

Geoengineering and Climate Change

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TnT Net

Geoengineering – This seems to more of an oxymoron than an accurate designation for what is going on. Engineering implies that it has been investigated, tested and proven to work. The things being done to our atmosphere has had none of this, it's all speculation and experimentation, whose long term effects are unknown. It is man playing God, trying to manipulate something more powerful than themselves.

Climate Change – The world's climate has been and will always be in a state of change, it's called weather. Scientists calculate there have been at least five 'Ice Ages' and the last one started about 2.6 million years ago. We are technically still in this age. At the coldest point 20,000 – 25,000 years ago 25% of the land surface was covered in ice and 7% of the total. Today it's 11% of land and 3% of the total, or 56 million cubic km of ice. When the ice was at its greatest depths, our oceans were around 425 feet lower than at present. Our oceans were quite different at this time. The Red Sea was a lake closed at its southern end. The Mediterranean was closed at Gibraltar. There was a land bridge between now Russia and Alaska. The Yellow Sea was dry, with Japan, Korea and Indonesia all connected. North America's land mass extended out over what is the Continental Shelf.

What caused this drastic melt? It definitely wasn't human caused or aided! Was it the Methane from all the beasts roaming the unpopulated space? We are told this gas from farm animals is a serious threat today. Could the shifting of our magnetic pole caused it? That pole has shifted over a thousand miles in recent decades, yet it never comes up in climate conversations. Was it our Sun's activity? Ben Franklin's *Farmer's Almanac* has been fairly successful in forecasting a years worth of weather since the 1700's. How did they accomplish this before computer models, satellites, reams of weather records, or even knowing if the area around the North Pole was ice free year round or not? They used proven science (seems lost today) of looking at the number of Sun Spots.

Types of Geoengineering

Carbon Dioxide Removal

CDR methods are designed to remove CO₂ from the atmosphere and transfer it to long-lived carbon reservoirs. They include:

- Direct engineered capture of CO₂ from ambient air. These devices consume over 2,000 kWh of electricity to remove 1 ton of CO₂ from the atmosphere. 'Climeworks' based in Iceland is testing them now and state it will take ***hundreds of thousands*** of these to make a noticeable change. The CO₂ removed from the air is then stored in tanks. Then they are dissolving it in water and injecting it over one mile into the Earth, where they say it will eventually turn to stone. What could go wrong with this plan, and how many solar panels and wind turbines will be needed to provide the electricity?
- Using the ocean to store/absorb the CO₂. The oceans hold 50x more CO₂ than the atmosphere and absorbs ¼ of all greenhouse gases, they want to force it to absorb more. They will need to construct (some small scale models, about 1/10 are being tested) 300' long tubes/pipes, 20'-30' in diameter, with blades at their bottom to force the cold, nutrient rich water to the surface. This will spur plankton growth, which feeds like all other plant life on CO₂ converting it to oxygen. Again, what could go wrong here? They also require electricity to drive the blades. Envision the oceans dotted with these (estimates of tens of thousands will be needed). They have yet to figure out how to hold them in place or what will be needed to make them survive in the open oceans.

Solar Radiation Management

SRM methods, also called sunlight reflection methods, aim to reflect up to a few percent of the incident sunlight away from Earth. Once broadly deployed, they would take a few months to have an effect on climate, and therefore some people argue they might be useful if a rapid response is needed, for example to avoid reaching a climate threshold. Methods that have been suggested previously include:

- Increasing the surface reflectivity of the planet by brightening human surfaces (painting them white), planting crops with a high reflectivity, and covering deserts with reflective material.
- Enhancing marine cloud brightness by increasing the number of particles acting as cloud condensation nuclei (CCN) over the oceans.
- Injecting aerosol particles (sulfates and other materials) into the lower stratosphere to mimic the effects of volcanic eruptions.
- Placing shields or deflectors in space to reduce the amount of solar energy reaching the Earth.

