February 3, 2017
https://www.counterpunch.org/2017/02/03/human-extinction-2026/

Human Extinction 2026

by Robert Hunziker

Photo by NASA/Kathryn Hansen | CC BY 2.0

Human Extinction by 2026, a controversial/questionable idea, is examined in some detail on the web site: arctic-news.blogspot.com. Within the posted article, a bright red box highlights the hypothesis: “Will Humans Be Extinct By 2026?” Of course, simply posing the question is tantamount to endorsing the conclusion in the affirmative.

Also of recent, but not directly related to the extinction article, scientists moved the infamous Doomsday Clock ahead by 30 seconds closer to midnight because of rising global nationalism and failure to confront both nuclear weapons and climate change, coincidentally as Trump takes over control of the big red button, which is mythological.

By definition, an article dealing with human extinction is highly provocative and touchy and generally dismissed as balderdash. After all, it sounds kinda crazy. Still, the named article: “Will Humans Be Extinct By 2026?” warrants serious consideration. Here’s why: The Arctic News blog is an amalgam of serious research by topnotch scientists that “speak to truth.” They endorse the distinct possibility of an extinction event that will catch humanity flat-footed. They really believe it is a serious risk. These scientists go against the grain, telling it as they see it, not pulling any punches.

Conversely, it is well known that many climate scientists have been fudging their work; edits make bad seem less bad. Otherwise, those scientists stand to lose grants and funding. This is a fact confirmed by one of the world’s leading climate scientist (mentioned in prior articles). Ipso facto, fudging data is one of the bugaboos about accurate climate science, as scientists intentionally lowball.

Assuredly, submitting the interrogatory “Will Humans Be Extinct By 2026?” suggests the existence

of solid evidence. But, in general, people do not, and will not, believe it. After all, how could it be true? Therein lies the major impediment to taking steps to prevent the problems of climate change. In point of fact, there are several good ideas to ameliorate climate change, if pursued in earnest.

For example, a recent NY Times headline: China Aims to Spend at Least $360 Billion on Renewable Energy by 2020 (New York Times, Jan. 5, 2017). All of which brings to mind: What if the United States spent $360 billion on renewables? That would be hugely helpful in worldwide efforts to combat climate change.

But, since the U.S. is diametrically headed the other direction, meaning a pinpoint sharp focus on fossil fuel exploration and production, which emits the CO2 that blankets the atmosphere and brings on severe global warming, what then are the facts behind the purported rendezvous with death by the year 2026?

Is the death threat by 2026 credible?

And, what is the probability it happens?

The probability of a human extinction event within 10 years is 50/50, a guess! But still, it is based upon extremely severe levels of planetary stress/damage that are not widely recognized as a threat to society, i.e., global warming (off the charts, and accelerating, especially in the ocean) and massive destruction of the ecosystem, e.g., acidification of the ocean, which, over time, kills off the base of the marine food chain.

Significantly, the scientific model that leads to a conclusion that human extinction happens by 2026 is based upon facts, not fiction. Scientists simply extrapolate current data about the rate of climate change into the future. Voila, extinction is right around the corner. Ten years comes fast. Thus, the scientific modeling is credible, but the 50/50 probability is guesswork.

The following quote from the Arctic News/blog article brings this bleak issue into focus: “The situation is dire. Little or no action is taken on climate change. Earth faces a potential temperature rise of more than 10°C or 18°F by 2026.”

Without a doubt, worldwide temp increases by 18°F essentially wipes-out global agriculture.

However, it’s worth noting that no universal consensus of opinion by scientists comes close to this prediction, not close at all. The scientific community at large believes temps will gradually rise, slowly, and manageably with human life continuing throughout the century, not by 18°F. Obviously, the Paris Agreement calls for holding temps to 2°C above pre-industrial. Thus, 195 countries are not looking for anything above 2°C. Otherwise, why select the 2°C upper limit?

Accordingly, a temperature rise of 10°C or 18°F within a decade is lights out for the human species. That’s bad news, leaving the planet to cockroaches.

The supporting facts behind the extinction thesis start with the Paris Agreement of December 12th, 2015 when 195 worldwide governments agreed to hold temps below 2°C above pre-industrial levels but doggedly pursue a lower limit of 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.

Here’s the problem with the Paris Agreement: Land+Ocean temps, according to the Arctic News/blog article, for most of the year 2016 have been above the 1.5°C guardrail, in fact it’s been above that level for ten of the months from October 2015 to November 2016. Therefore, in part, the Paris Agreement is already passé; it’s too late!

Going forward, the extinction cadre scientists foresee a series of feedbacks that cascade one upon another, in turn, cranking up temps to 10°C or 18°F by 2026. It all starts with the Arctic where temps are running 2-3 times significantly ahead of the planet, shaking lose millennia-old methane buried within ice for eons that is fast melting away. Methane, in turn, is a rip-snorting tiger at heating up the atmosphere, nothing compares, as it hits full stride, commencing runaway global warming.

Alarmingly, some scientists also believe a burp of 50 gigatons of methane (CH4) could happen within the extremely shallow waters of the East Siberian Arctic Shelf at any time without notice because of the striking loss of ice cover in the Arctic. Earth's atmosphere currently contains 5 gigatons of CH4. If the big 50-gt burp hits, it'd be a powerful shot of testosterone for the runaway global warming monster.

In turn, and aggravating matters ever more, water vapor, a very potent greenhouse gas as every 1°C warming increase equals 7% more water vapor, is goosed up, accelerating temps even more. The warmer the atmosphere becomes, the more water vapor it holds, in turn, turbo-charging global warming into a frenzy, blanketing the atmosphere and retaining heat, like an oven with the thermostat stuck wide open, hotter and hotter it goes without doing anything new.

In all, there are several feedback loops that reinforce one another, each one influencing another such that, like a whirling merry-go-round of horse carvings that spins out of control to hyper speed, features of individual horses become a whirling blur. That's runaway global warming! Morosely, the paleoclimate record has an example of temps cranking up rapidly within only 13 years.

