since models are only as good as the data and premises upon which they are based. Fortunately, we have had climate model projections available for some years now, and can actually test them. We can do this two ways: one method is to ask if the consequences of global warming have actually followed what the models suggest; the other is to run the model backwards and ask if they produce temperature trends consistent with what we have seen. I will address both tests:

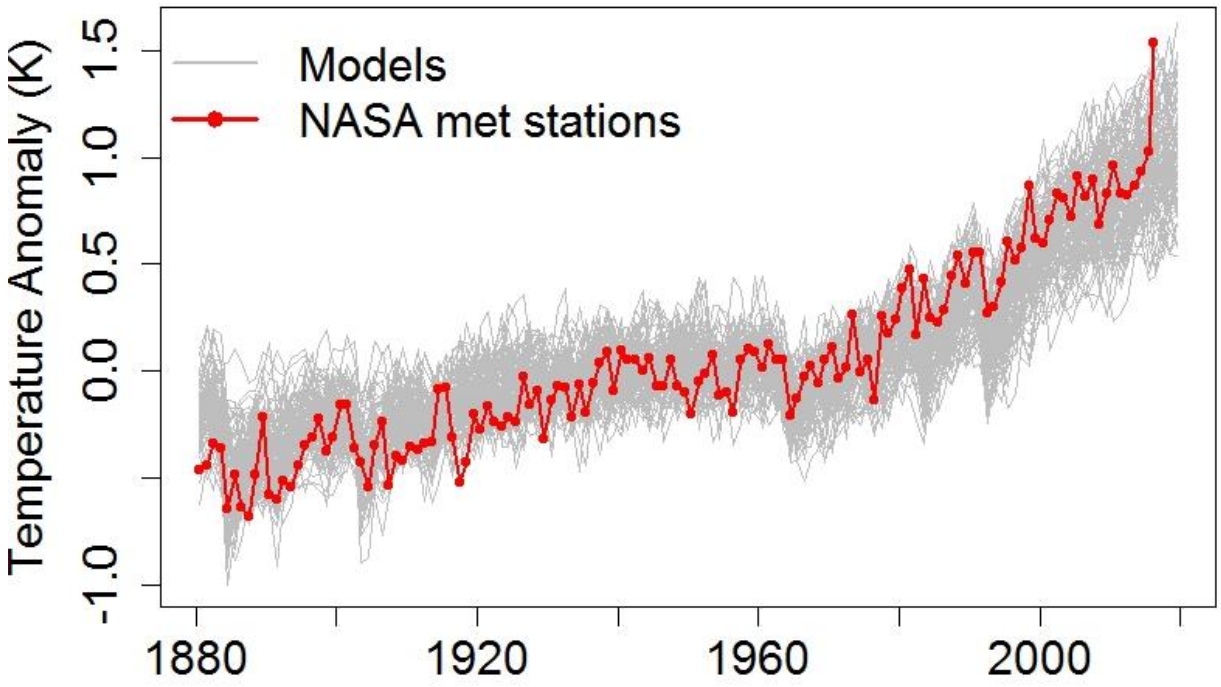
Are actual trends consistent with models?

Modeling of temperature is currently based on scenarios that project future trends based on the concentration of greenhouse gases (GHGs) in the atmosphere. They are called Representative Concentration Pathways (RCPs). They project the warming influence that different trajectories of GHG concentration increases will have by 2100, measured in the watts per meter squared warming that those concentrations will impose. Our current warming, measured as the difference between warming prior to the industrial revolution. We crossed the 2.5 watts per square meter value during the first decade of this century.

The RCP values most commonly used are
2.5 (which assumes that we return atmospheric greenhouse gases to that level)
4.5 (which assumes a substantial reduction in the current trajectory of increasing fossil fuel use and greenhouse gas emissions)
6.5 (which assumes some meaningful reduction in the below trajectory)

8.5 (which was designated as the worst-case scenario since it assumes continued accelerating fossil fuel use and emissions)

Let's look at what has been happening to global temperature compared to the RCP 8.5 scenario:



https://tamino.wordpress.com/2016/05/17/models/

As can be seen, the actual trend is pretty much in the middle of the RCP8.5 projection range.

