An “inverse School Strike” to provide the understanding, tools and methods required to effectively address Anthropogenic Climate Change (ACC)* Part 1

By R. S. (Bob) Baker

A partial introduction to a very large project which involved 18 years of intense effort, to address ACC in the form of a letter to an Aware politician who Cares enough to advocate for sanity and humanities survival in the face of ACC and to All who Care about our futures and their children’s futures and our living Earth we need for our survival.

*Our Earths “climate system” is in reality our “biosphere”, a totally interconnected system that reacts to the inexorably increasing output of our sun modulated by orbital cycles to maintain dynamic planetary “homeostasis” suitable for our family of Earths life to persist through upheavals and to thrive when given an opportunity by virtue of its biodiversity we have nearly destroyed over the last 12,000 years with exponentially increasing violence.

The format of a PhD then “PhD Innovation” which became aggressively unwanted when I challenged civilisation, and its institutions is insufficient to cover a comprehensive, focused utilitarian analysis of the problems that will guarantee our immanent extinction unless addressed. Especially when our institutions and citizens are a major part of the problems, and those problems and remedial recommendations must also form part of this “Project”.

And my efforts to fill the gaping gaps in mainstream information and discourse and to confront the cognitive dissonance I have been forced to confront with naïve socially inept bluntness and become an ostracised pariah for my troubles, also makes my “project” very confrontational to introduce, because I must confront the cults that maintain our civilisation.

The full reality of the destruction we are collectively causing are confrontational enough, but many ignored inconvenient truths must be addressed. And the human drivers of the destruction we cause are perhaps even more confrontational to consider let alone write about.

But hard realities far more complex, yet simple in essence, than the derivative dogs breakfast discourse of disjointed misinformation that prevails in simplistic mainstream discussions must be addressed. And I must expand and clarify many terms and concepts to allow discussions on how to optimally address our dire problems which cannot be understood by minds trapped within the currently limited civilised perspectives that prevail.

Consider this as an attempt to “bootstrap” the average readers understanding of the problems we face. Most concerned readers would already understand, I shall present a very unusual perspective, a different “angle” as it were to provide other dimensions of perception and understanding of integrated “solutions” to complex problems we must address or wear.

The destructive products of the diverse damages we inflict on our climate system/s are far greater than the sum of their parts, thus the rapid deterioration we are witnessing does not surprise me and my understanding has driven my efforts cruelly.

Conversely, the beneficial products of diverse actions and reforms to restore the diverse living components of our climate system can be managed to produce diverse beneficial restorative results far greater than the sum of their parts but we must save the remaining parts and actively restore our Earth to functional ecohydrological and biological health or perish.
Please excuse utilitarian style, I generally concentrate on substance, many of my more formal efforts over the years have been ignored by the denizens of the dysfunctional institutions in the systems of the cults of the terminal colonial delusion.

And please consider this as a deliberately informal introduction to a work that encompasses increasingly referenced and diverse components covering all major Earth/human systems interactions with tedious fieldwork and cutting edge engineered, hopefully still patentable ecosystem management apparatus to help address some of the commonly known problems of ACC and the many ignored ones, and outlines optimal strategies and actions to address ACC.

But many cultural barriers – the “automatic rejection switches” and exceptional non excuses in nearly all civilised minds trapped in the terminal delusions of the cults of Homo superior must be dispelled before the full realities of our situation can be understood and addressed.

More precisely this partial introduction to a project that is difficult to summarise is a necessarily confrontational “uncultured” effort to use the title of a book by Daniella Mestyanek Young I just read about and will soon order. Civilisation is a terminal cult

And after discarding about a quarter of a million words trying to introduce this project which confronts the herd instinct of “if you cannot say anything nice don’t say anything” this has been excruciatingly difficult. But hard truths must be confronted – by every human.

And I see and note many connections between different aspects of topics and the way that scientific disciplines and other groups and instruments of our cultures are artificially divided which helps maintain the current situation so the following “Contents list” is just a rough guide, because I will link, expand, and encompass topics in an attempt to reflect reality.

Warning. I can procrastinate no longer, this has been difficult to write and is driven in part by increasing frustration, despair and fury which have suffused most of my writing over the past few years, but as the title of an article by Jessica Wildfire I also just read suggests:

“You don’t need hope, you need Courage, and you might just have it”

I know that my initial recipients have demonstrated courage and integrity and thank you very much for your efforts.

I hope all readers can persist because the current level of mainstream discussions on ACC are woefully inadequate and what follows is also an attempt to update mainstream understanding of our interconnected crises. But denial must be dispelled or shattered first.

And after 18 years of being gaslighted for trying to address hard truths I am propelled by a fury only those who care about something bigger than a spoiled brat ego would understand and harsh as some of the following is, please appreciate that this is an attempt to wake up an average citizen who dwells in the 2 dimensional (me, me) flat Earth entitled terminal fantasy that will destroy us all and this version is much nicer than previous ones because much of it is aimed at those who do care and would understand my fury which is required to hold back the despair at what the bulk of my contemporary humans are doing in their deluded idiocy.

Some things are nearly impossible to say and many aware people like myself are also struggling to overcome our herd instincts and conformist training and so I shall write the confrontational facts for their sake too. Slammed if I do, damned if I don’t. For Our Earth.
Contents outline of part 1,

Note, only some of the headings below are used in the following text

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Warning, this is an attempt to exercise integrity and being morally correct not “politically correct” hard facts will be addressed in concise possibly brutal terms, but everything is relative. Naomi Klein likened the current moral crises and extent of reform required to address the current mess to the moral reform and financial impacts and upheavals required to abolish slavery and she has also identified that the first step required to address the planet destroying industries and institutions that have corrupted nearly all our governments is to remove their social license to exist. So, I shall “justify” my use of blunt terminology and scorn in what I feel are appropriate places with some quotes relevant to abolishing slavery which is outsourced now from page 463 of Naomi’s great book “This changes everything”:

“Writing in 1808, British abolitionist Thomas Clarkson described the battle over the slave trade as “a contest between those who felt deeply for the happiness and the honour of their fellow creatures, and those who, through vicious custom and the impulse of avarice, had trampled under-foot the sacred rights of their nature, and had even attempted to efface all title to the divine image from their minds”

“The rhetoric and arguments of American abolitionists could be even starker and more uncompromising. In an 1853 speech, the famed abolitionist orator Wendell Phillips insisted on the right to denounce those who in the harshest terms defended slavery. “Prove to me now that harsh rebuke, indignant denunciation, scathing sarcasm, and pitiless ridicule are wholly and always unjustifiable; else we dare not, in so desperate a case, throw away any weapons which ever broke up the crust of an ignorant prejudice, roused a slumbering conscience, shamed a proud sinner, or changed, in any way the conduct of a human being. Our aim is to alter public opinion.” (Klein 2014, 2015 Penguin Edition p 463) a perfect book for the times.

Currently most people seem to have no opinion, they prefer to deny that we are unlikely to survive beyond another decade which allows the destructive traditions and travesties that must be stopped and or reformed to continue. Unfortunately, we are born into this terminal civilization and are encouraged to engage in destructive practices which become part of our world views shared with our local culture which shapes our egos which have been inflated by propaganda designed to facilitate the exploitation of human beings by trapping their minds in a dysfunctional ego suited to self-limit and function in the structurally unjust cults of our anthropocentrically deluded patriarchal systems of exploitation we call “civilization”.

The major obstacle to effectively addressing the destruction of our biosphere or climate system – they are the same thing, has been the civilized humans ego which protects itself by rejecting any information that might threaten its slavishly subjective “happiness” and as the predominant delusion is that civilization will continue and one can pursue the noble path of “self” enhancement by the accumulation of wealth and conspicuous consumption in an infinite flat Earth of 2 dimensional Me, Me’s, anything that threatens that delusion of infinite growth is rejected. We are all in this together and must get real and cooperate now or perish.

When I first commenced discussing ACC in 2005 at university people would smile and nod and say a few things and I assumed that they understood what I was talking about but was then puzzled by their subsequent actions and conversations which demonstrated that the information had not penetrated, and they just politely pretended to understand and probably agreed with their friends that I was mad. As I began to try to engage people more critically, they began to reject me and I could actually observe their eyes go blank or turn inwards or become angry, so I became a pariah. Denial must be overcome, and social licenses reviewed.
Figure 1) Major features of a functional biosphere’s nutrient and ecohydrological cycles

Figure 2) The barren future if humanity does not wake up and heal our Earth.

Note that I have used the loaded term “geoengineering” in the following diagram but I have expanded the definition of the word to a non-anthropocentric non subjective definition which includes all impacts of living creatures in our biosphere/climate system positive and negative thus I can state that Archaea/Bacteria then blue green algae were the original and most powerful geoengineers in Earth and colonial humans have been geoengineering deserts for 12,000 years. Intelligence is not required and seldom demonstrated by band aid rent seeking idiots who push for stratospheric albedo modifications etc.
Figure 3) Generic outline of the ERGS system concept

1. **Cooperation**
   - For Soil Re-creation
   - Mineral, fuels, and carbon sequestration
   - Fertilizer, compost for agriculture

2. **Processing Technologies**
   - Biomass & Mineral
   - Sea-water from landscape
   - Fresh, clean water
   - Industries, portable villages
   - Electric/hot stations
   - Solar thermal

3. **Energy Production**
   - From wind, solar, cells
   - Electric/hot stations

4. **Carbon Sequestration**
   - Through CO2 capture and storage
   - CO2 absorption
   - Photosynthesis

5. **Freshwater**
   - Fresh, clean water
   - Sea-water from landscape

6. **Oxygen**
   - From fresh water and sea-water
   - Photosynthesis

7. **Context**
   - A carbon-negative ecosystem, enhancing energy supply, and multi-dimensional thinking.
To The Honourable Senator David Pocock  
From Robert (Bob) Samuel Baker  

Dear Senator Pocock, Thank you for your advocacy for our Earth, Justice, and humanity.  
And Congratulations for being elected by others who Care about our future.  

I am writing to you for several reasons which can all be grouped within my 18 yearlong “Project” to help humanity effectively address and reverse the destruction of our biosphere which is in fact our climate system in fact. But jargon has been mangled and concepts have been simplified and otherwise distorted in mainstream discussions which is a barrier to effective communication. And that is just one problem of many in our unsustainable civilisation and the minds that are trained to serve it that must be overcome before the problems that we are causing can be understood clearly enough to be effectively addressed.  

And some barriers to effective understanding have been so excruciatingly difficult to get through or around and have caused me to become an ignored then ultimately aggressively ostracised homeless pariah while being subject to increasingly diverse and occasionally monstrous repercussions from ‘vested interests’, fellow citizens and my university when the climate wars began as I commenced a PhD around 2013 and I became unwelcome in my corrupted region which is also part of the problem that maintains wasteful ignorance.  

And because the truth has been so difficult to introduce for many reasons, I am also using this document as an introduction to something much larger than the two or more PhDs worth of formal research, field and lab work, engineering and ecosystem engineering at its core and so please forgive me for writing this in an ‘open letter format’. This is written for all adults.  