Fifty-five (55) million years ago, global temps increased by 5° C within 13 years; CO2 in the atmosphere was 1,000 ppm, and there was no ice on the planet (today ice is melting like crazy, irreversibly in certain areas of Antarctica, which is extremely problematic). That's remarkable, as it should take hundreds of years, or more, for global temps to increase by 5° C, not a measly 13 years. This fact alone, as discovered by scientists studying timeless ice core and sediment, unfortunately reinforces the "Human Extinction by 2026" thesis, somewhat. But, if 5° C within 13 years is considered warp speed in paleoclimate history, and it is, then the projection of 10°C or 18°F by 2026 seems awfully aggressive. On the other hand, because of human fossil fuel activity and the massive accumulation of warming yet in the pipeline (the latency effect), it's within the range of possibility.

Furthermore, "no ice on the planet" (55 million years ago), equates to the imagery portrayed by the film Waterworld (Universal Pictures, 1995), post-apocalyptic science fiction when polar ice caps melted. One mythological storyline in the film claims dry land exists somewhere in the world. They search for it.

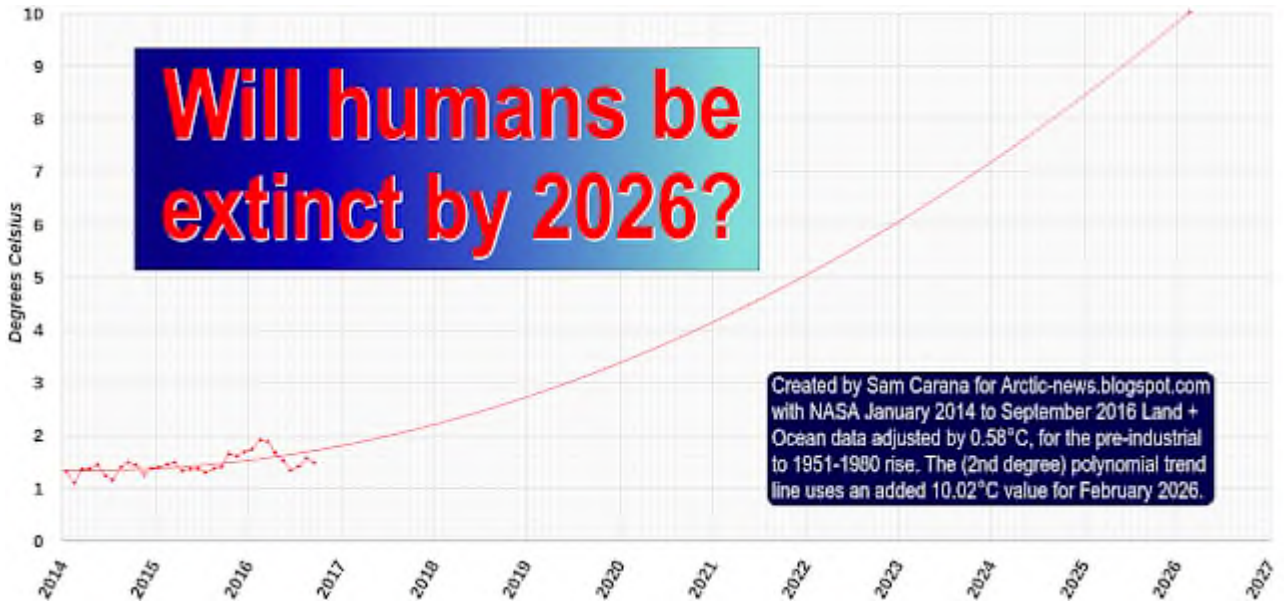
If the Doomsday Clock included everything that is wrong with Gaia, like the ocean absorbing up to 90% of planetary heat, which helps considerably to hold down land temps (tricking humans into thinking global warming is not as bad as it really is), but which also has a nasty habit of reversing the heat as a reverse feedback loop into nasty ole runaway global warming, then the Doomsday Clock is only a few seconds from midnight. That's how dangerously close some scientists believe humanity is to extinction. Hopefully, they are dead wrong.

Alternatively, a counter-balancing course of action, the United States leads the world in renewables, but alas, Donald Trump is president and Scott Pruitt is Trump's lead man for EPA (The Twilight Zone redux).

"Since President Nixon established the Environmental Protection Agency (EPA) in 1970, no prospective administrator has ever fundamentally questioned science or showed broad disdain for the work of the agency. That is until Scott Pruitt's nomination" (Trump's EPA Pick Scott Pruitt Won't Stand up for Science. He Never Has, The Hill, 01/31/17).

Eris, the Greek goddess of chaos, strife, and discord, has flown by, dropping her Golden Apple of Discord, aka Scott Pruitt, into the lap of the U.S. Senate.