What about sea level rise?

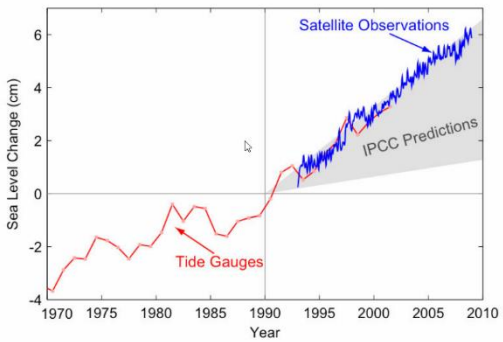


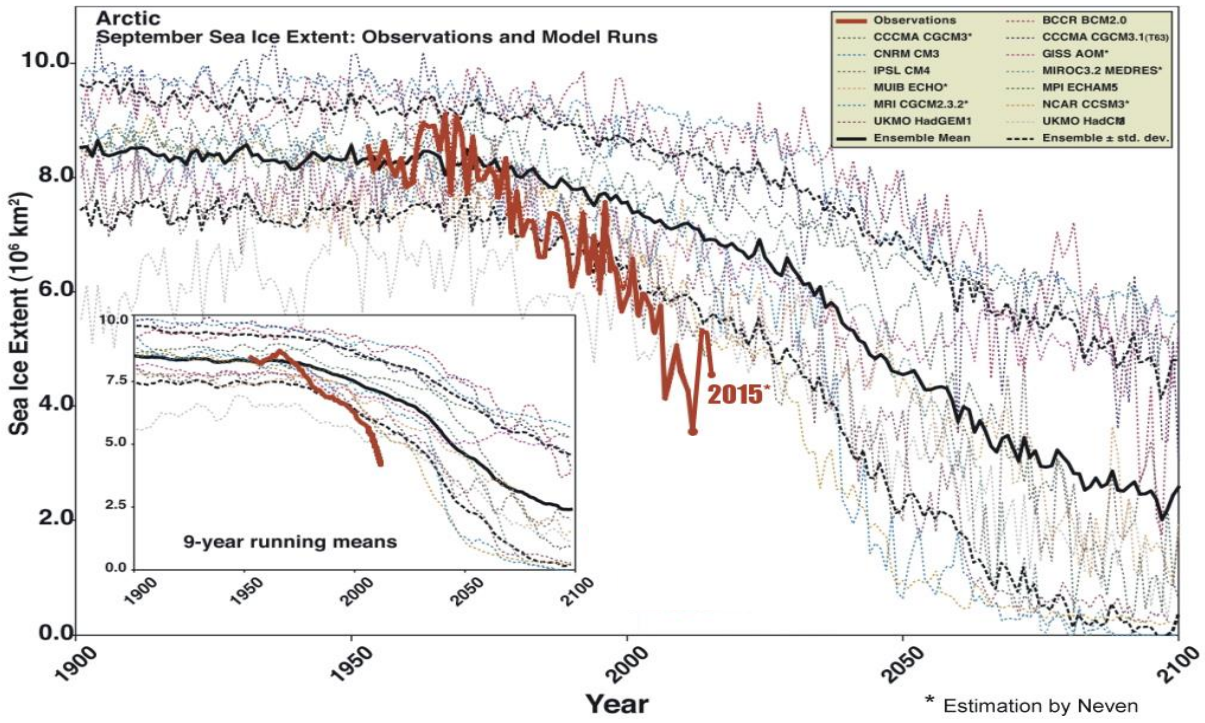
Figure 16: Sea-level change 1970-2010

The Copenhagen Diagnosis
http://www.copenhagendiagnosis.com/

http://www.ccrc.unsw.edu.au/sites/default/files/Copenhagen_Diagnosis_FIGURES.pdf

Again, it's pretty clear that the actual trend is at the high edge of the range of model projections.