It has proven to be nearly impossible for me to introduce this in a formal fashion that assumes that the reader understands what I am talking about and that they care (a verb) because most apparently do not understand our Earth, or care enough to understand, and trying to write to brainwashed minds has caused me great frustration and despair as common minds usually reject hard truths and the multiple repercussions and dead ends I have experienced even at the mention of an emotively loaded, poorly understood term, echo as I struggle for phrases that might get through to those minds, I have probably discarded a quarter of a million words over the past several years trying to introduce my confrontational but necessary “Project”. I began university in 2005 to address all ACC and have focused on that ever since. A difficult task.  

However, I believe that it will be easier to write to you about very confrontational topics that must be addressed because you already care about our Earth – the larger part of us we need to restore to functionality more than you care about an illusory ego which is the major obstacle to overcome, or bypass in the minds of the aggressively ignorant masses that must be overcome in a sufficient proportion of “normal” civilised humanity before reform is possible.  

I am much like Greta Thunberg, my mind is extremely different from that of most people, but I did not fully understand that until quite recently because I have predominantly focused on biogeophysical phenomena I could understand logically most of my life and effectively ignored humans, I assumed I understood them like normal people might assume that they understand our climate system but very few do. I understood far more about how our climate system/s work when I commenced university in 2005 to check my understanding formally.
I also went to university to develop the solutions to our complex mess that were obvious at the time and to stop the 2019 fires and worse that had begun to torment my nightmares in 2004 and increasingly began to torment my conscious and consciousness and I saw it as a Moral imperative to address the destruction of our “mother Earth” as my foremost priority and could not understand why others seemed to be trapped in cult like anthropocentric fantasies worshipping the deluded cults of our terminal civilisation/s, markets, nations, etc.

Reductionist scientists might understand their speciality extremely well but relatively few understand the full picture like Professor Clive McAlpine and a couple of other exceptional employed scientists in Australia and others globally who are usually not employed for long because reductionist compliance is preferred in the terminal world maintained by Vogon like management, short term self-interest, propaganda pushed by vested interests and fear.

So, the primary purpose of this introduction is to expand certain concepts and definitions to less subjective, non-anthropocentric definitions more suited to effectively encompass the reality of cause and effect rather than stated intention and rent seeking mess in the case of the term “geoengineering” for example or “desalination” and especially “Anthropogenic Climate Change” (ACC) which by my definition covers every change that humans cause that damages – or repairs our biosphere. Most of our actions are currently causing destructive ACC.

And I would like you to consider facilitating the advancement of my patentable unique apparatus designed to facilitate the interception of the nutrients humanity mines from developing and “developers” deserts before they are dumped into our rivers and oceans so they can be used to restore soils, vegetation and ecohydrological cycles etc.

I intend to approach more potential wealthy backers for logistical assistance to develop and manifest my apparatus and wider integrated systems required to restore the quality and survivability of our environment. But note that I have approached some rocket men and loud-mouthed billionaires and they proved to useless or worse which added another obstacle for me to overcome as they have also delayed effective actions to address ACC with their rent seeking “magic bullet” theatre designed to maintain business as usual (BAU) which is not possible, but we could do much better than BAU if humanity woke up and cooperated.

And I am offering my services as a consultant – I am compelled to seek suitable employment and developing and extending my systems to attempt to rescue our biosphere from the destruction is what is most suited to my broad and deep skillset, I have trained for at least 60,000 hours for that task and cannot engage in tasks that will destroy our futures.

But in the meantime I am also suited for reviewing proposals that you might like frank, fearless, and concise advice on, and I can draw on specialist advice from a network of diverse brilliant people I have begun to connect with since February 2021 when I came out of the wilderness after completing my biogeophysical research and satisfying myself that we do have a slim chance of survival and I had to reconnect to humanity which I had become utterly alienated from and still are in many ways, I have become allergic to civilisation.

So, this document is also a resume of sorts and I must explain myself or non-self to initiate effective communication because one major barrier to communication has been that I have projected my moral perspective and intellectual profile and capacity onto others during discussions while they apparently project a far more limited morality and ability onto me which is possibly the basis for their world view which derails communication immediately.
So please consider the following “resume” which also expands definitions and concepts so the reader can understand the scope of the problems that must be addressed and will then be easily able to understand the solutions that must be applied and so that a larger proportion of humanity can understand and act accordingly to secure our survival and build a better world.

There is no time to waste, but I will not declare that “it is too late” like a lot of lazy partially informed excuse mongers’ push as an excuse for their self-serving nihilism.

When I commenced pushing for action and Richard Torbay MP had proven to be useless university seemed like the best place to learn to be useful in an effort to address ACC which I assumed would soon become manifest in mainstream society and government, but as it had taken me 6 years of increasing concern and study as a layman boilermaker bushman misfit I thought it might take a while for people to wake up.

I also assumed that many academics at my university would be aware and concerned but they were not. At first it was surreal; I now know that I was suffering from “imposter syndrome” where I doubted my own understanding especially when all the shiny professors seemed to be oblivious. And I was morally offended at their ignorance and could not understand their self-centred lack of engagement, but I tried to mask my increasing distress and the fury required to quell my increasing despair for 6 years while my associates in turn chose to gaslight me to maintain their idiotic ignorance. Original Greek definition of “idiot” also defined later.

After 6 years my mask began to crack, I do not take breaks from this task incidentally, and my fury and despair increased as a reaction to many stressors some of which came from vested nasty interests and halfway through my oversized “PhD Innovation” project I had persevered with despite my university and societies increasing hostility I had to begin working from home so as to avoid people who had nearly all come to resemble Zombies and box ticking Vogons to me.

I have become the ultimate outsider, literally the Beatles “Fool on the Hill” but I stopped smiling a long time ago. And I can see the dysfunction from the outside and how to address it but those on the inside do not want to know about me, but as they are a part of the problem that must be addressed, I will try to enlighten the ignorant little Nero’s fiddling while Rome burns. Diplomacy has not worked so I shall try some boilermaker type communication and see if bigger “hammers” can crack the PC serf skulls enough to see if there is anything useful to be reached in the one trick wonder legends.

I am over being aggressively ignored by pea brained patronising backstabbing parasites I am afraid. My initial recipients are probably familiar with that disgusting phenomenon anyway and will understand the need for what follows, I do not enjoy writing this at all, I feel the pressures to conform to the mob, but we must somehow try to turn the mob.

Warning, what follows contains hard truths stated forcefully in places.

It also contains a partial outline of my project – I am what I do in the context of a “resume”.

And it contains key concepts and definitions understanding our climate system and a section titled “The evolution of our climate system and the “birth” of “Gaia” designed to facilitate a utilitarian understanding of how our climate system evolved and functions from a wholistic scientific perspective like that of James Lovelocks understanding as outlined in “Gaia. The Practical science of planetary medicine” I shall formally reference later.
For now, please consider me as a “Planetary Physician” or a Planetary General Practitioner who has trained in emergency surgery and has an intimate understanding of human infrastructure and how it can be reformed to have positive impacts in our biosphere and our civilisations. Or an “Earth/Human Systems Scientist/Engineer Ecologist, whatever.

The first obstacle I must overcome in the minds of most people is their habit of approaching information they do not like with the intention to find a perceived flaw and then be able to declare “the person is a fool or a liar” and then reject everything so they can continue in zombie like perfection with their entitled fantasies intact and demonise the bearer of facts they prefer to ignore so they “shoot the messenger” and the perfect mob cheers.

So, the first question to the average reader is “do you care enough to persist and try to understand what I, or others like me have to say? Or is your precious ego more important than your own and your children’s futures?”

One problem with the serfs is that they are trapped in their sick egos, divided from nature by the 12,000-year-old delusion of being somehow separate from and “superior” to nature and furthermore that male homo sapiens of certain genetics are superior to all the rest of humanity which allows the deluded monsters to do monstrous things to each other and our Earth.

The brutal unsustainable “cult of the warrior” legends that pervade the toxic monstrous “masculinity” that prevails in terminal world and lies just beneath the skin of many redneck cowboys, polished professors, overpaid CEOs, many citizens and the billionaires who seem to believe that rat cunning somehow equates to “intelligence” and that the monsters can get away with any inhuman excess they want while they surround themselves with duplicitous sycophants and believe their own self-serving rubbish and lies, is the foundation of most of our problems today.

Naomi Klein says it much better with copious evidence in “this changes everything” which I have just finished reading and will reference formally later along with the 800 plus diverse references which inform this “inverse school strike” which shall take a while to define as I must peel back the layers of misinformation and unexamined assumptions to ensure that I am on the same page with the general informed reader.

Apologies to my initial recipients who probably understand most of what I must cover in the following introduction and the many diverse chapters that I will follow this partial introduction with.

And the following text will contain extracts from former attempts to introduce the harder truths that must be addressed before my formal PhD introduction I wrote years ago can be fully understood and appreciated, so I might repeat some headings and summaries in a slightly different way because having been effectively screaming into a largely unresponsive void during 18 years of poverty and increasing frustration I am not sure what will resonate with some readers but I shall try not to be too repetitive.

This may be difficult to read but it has proven to be nearly impossible to write, so please bear with me as I try to convince the reader that I have something worth understanding and acting on – I am just one of many ignored people, but we require diverse teams to address the problems that will not be ignored for much longer.

Please bear with me as I introduce a very different type of project, for our Earth.
The following text contains a necessarily confrontational introduction to my project and some of my relevant experiences and qualifications and covers some of the obstacles in modern Homo sapiens minds and institutions that must be addressed to facilitate effective actions.

I am a Bachelor of Natural Resources with first class honours for thesis titled:

“Developing an integrated renewable energy, water supply and carbon management system in Australia as an alternative to fossil fuelled systems” (Baker, 2009)

And now lapsed PhD, then “PhD Innovation” candidate for an aggressively unwanted oversized “Project” titled:

“Monitoring and Manipulating Freshwater Microalgae Communities to facilitate “Ecologically Responsible *Geoengineering*” (ERG) and address major causes of Anthropogenic Climate Change” (which I am converting to an “inverse school strike”)

*Not “band aid” sunshade “Geoengineering” and all destructive human impacts in our climate system/biosphere. Definitions and concepts are expanded in the following pages.

And because my PhD project became aggressively unwanted when I insisted on addressing large gaps in IPCC and FAO and other data and analyses and included many ignored damages to Earth systems and worked out how to address the complex mess, I have created an “inverse school strike” format which is more suited for encompassing all of the major problems that degrade our biosphere and how to address them.

So, the title of my “Inverse school strike” which covers 18 years of “ASD intense” study, field and lab work and engineering focused on saving our biosphere is now:

“An “inverse School Strike” to provide the understanding, tools and methods required to effectively address Anthropogenic Climate Change (ACC)”

Please consider this as a partial introduction to an instruction or methodology manual on how to restore our biosphere optimally, rapidly, and possibly (if we hurry) to the same functional state it was in 12,000 years ago before colonial expansionist extractivist hierarchical deluded violent humans began destroying our climate system.

I am very much like Greta Thunberg, I was diagnosed with ASD last year at age 56, I prefer the term “Autistic Spectrum Condition” because the “disorder” only seems to manifest around the “bullshit” (lies that people choose to believe) that prevails in our terminally dysfunctional structurally unjust patriarchal “cult of the warrior” civilisation which must also be transformed.