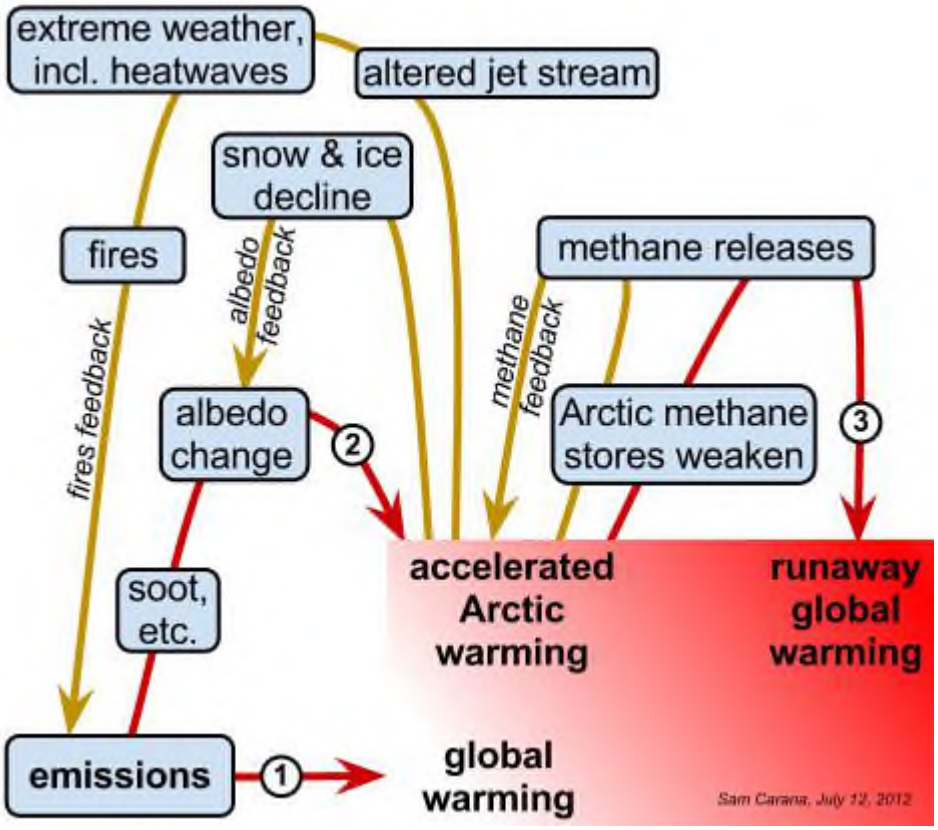
Will humans be extinct by 2026?



In the Arctic, vast amounts of carbon are stored in soils that are now still largely frozen. As temperatures continue to rise and soils thaw, much of this carbon will be converted by microbes into carbon dioxide or methane, adding further greenhouse gases to the atmosphere.

In addition, vast amounts of methane are stored in sediments under the Arctic Ocean seafloor, in the form of methane hydrates and free gas. As temperatures rise, these sediments can get destabilized, resulting in eruptions of huge amounts of methane from the seafloor. Due to the abrupt character of such releases and the fact that many seas in the Arctic Ocean are shallow, much of the methane will then enter the atmosphere without getting broken down in the water.

What makes the situation so dangerous is that huge eruptions from the seafloor of the Arctic Ocean can happen at any time. We can just count ourselves lucky that it hasn't happened as yet. As temperatures continue to rise, the risk that this will happen keeps growing.



This dangerous situation has developed because emissions by people have made the temperature of the water in the Arctic Ocean rise, and these waters keep warming much more rapidly than the rest of the world due to a number of feedbacks.

One such feedback is the retreat of the sea ice, which in turn makes the Arctic Ocean heat up even more, as much sunlight that was previously reflected back into space by the sea ice, instead gets absorbed by the water when the sea ice is gone.

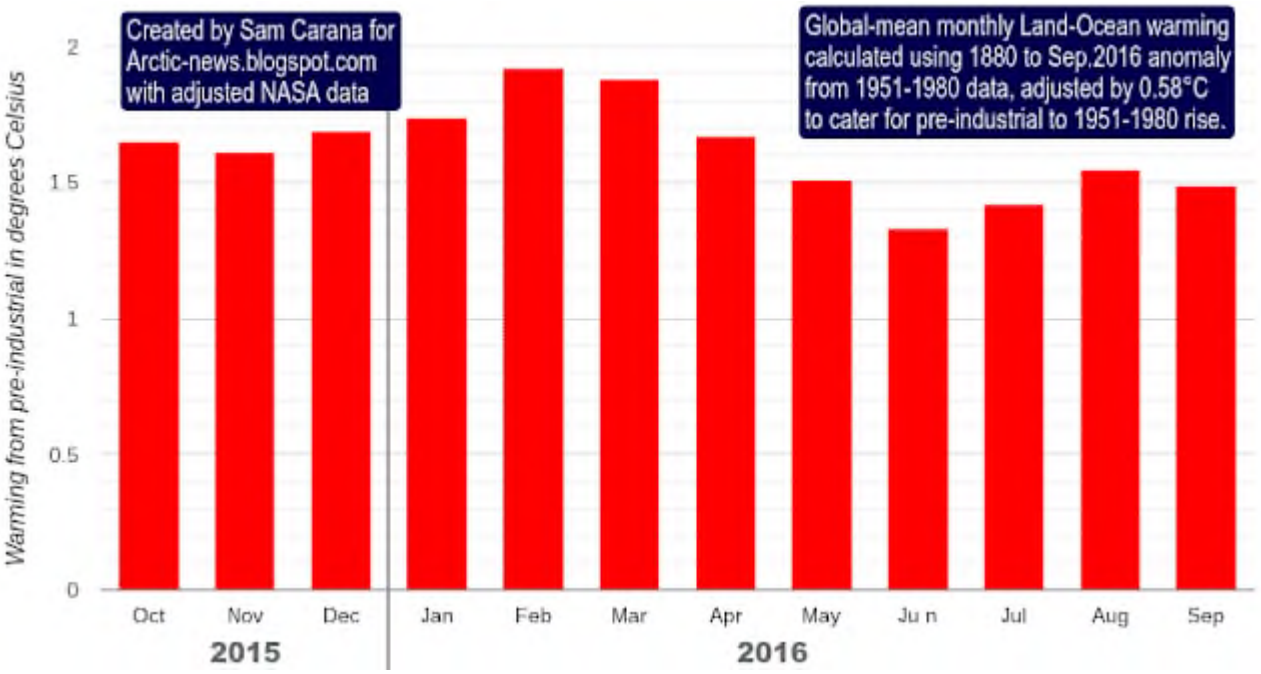
Without sea ice, storms can also develop more easily. Storms can mix warm surface waters all the way down to the bottom of shallow seas, reaching cracks in sediments filled with ice. This ice has until now acted as a glue, holding the sediment together. As the ice melts, sediments can become destabilized by even small differences in temperature and pressure that can be triggered by earthquakes, undersea landslides or changes in ocean currents.

