

An Introduction to Ecological Survival

PREFACE

Humankind is facing an extreme ecological crisis. Concentrations of greenhouse gases have risen sharply over the past few decades, causing the Earth to become far too warm. This has resulted in melting glaciers, vanishing polar ice, droughts, heat waves, and deadly storms. Other impacts, such as chemical pollution and habitat destruction, are also assaulting our fragile planet. Unless something dramatic happens soon to end the devastation, ecosystems will collapse and countless people will suffer and die.

Although these issues are discussed in my book [*Youth Ecological Revolution*](#), this was written primarily for the prospective leaders of militant youth movements. It therefore assumes that readers are intellectually and emotionally prepared to address the full reality of the crisis and the rational response. In this document I offer a simplified summary that is intended for everyone - young and old, leaders and supporters - who could help humankind survive the unfolding catastrophe.

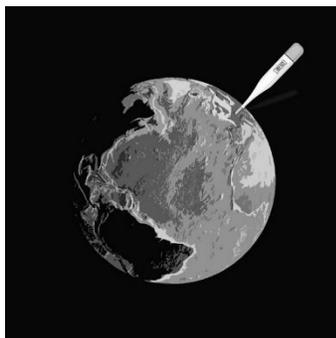
I am particularly eager to reach children as young as eight, for three reasons. First, except for infants their longevity is more severely threatened than any other age group. They have an undeniable right to know what could soon destroy their future. Second, they must be told the truth about the crisis before mainstream sources can implant their many falsehoods. These lies are highly effective in preventing rational thought and action. Third, today's children are the potential leaders of tomorrow's survival movements. They must receive basic guidance for this indispensable role as early in their lives as possible.

A conflict clearly exists between what young children are entitled to know and what they can deal with psychologically. I therefore ask responsible adults to ensure that children can safely handle such difficult topics as scientific lies, capitalism, and revolutionary change. In what follows I assume that this filter has been applied.

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1. WHY IS THE EARTH SICK?



Pretend that you're not feeling well and don't know what's wrong. What would you do to get better? You would likely go to a doctor, who will check you over and find out why you feel sick. The doctor will then treat your illness and hopefully cure it.

The Earth is sick, and most of us don't know exactly what's wrong or what to do. In this document I will therefore play “Earth doctor”. I will first examine our planet and find out why it's sick. I will then propose what I believe is the right treatment.

Let me begin by giving you the big picture about the Earth's tragic state. There are two things to consider: the Earth itself and us – the human species.

Scientists have been studying the Earth's climate for many years. One thing they have learned is that it is VERY sensitive to small changes. If we increase the global temperature just a little bit, massive ice sheets in the Arctic and Antarctica will start to melt and raise sea levels. Other ecosystems are easily damaged as well. If we destroy only a small part of the Earth's forests, many animals will die and some species will disappear forever.

We have already changed the Earth in numerous ways, so its sickness is no mystery at all. What is more difficult to understand is why people haven't treated it with more care and respect. Let me give you my views on this.

Scientists call our species *Homo sapiens*, which means *wise human*. But if we're so smart, why have we made such a mess of our beautiful planet?

To answer this we need to better understand who we are as a species.

Compared to other animals, human beings are highly *intelligent*. This is why we can build computers and go to the Moon. But we have two other important traits: we are *moral* and *self-interested*.

People have always lived in groups, so we care about other people who are familiar to us. This is why we have a moral or ethical side.

But we also care deeply about ourselves. We want to live and enjoy life. We therefore desire food, shelter, and clothing to survive, and also things that give us fun and pleasure. In other words, we are self-interested.

How might an intelligent, moral, and self-interested species behave? That depends on how moral we are compared to how self-interested we are.

If our morality is stronger than our self-interest, our intelligence will be used mostly for helping people and protecting nature.

But if our self-interest is stronger than our morality, our intelligence will be used mostly for our own benefit. We wouldn't care too much about others or the natural world.

Because human beings have damaged so much of nature, it seems obvious that our self-interest is much stronger than our morality.

However, people are not all the same: some are way more selfish than the average person.