As social conformity is maintained by scorn and derogation of those who are different, and I have copped my fill of that I shall put the boot on the other foot as it were and use harsh concise terms against the passive aggressive masses that better choose life or death soon because their ignorance ensures that our extinction will occur.

Hopefully the reader will understand.
What follows is part of my ~64th attempt to introduce this project.

But please note that I have submitted 2 PhDs worth of work in 3 chapters years ago to resounding silence. And I will send copies of those chapters in subsequent emails as I tidy this excruciating text up – my literature review chapter – additional to the 3 above had 32 topics reviewed when submitted that as an unfinished chapter to be reviewed but was then ostracised so had to review several more topics to try to understand that problem so I can address that and I have not had a break in a decade so it would be nice to get an indication that someone is prepared to engage with the most important project in Earth.

“Ecologically Responsible Synergistic Climate Systems Restoration” may be preferred to overcome marketing and other obstacles in human minds that cause immediate rejection than the use of the term “Geoengineering”, but many terms have been sabotaged and I must use the words available as a start but will expand the concepts and definitions behind the sabotaged jargon to more objective ones better suited to addressing the real crises we face.

I have experienced dead ends in discussions of the inconvenient truths that must be faced for 18 years now and variously understood jargon has been just one obstacle to effective communication. My initial intended recipients of this document will be interested in the hard information, analyses, and eco-technological synergies I will introduce in this multipurpose document designed to facilitate the restoration of our climate system otherwise known as our “Biosphere” or “Gaia” to its natural functional state as it was 12,000 years ago before a certain human culture arose and began to destroy the natural systems we must rapidly restore.

Having suffered the repercussions and other frustrations of rejection for 18 years by all but a handful of people I am acutely sensitised to the phenomena and so ask the potential minions who might be the first to assess this and subsequent documents to please persist because I have important information for humanities survival to convey and after more than 60,000 hours of intense study focused on effectively addressing the complex mess my incompetent civilisation has created and still ignores I would appreciate if the reader entertains the idea that I might actually know a lot more about ACC than anyone they know and even though the casual reader might believe that there is nothing in this that will personally benefit them in the short term and is tempted to censor my attempt at communication, please do not do so, persist until you understand what I am trying to say, or just pass this on to your boss to read.

Writing, marketing, engaging communication and self-promotion that might facilitate my diversely difficult task are not my greatest gifts, so I shall use a few potentially mind-expanding informative quotes from better writers to encourage the general intelligent reader to persist. And I apologise to my initial intended recipients if the tone of some of my writing is possibly arrogant or otherwise irritating or offensive, this is not a supplicatory effort and excruciating topics must be addressed so this is written to engage – and jar into wakefulness, the more brainwashed minds that prevail. There is no easy way, please bear with me.

“To paraphrase Einstein, a new story begins to gain traction when people come to understand that the problems, they face can no longer be resolved from within the same level of consciousness that created those problems in the first place” (Uhl & Anderson, 2020)

I was not aware how different my mind and motivations are from that of most people until forced to examine the causes of our dire situation and the difficulties I encountered in communicating with people whose minds are confined within our currently terminal
civilisations systems and legends. I made the error of projecting my intellect and morality onto others while they apparently projected the more myopic self-serving intelligence and current cultural immorality they subscribe to and or are accustomed to interacting with.

Please consider the following quote from page 291 of “This changes everything” (Klein, 2015), like I, Naomi Klein likes to use quotes to introduce hard topics, I highly recommend her book, she covers the same hard topics as I from yet another angle but converges on the same things as all of us studying this problem from different angles arrive at, and she also writes far more nicely than my confrontationally utilitarian efforts:

“The day capitalism is forced to tolerate non capitalist societies in its midst and to acknowledge limits in its quest for domination, the day it is forced to recognize that its supply of raw material will not be endless, is the day when change will come. If there is any hope for the world at all, it does not live in climate change conference rooms or in cities with tall buildings. It lives low down on the ground, with its arms around the people who go to battle every day to protect their forests, their mountains, and their rivers because they know that the forests the mountains and the rivers protect them.

“The first step towards reimagining a world gone terribly wrong would be to stop the annihilation of those who have a different imagination – an imagination that is outside of capitalism as well as communism. An imagination which has an altogether different understanding of what constitutes happiness and fulfillment. To gain this philosophical space, it is necessary to concede some physical space for those who may look like the keepers of our past, but who may really be the guides to our future.”


My mind does not filter information past my bank balance or my ego or whatever mob I am with might believe.

I have always tried to understand our world on its own terms and am morally compelled to attempt to help preserve our biosphere which gave us everything we have including ourselves and supports our lives and is the larger part of us, that is my primary motivation and declaration of interests, our biosphere.

I also have patentable technologies if the IP has not been stolen and pilot scale apparatus necessary for intercepting the nutrients we mine from landscapes and dump into rivers etc with additional carbon to return to soils where appropriate to facilitate revegetation, rehydration, sustainable food production etc and the rapid restoration of our climate system.

After I commenced university as a mature aged student in 2005, I discovered that I understood our climate system = our biosphere better than all my reductionist lecturers combined and have gone far beyond that understanding since and the truths I must cover have been almost impossible to write and are probably hard to read too, but this will have to do: Jargon has been dumbed down, distorted, emotively loaded by marketing and vested interests, and our institutions and most citizens are myopically, subjectively, anthropocentric and obviously incapable of effectively understanding and addressing our current dire crises.

I have been studying all major Earth/human systems with “ASD” intensity for 18 years now and worked out how to reform and or replace human infrastructure to give us the optimal chance of survival. ASD is also a poorly understood prejudicial term.
Colonial humans have been causing destructive ACC for millennia. By my non-anthropocentric, more “objective” definition of “Geoengineering” our civilisation has been destructively “Geoengineering” productive landscapes into deserts for about 12,000 years and are about to create a globalised desert even if it were not for the enhanced greenhouse effect which is only a part of the complex mess caused by human hubris spurred by the fondly held legends and traditions of the unsustainable “social constructs” (Rees, 2022) we are born into.

Please bear with me as I attempt to unpack a very broad, wholistic, reductionist informed, objectively utilitarian, non-anthropocentric perspective and understanding of the immediate biogeophysical threats to humanities survival suitable for effectively addressing complex ACC coherently on its own complex terms.

Most human minds have been trained to understand and serve simple destructive systems and ignore the far more complex natural world we are part of as we simplify it to death for vainglorious short-term gain and our anthropocentric traditions, institutions and instruments designed for BAU are demonstrably unsuited to addressing our currently terminal crises.

The obstacles to effective communication I have encountered with an overwhelming majority of people are diverse and profound. People are trained to reject information that threatens their comforting world views founded on unexamined assumptions. Please bear with me.

A PhD and even the “PhD Innovation” format I stretched my project into were unsuitable instruments to fit my “project” into because those formats only fit within the 2 dimensional flat Earth delusion which is part of the problem that must be reformed if humanity wishes to get real and survive its infancy. So, I have created a new format and project title. My PhD Innovation was unacceptable because I insisted on correcting mainstream understanding on the wider and deeper causes of ACC and that frightened many academics in a system being run by LNP hacks and vested interests in the status quo and people in denial which includes almost everyone I have interacted with for the last 18 years while becoming an impoverished homeless pariah still trying to refine and promote viable solutions to ACC.

So, I have created an “Inverse school strike” format which basically attempts to bridge and address the huge gaps between reality and the way modern humanity perceives it as discrete nodes rather than a totally interconnected network of nodes and the interactions that define and maintain or change those artificially separated nodes, to address reality on its own terms.

I have done an excessive amount of work in other words – for our Earth, not for the parasitic system and its adherents currently destroying it. We are all part of the systems that must be changed but resists change by design and indoctrination and other mechanisms that have formed part of the challenges of this problem-solving project that must be addressed before the rest, and I have been trying to encompass it all in a much broader utilitarian Project titled:

“An “inverse School Strike” to provide the understanding, tools and methods required to effectively address Anthropogenic Climate Change (ACC)”

Thank you for persisting this far. The previous few, and following few paragraphs are from an earlier attempt to introduce and promote my project to a good person.
I am writing to offer my services as a consultant on the full extent of ACC and how humanity can optimally address that mess and survive, I am required to seek paid employment which would be nice because I have effectively been slaving in poverty for 18 years on this task, but I am aware that your staffing allowance has been cut by our current government and I am prepared to provide my advice and analysis for free as I have also been doing for 18 years commencing with informing the worse than useless Richard Torbay ex MP NSW and ex Chancellor at my cowed dysfunctional University of New England (UNE) Armidale.

The honourable Tony Windsor MP was very helpful though and shared his time and resources with me on several occasions commencing when I missed my first day of orientation week at UNE to meet with him at the Uralla council chambers in 2005 which he had booked for the purpose of meeting his constituents. Unlike Barnaby, Tony listened to his constituents and acted with intelligence and integrity. So, I must try to contact other members of government and others who care. And all humans who are prepared to Care (a verb).

And I am also writing to request your consideration of assisting me to manifest the systems I have designed to address ACC commencing with assistance to patent and develop my microalgae ecosystem management and harvesting apparatus and associated systems I have also been developing these last 18 years, effectively alone because I discovered to my increasing dismay that I understood far more about our totally interconnected climate system – otherwise called our biosphere or “Gaia” (Lovelock, 2000) in the non-anthropocentric, non-sexual, non-sentient sense that James Lovelock intended when he first “saw” Gaia in 1965, the year of my birth. Lovelock faced many of the dysfunctions I have also faced in academia.

The current infantile level of fragmented mainstream understanding of ACC is less than helpful and I am sure that you are aware of that fact.

To ensure that we are on the same biogeophysical “page” and not trapped somewhere in the dog’s breakfast of diversely understood definitions of “climate change” “global warming” (GW) “geoengineering” “terraforming” and other jargon variously understood by different people and actively confused and emotively loaded by the fossil fuel industries (Mulvey et al., 2015) and others my whole life for the fossil fuelled component of GW and for well over a thousand years for “Anthropogenic Climate Change” (ACC) by other people in charge possibly going back 12,000 years when the colonial aberration that rose in humanity began as is most accessibly outlined in (Manning, 2004) and more formally presented by archaeological metanalysis in (Stephens et al., 2019):

- I shall append part of the first section of my “Inverse school strike” which contains a confrontational forward with appropriately confrontational words and part one of my project Introduction “The evolution of our climate system and the “birth” of Gaia” with this brief introduction to my project and “job application” for which I must create my own position, a position on a team which was described in 1965 I will expand on in subsequent pages.

But I must begin a summary of the problems and potential solutions and definitions at some point in the complex interconnected situation so I will begin with the “A” in ACC.

The origins of our grain fuelled, beef and goat fed landscape mining desert creating (climate changing) structurally unjust patriarchal “cult of the warrior” terminal world delusion is outlined in: “The Origin of the State: Land productivity or appropriability?” (Mayshar et al., 2022) who found that appropriability was the key feature of energy dense grains in particular,
the ability to tax and raise and fuel armies formed the foundations of our climate system
destroying civilisation.

The evolution of that colonial, extractive culture and its destructive spread across the globe
forms the foundations of our currently terminal civilisation which has almost destroyed all
other life in Earth. But many of those destructive practices have become fond legends and
traditions which when touched on critically usually inspire emotively driven habitual
rejection in most people who perceive that their world views and dreams are being
threatened, and my efforts to broach these topics have led me to become a homeless pariah.