And, finally, let's look at Arctic ice melt (at the late summer low in ice extent, before the onset of winter when the ice reforms).



It is evident that what has actually been happening to Arctic polar ice is more extreme than the models suggest.

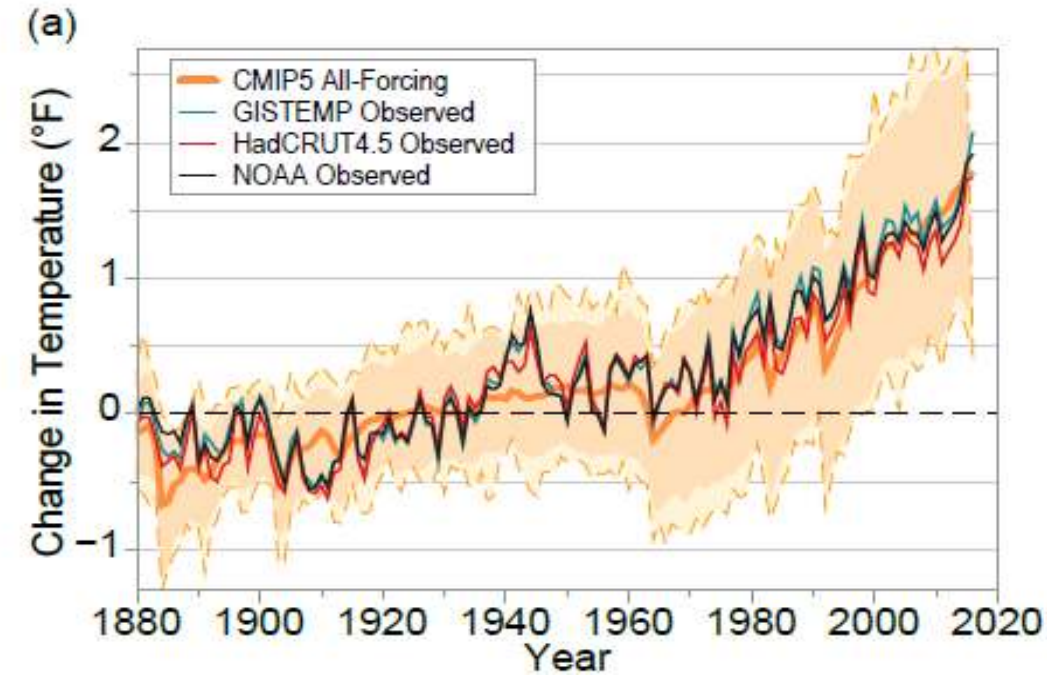
The pattern evident from these examples is not that models exaggerate the trends. Rather, it is that actual trends are at the most extreme edge of what models suggest, or even more extreme.

In my judgement, it is not, therefore, reasonable to argue that climate science has been wrong for years - unless one is arguing that the models have failed to tell us how alarming the situation really is.

Let's now look at what the models suggest if we run them backwards over temperature trends we have recorded.

In this assessment, the models have been run two ways: (A) includes the impact of human greenhouse gas emissions while(B) excludes these influences and includes only on natural (non-anthropogenic) impacts.