As a result, huge amounts of methane can erupt from the seafloor of the Arctic Ocean and once this occurs, it will further raise temperatures, especially over the Arctic, thus acting as another self-reinforcing feedback loop that again makes the situation even worse in the Arctic, with higher temperatures causing even further methane releases, in a vicious cycle leading to runaway global warming.

Such a temperature rise in the Arctic will not stay within the borders of the Arctic. It will trigger huge firestorms in forests and peatlands in North America and Russia, adding further emissions including soot that can settle on mountains, speeding up the melting of glaciers and threatening to stop the flow of rivers that people depend on for their livelihood.

These developments can take place at such a speed that adaptation will be futile. More extreme weather events can hit the same area with a succession of droughts, cold snaps, floods, heat waves and wildfires that follow each other up rapidly. Within just one decade, the combined impact of extreme weather, falls in soil quality and air quality, habitat loss and shortages of food, water, shelter and just about all the basic things needed to sustain life can threaten most, if not all life on

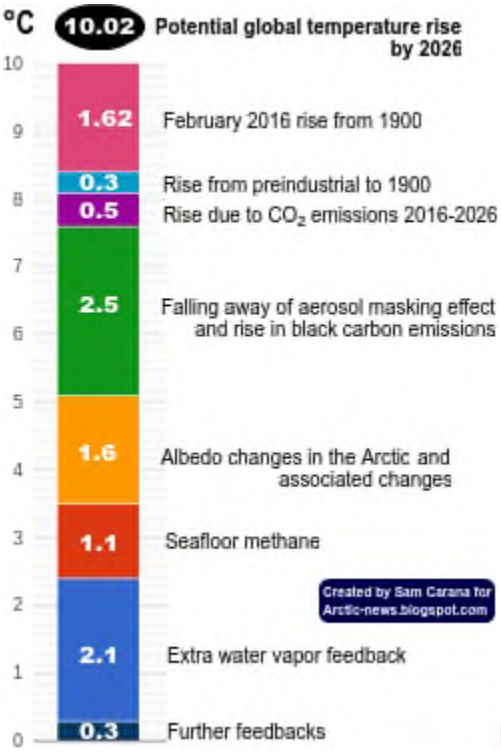
Earth with extinction.



From the October 17, 2016, post '[Pursuing efforts?](#)'

A Global Temperature Rise Of More than Ten Degrees Celsius By 2026?

How much have temperatures risen and how much additional warming could eventuate over the next decade? The image on the right shows a potential global temperature rise by 2026 from pre-industrial levels. This rise contains a number of elements, as discussed below from the top down.



February 2016 rise from 1900 (1.62°C)

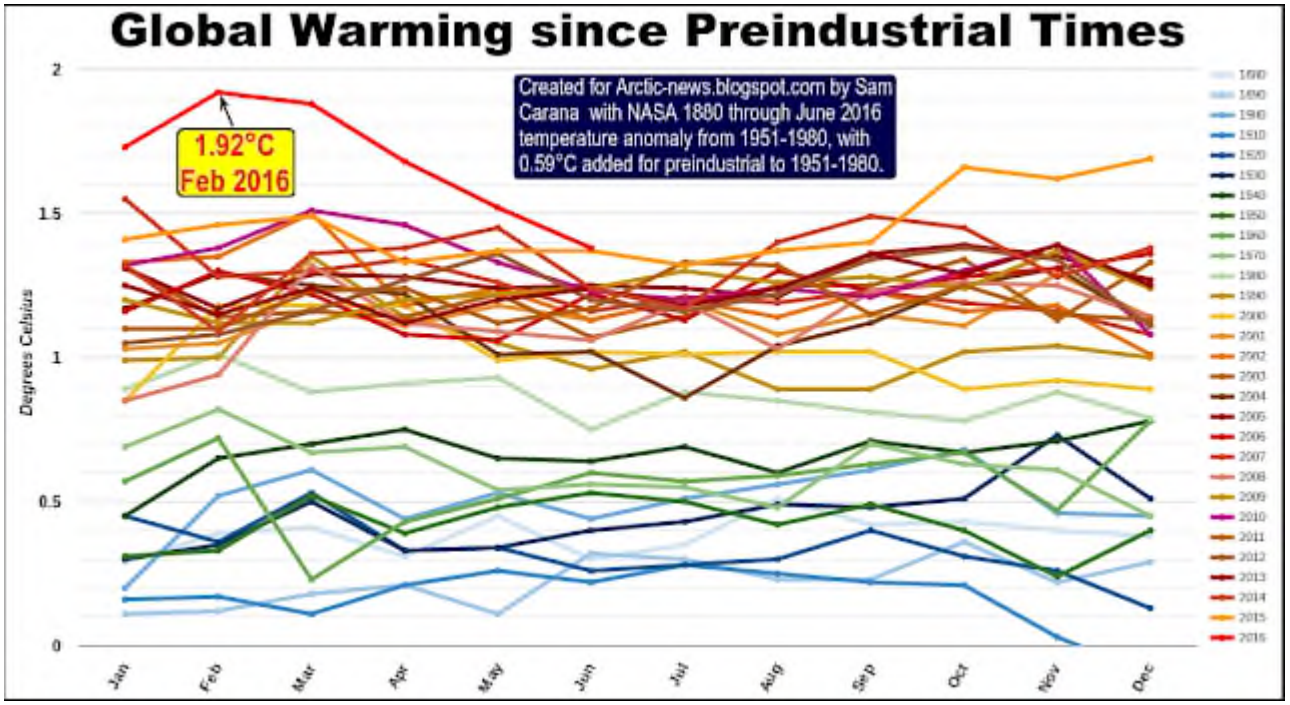
The magenta element at the top reflects the temperature rise since 1900. In February 2016, it was 1.62°C warmer compared to the year 1900, so that's a rise that has already manifested itself.

Rise from pre-industrial levels to 1900 (0.3°C)

Additional warming was caused by humans before 1900.