A long time ago these selfish people convinced the rest of us to join them in consuming too much stuff, and to ignore the damage we were doing to the environment.

Below I will call them the "greedy people". Those with an average level of self-interest will be called "ordinary people".

Let me use these terms to briefly explain why the Earth became so sick.

A few centuries ago the greedy people took control of our economies and societies. This allowed them to produce more so they could consume more.

Because the ordinary people also desired improved lives, they were happy to consume more themselves, so they didn't complain.

Meanwhile the trucks, factories, mines, and farms used to produce all these things began to severely damage the Earth.

This damage has now reach a critical stage and is putting both human and non-human lives at serious risk.

At this point you probably have lots of questions, such as:

- What exactly is wrong with the Earth?
- How can its illness be cured?
- How can we get this done despite the greedy people?
- What can I personally do to help?

Continue reading for my answers.

2. THE ECOLOGICAL CRISIS



People who are concerned about the Earth often call its illness the *ecological crisis*. I will first explain this crisis and then propose how to fix it.

Before starting I must warn you about something. The greedy people want to keep producing too much stuff, so they often use confusing words and phrases to muddle our minds. This makes it really hard to think clearly and figure out what to do.

Below I will introduce some new terms that make sense to me, and hopefully to you too.

One important term, which the greedy people carefully avoid, is *ecological overshoot*.

The word "overshoot" means to go beyond a limit, like an airplane that lands too fast and ends up in a field beyond the runway.

Ecological overshoot means that our impact on the environment has become so great that plants and animals start to die. This destruction of nature began around 1950. We should have stopped consuming too much stuff soon after, but we didn't - we kept right on going.

As a result we are now facing an extreme ecological crisis. This has two parts. Because the first part poses an extreme danger right now, I will explain it in detail.

Part One: The GHG Crisis

This part of the ecological crisis was caused by unsafe levels of carbon dioxide and other greenhouse gases (GHGs) in the atmosphere. As you probably know, these gases are emitted when we burn fossil fuels such as coal, oil, and natural gas, and also when we cut down trees or convert wild land to farms.

When these gases enter the atmosphere they form a kind of blanket that keeps the Earth's heat from escaping to space. The resulting rise in the Earth's temperature is called *global warming*.

The levels of GHGs in the atmosphere are called *GHG concentrations*. For carbon dioxide these are written as "415 ppm", which means 415 parts per million. This number is increasing every year, so it's likely higher today.

When the Earth warms, weather patterns change: we get bigger storms, longer droughts, hotter heat waves, and so forth. These effects are called *climate change*.

From this you can see that global warming causes climate change. The greedy people often say that they're the same thing, but this isn't true.

Carbon dioxide has a second nasty effect. Besides warming the Earth it causes the oceans to become more acidic - that is, more like vinegar. This destroys coral reefs and some marine animals because it dissolves their shells and skeletons.

There are thus two major dangers from unsafe carbon dioxide concentrations: global warming and *ocean acidification*.

These impacts are usually lumped together and called "climate change". However, this can't be right because ocean acidification is a chemical effect - it's not a result of changing climates.

Using "global warming" for all these impacts is also wrong because acidification is not caused by higher temperatures.

It's clear that both standard terms are wrong, so I use a different one: the *GHG crisis*. This is accurate because global warming, climate change, and ocean acidification are all the results of unsafe GHG concentrations.

So far I have ignored an important fact about global warming to keep things simple, but this must now be addressed.

Fossil-fuel emissions contain not just GHGs that warm the Earth, but also tiny particles called *aerosols*. These cause health problems when we breathe them in, but they also reflect the Sun's rays and therefore cool the planet.

This means that fossil-fuel emissions have three impacts: they warm the Earth, they cool it, and they harm our health.

In the next section I will examine these impacts to see if the greedy people are right when they say that reducing fossil-fuel emissions is the best way to fight global warming.

Part Two: Non-GHG Harms

The second part of the ecological crisis is the damage to nature that has little or nothing to do with GHGs.