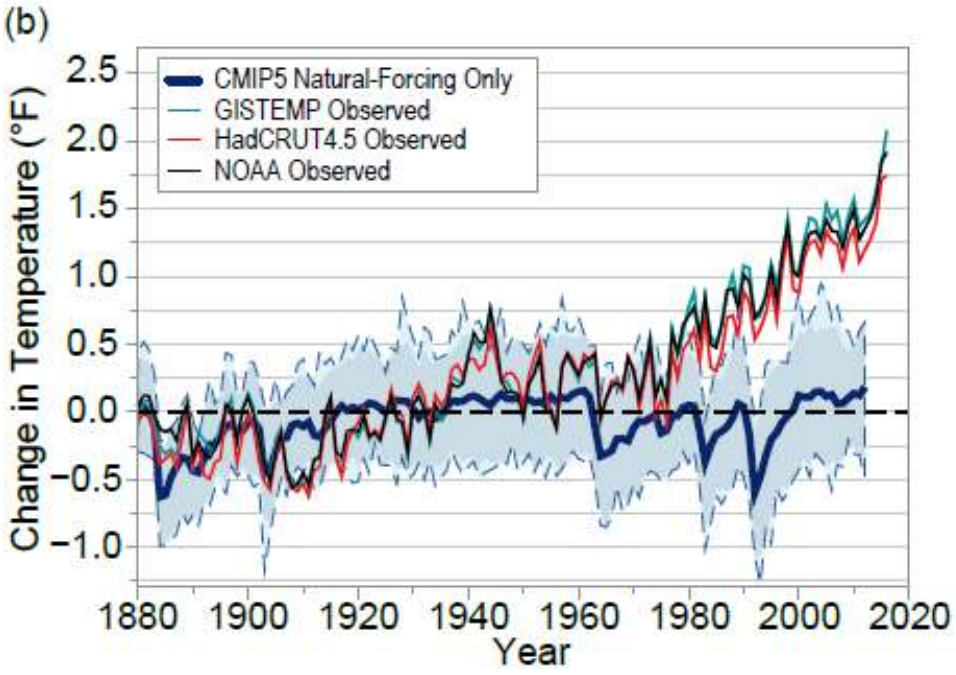
A)



The orange range and solid line represent what 36 models suggest the historical temperature should have been while the black and other colored lines represent actual data from three different atmospheric labs: GISTEMP is U.S. NASA, NOAA is the U.S. National Oceanic and Atmospheric Administration and HadCRUT is the British Meteorological Office collaborating with the University of East Anglia Climate Research Unit.

The similarity between what the mean model line suggests (Orange) and the actual date depict is striking.

B



In this graph, the blue range and line represent what the models without human emissions influences suggest. The actual data from the three sources are identical to graph A, but the models now suggest that absent human-induced emissions, the temperature trend should have been essentially flat. This analysis again suggests that the models are reasonable accurate so long as the impact of human activities emitting greenhouse gases into the atmosphere is included.

Maybe if you can come up with solutions that don't tax us more or control us more bu limiting choices like plastic bags or straws. Why not come up with a business solution to recycling egg cartons then there would be more credibility.

It would be really wonderful if solving this problem were as simple as plastic bags, straws, egg cartons and light bulbs. Had we paid attention a a couple of decades ago when the evidence was already quite convincing, instead of sticking our collective heads in the sand and continuing business as usual, the requirement for action would not have been as drastic as it is now. And, of course, the longer we postpone action, the steeper will be the necessary trajectory in emissions reduction - and thus the greater the danger of economic disruption.
Individual actions such as this are important, but they will not turn the tide. One of the critical components of SB1530 is that it does not dictate what businesses should do to reduce their emissions since that would be quite draconian. Rather, it simply encourages businesses to reduce emissions the best way that suites their individual business model.

It’s easy to just tax and control others when you manufacture a crisis. As a personal sacrifice give up your clothes dryer and prove it to me that you did then you might be credible

There is no manufactured crisis here, unless you mean the crisis manufactured by our continuing to emit greenhouse gases when we should have curtailed that behavior and promoted renewable energy sources. It's interesting that you should nominate the clothes dryer as an example of sacrifice since we have, indeed, done that. We hang our clothes on the clothes line during summer, and on clothes racks inside the house during winter. It really is no great sacrifice; recall that's what our grand-parents did - and they survived.
There is nothing easy about the proposed remedy (SB1530). In fact, it has taken 6 years of proposals being developed, rejected, and modified to reach this point. Furthermore, it is not a tax any more than a fishing licence is a tax or the charge to pick up your garbage is a tax. What SB1530 does is place a reducing cap on greenhouse gas emissions in the state and require major emitters to buy permits emit. We know that if we don't restrict fishing to a limited number per day, our fish populations will be depleted and may go extinct. Also, one can reduce the fee by fishing less often. Similarly, if we don't require garbage pick-up, our streets will soon be shoulder deep in trash. We can reduce this fee by producing less trash. And, if we don't limit greenhouse gas emissions, the livability of our planet for our children and grand-children will be seriously compromised. The fee for emitting can be reduced by emitting

