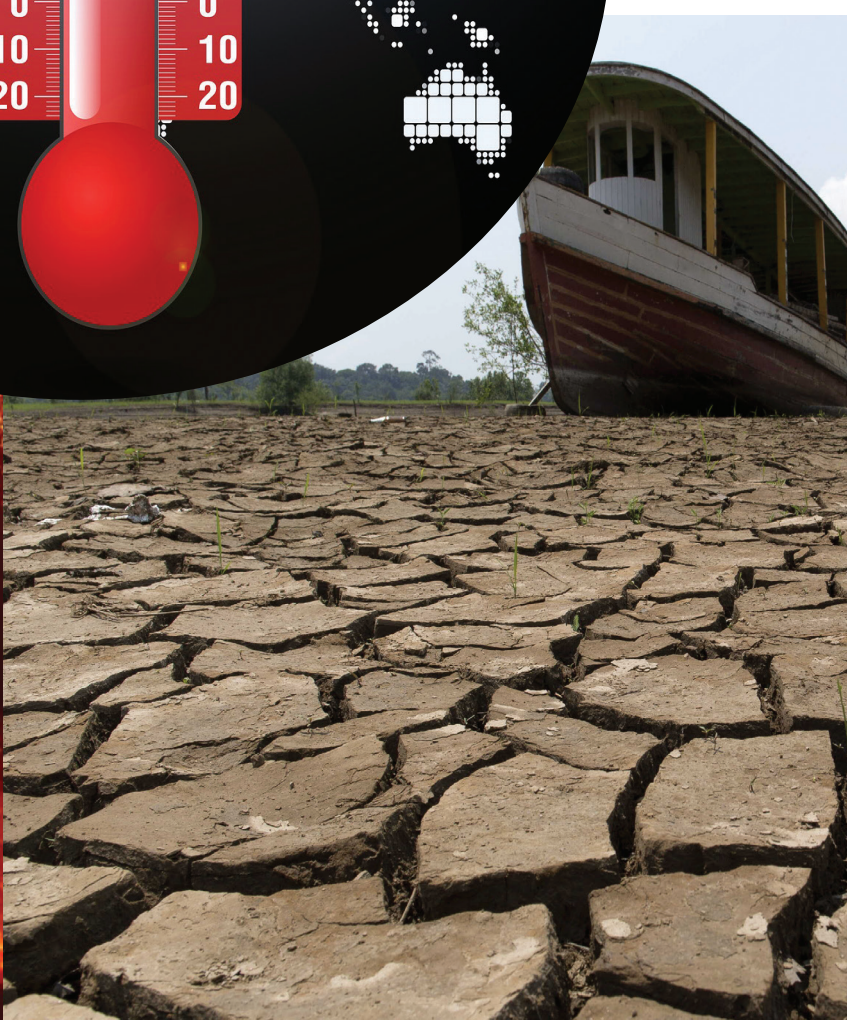
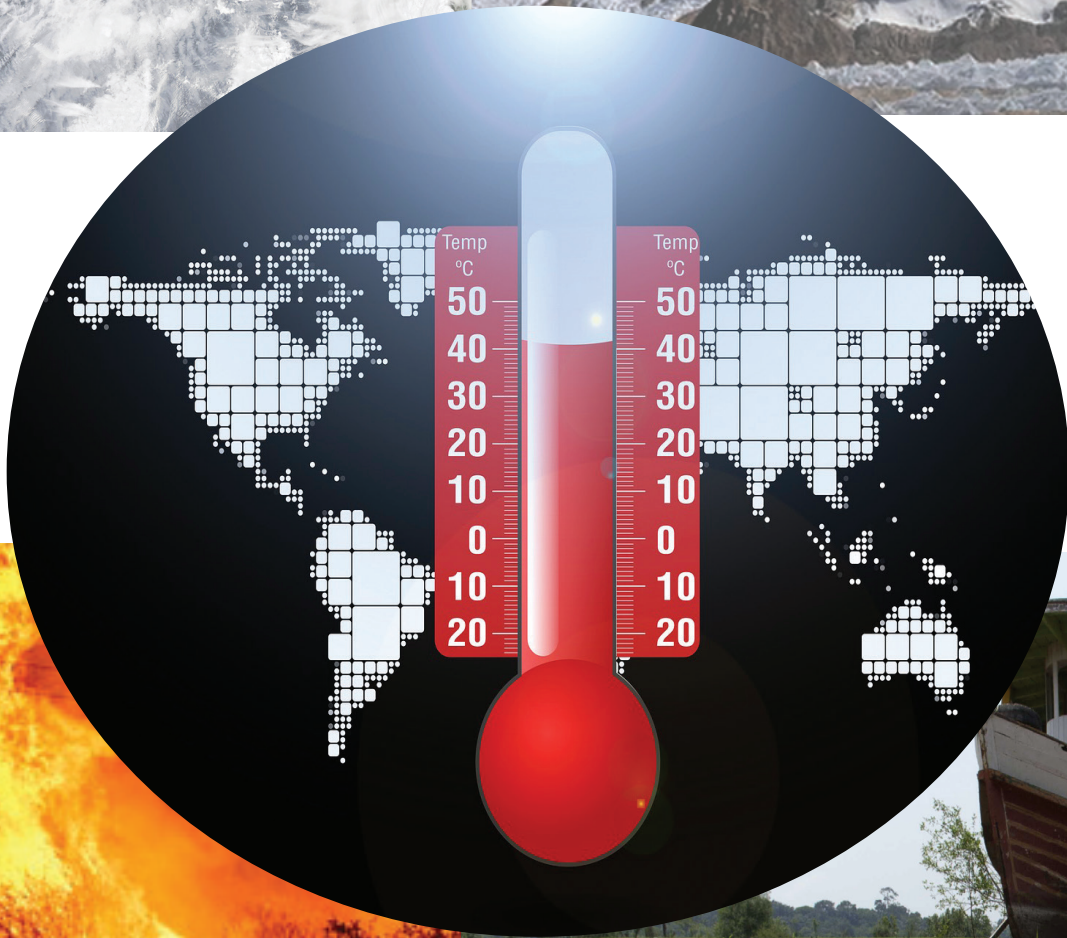