Accordingly, the next (light blue) element from the top down uses 0.3°C warming to reflect anthropogenic warming from pre-industrial levels to the year 1900.

When also taking this warming into account, it was 1.92°C (3.46°F) warmer in February 2016 than in pre-industrial times, as is also illustrated on the image below.



Warming from the other elements (described below) comes on top of the warming that was already achieved in February 2016.

Rise due to carbon dioxide from 2016 to 2026 (0.5°C)

The purple element reflects warming due to the amount of carbon dioxide in the atmosphere by 2026. While the IEA reported that energy-related carbon dioxide emissions had not risen over the past few years, carbon dioxide levels in the atmosphere have continued to rise, due to feedbacks that are kicking in, such as wildfires and reduced carbon sinks. Furthermore, maximum warming occurs about one decade after a carbon dioxide emission, so the full warming wrath of the carbon dioxide emissions over the past ten years is still to come. In conclusion, an extra 0.5°C warming by 2026 seems possible as long as carbon dioxide levels in the atmosphere and oceans remain high and as temperatures keep rising.

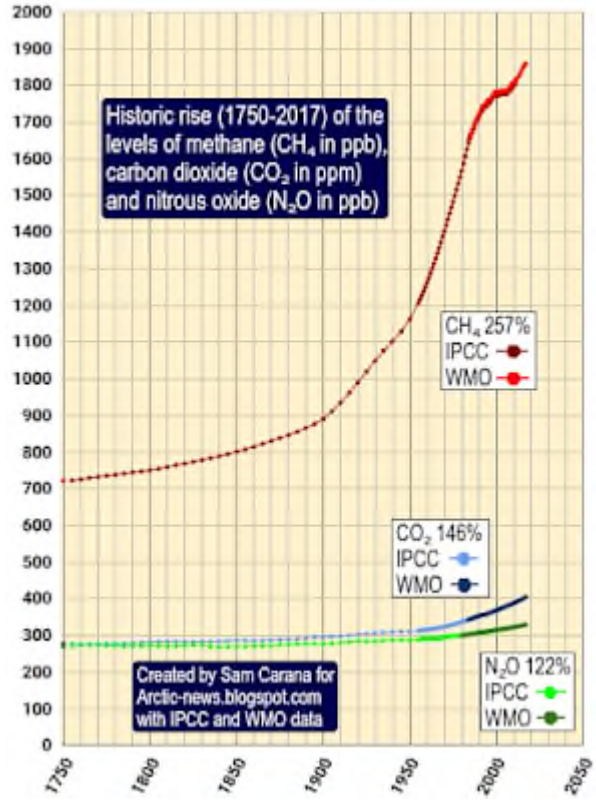
Aerosols: falling away of the aerosols masking effect and rise of black carbon emissions (2.5°C)

With dramatic cuts in emissions, there will also be a dramatic fall in aerosols that currently mask the full warming of greenhouse gases. From 1850 to 2010, anthropogenic aerosols brought about a decrease of ~2.53 K, says a recent paper. While on the one hand not all of the aerosols masking effect may be removed over the next few years, there now are a lot more aerosols than in 2010. A 2.5°C warming due to removal of part of the aerosols masking effect therefore seems well possible by the year 2026, especially when considering further aerosol impact such as caused by burning of biomass, as discussed in this post.

Albedo changes in the Arctic and associated changes (1.6°C)

Warming due to Arctic snow and ice decline (i.e. of both sea ice and the snow and ice cover on land) may well exceed 2.6 W/m², calculated Professor Peter Wadhams in 2012. This could more than double the current net global warming caused by people since pre-industrial times. Associated changes include the loss of the ice buffer (latent heat), greater heat transfer into the Arctic Ocean due to stronger winds (and the resulting freshwater lid on the North Atlantic) and more heat entering the atmosphere due to more open water in the Arctic Ocean. A 1.6°C warming due to albedo changes and associated changes seems possible over the next few years, as discussed in this post.

Methane eruptions from the seafloor (1.1°C)



CH_4, CO_2 & N_2O levels in 2017 were 257%, 146% & 122% their 1750 levels.

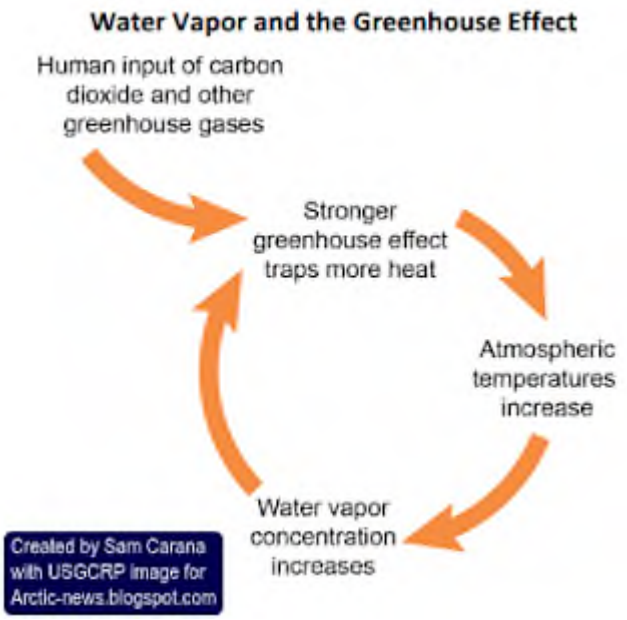
Dr. Natalia Shakhova et al. wrote in a paper presented at EGU General Assembly 2008 that "we consider release of up to 50 Gt of predicted amount of hydrate storage as highly possible for abrupt release at any time." Authors calculated that such a release would cause 1.3°C warming by 2100.

This 1.3°C warming (by 2100) from an extra 50 Gt of methane seems conservative when considering that there now is only some 5 Gt of methane in the atmosphere, and over the next ten years this 5 Gt is already responsible for more warming than all the carbon dioxide emitted by people since the start of the industrial revolution.