Simply put, the products of all destructive actions we inflict in our biosphere are far greater
than the sum of their parts. Destructive processes interact and enhance each other.

Conversely, the beneficial products of diverse coherently coordinated, dynamic context
appropriate adaptively managed remedial actions can also be far greater than the sum of their
parts and effective landscape (climate system) restoration facilitated by synergistic reforms of
human infrastructure and agriculture etc could profoundly mitigate regional and global
climates and enhance rapid, useful carbon drawdown into natural systems being restored as
natural ecohydrological and nutrient cycling and accumulating systems are restored.

So, “Ecologically Responsible Geoengineering (systems)” – ERG, or ERGS involve the
reformation and synergistic integration of human systems within our climate system to
facilitate its rapid, natural functional restoration by working with Nature.

In other words I have worked out how to restore “Gaia” (Lovelock, 2000) to as close as
possible to the state it was in ten or more thousand years ago before humans destroyed at
least 2/3 of its vegetation and soils and nearly all of its natural nutrient cycles and I have
encompassed those problems and how to address them but am ignored by minds trapped
within our institutions and their dreams. Note that “Gaia” is also a loaded concept which has
been deliberately denigrated and misrepresented by self-interests - expanded on later.

To train for the task which I must also define, as only an outline was provided in 1965, I have
researched a fair bit of everything in Earth under the sun which has increased its output by
about 25% during the evolution of our geophysical and then biogeophysical, totally
interconnected climate system created and maintained by Earths Life – Our Genome.

We are merely a part and product of our living climate system or “biosphere” – our Family of
Earths life we require for our survival but have almost destroyed and humanity will not
survive the destruction. We are part of and within that biogeophysical system and totally
dependent on it.

So my project has encompassed all major components of our climate system as they evolved
over the 4.5 billion history of our planet in all major dimensions of scientific understanding
and my own integrated understanding of all major Earth sciences informed by a broad
practical experience in and understanding of all major destructive human industries such as
agriculture, Boilermaking, civil, domestic and industrial construction, defence, mining,
electric hydraulic and mechanical systems etc, and a life in regional areas and the wilderness
I am most comfortable in. I have become somewhat allergic to civilisation this century.
That excessive effort was required to inform a full utilitarian understanding of our climate system/biosphere – and to help me explain it, so that the dire problems we face can be addressed coherently and the utility of the systems I have designed to do so can be understood and be integrated within our landscapes and infrastructure in appropriate context.

But even though this is about our Earth I must describe myself as I have found great difficulty in communicating with “normal” people my whole life, in part because I projected my intellect and morality onto them assuming that they thought and were motivated in similar ways to myself, and they in turn must have been projecting their limited understanding and generally self-centred myopic motivations they are accustomed to dealing with onto me while pretending to understand or simply going blank and subsequently avoid and or gaslight me because I inadvertently challenged their deluded world views.

And I apparently “threatened” the entitled comfort of their sensitive egos and became the messenger that had to be shot to maintain comfortable idiocy – originally defined as a totally self-interested person (Parker, 2005) - and mediocrity, collect pay, flog the planet over the weekend, then back to ticking boxes that the Zombies and Vogons (Adams, 1979) love. I tried being polite for the first 12 years but got nowhere.

Thus, I became a homeless pariah when the fires of my nightmares since 2004 manifest in 2019 while monsters moved next door and shot most of the kangaroos in the catchment leaving 7 grievously wounded ones that I had to kill and my mother died at the same time I was testing the “filter/screen/etc.” and other nastiness occurred and I lost my tolerance to normal people and monsters and went bush where worse things happened but I survived.

I was diagnosed with “Autistic Spectrum Disorder” in 2022 before my 57th birthday, I was very lonely and felt intellectually and morally isolated until I saw Greta Thunberg speak.

I prefer the term “Autistic Spectrum Condition” or ASC given that “disorder” only manifests in the presence of injustice or “bullshit” as defined in (Funnell, 2021) who also covers lies, “functional stupidity” and “functional ignorance” which are major components of the anthropocentric drivers of ACC and are major obstacles to reform, also covered in “Think Again: the power of knowing what you don’t know” (Grant, 2021).

The lowest common denominators of mob like human dysfunctions are exacerbated by the ”Dunning Kruger effect” (Dunning, 2011) (on being ignorant of one’s ignorance) which is a scourge of our democracy and facilitates destructive business as usual and the election of imbeciles like Barnaby Joyce servicing my electorate of New England.

The self-destructive idiocy (originally extreme self-interest) of colonial stupidity and or immorality is facilitated by the herd instinct that forms the masses into group “think” mobs that prefer to lie than disagree with the mob as was explored in “Nationality and Conformity” (Milgram, 1961) where he found that the more civilised people were the less likely they were to think for themselves and simply lie to go along with their buddies.

And the “false consensus effect” (Lee et al., 1977) where people assume that others are like them I mentioned above, only reinforces the group think idiocy especially when that is driven and reinforced by media and other forms of propaganda that Noam Chomsky often writes about, and Naomi Klein has covered well in “This changes everything” (Klein, 2015) – first published in 2014, more details provided in a subsequent document.
Civilisation initially shrunk human bodies and brain capacity on average, but averages can be deceiving and worse than useless as exemplified by the breathtaking dumbing down of all-encompassing ACC into a simple metric of average global temperature which includes our huge oceans and cryosphere with its vast latent heat capacity often using very dodgy assumptions to fill huge data gaps as discussed in “How fast are the oceans warming?” (Cheng et al., 2019) where dodgy science was used to fake a “pause” in warming which the masses loved as they prefer happy stories and legends but the oceans are accumulating heat energy at an accelerating rate about 50 times that of all human primary energy use – before losses, last time I checked about 2 years ago which continued last year according to a report I have yet to read - that alone will destroy our biosphere but I have also worked out how to optimally address that as part of the integrated “Ecologically Responsible Geoengineering” (ERG) systems I would prefer to be working on than discussing colonial delusions.

ERG basically involves using all appropriate technologies and ecological and indigenous sciences managed in a proactive adaptive learning dynamically contextual fashion to rapidly restore our ecohydrological biogeophysical animal and other life maintained biosphere to the same functional state it was in before the colonial aberration began to spread like an accelerating plague 12,000 odd years ago and wiped out at least 2/3 of Earths vegetation (Bar-On et al., 2018) and associated soils and ecohydrological systems (Falkenmark & Rockstrom, 2004) and more than 90% of the animals that created and maintained Earths fertile soils and nutrient cycles (Doughty et al., 2015) which we have nearly killed. And my further reviews of ecosystem destruction and soil loss etc indicate to me that colonial humanities destruction was even greater than those sources indicate.

And there are more recent reviews published on all the topics above I shall incorporate into subsequent detailed review sections of this work which is a challenge to summarise.

Everything in our living Earth is indivisibly interconnected in countless ways on all spatiotemporal scales and reality defies simplification but a person with ASC who has been forced to process broadband input with hardly any of the prejudicial filters and logical inconsistencies that seem to cloud the perception and cognition of “normal” people can understand our massively complex dynamic Earth to a utilitarian degree.

And my perceptions and constantly running earth system models create vivid accurate projections that inform nightmares beyond description I have been trying to address before they manifest but I have been effectively screaming into a vacuous void for 18 years.

Had my honour’s thesis system been constructed as a priority we could have mitigated or even avoided the 2019 – 20 infernos. Unfortunately, no one is prepared to argue with me on that, they prefer to project their ignorance onto me with statements like “no one can understand that” but I can, and can, or could, concentrate for five hours without a break on a good day where I have observed that many struggle to concentrate for five seconds.

Apologies for belabouring the stupidity of the mob as I am initially addressing this to highly intelligent people who do care but I also intend to use it to get pea brained one trick wonders to have a look at themselves instead of demonising the people who could save their futures in the hope they will wake up and try to be contribute to our survival instead of regurgitating non excuses. Hard truths must be understood so they can be addressed.
In any case, when civilisation began to plunder new ecosystems their diet improved from grain and beef and their bodies grew but their brains remained shrunken (Gowdy, 2020).

Another problem with docile civilised people is that they can be easily led into doing monstrous deeds like operating gas chambers while conducting genocide or electrocuting their neighbour’s as revealed in “Behavioural study of obedience” (Milgram, 1963) which is such uncomfortable reading for civilised types they ignore it totally lest it shatter their delusions. But delusions must be dispelled before enlightenment is possible.

Unfortunately, our Earth is shattering their delusions now and they will all be shattered soon and the sheeple will not have a clue what to do bar squabble over the last remaining scraps of food in a planet of warm slime as described in John Mayall’s song “Nature’s Disappearing” (1970). An accurate ignored song, perhaps he read “Restoring the Quality of Our Environment” (Environmental Pollution Panel, 1965) which was tabled and presented to congress that year (Mulvey et al., 2015) about the same time Lovelock “saw” Gaia when I was less than 6 months old. I was furious when I found that ignored report in 2018 and read page 9 and 39 which describes what I have trained myself to be for our Earth.

I was furious because I saw that the problems that I have become a pariah trying to address were fully understood in the year of my birth and would have been easy to address then, but my civilisation chose to do far worse than ignore the filthy mess they were creating for the kiddies.

So, brainwashed and or stupid are the kindest reasons I can find for how our civilisation is rapidly causing its own destruction and political correctness is unsuited for discussing reality, and summary can be harsh. I have discarded about 200,000 words trying to introduce my project as a demonised pariah living rough in the wilderness, but I am out of the wilderness now. This is a stressful task, but it seems that it is my moral duty to confront my own civilisation and all its members who facilitate destructive ACC to achieve useful reform.

Note that (Mulvey et al., 2015) referenced (Environmental Pollution Panel, 1965) as “(Revelle 1965)” but some of the best Earth Scientists in the USA contributed to that report, I thought I would mention it because this is not an academic effort and one trick wonder academic pedantry is not helpful if they cannot look past form to understand substance they are a waste of space now, Restoring the Quality of Our Environment must be our number one priority now and entitled serf egos are unhelpful.

This is all our problem whatever one’s profession or status, no one is exempt.

Quality is more important than quantity in most things including brain capacity, but I have suffered a lot this last 18 years while trying to be polite and found that only allows the mob to trample me and I am sure that my initial recipients understand that better than most people.

So I have decided to “Stop being reasonable” (Eleanor. Gordon-Smith, 2019) for Our Earth.
“CLIMATIC EFFECTS OF POLLUTION”

“Carbon dioxide is being added to the earth's atmosphere by the burning of coal, oil, and natural gas at the rate of 6 billion tons a year. By the year 2000 there will be about 25% more CO\textsubscript{2} in our atmosphere than at present. This will modify the heat balance of the atmosphere to such an extent that marked changes in climate, not controllable though local or even national efforts, could occur. Possibilities of bringing about countervailing changes by deliberately modifying other processes that affect climate may then be very important” (Environmental Pollution Panel, 1965)

Please note that I certainly do not recommend simplistic “band aid” “Geoengineering” “solutions” which will cause far more problems than they purport to “solve” and the use of hydrogen could be a disaster (Warwick et al., 2022) and I have edited hydrogen out of my ERG system flowchart which outlines the generic form and components of the type of infrastructure we must adopt to give humanity a chance of surviving beyond this century.