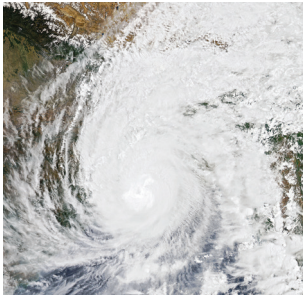
The Climate Crisis and

Humanity's Future



FROM THE COVER

Extreme Weather: Super Cyclone Amphan, May 2020



With energy fueled by super-heated oceans, Amphan was only the fourth super cyclone ever to hit West Bengal, after previous ones which came ashore in 1582, 1737, 1833, and 1942. The storm left over \$13 billion of destruction in its wake, making it the costliest storm ever to emerge from the North Indian Ocean.

Rapid Glacier Melting: Himalayan Mountain Range, Then and Now

Glaciers in the Himalayas are melting at a rate twice as fast as they were a century ago. At this rate, much of the water stored in those glaciers will reach peak runoff within the next few decades, followed by a rapid decline. The impacts on agriculture and hydroelectric power are already being felt throughout in Bhutan, northern India, and Nepal.



Wildfires: California, September 2020



After years of increasing drought and increasing average temperatures due to global heating, 2020's wildfire season in California was the worst ever. The California Department of Forestry and Fire Protection logged 9,639 separate fires covering 4,397,809 acres (1,779,730 hectares) destroyed by year end. That represents about 4 percent of the state's approximately 100 million acres of land.

Drought: Amazonas Riverbed, Brazil, October 2015

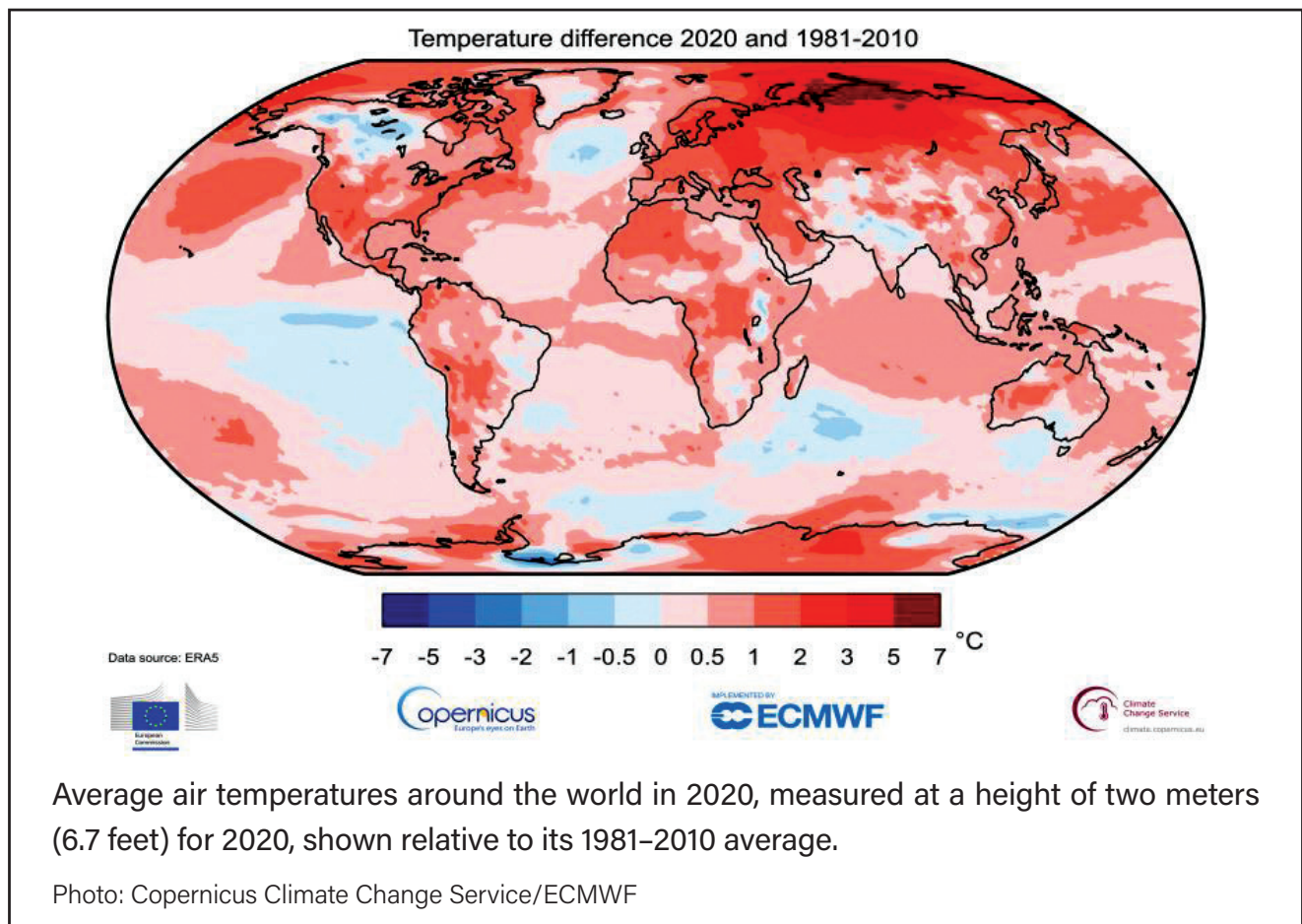
With global heating and changing weather patterns as the principal causes, Brazil has been suffering from severe drought for now over 40 years. In the years 2012-2015 alone, the southeastern part of the country lost an estimated 56 trillion liters of water every single year. These conditions have forced widespread water rationing, rendered agricultural production close to impossible, and choked off water flow to critical hydroelectric dams. In 2015, the main water reservoir of São Paulo, Brazil's largest city with over 9 million residents, was drained to only 11 percent of its total capacity at its lowest.