Albedo Modifications, Risk vs Reward

(Albedo – the amount of electromagnetic radiation reflected by a surface)

<i>REWARD</i>	<i>RISK</i>
Cool the planet	Regional droughts
Reduce/reverse ice loss	Acid deposition
Increase planet productivity	Continued ocean acidification
Better precipitation control	Ozone depletion
Nice Sunsets	Cirrus effects, white sky
	Lower solar power margins
	Environmental side effects
	Can't stop quickly, rapid warming if stopped
	Cost
	Who controls, private or government
	Whose hand is on the thermostat
	Military use, conflict of Treaties
	<i>Unknown unknowns</i>

Some of the techniques suggested and used over the years include covering portions of the ocean with reflective ping pong balls, painting buildings and roofs white, and placing large reflectors in space. The placement of materials in the atmosphere via aerial spraying, rocket delivery, and forest fires.

Types of Aerial Spraying

Low Altitude Aerial Spraying (LAAS)

Below 3,000 above ground level, mostly agricultural and insect control.

Mid-Altitude Aerial Spraying (MAAS)

Usually between 5,000' and 25,000' above ground level. This is the cloud seeding area. This has been going on since the 1930's, and continues today. Done with airplanes, rockets and other machines to deploy different substances:

- Unknown mixtures of liquid nitrogen, silver, barium and new experimental polymers of undisclosed ingredients.
- Chaff, Manly used by the military in experiments. One mixture is metal coated fiberglass fibers. Last reported case of its use was 16 Apr 2004 in the San Frisco area where it caused weather radar to give strange reports.

High Altitude Aerial Spraying (HAAS)

Above 25,000' above ground level. This is where the atmospheric manipulation and altering takes place. Delivery techniques include modified jets to spray aerosols, launching substance emitting rockets, and directing energy to alter the electromagnetic field of the entire planet. This is where the weather is weaponized.

Weather Warfare

In a U.S. Air Force research paper, *Weather as a Force Multiplier: Owning the Weather in 2025*, the feasibility and efficacy of modifying the weather for military operations is evaluated and promoted. The paper also provides an outline on why and how the weather should be controlled. The report boasts, "one major advantage of using simulated weather to achieve a desired effect is that unlike other approaches, it makes what are otherwise the results of deliberate actions appear to be the consequences of natural weather phenomena. In addition, it is potentially relatively inexpensive to do (US Airforce, 1996)." To conduct weather modification for military purposes violates the Environmental Modification Treaty. When the US Air Force's paper started to gain attention, it was suddenly removed from the US Air Force's website. However, the report can be read on a number of websites by doing a simple internet search for the title.

HAAS is continually used and evaluated for mitigating global warming. One such mitigation technique is referred to as the "sunscreen concept" in a major congressional study, *Policy Implications of Greenhouse Warming, Mitigation, Adaptation, and the Science Base*, which was sponsored by the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine. The experts in the study assess spraying the atmosphere with "stratospheric dust or soot" and to "simulate clouds" and to dump iron into the ocean to stimulate phytoplankton to mitigate global warming (Figure 3). After the study was released, their recommendations went into practice. In May of 2007, the University National Oceanographic Laboratory System (UNOLS) Research Vessel *Weatherbird II* dispersed more than 20 tons of iron dust into the Pacific Ocean near the Galápagos Islands, a World Heritage Site, in an attempt to mitigate global warming (Triple Pundit, 2007).

Another example of the aforementioned congressional study's recommendations being in actual practice was glaringly apparent in the late 1990's when millions of people started noticing airplanes emitting trails that would not dissipate after a few minutes like normal vapor-based contrails. The new and unfamiliar trails would grow and expand to form unnatural clouds and in just a short period of time would cover the entire sky. The primary chemicals in these trails are highly reflective and chargeable particles, including titanium, barium and aluminum (Twietmeyer, 2008).

It was later revealed that these chemical trails, which are still being deployed in our skies almost daily, have a dual purpose. One purpose is to create a sunscreen, as mentioned in the aforementioned congressional study. Another purpose is to assist in ionosphere heater research programs. The largest publically known ionosphere heater is called High Atmospheric Arural Research Program (HAARP) it is located in Gakona, Alaska. The chemical trails create a layer or chargeable particles that surround the planet. When the HAARP transmitter projects 3.6 billion watts (Smith, 1998) of radiated power, the chargeable particles assist in helping to electrify the ionosphere. When the ionosphere is excited or electrified, it is then able to do a variety of tasks. Here are only a few examples of HAARP's capabilities.