This includes the destruction of animal habitats when land is cleared for farming or raising cattle, the chemical poisoning of streams and rivers, and the spread of microplastics all over the planet.

I call these forms of damage *non-GHG harms*. These don't seem to threaten our survival right now, but if things don't change they very likely will in the near future.

3. THE KEY SURVIVAL MEASURES

As we've just learned, the ecological crisis consists of two parts: the GHG crisis and non-GHG harms. The main threat to our survival today is the GHG crisis.

Let's now see how we should tackle this environmental nightmare. For simplicity I will deal only with the most serious aspect of this threat: global warming.

Remember that the GHG crisis is the result of GHG concentrations that are too high. The most obvious way to fix this problem is therefore to reduce these concentrations.

Sadly, this is very difficult to do, and it would take far too long.

There are two reasons for this: GHGs are mixed with other gases in the atmosphere, and their actual amounts are very small. Imagine dissolving a teaspoon of sugar in a barrel of water and then trying to take the sugar back out!

This measure, which is called greenhouse gas removal or GGR, is therefore not a good survival solution.

What about reducing fossil-fuel emissions? Are the greedy people right when they tell us that this is the answer? Let's check the facts and see.

The first issue is that the GHGs in emissions are only a small fraction of the unsafe GHG concentrations. For example, every year we add about 2.5 ppm of carbon dioxide to the atmosphere through emissions. However, the concentration of carbon dioxide is at least 65 ppm above its safe level. This means that reducing emissions addresses only a tiny part of the temperature problem. The rest is simply ignored.

The second issue is that emissions contain both warming GHGs and cooling aerosols. The GHGs stay in the atmosphere for a long time, but the aerosols quickly fall to the ground. The result is that, when emissions are reduced, the rate of global warming hardly slows, and it may in some cases speed up.

The greedy people are therefore completely wrong - their favorite solution will not work. Let me say it clearly and loudly: ***reducing fossil-fuel emissions cannot cool the Earth for our survival.***

To find the right solution, we should imagine TWO smokestacks on every polluting facility. We can then picture GHGs coming from the first and aerosols coming from the second. Let's call these pollutants *GHG releases* and *aerosol releases*.

With this image in mind, we can ask the right question: what should happen to the releases from each smokestack?

For the GHG smokestack the answer is simple. Because GHGs cause global warming and stay in the atmosphere for a long time, they're highly dangerous. They should therefore be reduced as much as possible, as quickly as possible.

For the aerosol smokestack the question is a bit trickier.

Recall that aerosols have both a good and a bad effect. They cool the Earth, but they also damage our health. This means that there is no easy answer.

What I think should happen is that smart people who care about both people and the environment should find the best balance between the two effects. For example, they might decide to remove half the aerosols to improve our health, but to leave the rest to help with global cooling.

So far I have proposed two measures for dealing with the GHG crisis: reduce GHG releases and find the right balance for aerosol releases.

Unfortunately, these won't be nearly enough for our survival.

Reducing GHG releases will slow the rate of global warming, but the warming itself will continue. Allowing some aerosol releases will provide a bit of cooling, but much more is needed.

Fortunately a third solution is available: we can reflect the Sun's rays to directly reduce the heat.

There are several ways to do this. We could set up mirrors on land or water, or perhaps even in space. We could also make clouds brighter, or spread aerosol particles high in the atmosphere.

These measures are usually called solar radiation management (SRM), but many other terms are used as well. Probably the most common one is "solar geoengineering".

To summarize, there are three things we can do in response to the GHG crisis:

1. Reduce GHG releases as much as possible
2. Find the right balance for aerosol releases
3. Reflect the Sun's rays with SRM

If we can quickly do all three, our survival chances will greatly improve.

Now, what about non-GHG harms?

The best solution here is to decrease our population and consumption levels as quickly as we can. This is especially true for the rich countries, where too many people consume much more than the Earth can safely provide.



We must also use far fewer resources and create far less waste when we make stuff. That is, our economies must become much more efficient.

If we can rapidly do these things in addition to the three GHG measures, we have a chance to solve the ecological crisis as a whole.

Let's now see how all this might be achieved.