THE PROBLEM

Humanity and other species on Earth face an increasingly catastrophic future due to the climate crisis, global pollution, and environmental destruction.

The reality is that Planet Earth is already in the midst of its sixth and most rapid mass extinction and this time the eradication of life is caused by a single species: humans.



We have already lost more than 70% of wildlife globally.¹

Many regions have experienced a collapse of more than 70% of insect populations.² This alone will greatly accelerate other mass extinctions, including plant life. Without insects, most other life on Earth cannot exist.

Freshwater species have declined by an estimated 83% worldwide since 1970.³

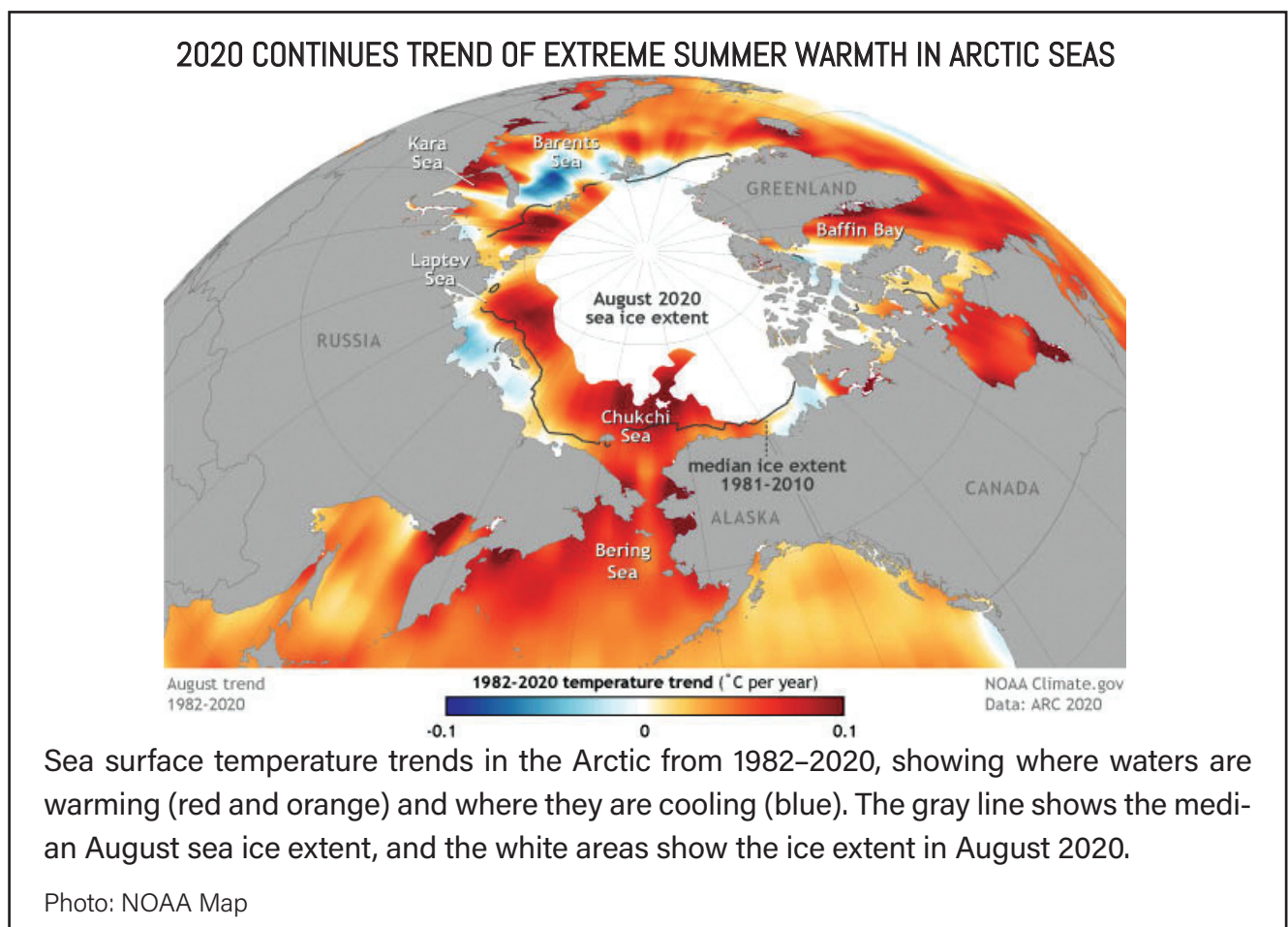
Marine life is also collapsing, from the tiny phytoplankton that produce most of our oxygen to the great whales.