And I have redefined “Geoengineering” from a non-anthropocentric utilitarian perspective which I will not begin to describe in this initial summary as it takes 2,700 odd words to summarise the topics of the extensive literature reviews I undertook to fill the gaps and pick up the slack left by our civilisations that must be understood and addressed and the details seem to be too overwhelming for most people which is why people should try to listen to and understand people like me, or at least what we are trying to explain, if their own and their children’s survival is more important than their ego’s. But unfortunately, many people seem to prefer to sacrifice their children and their own futures on the bonfires of their vanities.

The following section is an attempt at “self-promotion” which is difficult for one with “imposter syndrome” who is fairly sure that the “self” is an illusion, I actually see myself as part of a larger “self” – our biosphere or “Gaia” which is part of our totally interconnected universe of which I am merely an infinitesimally small, temporary part of, but no more or less significant than any other temporary part of it, we are what we do and what we do affects everything else. The delusion of being above and separate from nature is the root cause of the cultural aberration that allows and encourages us to destroy our own life support system we are part of. But it can be dangerous to be certain about the foundations of reality, so my philosophy is best described as a non-dualistic autonomous superposition. Words are variously understood metaphor, but humility and morality are required for this task.

And I must attempt to communicate effectively with my fellows so enough of us can work together to effectively address our problems therefore I must attempt to inspire some desire to try to understand what I must explain because most previous attempts are met with immediate rejection and mutually dehumanising disrespect.

So, I shall try to encourage the reader to consider my work thoughtfully even though it covers many confrontational issues and to try not to “shoot the messenger” by providing a description of myself that will hopefully aid the reader to see our world from my perspective which I have found is very different than that of most of the people I know. Again:
“To paraphrase Einstein, a new story begins to gain traction when people come to understand that the problems, they face can no longer be resolved from within the same level of consciousness that created those problems in the first place” (Uhl & Anderson, 2020)

The quote above is from “Developing Ecological Consciousness: Becoming Fully Human”

A provocative title and book which summarises how humanity has been “disconnected” from nature – the root of our problems and how we can reconnect and unite to appreciate our Earth and act appropriately to restore the quality of our environment and possibly survive.

But it does not provide the specific details to address ACC which I have provided in my thus far aggressively ignored work, and some perspectives may not resonate with everyone.

In a sense my 18 year and counting “project” has attempted to address the gaping gaps in humanities understanding of our Earth systems and the interactions of our systems within it, the ecohydrological, ecological, engineering and all biogeophysical, or simply biophysical aspects of our problems have been relatively easy for me to understand compared to understanding my fellow humans unfortunately. Which is why diverse teams are required.

And other humans seem to constantly misunderstand my perspective and motivations which has proven to be an extremely frustrating barrier to communication when the other party projects their often extremely limited understand and self-serving motivations subject to the artificial constraints of a system that must be changed, onto me.

The quote also plainly states the obvious: Average modern minds are intrinsically and or by indoctrination, incapable of addressing the problems those minds cause and perpetuate.

My mind is unusual and unusual minds are required to address our complex problems.

Biodiversity is essential for the preservation of our life support system/s, Einstein also said something like ~” the first rule of successful tinkering is to not lose any pieces” I understood that as a child, I was a successful tinkerer. But hubristic humanity seems to believe that it can get by with a world as artificially simplified as a modern human mind. No chance.

Biodiversity must be preserved and enhanced at all levels from individual species through ecosystems to the product of all ecosystems – our biosphere.

And neurodiversity is one aspect of biodiversity which must also be appreciated and enhanced where possible as I have tried to do these last 18 years.

We are all different and none of us are “perfect” we have varying characteristics and abilities, but we must work together so that our more useful abilities are enhanced and try to rise above the lowest common denominator of whatever mob we are in which is usually measured in terms of fiat currency and its manifestations in the terminal world we were born in.

The following task description is from page 39 of “Restoring the Quality of Our Environment” (Environmental Pollution Panel, 1965) which describes people like me and we are extremely rare, but are what is needed now. As well as many other types of people of course:
“Challenging Tasks for the Men and Women Who Can Improve the Quality of Our Environment”

“Men and women with a full spectrum of abilities, education and interests are needed to solve the problems of pollution and to protect our human environment. Finding them, training them, and directing their efforts toward these problems will be a major task.

Fundamental to all else in the long run, however, will be the natural and behavioural scientists and engineers who have the imagination, the dedication, and the skill to gain the understandings of unknown processes and obscure relationships that we must have if our complex civilization is to continue to exist in harmony with its earthly environment.

Creative men and women are always in short supply and the demands and rewards for their talents continually increase. How can we ensure that a sufficient number of them will devote themselves to environmental problems?

We believe this can be done only if the challenges of the environmental sciences can be made manifest. First-rate people seldom devote themselves to second-rate problems.

Great scientific excitement is usually associated with the exploration of great mysteries. One of these is the mystery of life and of living things.

*Homo sapiens* is but a single species among an almost numberless variety on earth. He is related to and affected or rewarded in subtle ways by almost all the others. He senses that when a species disappears something wonderful has been lost; that when the balance among living things is perturbed, the quality of his life is changed.

The delicate interrelationships between living creatures on and beneath the land and in the rivers, lakes and oceans, are dimly appreciated and little understood. Yet few things are as satisfying as study, understanding and appreciation of what goes on in the world of living things. Excitement must be in discovery, immediate reward in understanding. Wiser control of the environment can then follow almost automatically.

But these generalizations are not enough to recruit first-rate minds. We must be able to point out, as we try to do in the following pages, specific examples of exciting problems and promising pathways to fundamental understanding.” (Environmental Pollution Panel, 1965)

No one bothered to find and train people like myself though, and still do not seem to want anything to do with us, but I shall persevere with some self-description in the hope that the effort will aid the readers understanding of the instrument attempting to communicate with the reader and encourage them to understand and facilitate my efforts and the efforts of others like myself so that we might be able to work together or in parallel, productively.

One barrier to communication is the inadequacy of our language when describing objective reality, I often think by processing dynamic mental holograms that are difficult to translate into linear, limited words. Language can expand but can also confine perceptions.
I was born the day after Lovelock’s birthday in 1965 to a mother with children from a previous marriage to a violent drinker, it is said, and a father who had taken a dead soldiers name in WW2 then joined the French Foreign Legion and was tricked into signing up for a second term but was medically retired after the Battle of Dien Bien Phu, he did not recommend going to wars, he spoke many languages, but spoke sparingly and thoughtfully.

My mother had post-natal depression and did not really like me, she cheered up a bit when she had my younger brother 2 years later apparently but she was unhappy with my father and they were divorced when I was five and my mother demonised him which was required to maintain ones “image of respectability” in those days and still is in this bullshit terminal world for whatever the fashion of the time and place may be. She did her best though.

In any case I was often not treated nicely by my mother who was traumatised by the brutal post WW2 patriarchy, but she did her best and I was by no means a spoiled brat like many of my contemporaries (summary can be harsh). My parents divorced when I was five years old then I was accidently poisoned twice by strychnine then prescribed diazepam to make me fit in with those with generally less active and inquisitive minds until I was 9 years old. During that time, I read everything interesting in the school library at lunch times and would play with the electronic kits and tools my father gave me, dismantle, and reassemble anything I was allowed to, tried to make logical sense of our world, and had few social skills.

I had no real empathy either, or first felt real empathy while washing my dog in cold water when I was about 30, I still struggle to feel empathy with people who do not seem real when stuck in their delusions. I got by with a simple moral code based on Jesus as I understood the person described in the Bible when I read it at the age of five and figured it was embellished rubbish possibly based on a few historic characters. I do not feel jealousy or envy either, but I feel a massive increasing empathy for our Earth and its innocent creatures now.

It took a long time to begin to regain the clarity of perception I had as a five year old, I should have been trained to be on the team no one really bothered to create described on page 39 but instead I was drugged to conform to the lowest common denominator standard required to produce copyboys, ploughboys, cannon fodder and other destructive serfs for the glory of whatever spoiled brats are in charge at the time.

As a child I learned about basic electronics and mechanics, and construction from my older half-brother who was a master builder and workaholic I used to stay with some weekends.

My mother had fallen in love with a 16 stone violent narcissistic “10 pound pom” bricklayer who believed he was superior to all colonial descendants of convicts, especially Irish convicts like my mother’s ancestors and had a thing about older brothers as he separated my mother from my older brother and liked to bully me using words, fists, shovels and trowels while my younger brother and I were forced to help construct “Jimar Castle” and a Devonshire tea room at the very end of Rifle Range Road, Uralla, NSW, although we had to clear the track down the hill to the place, past the end of the road, much like the place I was stranded past the end of the road during the winter of 2020 by another opportunistic relative.

My brother and I also had to bury the toilet bucket etc, until the first dwelling was constructed. We commenced in 1975 or 76 when my brother and I would sleep in a freezing annex on a caravan where my mother and stepfather slept every weekend, travelling from my mother’s housing commission house in Armidale to the block.
When the first building was built, we moved there. I had commenced high school at Armidale High School and at first used to ride a bike or get a lift to a bus stop to go to school but then transferred to Uralla Central School during my second year of high school.

My brother and I also carted wood for the slow combustion stove which also heated our water and for the large open fire which every Englishman needs in his Castle according to my stepfather. It became difficult to get the wood with an axe and wheelbarrow, so Jim bought me a Danarm Tornado Chainsaw when I was 13 and I suspected he wanted to kill me it was so dangerous. Fortunately, I was 6’5” and quite strong. I learned to mine alluvial gold while there and shoot rabbits and other rural skills, my brother and I were also given .22 rifles.

When my stepfather punched me very hard over my heart which deformed a rib as I found years later, after telling me about a month before that such a blow could kill someone, then hooked me in the jaw when I did not drop, I became sure he was trying to kill me.

I left home when I was 14 and first lived in a shack at a bush plumbers’ property who also owned a pump shop/pinball parlour in Uralla where I was assaulted by an older bloke wielding a piece of 4 by 2 hardwood and was introduced to alcohol my older brother also loved, rough times. I was provided the money my father sent for my brother and I, and I fed myself and paid my electricity bills with that while I completed school living alone.

I moved out of that house when a homeless family needed it and lived at a friend’s place then the Uralla caravan park while I completed school to year ten then went to Sydney to commence an Apprenticeship at Garden Island Naval Dockyard as a Boilermaker Welder in the early 1980s.

I was only beginning to recover from the numbing effects of the diazepam halfway through high school and I was extremely socially inept and naïve which is common for people with ASC, but I also had a great hole in my memories of people during that time and only began to become socially aware in Uralla, but I could remember nearly all the technical and scientific things I had learned, and a few events with intelligent friends from my childhood.

I also remember some very harsh things; major socially destructive symptoms of our brutal colonial legacy are covered in Sinead O Connors song “Famine” and those types of legacies must be addressed to reform our society into a decent sustainable form.

My mind has always been mainly preoccupied with phenomena beyond my “self” and I did not understand other human “selves”, yet I functioned and had relationships and believed that I was much like everyone else despite much evidence to the contrary.

My fellow apprentices had 2 nicknames for me “Professor” or “Barco Bob” because I would overreact to any attempt at domineering horseplay or bullying as I had had enough of that.