- Communications: Signals are bounced from the ionosphere to the other side of the globe, up to an altitude of 150 miles (Alaska Conservation Foundation, 1996).
- Weather Warfare: Directing huge amount of energy at a single area can create earthquakes, tsunamis and hurricanes (Smith, 1998).
- Military Defense: "Creating a "full global shield" that could destroy ballistic missiles by overheating their electronic guidance systems as they fly through a powerful radio-energy field (Alaska Conservation Foundation, 1996)."

• Soft Kill Weapons: HAARP transmits extremely low frequencies (ELF). “The Air Force documents indicate that these weapons [HAARP] can be used for mind control, inducing heart attacks, causing electronic failures [e.g. power outages] and creating computer malfunctions (Dr.Begich, 1996).” Research and development teams in private and military sectors are continually expanding and exploring the uses of powerful ionosphere heaters.

- Nuclear sized explosions without the radiation.
- Smaller HAARP devices now are located in South America, Puerto Rico, Haystack Observatory in Westfield, MA, Greenland, Norway, Japan, Svalbard Is, and Kazakhstan.
- US Navy operates the SBX-1, a floating X-band radar ship that is the most powerful portable transmitter in the world. RF output is classified, however there are six 3.6 Mega-Watt (21.6 Mega-Watts) generators onboard.
- HAARP when used in conjunction with HAAS delivery of metal loaded vapor, they are able to move entire weather systems (geoengineeringwatch.org has many clips).

Sunlight Reflection Techniques

Chemtrails

- Often this one word carries the label of 'conspiracy theorist' for anyone even whispering it in any public forum. There will also be names like 'science denier' and a boat load of unflattering calumny by the tree hugging educated folk. It's an appellation describing aptly what is happening right above us, for all to see worldwide even over the oceans.
- The chemicals and metals mixed with un-published liquids. Using HAAS techniques is released from aircraft not tractable using available aviation monitoring systems. The goal is to replicate the reflective attributes of volcanic ash after and eruption.
- This is openly discussed by academia in countless public classes, seminars, college classrooms, documentaries and publications.

Dr David Kieth, Professor of Chemical and Petroleum Engineering, University of Calgary, is one of the loudest voices campaigning for HAAS use for sunlight reflection actions. His estimate of the number of aircraft needed to complete the job is 10,000 flights every two years, delivering 'millions of tons' of matter to the atmosphere. All of this would reduce solar radiation by a huge 2%-3%. Problems:

- How much more Carbon are you creating? One Boeing 737 (on avg) consumes 20,454kg (45,000lbs) fuel per hr.
1kg of fuel consumed = 3.16kg of CO₂
Four hr flight = 71 tons CO₂

Now multiply that by 10,000, have you mitigated the problem or added to it?

- These applications nearly always contain a type of Sulfide. Does 'acid rain' no longer poise any risks to the plant and wildlife? What are the effects of these cocktails on humans, or is population control part of the plan?
- Forest Fires have been floated as another way to add particulate matter to the atmosphere. 2023 had an enormous amount of wild fires worldwide. Canada lost over 44,000 sq miles of forest alone. Could this been part of a plan?

Movement of the Magnetic North Pole

Since 1900 the magnetic North Pole has shifted over 15 ° or 1,350 miles north. Up until this year scientists stated 'the magnetic pole effects the jet-stream, thus effects our weather patterns.' This year NASA published a paper refuting all previously held beliefs.

You Tube and Websites

You Tube Searches

Dane Winington

The Dimming

DW Documentary

PBS Terra

Climate Change Technology (The Economist)

Should we be reflecting Sunlight to Cool the Planet (VOX)

The Science – And Oft Ignored Side Effects of Global Engineering

The Peril and Promise of Solar Global Engineering (Museum of Natural History, Harvard)

Mystery of the Dark Ages Global Climate Disaster (Timeline)

Websites

geoengineeringwatch.org

Harvard University, Applied Physics

Science for the Public

climate.mit.edu