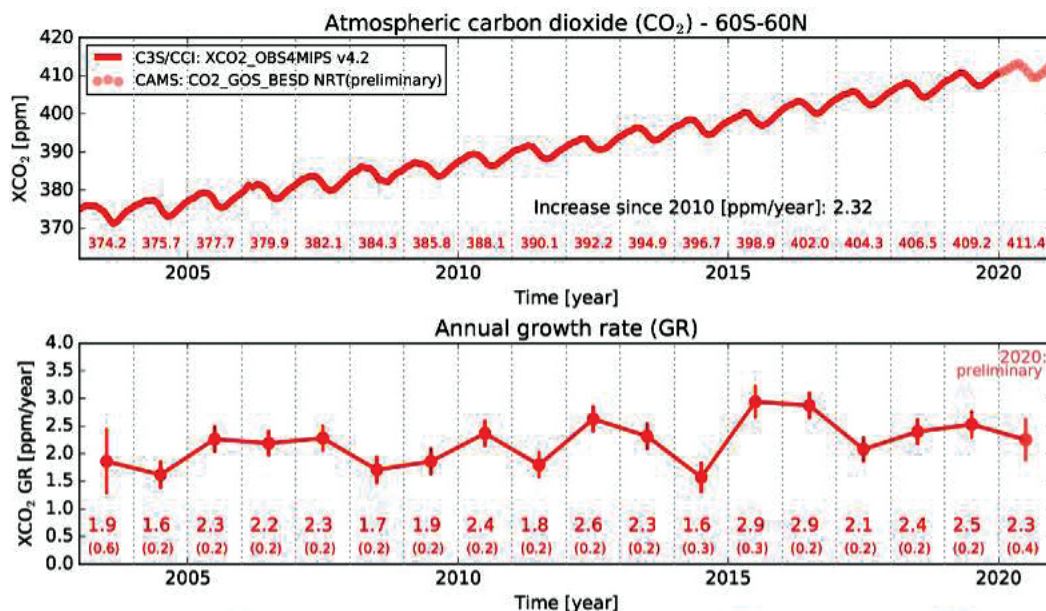
The greatest threat to our future is the climate crisis because it will have such wide ranging and long-term impacts and cannot be reversed by any known practical means.

Humanity has had more than 40 years to transition off fossil fuels and stop deforestation but has instead increased carbon emissions and deforestation. Few nations have made any significant progress towards reducing their emissions or replanting the forests necessary to absorb carbon from the atmosphere.

Contrary to statements by the UN's Intergovernmental Panel on Climate Change (IPCC), major tipping points have already been triggered and it is now too late to prevent catastrophic climate change and the collapse of our carbon-fueled civilization.

The greatest tipping point is the Arctic, which has already lost its old ice, is regularly experiencing temperatures more than 50°C above normal and is nearly ice free in summers.⁴





Monthly global CO₂ concentrations from satellites (top panel) and derived annual mean growth rates (bottom panel) for 2003–2020. Top: column-averaged CO₂ (XCO₂) based on the C3S/Ob-s4MIPs (v4.2) consolidated (2003–2019) and CAMS preliminary near-real time data (2020) re-cords. The listed numerical values in red indicate annual XCO₂ averages. Bottom: Annual mean XCO₂ growth rates derived from data shown in the top panel. The listed numerical values corre-pond to the growth rate in ppm/year including an uncertainty estimate in brackets.

Photo: University of Bremen for Copernicus Climate Change Service and Copernicus Atmosphere Monitoring Service/ ECMWF

With just the increase in temperatures so far, the Arctic has gone from an essential energy reflector to an energy absorber and mass emitter of CO₂ and methane. The Arctic alone holds vastly more carbon than all human emis-sions for all time, enough to increase CO₂ levels from the current 415 ppm to more than 800 ppm.

280 ppm CO₂ is required for a stable climate that supports an abundant di-versity of life as we know it. It is believed that 350 ppm would at least permit many species to continue, but in much lower numbers. More than 500 ppm likely means mass extinction for at least 1,000 years, likely much longer.⁵

Humans have never lived on an Earth with the current level of greenhouse gases.

According the U.S. National Oceanic and Atmospheric Administration, the last time CO₂ levels were above 400 ppm was about 3 million years ago when global average temperatures were two to three degrees C higher and ocean levels were 15–25 meters higher.⁶

But it will get much worse than 3 million years ago.