I worked, studied, drunk alcohol and engaged in some of the other diversionary pursuits common in Sydney in the early eighties to fit in and it worked, but I overdid it, like most things. I was an extremely good apprentice but left near the end of my final TAFE year to escape from Sydney which had become too overwhelming for me.
I completed my trade qualifications years later and can construct pretty much anything because I have worked in many industries as a boilermaker and in many other capacities as well as lived as a feral bushman and nearly in the gutter during various bouts of overindulgence in the alcohol that all young Australians were vigorously encouraged to drink at the time. Humanity must undertake a 12 step program like AAs to overcome its addictions.

But I was compelled to try to better my being, so I overcame those problems last century, bar one carton of beer I bought after witnessing one too many low acts for a few dollars some ruthless multi-millionaires did not need while doing contract work for cotton farmers and became horribly disillusioned with humanity and was beginning to become concerned about ACC.

I moved back to Armidale and tried to run a small metal fabrication business in a shed in the western industrial area but struggled as the already connected cosy network of Armidale industry was hard to integrate with and many customers expected products to be constructed for a similar price to which they had grown used to with imported Chinese made goods when the cost of the steel I could buy for a given product was greater than what the painted finished imported product was.

During my life I witnessed the devaluing of my trade by allowing lesser skilled metal tradesmen to be trained and used then watched Australia’s manufacturing industry being dismantled as subsidised fossil fuelled transported goods were imported from places with very poor standards for workers as Australia was sold out to the globalised market.

I was camping in the workshop I rented when I became crippled for a couple of months in late 2003 because spinal injuries I had accumulated over my life dropped me. But I would not use painkillers because they might trigger drinking, so while crippled, I began to focus on climate changes I had witnessed all my life and global warming to distract myself from the pain by focusing on something far worse because I was becoming concerned even as I was becoming very tired of the rat race and was considering going bush to live as a hermit near my friend Mark May (Patterson, 2022) where I stayed while completing my last biogeophysical review topic in late 2020. But it became obvious that all wildernesses would burn, and in 2004 my subconscious began to generate horrific nightmares of the fires.

So, after failing to engage my local state MP with the problem I decided to try to enter university with my year 10 education to undertake the most difficult science degree there at the time because I had identified that people with the skills outlined on page 39 of the 1965 report I found years later would be essential for addressing the dire problems I could see plainly but to which all around me seemed to be oblivious. So, I struggled to gain entry while learning the basics of using a computer and trying to learn year 12 maths and survive.

I commenced formal studies at the University of New England, Armidale (UNE) in 2005 and became fully focused on the first worthwhile task I had identified in my whole life, that of helping to save our biosphere. I missed my first day of orientation week to meet with the Honourable Tony Windsor MP to discuss global warming and the larger issues of ACC, he shared about 90 minutes of his and his assistants time that day, a great man.

I engaged with university studies as a problem-solving exercise to solve a very complex problem, not to produce pithy papers or enrich myself as money is not my priority, Restoring the Quality of Our Environment is my major priority above all else.
Apologies for waffling about myself but as most people prefer to play with the person rather than address the hard facts that person would address, I thought I would get the illusory “I” out of the way first. Apologies to my initial recipient/s that is, who do Care and do face facts.

Besides, this is in a way a resume for the most difficult and only important task facing humanity so I must try to engage in self-promotion despite lingering “imposter syndrome” in this Dunning Kruger world.

The following lists my units and grades, they are not perfect but are very good, I did my best but spent extra time researching between and beyond the units as I increased my understanding of ACC.

I also struggled with poverty as I sold tools to buy textbooks and packed shelves at night as the LNP was dismantling our education system but fortunately I met a lovely lady who I moved in with and who supported my efforts until my intensity as the fires were approaching destroyed our relationship, but she is still my great friend.

Very few people can stand my presence for long I am afraid, and I can no longer stand the presence of most people either so I am now effectively a hermit as well as being a pariah but even so I must attempt to engage with humanity through those who do care.

And I can work with people who care in short stints and by correspondence, and possibly through decent representatives to establish factories etc, if humanity really wishes to address ACC rather than profit from opportunistic diversions.

**Bachelor of Natural Resources, my units, and results:**

2005 Semester 1

Biol 110 Biology 1, D
Chem 110 General Chemistry 1, HD
Maths 110 Introductory Mathematical Methods, D
RSNR 110 Agriculture, Natural Resources & the Environment, D

2005 Semester 2

Biol 120 Biology 2, D
Biop 120 Biophysics 2, HD
RSNR 120 Sustainable Resource use and Environmental Management, D
Stat 100 Statistical Modelling for the Sciences, P
2006 Semester 1
Boty 211 Plant Taxonomy, D
Ecol 210 Principals of Ecology, D
Geol 110 Geology and Environment 1 D
Stat 200 Statistical Modelling in the Sciences 2, C

2006 Semester 2
EM 234 Introduction to GIS (Geographical Information Systems), D
EM 251 Australian Wildlife, Evolution, Ecology & land use impacts, C
Soil 220 Introduction to soil Science, C

2007 Semester 1
EM 312 Impact assessment in Natural Resources Management, C
EM 331 Resource Survey and Habitat Evaluation, C
ENVE 352 Principals of Hydrology, D
ENVE 361 Systems Analysis, D

2007 Semester 2
Ecol 220 Australian Terrestrial Ecology, C
ECON 329 Natural Resource Economics, D
EM 311 Land Assessment for Sustainable Use, D
NR 331 Remote Sensing and Spatial Data, HD

2008 Semester 1
EM 433 Spatial Analysis and Modelling, C
NR 411 Natural Resource Policy and the Community, D
RSNR 403 Sustainable Land Management, D
NR 490 Project report B'Nat'Res' year long (Honours) 12cp D
2008 Semester 2
RSNR 402 Freshwater Ecology and Management, D

2009 Semester 1
EM 353 Conservation Biology, (82%) D
Soil 310 Environmental Soil Science, D

2009 Semester 2
Honours result D (as above) H1
EM 351 Ecosystem Rehabilitation, (74%) C
NR 481 Special Topic in Natural Resource Management HD
Soil 411 Soil and Nutrient cycles (superfluous to degree, withdrawn) W

Achieved Credit Points: 198
And I won the Burton Prize for topping the B’ Nat’ Res” in my graduation year.

Please note, I undertook the extra soil 411 unit because of the crucial importance of soils for our survival and completed most if not all the work but withdrew when the same professor who ran the confrontational stat 100 unit refused to let me credit him for advice on which statistical method, I should use to analyse a seed germination trial for the last assignment. I try to be honest and had learned all the unit material in any case.

By the time I finished university I was exhausted by the intensity of my studies but even more so at the increasing frustrating surreal feeling of being among people who seemed to be utterly oblivious to reality and the obviously developing climate crisis.

Only a few aware students engaged with the topic of global warming and only Tony Windsor MP and the late great John Kaye MLC really engaged with discussions of the wider aspects of ACC, John Kaye understood a central feature of my Honours thesis immediately and he exclaimed “you want to air condition Australia!” “yes” I said, among other things of course.

Now I have worked out the best way to air condition Earth by healing “Gaia”.

Simple in concept but the devils are in the many details as they say. Of course the “best way” can be improved and I would prefer to be working on those details – but at least I have been trying to provide humanity with a coherent framework of a “plan” to restore our “mother Earth” to functional health because if “she” becomes dead to us which is immanent, Humanity and all the Beautiful innocent creatures and ecosystems we love, will be destroyed forever by a crime beyond all crimes which we either facilitate or resist, there is no neutral position.

But I must try to get someone to understand and accept my “plan” no one seems to want.
And there is no more time to waste, and “magic bullets” alone will not save us.

I found other problems while researching my honours thesis like the fact that for every ton of coal excavated, four tons are left exposed to low temperature oxidation and spontaneous combustion in spoil heaps and exposed seams and that significant legacy and increasing source of greenhouse gases are conveniently ignored by the IPCC, around 52 billion tons in Australia and 2 teratons of carbon legacy globally, and the ignored emissions are skewing carbon cycle analyses GIGO.

But only Tony Windsor engaged with trying to access more objective data than I could derive from annual reports, but he could not access that information and the attempt possibly added to his and my difficulties at the time. Things went bad for Tony and I at that time.

I mentioned the massive, ignored legacy to Ross Garnaut after he spoke about his carbon review at UNE, and he was unaware of the issue but asked me to send the review my data and sources and I did. Unfortunately, the review was in its closing down stage, but I got a reply a few weeks later to the effect ~ yes, we know, no it is not being counted, thank you, bye. And they probably did not tell Ross because he made a grave error on page 126 of “superpower” where he stated:

“Fugitive emissions are of large immediate but transient significance. They will disappear with coal and gas mining by around the middle of this century”. Blah blah (Garnaut, 2016) blah blah. Sorry Ross, but he did a much better effort with his review (Garnaut, 2008) than previous works but still missed a lot, a big ask for an economist really, but not to worry, I had to work out how to deal with that as well. Ross is concentrating on degrading the ocean now.

So, I was stressed by the time I completed, and it was a shame that I was too nervous to present my thesis on the day I could have at UNE. My nervousness was due to many factors, it seemed as if I was stuck with a heap of people in flat Earth wonderland amusing themselves with small things and I was also nervous about crushing their perspectives with the scope of my thesis compared to their narrowly focused efforts. Because not long after that a whole team down south -BZE, virtually duplicated my thesis albeit with a narrower but far glossier focus and got funding but apparently did nothing while I struggled to interest many people in constructing my systems and addressing the 2 teratons C legacy and other ignored legacies of similar and greater consequence for our climate/life support system/s.

My nightmares of the impending fires became much worse as Australia heated and dried and no one would engage with ACC or my initial systems to address Australia’s increasing climate catastrophe.

Everyone seemed to believe that I was pursuing some “hobby”, even my then partner who was swayed by the power of the ignorant seamless idiocy of the crowd and media. My exclusion from the crowd probably commenced long before 2004 but it definitely commenced as soon as I stated my intention to go to university to study to address ACC and increased exponentially after that.

After graduation while I was trying to engage people to help to address ACC I constructed a 2 tank 2 pump, 37 sprinkler, 10 fire hose fitting bushfire fighting system and did some other construction and bushfire preparation work at my friend’s house.
I could not understand how others did not understand or care, so I decided to accept an invitation to do a PhD under an academic who was keen to have me as a student. I assumed that was because he was concerned about our Earth, unfortunately, like most people apparently, that was not his central concern, brownie points for promotion and a pay rise were the motivations there as it transpired. And he was less than helpful with my project.

In any case I designed a large PhD project to work out how to optimally manage biodiverse productive resilient microalgae ecosystems to intercept the nutrients we mine from landscapes and kill rivers and estuaries etc with as well as stabilise additional carbon absorbed from the atmosphere and or point sources and return it to soils in a form suitable for restoring fertile soils and ecohydrological cycles, simple, if one has studied excessively.

But my supervisor persuaded me to focus on the biofuel potential of microalgae which I did and reviewed the literature on possibly all biofuel production systems and their impacts. But we really should stop burning things, biofuels from algae could help a bit but their N$_2$O emissions and many other details must be managed and there are better alternatives, but I can advise on those issues, and they are covered in my reviews I must tidy up and update.

