We can restore a healthy climate for our children.

The Healthy Climate Alliance is an education, networking, and advocacy program of the non-profit Foundation for Climate Restoration. Our global dialogues unite stakeholders including the public, policy-makers, and technical and business experts. HCA is shifting our shared goal to reversing global warming and restoring the climate.

HCA’s first and most urgent climate restoration goal is to protect the Arctic. Next is to reverse—not just slow—global warming, which requires drawing down a trillion tons of CO\textsubscript{2} from the air. We have scalable, safe solutions to reach these goals. We have the means to affordably and safely restore the quality of our air to pre-industrial levels and return life to vast ocean deserts.

Switching to renewables, reversing global warming, removing carbon dioxide, and rebuilding Arctic ice are goals that match the scale of the challenge and the scope of what we want. HCA builds public awareness, understanding, and support to develop and deploy the best solutions for these goals.

Our generation has the opportunity to restore a healthy climate for our children. Current climate strategies aim to “mitigate” emissions and “adapt” to extreme climate impacts, but this is not enough. It’s true that we must end global dependence on fossil fuels and protect the planet’s most vulnerable populations, species, and places. Yet this alone will not guarantee a habitable planet.

Restoring the Arctic

The Arctic is warming twice as fast as the rest of the world. Arctic sea ice has lost 80% of its volume since 1979. The Arctic Ocean is increasingly ice-free in the summer. 24-hour summer sun shining on formerly bright ice is responsible for about a third of the warming we are now experiencing, along with contributing to extreme weather. Rebuilding the ice is also critical to restore the jet stream and stable weather patterns.

Drawing down carbon dioxide

Burning fossil fuels at an increasingly rapid pace since the Industrial Revolution has built up greenhouse gases to dangerous levels. Because these gases persist for millennia, warming will increase long after we switch to renewables. To restore the climate, along with stopping emissions, in the coming decades we need to draw down a trillion tons of CO\textsubscript{2} from the air. Fortunately, we know how.
Solutions to Restore Arctic Ice

These are two promising methods to begin restoring Arctic sea ice as soon as possible. Others are in development.

Floating sand
Ice911 (ice911.org) is conducting research in the Arctic. The team spreads a safe floating, reflective silica sand on top of ice. That increases its reflectivity so it absorbs less heat and can survive the Arctic summer, building thicker, multi-year ice. Field testing and climate modeling show that applying the sand in strategic Arctic locations can rebuild ice volume, decrease extreme weather, and reduce Arctic and global temperatures. Ice911 presently seeks increased funding for permitting, climate modeling, and more testing and scale-up. To move toward deployment in the most strategic location, the Fram Strait, this nonprofit seeks $3 million in 2019.

Ice Thickening
In winter, the Arctic gets no sunlight and temperatures reach -50 degrees C. Scientists at Arizona State University (ASU) are exploring using wind power to pump and spray seawater on top of winter sea ice where it freezes rapidly. One meter of additional sea ice will last throughout the summer. HCA is assembling a team to develop and field test this technique, which has been used by oil companies for decades to build ice roads and islands for oil production. To conduct lab testing and begin field tests, they seek $1.5 million in 2019.

Ocean Ecosystem Restoration
For an effective, efficient, relatively inexpensive way to reduce greenhouse gases from the earth’s atmosphere, we need look no further than the oceans that cover 70% of the surface of our planet and already store 50 times more CO₂ than the air. A precipitous drop in ocean productivity over the last half century offers the chance to restore large ocean pastures by seeding them with ultra-fine iron dust (a limiting nutrient in much of the ocean) to stimulate the growth and photosynthesis of phytoplankton and fish. This process mimics such natural events as dust storms and volcanic eruptions. It brings the huge added benefit of restoring our dwindling fish stocks to feed hundreds of millions of people.

Marine permaculture creates seaweed forests fed by nutrient-rich deep ocean water. Kelp grows several feet per day and sequesters carbon efficiently. The Ocean Ecosystem Restoration project seeks $1 million in 2019 to begin.

Turn CO₂ Into Building Materials
Limestone aggregate is nearly half CO₂ by weight. It is the only product with sufficient demand to scale up to the goal of removing a trillion tons of CO₂. Blue Planet (blueplanet-ltd.com) produces limestone for concrete through a reaction similar to how shellfish build their shells. They sell the resulting aggregate. CO₂ can come from industrial flue gases or from the atmosphere. They are integrating an efficient Direct Air Capture technology, pioneered by Dr. Klaus Lackner, to concentrate and remove CO₂ from the air. This year, Blue Planet plans to start commercial production and scale-up of this already-proven technology.

Learn more about climate restoration at: healthyclimatealliance.org // Contact us at: contact@healthyclimatealliance.org