The Arctic tundra has already heated up enough that it is no longer freezing completely in winter and continues to emit CO₂ and methane all winter long.

Methane hydrate on the bottom of the Arctic and other oceans is now melting and spewing out massive amounts of methane gas.⁷ Some of it is absorbed by the water but much is reaching the atmosphere.

In the short-term, methane is over 80 times more potent a greenhouse gas than CO₂, in terms of its capacity to increase global warming.⁸

The fossil records show that massive methane releases cause rapid mass extinction. Because our planet is heating up faster than at any time in the past, we can expect such abrupt methane releases in the not-too-distant future.

About 90% of excess atmospheric heat has been absorbed by the oceans but as ocean temperatures continue to rise, they will no longer be able to absorb as much heat.⁹

About 25% of atmospheric CO₂ is absorbed by the oceans¹⁰, but that too has already reached a saturation point as temperatures increase and the oceans become more acidic from the carbon.

About 29% of the CO₂ emitted by humans is taken up by plants but as the planet's life support systems break down much of that CO₂ previously absorbed by plants will remain in the atmosphere and accelerate global heating.¹¹

Many of the forests we have not yet destroyed are now releasing more carbon than they absorb due to the heat stress, droughts and break down in the forest floor ecosystem. And of course, the fires that are wiping out many forests are releasing massive amounts of CO₂.

Remaining wetlands and peat bogs are also shifting from carbon sinks to carbon emitters as they dry out and heat up.

A paper published in the *Proceedings of the National Academy of Sciences* entitled "***Irreversible climate change due to carbon dioxide emissions***"¹², shows that it will take more than 1,000 years for temperatures to start to come down *after* greenhouse gas levels drop. This study has not been refuted.

Earth's climate is extremely complex, and we simply don't understand every aspect of it, but it has become apparent that no matter how much humanity reduces its own greenhouse gas emissions, the damage is done and it is now too late to make enough difference to avert mass extinction of life on Earth and the collapse of our civilization.

We really have triggered our planet's self-destruct mechanism and we cannot turn it off.

When you connect all the dots, the most likely scenario that our world as we know it will come to a violent end. For us humans it will unfold in slow-motion but for the planet it will occur much more rapidly than any previous mass extinction.

Here is what we can expect in the near future

Food Shortages, Malnutrition and Famine

As temperatures and precipitation oscillate between extremes it will become much more difficult to grow crops outdoors. Crop failures will increase, food prices will continue to rise and there will be severe food shortages and famine.

Some crops will also yield less nutrition due to stress, more rapid growth, and loss of nutrients from changes in soil biology. Having less nutritious crops means less healthy people.

The UN recently warned that in 2021 there will be more than 1 billion people who will not get enough to eat. While much of the increase in food insecurity is related to government's reaction to the pandemic, the climate crisis is also a huge factor.

Of course, it is possible for humans to grow food in climate-controlled facilities but so far it has proven more difficult to grow some calorie and protein dense foods indoors. Humans cannot live solely on the lettuce and herbs currently grown in intensive indoor farms. Staples such as wheat, rice and soy currently require vast amounts of land.

We can adapt more crops to indoor conditions and adapt to a new diet, but it would not be possible to grow enough food in greenhouses or other structures to feed billions of people with their current dietary preferences.

However, the reality is that there is currently more than enough food grown to feed everyone, especially if we stopped feeding 80% of grain to animals to feed to humans. Food shortages at present are caused more by social and cultural issues than the climate crisis but the climate crisis is amplifying the other underlying problems and will soon be a much greater cause of famine.

Heat Stress, Hyperthermia and Hypothermia

Temperature extremes will cause more deaths, illness, and loss of productivity. Extreme heat will rob vast numbers of children of their ability to thrive and grow up to become productive members of society. The hotter it gets the more energy that must be used for cooling and that means more greenhouse gases and more rapid heating and ever more energy needed.

One of the causes of the collapse in insect population is the severe oscillations in temperature. Warm winter temperatures in temperate regions brings hibernating insects out of hibernation and then kills them before they can find food or reach shelter when temperatures drop. These wild temperatures swings are also hard on plants, birds and other creatures.

Mass Migration

The rise in Ocean levels alone will force the relocation of more than a billion people¹³ and extreme heat, floods and food shortages will force vastly more people to flee their homes. There is no place for large numbers of climate refugees to go but they will still go where they think they might have a better chance of survival. This will result in violent conflict and the collapse of governments.

Even where climate refugees can find a place where they will be accepted it will mean massive construction, and likely more deforestation and the emissions of more greenhouse gases.

Disease

With a rapidly changing climate, thawing permafrost and the global mass spraying of DNA damaging chemicals such as glyphosate, new diseases are emerging, and existing diseases are spreading to new areas. Combined with the stresses on immune systems and the breakdown in healthcare systems, diseases will become more lethal and spread more quickly. The current pandemic is just the beginning of a new era when more lethal pathogens spread not just through the human population but also through other beings as well.

Violence

For many governments, the default response to civil unrest is violence.

When one nation takes the water needed to sustain another country, there could be war.

When a country massacres the refugees from another country, there could be war.

Governments will also wage war merely to stay in power.