After beginning my PhD I was delayed by influenza caught from a student who refused to leave a practical class I was helping with then a complex hernia which I had to wait 6 weeks to have repaired then I encountered challenging conditions in my sewage ponds – an inverse trophic biomass pyramid at which point my supervisor tried to write my work to there off as a master’s degree but I refused and stated my intention to construct an apparatus that would allow me to complete the project because it is needed for our survival.

Even though my supervisor probably did not understand about the significance of my work when one is being pushed by ones planet one does not perceive a pea brained parasites convenience as an obstacle and I effectively continued alone from then, my supervisor became hostile to me because I was apparently an obstacle to his progress but he bought himself undone when he dumped his wife and kids for another UNE employee so, too bad.

So, I effectively designed, Constructed and tested my plankton ecosystem manipulation and harvesting apparatus despite my university who changed my PhD to a “PhD Innovation” and chipped in with funds to complete the reverse flushing cylinders after I had expended possibly $20,000 or more of my own funds during development and 2 years of work – as I said it was a blur and a forensic re-examination of details is not useful at this introductory stage. And I suffered what could be viewed as deliberate obstruction by senior management.

I wrote up and submitted my pond monitoring and results chapters 3& 4 which could have been rearranged into a PhD with 5 of my ~32 topic literature review topics, intro &synthesis.

And I submitted Chapter five which included a review of all relevant filter and other separation and harvesting technologies and its own introduction and description of the need and utility, design, construction, successful testing, and analysis of results which is also certainly worth a “PhD Innovation” if I had bothered to break it up into chapters.

I shall send copies of those chapters in subsequent correspondence or on request if I become too delayed with editing and toning down the fury in my more detailed introduction.
In any case, I went to UNE to solve the problems of climate change and I insisted on correcting the worse than useless Earth systems data and have also identified that our university systems and institutions and modern human minds themselves are major parts of the problems that had to be identified and addressed and discovered that my attempts to address those aspects of the problems were also extremely unwelcome.

So, my university basically ceased to communicate with me after I handed in a draft of my then roughly 32 topic literature review which included a critique of our civilisation and its institutions and many of their denizens as a major part of the problems that maintain our civilisations criminally insane trajectories to utter and very immanent annihilation.

And while I was testing my apparatus where I used to live new monstrous neighbours began to wound and kill most of the kangaroos where I lived as I unsuccessfully tried to stop them while living through the nightmares of the fires and burying my mother and I snapped and went bush to finish my work in isolation because no one wanted to know me by then.

Except the four people who tried to exploit my vulnerable position and almost destroyed any remnant respect I had for humanity in the process as well as endangering my life, the first and last one of those harrowing interactions were a result of unintelligent opportunism and not as bad as my interactions with the pair of close relatives who effectively manipulated me into being stranded over winter in a freezing isolated place under false pretences.

But I continued my analyses and survived in gruelling circumstances until I was satisfied that I could see a possibility that we could effectively address ACC while camped in the wilderness in February 2021. Then I tried to engage billionaires and others with my project and found that my emails and even computer became blocked from accessing certain sites and as well as being totally isolated from all humans I personally know I was then digitally isolated from most of the rest of humanity with a full understanding of our crises and a very hard-won understanding of how to address the mess. But I was unable to communicate with anyone.

I was totally alienated from humanity, and in a state akin to that described as “hypersanity” in a BBC reel video clip – conscious and subconscious merged and brain working far beyond normal capacity with more than a decade of accumulated stress beyond description with no apparent paths forward, I felt like the “lawnmower man” character caught in a slow motion digital and human dead end with no way out.

So, I decided to drive to Nimbin to see if I could find a Human I could communicate with. I had never been to Nimbin before but it is probably the centre of Australia’s largest population of alternative lifestyle communities so I thought that I might find someone I could speak with there. It is difficult to describe the headspace I was in at that time. I had been intensely studying nightmarish projections and interactions and seeing cascades of destructive cause and effect in human affairs and activities. “Hypersanity” as described in a BBC reel video clip (Burton, 2020) describes a similar experience Jung documented but without any fancy mythical beings, just mass extinctions and the suffering of billions of animals experiencing extinction and the fires, and worse, a waking nightmare that fades to the background but never stops and often requires effort to manage and supress.
So, like Diogenes in that BBC reel clip I went to Nimbin to find a Human I could practice Parrhesiazomai with, a quest akin to finding a needle in a haystack. I was lucky though.

I parked in Nimbin, walked around a bit then had a cup of tea in the legendary Nimbin Hemp Embassy and asked where I could camp and if anyone was active in addressing climate change in the region and was informed that several people were quite concerned about ACC but not as much as it seemed and that I could camp in the showground and told me how to get there. I camped on the edge of where most people were camping near a wild looking man with a large dog, had a shower and looked at the beautiful rainforest and all the birds and flying foxes and insects and life and slept.

The next day I soaked up the rainforest again and slept. The following morning, I began to talk with the man who to be fair probably did not look as wild as I. We talked for three days, I explained my project and he explained a lot about why I was having trouble communicating with “normal” people.

My new friend Dan had been a Red Beret Paratrooper, an elite soldier selected for high intelligence and mental and physical toughness. He had been grievously injured in a training exercise then was subject to an attempted medical quick fix which made his spinal injuries worse and then fought the department of veteran’s affairs for 15 years to achieve justice for himself and any other injured service personnel who were unfortunate enough to be injured while training to defend our country. He had to contend with petty power trippers and the sorts of institutional dysfunction and Vogon like nastiness that often prevails in all our increasingly hollowed out institutions.

Dan ultimately managed to help change a law to help injured service personnel and received a payout that was immediately clawed back due to an “administrative error”. So, he understood the kind of petty dysfunction and human shortcomings that I had experienced. And he had the mental stamina and care to listen to my accounts of the multidimensional Armageddon I had been processing and projecting and devising strategies to effectively address and he gave me some insights into “normal” human minds that allowed me to understand enough to begin to reconnect with the rest of humanity.

I then went to Kyogle to camp and think then went to Lismore to pick up some parts for my vehicle and suffered heatstroke while driving back to Kyogle and could not even hold water down. After a terrible night I drove to a service station and bought some ginger soft drink which did stay down, and I drove to the ranges near Drake to sleep and recover in a cooler place then drove back to the wild rivers to recover for a couple of days.

After recovering I visited a reclusive former neighbour who agreed to allow me to camp in his property to finish my work and allowed me to move my scrap metal shipping container I had reconditioned and converted to an office and storeroom for my microalgae ecosystem manipulation and grading apparatus and library. I had purchased and reconditioned the container in late 2020 at a friend’s property near Hillgrove who helped me get out of the place I was stranded over winter, but we had what is best described as a clash of world views, so I worked around his yard and on my shipping container during the week and spent my weekends and some weeks in the wild rivers researching and writing.
Now I am camped near Armidale on a decent man’s property who has also experienced discrimination because of his neurodiverse condition which is like my own in many ways. But we are all different even though we go through cookie cutter indoctrination and have prejudices hammered or infused into our beings, labels can be worse than useless.

I joined Facebook while in Nimbin to keep in touch with my new friend and I have since used it to find people like myself and to help me understand and interact with my fellow humans so I can better translate and communicate my confronting work.

I have found some people much like myself, and many very intelligent people who understand many aspects of our Earth in far greater detail than I, but only a few who can, and are prepared to grasp the whole situation and all of the destructive legacies I have found, which I have encompassed in my reviews I have yet to do a final edit of now that I better understand barriers to communication and can possibly edit out some of the furious despair and outrage that some of the topics I examined provoked and which infused my writing on some extremely confrontational topics that must be confronted and effectively addressed so that human civilisation can be transformed into something viable and decent before it is too late.

As I see it no one is qualified to declare that it is too late to avoid self-inflicted extinction and the destruction of “Eden”, and no one should put themselves above that which supports their life and all life. But that seems to be what most people do, and I cannot tolerate such people for very long at all despite understanding that they are merely following the path of least resistance to maximise their individual wellbeing as they have been trained to do.

Summary.

I commenced university in 2005 to study all details of Earth systems to develop viable solutions to complex ACC – the destruction of our climate system by addressing all of the problems at their sources in a coherent integrated fashion designed to directly mitigate the major ignored components of ACC at their sources and to repair the damage and reverse Australia’s greenhouse gas emissions with integrated systems that can be transferred to other continents to reverse desertification and provide ecologically responsible sourced freshwater supplies for humanity and ecohydrological (ecosystem/biosphere) restoration.

That task was accomplished as outlined in my honours thesis I completed in 2009.

I then tried to get traction to develop my systems and got nowhere, most people either did not have a clue about the magnitude and immediacy of this crises at the time or did not care and preferred to designate me as mad and or bad and to be avoided or patronised if it suited them apparently. Which is very civilised but very nasty to be on the receiving end of.

But I thought people would wake up and eventually decided to go back to university to work on key components of the system that needed to be better understood and optimised to optimise the larger ERG system I was developing from my honours system – my mind seldom ceases to concentrate on ACC, I was determined to try to stop those fires that all around me seemed to be oblivious to, as eastern Australia dried up.
So, I designed and negotiated a PhD with an academic who was keen to be my primary supervisor and commenced that in 2012. I have been homeless since the fires and am living in rough circumstances and will be more specific in details later. 18 years of off the scale effort is difficult to unpack especially after various upheavals which are also indicative of the dysfunctions in many civilised people which serve to maintain our terminal trajectory.

When I commenced sampling the sewage ponds of three towns on monthly intervals to build a picture of microalgae/zooplankton/nutrient dynamics as foundational for optimising the recovery of the nutrients we mine from landscapes and defecate and leach and erode into waterways, I still had some naïve hope that humanity would wake up.

And as I counted and identified 130,000 odd microalgae of 108 species and analysed nutrients and carbon and pH and zooplankton and continued broad based and focused Earth systems research, I used to text prolifically to the ABC country hour and Michael Condon would read many of my texts out.

But around that time ACC became an increasingly unpopular topic, and our government and universities became the pressured playthings of the LNP and other Lying Nasty Parasites that rise to the top like scum in our current 2 dimensional social construct – flat Earth.

And my supervisor became hostile when things got tough – in my fieldwork and the sickening university culture, the fish rots from the many rotten heads, as everyone else increasingly avoided me because they were in denial of the confronting facts I would broach and were possibly fearful to associate with me for other, probably mainly self-centred reasons. The ABC stopped reading out my text and I began to feel as if I was isolated among people who increasingly seemed like zombies to me – a side effect of them shutting their minds down in my presence.

My polite “masking” effort began to crumble, in 2014 perhaps. I had read out my honour’s thesis title to a very civilised professor in 2009 and his eyes went blank halfway through, and he said “long title” I was dumbfounded, and annoyed, a show pony in flat Earth. That professor did the same thing in late 2014 or early 2015 perhaps, with the working title of the PhD I had to subsequently stretch to encompass a reality no one wanted to know about, and no one really wanted the core of the “PhD Innovation” I had stretched it to by 2019 and submitted before my university effectively ceased communication beyond sending box ticking form letters.