4. IMPLEMENTING THE SURVIVAL MEASURES



Above I said that the Earth is sick mainly because the greedy people control our economies. This means that the ordinary people must take this control away from them.

Once we're in charge we can tackle the GHG crisis and non-GHG harms. If we're not in charge we can't do anything at all. We can get angry, complain, and demonstrate, but nothing will really change.

However, there is a huge obstacle to this plan: most people think that our economies are controlled by governments, not by the greedy people. Governments are important because they allow the ordinary people to express their views, but we must never forget that the greedy people are the real bosses.

So the big question is this: what can the ordinary people do to seize control of the world's economies?

The answer, unfortunately, is that force will be required.

Because the greedy people won't give up their control without a fight, they must be shoved out the door and replaced with ordinary people who truly care about human survival. This great change is called a *revolution*.

Most people strongly dislike revolution because it involves huge and possibly painful changes. It also means that the greedy people will lose the luxuries that are so important to them. This could lead them to use violence to keep what they have long enjoyed.

There is much more to say about this difficult topic, but I can't say it here. If you're ready for the details, please read [Youth Ecological Revolution](#). In this book I propose a strategy that the ordinary people - especially the young - can use to replace the greedy people with new leaders.

Let me now say a few words about a sustainable economy, which means one that won't destroy the Earth.

Today's economy is called *capitalism*. This is the system that the greedy people set up many years ago. It is designed to help them produce more stuff while ignoring the damage to the natural world.

A sustainable economy would instead satisfy people's needs and some of their wants, and it would carefully stay within environmental limits.

If you want to learn more about such an economy, see my book [The Economics of Needs and Limits](#). For a brief summary, see chapter seven in [Youth Ecological Revolution](#).

5. ACTIONS YOU CAN TAKE

If you think my ideas make sense, I urge you to do something concrete to get the survival project started. These are my top suggestions:

- If you have what it takes to be a leader, carefully read [Youth Ecological Revolution](#) and then form a movement for revolutionary change. If you don't feel you can lead but know someone who can, talk to them about reading the book and then help them form such a movement.
- Read my [Youth Survival Manifesto](#) and send it to other concerned people. This document lists the most common lies we're being told, and what the truth really is. It also makes four demands that must be met if today's young people are to enjoy long and healthy lives.
- Read and distribute my proposed public statements by these four groups:
 1. [The United States military](#)
 2. [Concerned people who strongly support SRM](#)
 3. [Ethical climate scientists](#)
 4. [Economists who understand the need for a sustainable economy](#)
- Oppose groups that reject revolutionary change because they believe that governments control the economy. These are a few prominent examples:
 - [Extinction Rebellion](#) (XR)
 - [Sunrise Movement](#)
 - [Scientist Rebellion](#)
 - [Fridays for Future](#)

- Also oppose organizations that spread the greedy people's lies. There are hundreds of these, but the most important one is the [Intergovernmental Panel on Climate Change](#) (IPCC). The IPCC is strongly supported by the greedy people and those who serve them, but don't let this fool you: it is a huge danger to people and planet.

6. SUMMARY

Below are the main points in this introduction to ecological survival.

- Human beings are intelligent, moral and self-interested. But individuals differ, and some are far more self-interested than others.

These greedy people long ago convinced the ordinary people to join them in consuming much more than the Earth can safely provide. This led to ecological overshoot around 1950.

Since then we have continued to increase our consumption. As a result we now face an ecological crisis that threatens our very survival.

- The most critical environmental problem is the GHG crisis. This was largely caused by emissions from burning fossil fuels, which increased GHG concentrations to unsafe levels. The results were global warming and ocean acidification.

Because this problem is a major threat, it must be solved first. To do this we must quickly reduce GHG releases and find the right balance for aerosol releases. We must also implement SRM on a massive scale.

The greedy people only want to reduce emissions, but this won't stop or even slow global warming.

- The only way for our species to survive is to replace the greedy people who are now in charge of our economies with a more responsible group. In chapter six of [Youth Ecological Revolution](#) I explain how this might be done.