Professor Peter Wadhams co-authored a study that calculated that methane release from the seafloor of the Arctic Ocean could yield 0.6°C warming of the planet in 5 years (see video at earlier post).

In conclusion, as temperatures keep rising, a 1.1°C warming due to methane releases from clathrates at the seafloor of the world's oceans seems well possible over the next few years and even more
warming seems possible beyond that, as also discussed in this post.

Extra water vapor feedback (2.1°C)



Rising temperatures will result in more water vapor in the atmosphere (7% more water vapor for every 1°C warming), further amplifying warming, since water vapor is a potent greenhouse gas.

Extra water vapor will result from warming due to the above-mentioned albedo changes in the Arctic and methane releases from the seafloor that could strike within years and could result in huge warming in addition to the warming that is already there now.

As the IPCC says: *"Water vapour feedback acting alone approximately doubles the warming from what it would be for fixed water vapour. Furthermore, water vapour feedback acts to amplify other feedbacks in models, such as cloud feedback and ice albedo feedback. If cloud feedback is strongly positive, the water vapour feedback can lead to 3.5 times as much warming as would be the case if water vapour concentration were held fixed"*, according to the IPCC.

The temperature rise due to extra water vapor works immediately, i.e. it goes hand in hand with rises due to other warming elements. Given a possible additional warming of 2.7°C due to just two elements, i.e. Arctic albedo changes and seafloor methane, an additional warming over the next few years of 2.1°C due to extra water vapor in the atmosphere therefore does seem well possible over the next few years.

Further feedbacks (0.3°C)

Further feedbacks will result from interactions between the above elements.

- Changes to the atmosphere (clouds, storms, lightning, etc.)

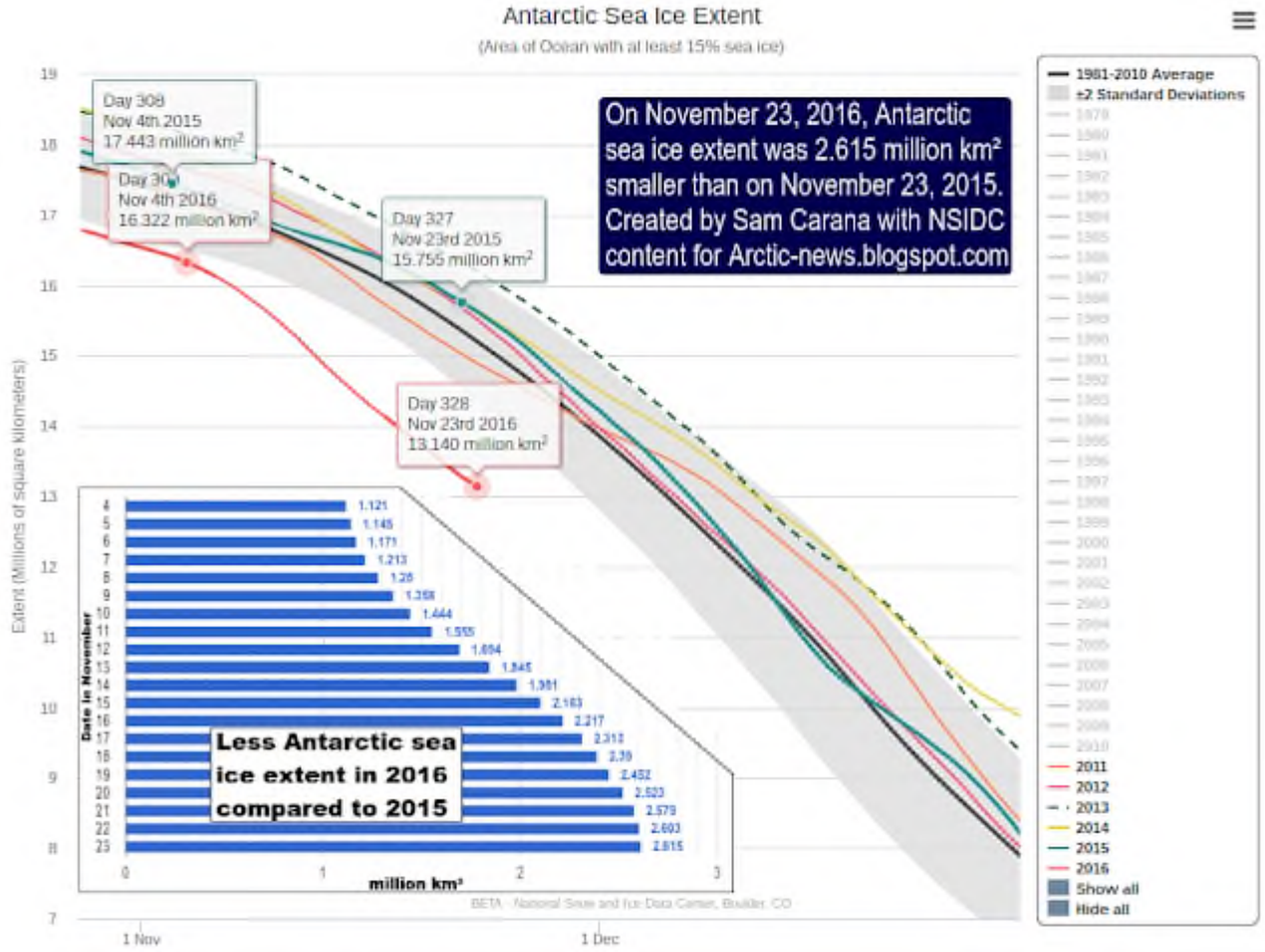
Additional water vapor in the atmosphere and extra energy trapped in the atmosphere will result in more intense storms and precipitation, flooding and lightning. Flooding can cause rapid decomposition of vegetation, resulting in strong methane releases. Furthermore, plumes above the anvils of severe storms can bring water vapor up into the stratosphere, contributing to the formation of cirrus clouds that trap a lot of heat that would otherwise be radiated away, from Earth into space. The number of lightning strikes can be expected to increase by about 12% for every 1°C of rise in global average air temperature. At 3-8 miles height, during the summer months, lightning activity increases NOx by as much as 90% and ozone by more than 30%. The combination of higher temperatures and more lightning will also cause more wildfires, resulting in additional emissions of carbon dioxide, methane and carbon monoxide. Ozone acts as a direct greenhouse gas, while carbon

monoxide can indirectly cause warming by extending the lifetime of methane.