Some religious groups may take advantage of societal collapse and seize power while other religious groups will seek to take their power.

In some countries there are already very well funded and armed criminal groups that will seek to impose control over populations and resources. Such groups will emerge in other countries.

The U.S. military has invested vast amounts in studying the future and the impacts of the climate crisis. It calls climate change a “threat multiplier” and its 2014 *Climate Change Adaptation Roadmap* says that climate changes pose “immediate risks to national security.”¹⁴

A 2016 high level report prepared by the *The Center for Climate and Security* states, “these rapid changes in the climate are already exacerbating natural disasters, water, food, energy and health insecurities, contributing to conditions that can lead to conflict, state instability, and state failure, straining military readiness, operations and strategy, and making existing security threats worse.”

Nuclear Fallout

The world has generated an overwhelming amount of highly toxic nuclear waste which which will require substantial resources to store safely for many thousands of years. With the breakdown of government, some nuclear storage facilities may be abandoned or improperly maintained. With the increase in extreme floods and earthquakes it is also likely that some nuclear power plants will experience structural and equipment failures, meltdowns and ongoing massive radiation release.

We can expect more life-threatening nuclear catastrophes like at Chernobyl and Fukushima but without effective containment and cleanup responses.

With the increased development of smaller tactical nuclear weapons, some governments have shown a willingness to use them as a deterrent or to eliminate threats before they emerge, or just for the hell of it. The use of these and other nuclear weapons will increase the amount of nuclear radiation already in the atmosphere and potentially poison large portions of the globe.

It is conceivable that some misguided politicians may think that a short-term nuclear winter is a better alternative to seering temperatures.

THE SOLUTION

Surviving the Future

We are well past the point where transforming our civilization not to rely on fossil fuels will make enough difference. We had more than 40 years to do so, did almost nothing, and are now out of time to stop catastrophic runaway climate change.

Switching to renewable energy, reducing our consumption, stopping population growth and reforesting the planet would have worked, had we already done so. But since we failed to act in time, we now must shift our focus to plan B and learn how to live on an increasingly uninhabitable planet.

A human civilization without the use of fossil fuels, without the abundance of mineral resources and on a planet with failing life support systems will be much different than what we currently have.

It took humanity less than 200 years to build our current civilization with fossil fuels and an abundance of resources. We must now build something much more advanced and much different, without the resources we had previously. And we must do it very quickly.

A Better Future

The core mission of *Climate Survival Solutions* is to engineer and build a new climate-proof, resilient, self-sufficient, and sustainable culture and civilization that stimulates human evolution and supports a wide diversity of life.

Our goal is to transform ourselves from a destructive species into caretakers of the Earth and nurture the planet back to health. Creating a new human culture and civilization is of course a gargantuan and complex undertaking and so we have assembled an international team of great minds that includes engineers, architects, scientists, psychologists, teachers, artists and many others who share our vision. Together, we are developing

new technologies, systems and ways of thinking. We have even founded two new fields of science—geo-energetics and bio-linguistics needed to support the new civilization.

We invite you to join us.



Here is what our climate-proof, self-sufficient and sustainable habitats will be like

Imagine living in a self-contained luxury resort that you never have to leave and where you have an abundance of friends and meaningful activities.

Housing

Residents will have their own apartments that are like hotel suites with beds, living rooms, desk, video and audio system.



Food

Residents will enjoy a delicious and highly nutritious whole food plant-based diet that eliminates 90% of the heart disease, cancer, diabetes and other diet-lifestyle diseases that current common diets produce.

Food will be grown in intensive vertical gardens under precisely managed conditions using a natural nutrient recycling system.

Food will be served fresh from a central cafeteria and speciality cafes.

Energy

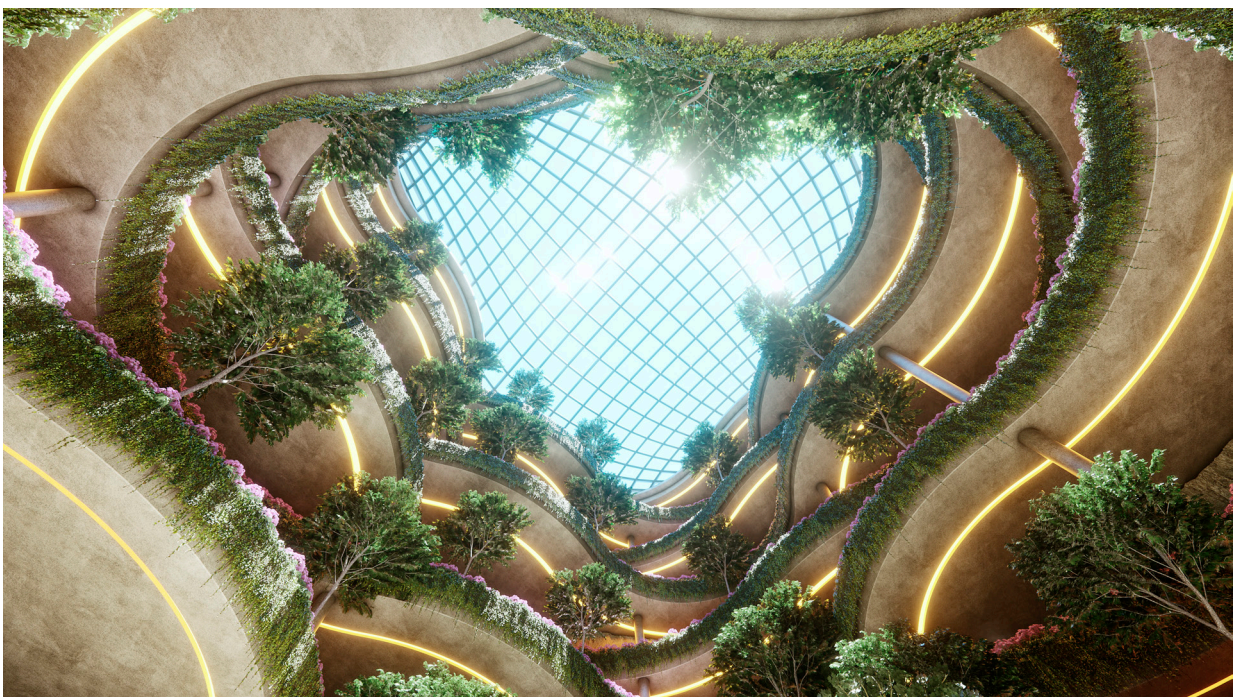
Electrical power will come from a variety of green sources. Heat will come from solar, biogas and other sources. Some power will come from exercise equipment. The habitats will be designed to require a minimal amount of energy.