less and needing fewer permits. We have to decide if we care about our grandchildren, and, if so, how much we care.
SB1530 has been tailored to reduce the imposition on individual Oregonians as much as possible. Meanwhile, provisions in the proposal mean that there should be no increase in utility rates, that fuel costs form residents outside Metro Portland would not be impacted until several years later, and some may be no at all.
It is also important to know that other states in the U.S. that have imposed some form of Cap, Trade, and Invest on greenhouse gases have not experienced economic decline, and are actually doing better than surrounding states without such a program. In eastern states with a program such as this targeting utility emissions, electric bills have not increased while gasoline prices in California were lower a year after transportation was incorporated into the program than before.
This is not to suggest that life will continue as before and be unaffected. The whole point of the proposal is to reduce emissions. To the extent that we are responsible for emissions, we will - and should - be affected since the point is for us to adjust our behavior to reduce emissions and protect life as we know it for future generations.

Reply from Robert:

Alan thanks for the reply I will admit that you were more civil than I was. I will admit to my anger because I feel I am losing freedoms and being forced to pay more for everything in the name of the environment.
if you look at the competitive enterprise institute they compiled a list of failed climate predictions of the last 50 years. Furthermore none of al gore's predictions from his movie came true but he did use the money to buy a house in the beachfront that should be underwater soon. Barack Obama bought a whole island that should be underwater as well if the seas rise. when cylvia hayes emails were released to the public she had a 5 year plan to become a millionaire from jobs, speeches and books about climate change. I will bet money that you know more about the subject than she does. it does bring up red flags if people want to get rich off of activism. I myself have had a green job since 1994 I make windows energy efficient. However, I would never want to force anyone to buy my product. They buy it because it saves them money and we do it better than our competition.
Even if they have developed sb 1530 for 10 years democrats know they may not have the supermajority in the next session to pass it. They also know if they put it to a vote of the people they would lose. Politicians know how the political winds blow and they know it's do or die time.
Yes, you can use our civil discussion to show others that it is possible to have civil discourse. what I see now is the opposite.
If you have any questions, I would love to answer them
thanks.

I was unaware of the Competitive Enterprise Institute's list but found it: https://cei.org/blog/wrong-again-50-years-failed-eco-pocalyptic-predictions. As you will appreciate, I hope, I don't have time to go through each claim and evaluate it but will agree with you that, on the whole, it represents an

unfortunate array of predictions of catastrophes that have not come to pass. I will note that I have long been suspicious of predictions that argue such and such will happen by a certain date since making these predictions is likely to be defied by unknown events. This brings into question the science that led to those unfortunate predictions. Some of the prediction offered in the list seem to me, on face value, to have been preposterous even at the time, others more reasonable. As soon as we make a prediction, and miss a date, this is what happens. You will note, maybe, that many of the 50 items listed were predictions offered not by scientists (Al Gore is an example) or were offered more by media or by very minor players in any scientific arena, though that would take some familiarity with the field to discern. Additionally, a number of those predictions were completely outside the climate science arena.