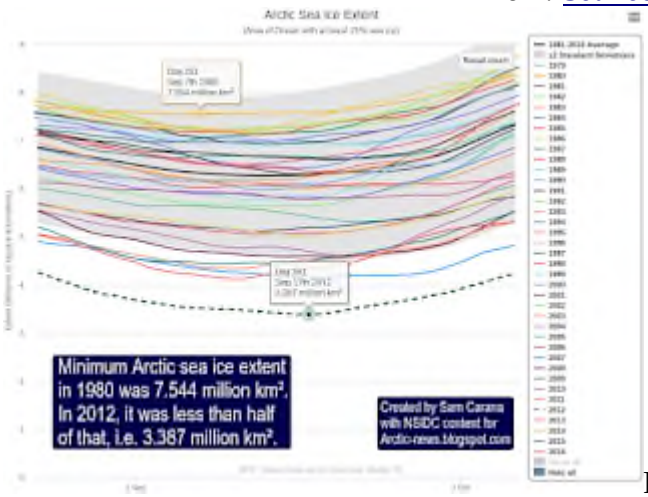
- *Changes to soils and ecosystems on land*

Additional warming of the atmosphere can also result when sinks that are currently holding back warming, instead turn into sources. An increase in the uptake of carbon by vegetation until now was attributed in a recent study to higher CO_2 levels in the atmosphere. This land sink now appears to turn into a source of carbon emissions, due to deforestation and soil degradation caused by agricultural practices and more extreme weather, as discussed in this post.

- *Changes to the cryosphere (global sea ice, snow and ice cover on land, glaciers, etc).*



From: Sea ice is shrinking



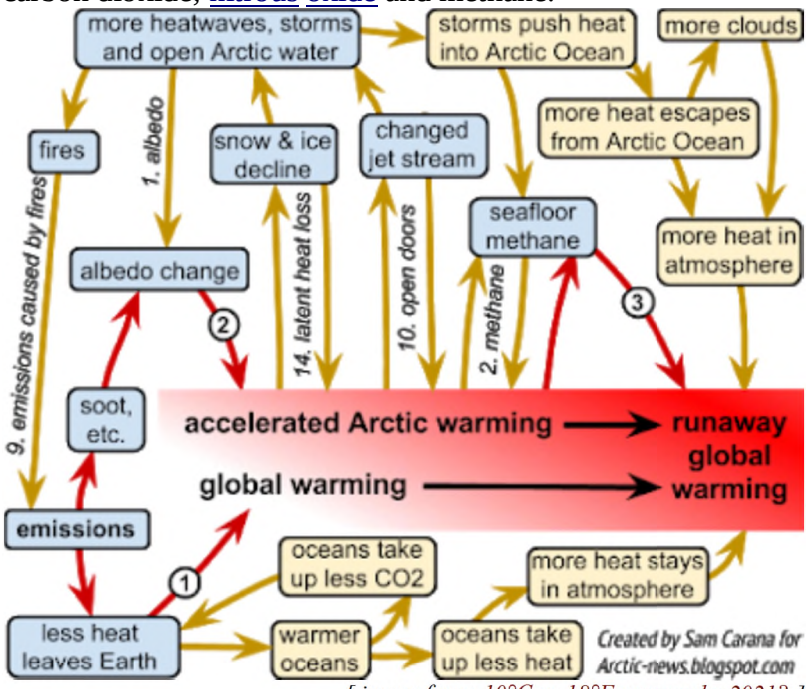
For years, global warming was also thought to be held back by growth of sea ice around Antarctica and the greater albedo resulting from that.

Recently however, sea ice around Antarctica reached record low extent for the time of the year (late 2016). On November 23, 2016, Antarctic sea ice extent was 2.615 million km² smaller than it was on November 23, 2015.

To put this 2.615 million km² in perspective, the minimum Arctic sea ice in 2012 was 3.387 million km², 4.157 less than the minimum extent in 1980, as illustrated by the image on the right.

Ever warmer oceans and stronger winds that move sea ice away from Antarctica make the outlook for global sea ice grim. Furthermore, higher temperatures look set to cause more growth of algae and melting, resulting in further albedo decline. Higher temperatures on land will cause warmer water from rivers to enter the Arctic Ocean. Higher temperatures on land will also cause trigger more wildfires resulting in emissions such as of black carbon that can settle on the snow and ice cover in the Arctic.

A recently-published study warns that permafrost loss is likely to be 4 million km² (about 1.5 million mi²) for each 1°C (1.8°F) temperature rise. This is a self-reinforcing feedback loop, since the albedo loss will further speed up warming in the Arctic, which will also cause more emissions of carbon dioxide, nitrous oxide and methane.



[image from: 10°C or 18°F warmer by 2021?]

- *Changes to oceans*

Warmer water tends to form a layer at the surface that does not mix well with the water underneath, as discussed here. Stratification reduces the capability of oceans to take up heat from the atmosphere, thus speeding up warming of the atmosphere.

Until now, oceans have been taking up 93.4% of the extra heat caused by emissions by people. So, even a small decrease in the amount of heat that oceans take out of the atmosphere would result in a strong rise of global air temperatures.