Transportation

Transportation within communities generally won't be required for most residents since they will be able to walk everywhere. Those with mobility challenges will utilize electric modes of transport within the habitat. Travel between communities will be via underground rail, aerial drone taxis or foot paths. Highways won't generally be needed nor will cars, trucks or buses. Travel between continents will be by submarine or surface ship powered by wind and other green sources of power.

Recreation

There will be a variety of sports facilities, gym, theater for plays and music, social clubs, an extensive library and other forms of recreation. Because residents will not need escapist entertainment and will enjoy a new culture of



intelligent creativity versus the the old culture of destructive stupidity, less recreation will be needed.

Health Care

Health care and support will be fully integrated into the daily lives of residents. With a healthy diet, lifestyle, nurturing environment with deep social support, most health problems will be non-existent. For times when more is needed, the most advanced health diagnostics, and support possible will be readily available. A medical clinic, doctor and counselor will be readily accessible to all residents as needed.

Work

Residents will only need to work a fraction of the amount of time they might currently have to work. A high degree of efficiency and automation will mean that more time is available for recreation, art, learning and socializing. A wide variety of meaningful jobs will be available. Residents will have the ongoing responsibility of improving themselves, deepening their knowledge and understanding, engineering better systems, and nurturing the planet back to health.

Money

Money will exist but will play a very minor role, with residents not needing to really think about money. However, they will earn digital credits that can be transferred to other communities should they choose to move or convert those credits to other currency if they leave the communities altogether.

Because residents will work together for their mutual needs and various resources will be shared, there generally will not be a need for money to pay bills or buy anything.

Because residents will enjoy healthy, happy and fulfilling lives, they won't feel a need to shop to feel empowered.

Government

Government will be as it should be and will exist to meet the needs of residents by merely providing essential services, as needed by residents. Major

decisions will be made collectively by residents so there won't be any need for politicians. Various systems will be managed by qualified individuals who volunteer and are approved by the other residents.

Crime

Crime will generally not exist because residents will be carefully screened and receive training before being admitted and their physical, psychological, and emotional needs will be met, and the social environment will support vibrant mental health. Those who need mental health services to resolve past trauma, cope with potential stress and other challenges will receive effective assistance and support. Those who prove themselves incompatible with a particular community may be transferred out of the community, if necessary.

Education

Education will be for everyone, lifelong, holistic, integrated, relevant and useful. Together, we will learn how our planet actually works and really get to know our fellow species and each other. We will learn how to nurture our planet back to health, how to support life and biodiversity and how to be a species that contributes to the continued evolution of life and consciousness.

Endnotes

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- 14 **The U.S. Department of Defense 2014 Climate Adaptation Roadmap**, republished by The Hill, at <https://thehill.com/policy/energy-environment/220577-read-dod-report-2014-climate-change-adaptation-roadmap>. The original document is no longer available on the Department of Defense websites.

Further Reading

The *IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) Global Assessment Report on Biodiversity and Ecosystem Services*, a United Nations sponsored publication, initial draft published May 2019.

Among the findings by this compilation by 145 expert authors from 50 countries over the past three years, with inputs from another 310 contributing authors, is that **approximately 1 million animal and plant species are now threatened with extinction, many within decades, and more than ever before in human history.**

“[Atmospheric CO₂ Soon to Hit Levels Not Seen in 15M Years](#)”, published by Trillions on July 9, 2020.

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“[Arctic methane deposits ‘starting to release’, scientists say](#)”, published in *The Guardian*, October 27, 2020. This article covers significant discoveries of methane hydrate sublimation (direct conversion of frozen methane into gaseous form) some 350 meters below the surface of the Laptev Sea in the Russian Arctic.

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OUR TEAM



Tim Loncarich

Chief Executive Officer, Climate Survival Solutions, Inc.