What I took away from Al Gore's 'Inconvenient Truth' was not the predictions but his discussion of the basic science. Although Gore is not a scientist, and no-one that I know in the climate science or climate activist arena uses Al Gore as a source of credible evidence, the basic science that he reported in that book and movie has actually been born out. Though he is not a scientist, he did a very creditable job of synthesizing the science of the day and presenting it in a way that non-scientists could understand. That he has become such a target for those wishing to undermine public acceptance of the science was probably inevitable, and should have given him pause in making 'by such and such a date this or that will happen' predictions. Criticism of Gore, however, is totally irrelevant to assessing the credibility of current climate science since, as he repeatedly acknowledges himself, he is not a scientist and does not conduct the research. Rather, to learn what the current science is telling us, we have to delve into the peer-reviewed climate science literature - which is where I go for evidence and conclusions. I recognize that this is not something everyone can do (either because of limitations in time or expertise), but this is where the scientific debate is happening, and the consensus is appearing.

I would caution you with the following analogy. Suppose a dear relative of yours were diagnosed by a series of medical experts with a life-ending disease, and given by some of them (say) six months (26 weeks) to live. If we spent time with them, and saw them declining week-by-week, but discovered that 27 weeks had passed, we probably would not suddenly deny the initial diagnosis. What we would conclude is that the diagnosis is still correct but the time-line was wrong; life-and-death timelines cannot be predicted with that much certainty. This is why giving timelines can be dangerous and should be avoided. Predictions about the date by which late summer polar ice will disappear, for example, are basically silly (though newsworthy). However, what we can clearly see from satellite images that the late summer (September) trough in sea ice extent is exhibiting a general pattern of decline. I provided a chart displaying this trend previously. Just because one or two years don't follow the general downward trend does not deny the accuracy of the conclusion of that overall downward trend.

If we judged every field of human endeavor on the basis of errant predictions made by a few practitioners, and dismissed the entire field if errors are made, we'd dismiss the entire fields of economics and medicine, plus political and sports punditry. Yet, all fields are alive and well. Rather than judging an entire discipline on the basis of a few errors, we judge each prognostication on its own merits, on the basis of an evaluation of the evidence that supports it.

I am not sure what point you are making about Al Gore buying a beachfront house, or Barack Obama buying an Island, both of which are, or soon will be, under water. I have no knowledge of the accuracy of either claim. However, that oceans are rising such that these locations will soon be underwater is exactly consistent with climate science theory and expectations. Thus, rather than denying the science, these

anecdotes actually support it. They may testify to a lack of wisdom on the part of Gore and Obama in their purchases, but the trends confirm the science -just as the flooding streets at high tide in Miami confirm the science.

The Cylvia Hayes story offers no evidence on the science, merely evidence of her naïve optimism at making money from pending disaster - not a very honorable hope, but irrelevant to the science.

I am inclined also to be suspicious when someone seems to want to make money from addressing a critical issue such as the climate crisis. But I am then reminded that we seem to think it's perfectly acceptable if someone makes money by destroying the environment - which is exactly what open pit coal mining companies and oil or natural gas fracking operations do.

And then, just to add to the paradox, we demand that efforts to redress the environmental damage we are doing (by replacing coal with solar energy, for example) should be profitable either for us or someone else.

I wonder if you are conflating your personal feelings about certain individuals, with the climate science that that they have been promoting, or using in some way, and are rejecting the science because of unrelated actions by those individuals.

Of course, Oregon's Democratic leaders know they may not have a super-majority for long, and are conscious that, at some time in the future they may be in the minority. However, how that plays into their current thinking and actions I do not know.

In terms of offering SB1530 as a Ballot Measure, the outcome would certainly be questionable. However, as the Oregonian editorial argued, the people have already voted on climate action by returning to Salem a party of legislators who are committed to taking action. Not every candidate may have campaigned on climate action, but it was probably clear to voters that by returning Democrats to power, they were essentially demanding climate action. Indeed, our rural Senate and House Representatives from Southern Oregon both identified climate action as their top issue, and were elected with wide margins against candidates who either ejected the science or rejected the cap, trade, invest solution.