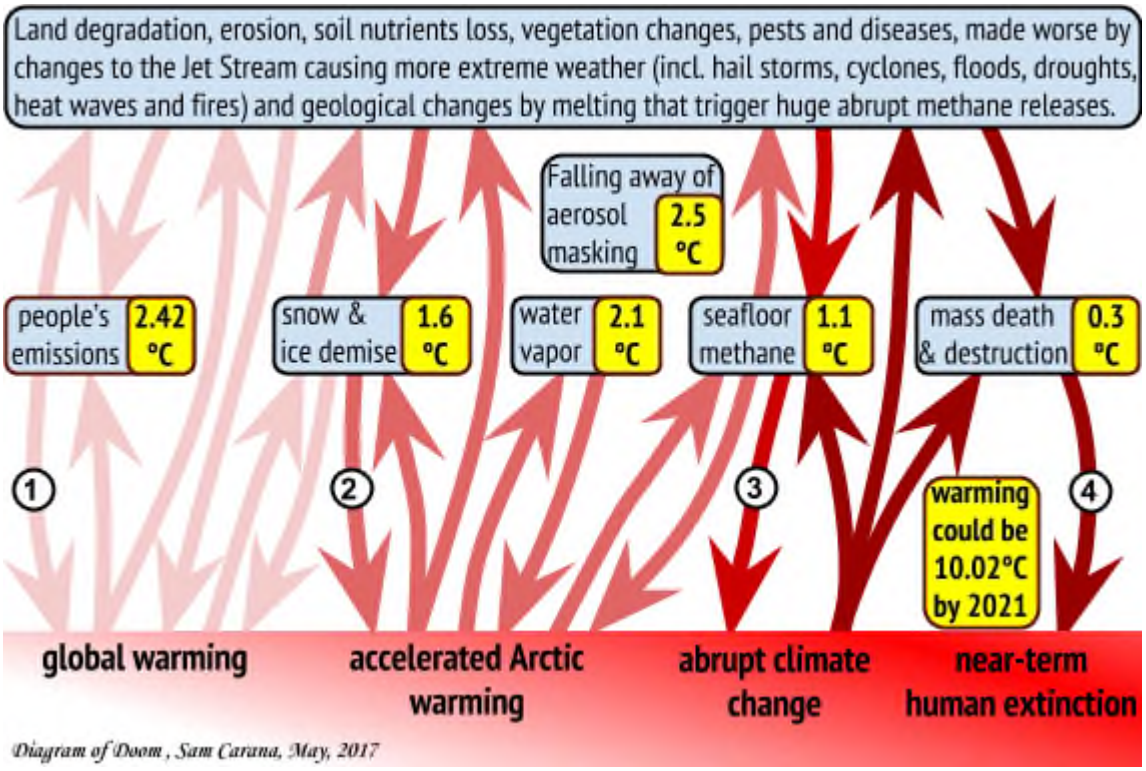
Additionally, greater stratification of oceans results in less phytoplankton and thus less carbon dioxide that will be taken by oceans out of the atmosphere, so more carbon dioxide remains in the atmosphere. More carbon dioxide in the atmosphere means that less heat can leave Earth, as it gets trapped by the carbon dioxide, so this is another self-reinforcing feedback loop that further warms

oceans, as described under feedback 29. Furthermore, ocean stratification can cause oceans to take up less heat from the atmosphere, resulting in more heat staying in atmosphere, while lower oxygen levels at sea surface can also increase releases of nitrous oxide.

In conclusion, the joint impact from further feedbacks may well amount to an additional 0.3°C warming over the next few years, or much more than that over more years, cancelling out possible over-estimations in other elements.

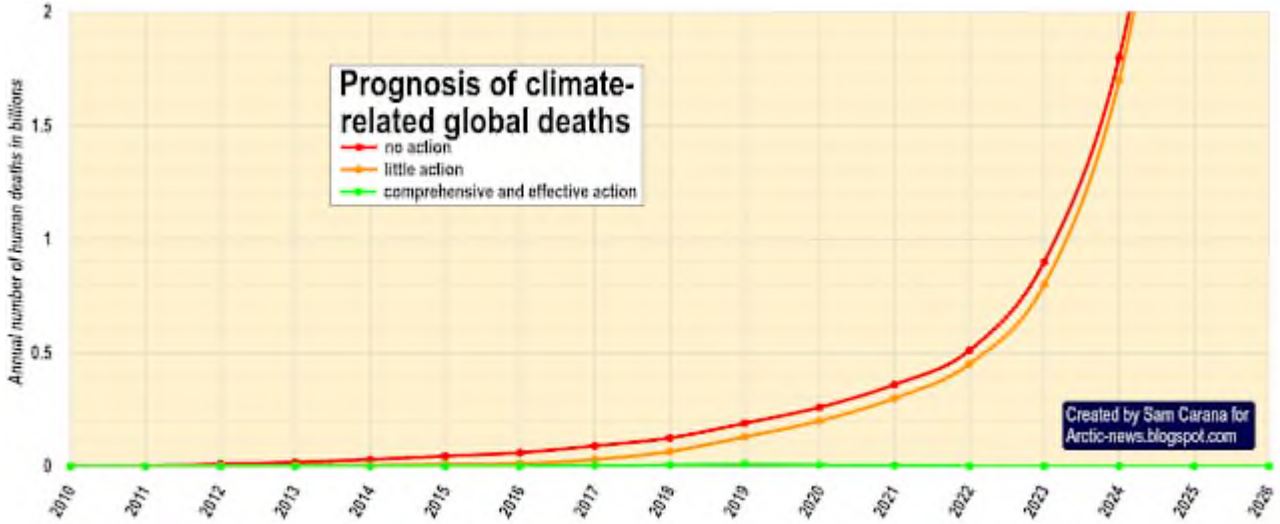
Summary: Total global temperature rise could be as much as 10°C or 18°F by 2021

In summary, adding up all the warming associated with the above elements results in a total potential global temperature rise (land and ocean) of more than 10°C or 18°F in a matter of years, by as early as 2021, assuming that no geoengineering will take place over the next few years.



Abrupt Warming - How Much And How Fast?

Accordingly, this would lead to numbers of climate-related global deaths in line with the prognosis below.



[click on images to enlarge]

The situation is dire and calls for comprehensive and effective action as described in the Climate Plan.