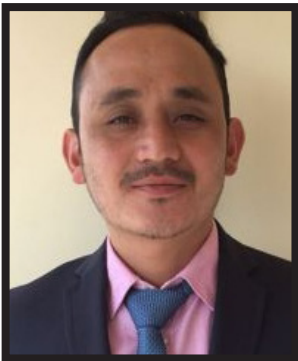
Tim Loncarich has been an entrepreneur, researcher and futurist since he was twelve years old and has spent the last forty years deeply immersed in sustainability issues and developing a framework for a new human civilization and culture that is truly sustainable and which nurtures human evolution. He is the founder and Chairman of the International Digital Monetary Council think tank, and founder and CEO of Bid Ocean, Inc. and Climate Survival Solutions, Inc., a U.S.-based public benefit corporation.



Brad Reddersen

Chief Executive Officer, Climate Survival Solutions India Private Limited

Brad Reddersen is the CEO of Climate Survival Solutions Private Limited. He is also the co-founder of Sustainable Sikkim, a sustainability outreach organization based in Gangtok. He is an entrepreneur with over 35 years of experience in the fields of computer graphics, electro-optics, supercomputers, and climate crisis science. Mr. Reddersen has a B.S. in Physics, and M.S. in Optical Engineering and advanced graduate education in computer science and electrical engineering. He holds over 30 U.S. patents, and is the author of papers in climate science, technology, and strategy. He is also the author of **The Sustainable Sikkim Guide to the Climate Crisis**.



Barnabas Sherpa

Head and founder of Bid Ocean Consultancy Pvt. Ltd.

Barnabas Sherpa supports the organization in a variety of outreach and logistics management roles. He is also the Founder and Head of Bid Ocean Consultancy Pvt. Ltd., based in Gangtok, Sikkim. Mr. Sherpa has been with Bid Ocean since 2013.



Matrika Ghimiray

Climate Scientist

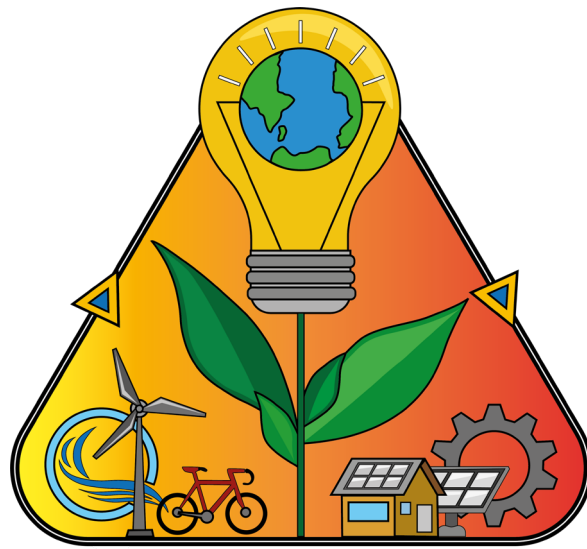
Matrika is a Research Scholar currently in the Ph.D. program and IIT Bombay, located in Mumbai, India. There she is pursuing studies in the fields of climate action and sustainable development goals. Her research interests are in Climate Justice, Energy, Environment and Systems Thinking. Ms. Ghimiray also holds the degrees of M.Tech in Energy Technology, from the National Institute of Technology in Hamirpur, H.P., India, and B.E. in Electrical Engineering, from Basaveshwar Engineering College in Karnataka, India.



Dr. Simrat Kaur

Senior Research Scientist

Dr. Simrat Kaur is a Senior Research Scientist specializing in applications of algae for everything from wastewater treatment to biofuel development, aquaponics, and more. Her background includes post-doctoral research at Le Mans Universite in France; as an Algae Scientist at Texasta, Inc., in Texas; as a Technical Manager and Microalgal biotechnologist at Algae Health, SME, Ireland; as a Research Scholar and Defence Research & Development Organisation (DRDO); and at India's Ministry of Defence. She holds a Ph.D. in Botany & Plant Science, National University of Ireland. She holds a Ph.D. in Botany & Plant Science, National University of Ireland, M. Phil and M. Sc. in Botany from Delhi University, and a B.Sc. in Botany from Venkateswara College, Delhi University.

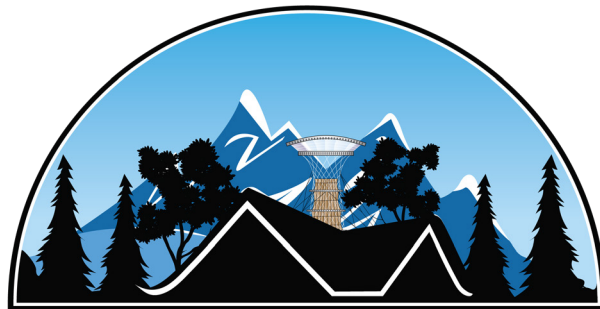


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The offices of **Bid Ocean, Inc., PBC**, and **Climate Survival Solutions, Inc.** are located in Nova Scotia, Canada. **Climate Survival Solutions Pvt. Ltd.** and **New Kalapa Tech Park and Habitat Pvt. Ltd.** have headquarters in West Bengal, India, with satellite facilities in Sikkim, India.

For further information on this report or about these companies, please contact us at info@climatesurvivalsolutions.in.