The whole idea of Representative Democracy, in Oregon as elsewhere, is that we send representatives to our Capitol to spend the time that we don't have on exploring all manner of proposals, and then making informed decisions. If those representatives start sending every complex issue out as a Ballot Measure, they are negating the very reason for having a legislature. We also know that Ballot Measures have to be simple in order for voters to understand them. This is no criticism of the voter but a reasonable principle based on the time voters have (or don't have) to explore issues fully. Also, complex measures are almost certain to fail because (a) they have so many components that fault can always be found somewhere, and (b) opponents mount campaigns against them that are based on lies and misinformation that the average voter cannot discern. If addressing greenhouse gases comes out as a ballot measure, it should be something simple such as: "The Department of Environmental Quality shall establish a program whereby Oregon's in-boundary regulated greenhouse gas emissions shall decline to net zero by 2050." The reason for such a goal is that this is what the science tells us we need if we wish to have a reasonable chance at holding warming to manageable limits. The problem with this is that it assigns a huge program development and rule-making responsibility on the DEQ - and out of the realm

of public discourse, debate, and approval. And, of course, many Oregonians have a huge mistrust for DEQ. One benefit that SB1530 offers is that its development and discussion in the legislature have allowed extensive discussion about the components. In fact, many elements of the program as currently proposed are a consequence of input by members of the party that has walked out to prevent a vote claiming falsely that they had no input.

If we accept climate science, which Republicans in Salem largely claim they do, then we should develop a program that reduces our statewide emissions. There are essentially only two ways currently in use that do this: one involves a **cap** (such as SB1530) where large emitters are required to obtain permits to emit, and the number of permits issued annually decreases in the required trajectory towards a future goal. Emitters may be allocated permits according to some formula, they may have to buy them at a set price, or they may buy them at auction. This is not a tax; a better analogy is to consider it a license to emit…much like fishing licenses constitute a license to catch so many fish per day. The other approach is to impose a **tax or fee** on the emissions that result from our activities. The cap approach applies a direct limit to emissions and therefore inevitably reduces emissions, but the cost to emitters may fluctuate if an auction is held. The tax/fee approach, meanwhile is an indirect approach since it is an assumption in the concept that placing a fee on emissions will encourage emitters to seek ways to do business that reduce emissions. The emissions reductions in this approach are not determined, so the tax/fee applied to emissions rises annually until the reduction trajectory is achieved. For a more complete discussion of these choices, visit: https://socan.eco/Approaches-to-reducing-greenhouse-gas-emissions/. These two mechanisms are both referred to as 'pricing emissions' since they result in emitters having to pay to emit.

The second question in whichever approach we adopt is: what do we do with the funds generated? Integral to SB1530 is the notion that funds should all be allocated to activities that reduce greenhouse gas emissions. Meanwhile a substantial proportion of these fund are assigned to assist rural and coastal Oregon in addressing the economic hardships they currently experience. As proposed, the program would likely be a boon to these regions of the state. Other aspects of the proposal (along with a companion bill) would eliminate or counter economic hardship for rural and low-income Oregonians.

The climate problem we face is sufficiently serious that we have to do something to reduce emissions if we wish to protect our treasured planet for our children and grandchildren, and even for us as we age. While, in my judgement, the science is sufficiently credible that it's as settled as scientific conclusions ever become, decisions as to what we should do to reduce emissions clearly fall in the political arena - and hence are legitimate subjects for legislative debate and action. The problem arises, however, when some members of a legislature engage merely in stalling tactics to block action rather than engaging in genuine discussions about solutions. Regrettably, this is where we are in Oregon.

We have a proposal that has been developed over many years (I have been engaged in statewide discussions about this since 2013) with extensive input from both parties. Then, for the second time in as many legislative sessions, just as a proposal reaches the floor of a chamber, one party walks out to prevent any further discussion and blocks a final vote because they fear they will lose that vote. The result is that our children and grandchildren are compromised once again.

The following editorials explore the political issue further:
https://www.oregonlive.com/opinion/2020/03/editorial-republican-walkout-ignores-progress-in-cap-and-trade-bill.html

https://mailtribune.com/opinion/editorials/walkout-shortchanges-oregon-voters