My university like most others and most dysfunctional institutions do not want anything to do with inconvenient truths even though that ignorance will probably guarantee them a horrible end in a decade or two. Unless we address the crises, I have been trying without success to engage the zombies and Vogons who prevail with since the middle of 2004.

In any case when the same professor who had been promoted to a pro vice chancellor position said “long title” the second time I yelled at him for being an ignorant useless zombie parasite or similar and the whole Ecosystem management building heard it apparently.
I decided to work from home then, I was constructing a 7-stage bespoke selective harvesting filter to continue my PhD as a reaction to my supervisor trying to write my extremely challenging monitoring component off as a master’s degree and I had already done more work than he put into his PhD, by my estimate. An inverse trophic biomass pyramid was a challenge that had to be overcome to optimise my systems so I said I would build my microalgae manipulation tool to achieve that end and allow me to complete the tub experiments that the unexpectedly low densities of microalgae made impossible to perform as originally proposed – processed straight from the ponds, my supervisor would not accept my alternative suggestion, he just wanted to write my project off and get rid of me.

So, I proceeded to construct a 7-stage plankton size~species grading/ separating/ concentrating ecosystem management and harvesting tool to enable my initially proposed ecosystem function optimisation experiments to be possible because that work is needed to restore the quality of our environment even if I am apparently the only one who understands that.

But I would like to explain how to give us an optimal chance to save our Earth, I have been trying to do so for 18 years alone working far from any comfort zones while watching highly paid one trick wonders frolic in flat Earth like show ponies while I struggle to exist and cop ostracism and prejudice based on my ragged appearance earned while trying to address the entitled show ponies mess as they trash more of our planet and waste resources.

Most of the problems we face are glaringly obvious to many people like me, but we are marginalised and ignored, even extremely eloquent and engaging people who advocate addressing those problems are ignored, and generally do not last long in our dysfunctional institutions where short-term self-interest usually prevails, especially in a “competitive” environment under increasing stress.

The way that most humans have been trained to “compete” in a duplicitous human world divides humanity and makes it easier to exploit people. As stress increases such people will become increasingly divided and dysfunctional. But we must cooperate to have a chance of saving our biosphere, despite the powers that be liking things as they are – they do not seem to realise that they will face a horrible end too if humanity does not wake up and act appropriately.

Civilisation has almost destroyed its life support system and all our traditions and institutions, and training and hierarchical system run from ivory towers will plough on like stupid bulldozers unless they are jarred awake enough to work together. The introduction I will send in a subsequent email does attempt to wake people up and is very confronting in places, but I shall try to tone it down a bit more, it is impossible to be nice and concise about some things.

And describing the real world in a language used to describe simple artificial systems that suit our anthropocentric world views and systems is almost impossible to do briefly because most people do not understand basic ecological and physical realities. We are generally only taught what suits our cultures short term needs and wants; we live in a “social construct” and are trained to serve that now unsustainable social construct, a term used by Professor Rees in this nearly 2 hour interview (Rees, 2022) which covers all of the problems as I see them from his extremely well informed perspective.
We are in a huge holographic problem which must be viewed from many perspectives to understand and there are many details when one “drills down” on them.

The major perspective I have to add to the many others I have reviewed is that of a “Planetary General Practitioner” as outlined in “Gaia, The Practical Science of Planetary Medicine” (Lovelock, 2000).

To extend the metaphor, I have done a major analysis of the biogeophysical nature of our “Mother Earth” when “she” was healthy around 12,000 years ago, and I have studied what we have done to our Earth since then and have identified the optimal means by which to perform emergency surgery to “her” to save and restore her vital functions to the state they were in several thousand years ago which is what is required to restore our climate system to a state we can survive in.

The “market”, corrupted governments will not save us in their current form, nor will idiot billionaires, we must work with our Earth so we can survive, artificial human systems like the cult of the economy must conform to reality before reality destroys them and everything else.

Please consider this document as a preface to my “inverse school strike” and I will expand on this sketchy introduction in a more complete introduction that I will send after I have edited it and I shall send a copy of my 2009 honours thesis which outlines systems that we must begin to construct in Australia and in other increasingly arid countries as a matter of urgency but such systems must be designed and installed to facilitate beneficial integration into the landscapes – surface/ground/oceanic ecosystems and ecohydrological systems they interact with, and must be managed appropriately with climate system restoration as a priority.

I have covered most of the basic considerations and infrastructure impacts and how to optimally manage those in my honour’s thesis. I would change some details, for example I no longer recommend using compressed air energy storage in many situations, but energy storage is a relatively minor issue despite the hype of vested interests.

As mentioned, I am pleased to provide details and will in subsequent documents.

So, please consider this as an intro to a job and funding application and personnel and position description for a planetary physician keen to restore the quality of our environment.

The following section expands on the concept and introduces some issues facing people who try to confront a flawed system as well as an introduction to how ignored components of our Earth/climate system interact and encompasses major features of the evolution of inanimate then living climate system as it evolved under increasing solar energy inputs which are often ignored during comparisons of past climate changes compared to current events.

Which will be followed by concluding remarks, summary diagrams, and references.
Introduction part 1:

The Evolution of Our Climate System and the “birth” of Gaia*

An annotated summary of significant aspects by Robert (Bob) S Baker

Part 1; context and some acknowledgements.

*I read the 2000 edition of James Lovelock’s book “Gaia, the practical science of planetary medicine” (Lovelock, 2000) in 2001 perhaps, before I even considered undertaking university studies and many of the controversial concepts must have been retained in my subconscious because I found that I had adopted Lovelock’s perspectives when I read the book again a few weeks ago. I am aware the term “Gaia” is emotively loaded, which is a frequent obstacle. I did not have the depth of understanding of the chemistry, biology, and ecology that I do now when I first read the book so many of the concepts did not resonate with my conscious mind like they do now, which is possibly why I did not realise that I had been virtually reproducing his work on Gaia, albeit from more of an ecological perspective for this section.

Cognitive bias or “prejudice” may have played a part in my temporary amnesia also, Lovelock had gotten some very biased coverage on the few occasions I saw him interviewed on television and when he was advocating for nuclear energy I thought that he must have been poorly informed because I understand the full nuclear fuel cycle and do not recommend nuclear power at all, I was not impressed and apparently let that even diminish my respect for Lovelock’s intelligence and I did not bother to revisit his work until recently.

I try to address my prejudices as they become apparent but have observed cognitive bias in most people when I try to discuss hard topics they would rather ignore, it is often easy to pick up on an apparent or real error in someone’s work and use that to totally dismiss all the work.

The term “Gaia” itself can inspire mistaken impressions in many – myself included initially as they might envisage a Greek goddess from which the name comes and dismiss it as a “new age delusion” but it is not. Lovelock’s Gaia is the most utilitarian description of our dynamic “living Earth” that I have found from a “top down” perspective – a biogeophysical self-regulating super organism, not necessarily “sentient” or “intelligent” but the same could be said for the deluded species destroying “it”. Delusion is one of the nicest explanations for our idiotic (Parker, 2005) ecocidal actions I have found in fact.

In any case I highly recommend Lovelock’s book, he covers the human shortcomings of reductionist individuals and the institutions they form and occupy very well in his forward and defines the nature of “Gaia” as he meant it to be used in a way that should satisfy any intelligent scientist or logical mind.

Note that I have not read Lovelock’s “Revenge of Gaia” published in 2007 but have just ordered it, and I have only just read “Atmospheric homeostasis by and for the biosphere: the Gaia hypothesis” (Lovelock & Margulis, 1974) which begins in a very similar way to the following account I have been drafting for six months or more so I must acknowledge Lovelock and I have read another of his papers cited later in this summary, 2 papers from around 200 published, I have barely scratched the surface there.
Lovelock died last year on his 103rd birthday, 26/7/2022, he was a giant among giants. This abstract and the referenced chapter supporting it attempt to reveal another aspect of Gaia and is brief and not as well written as Lovelock’s work which I hope the reader has read before reading this, but hopefully this will provide enough information to allow the reader to understand the aspects of the emergent “system” we are part of and need for our survival.

I must also acknowledge another visionary author; Fritjof Capra and his book “The web of Life” which I also read, before Lovelock’s book when I enjoyed reading to get to sleep and like Lovelock’s work many of Capra’s great insights must have entered my unconscious and influenced my research as I studied the diverse units of the Bachelor of Natural Resources which I undertook specifically to address complex Anthropogenic Climate Change (ACC) I have just read Capra’s book again too.

When I decided to address ACC, I became much more attentive to my sources and was consciously influenced by Faulkenmark and Rockstrom’s great book “Balancing Water for Humans and Nature, the new approach in Ecohydrology” which also provides deeper insights into water cycles as they are in reality than basic Hydrology - one of my units, especially when monitoring and modelling are often biased towards economic interests and accurate but inconvenient hydrological analyses are ignored in Australia and elsewhere.

This summary outlines ecological interactions that possibly underlie the evolution of individual organisms, ecosystems and the emergent non anthropocentric nonsexual “Gaia” as I understand it – an amazingly complex, resilient “self” regulating emergent system of biogeophysical systems which coevolved in an overwhelmingly cooperative synergy where selection pressures on individual species were often less important than natural selection of successful cooperative communities where successful interactions evolved from a chemical to behavioural and eventually “moral” “code” of interactions instincts and behaviours which facilitate near optimal dynamic ecosystem functions in mammals and birds and possibly all creatures with a nervous system to some extent and resonate throughout all levels of life and the environment it coevolved with in a reciprocal synergy of increasing complexity of life’s defiance of entropy as it process the energy manifest in our unfolding universe.

Capra summarises the emergent “mind” and “matter” interactions that shape our Earth and the “world we bring forth” with our limited perceptions well, the reader may not glimpse that dimension in my necessarily sketchy summary which has a primarily biogeophysical, physiological/ecohydrological focus which can hopefully be added to their great works, or at least the pieces that are not flawed and have resonance with a better, survivable reality that we must make manifest now, minds and collective minds must consciously evolve.

Translating dynamic holograms into ambiguous, variously understood, often emotively loaded words can be difficult, I wonder if the dinosaurs named our home. Capra and Lovelock describe the limits of scientific and other human reductionist institutions and the difficulties faced when trying to describe complexity that straddles many disciplines and challenges reductionist practitioners worldviews which often causes emotively inspired blowback from the “establishment” and its currently worse than useless (in the context of saving humanity from immanent self-inflicted extinction) institutions and their denizens with a few exceptions who are not appreciated and are ignored, sacked, gaslighted and crushed by those comfortable with self-serving mediocrity as we accelerate on a trajectory to oblivion.
“Gaia became visible through the new knowledge about the Earth gained from space and from the extensive investigations of the Earth’s surface, oceans, and atmosphere during the past few decades. While this view lends itself to poetic metaphor, it is also a hard science theory of our planet that came from a top down view from space. The top down view of the Earth as a single system, one that I call Gaia, is essentially physiological. It is concerned with the working of the whole system, not with the separated parts of a planet divided arbitrarily into the biosphere, the atmosphere the lithosphere and the hydrosphere. These are not real divisions of the Earth; they are spheres of influence inhabited by academic scientists.” (Lovelock, 2000)

And, as quoted by Capra:

“This we know.
All things are connected
like the blood that unites one family.
Whatever befalls the Earth,
befalls the sons and daughters of the Earth.
Man did not weave the web of life;
he is merely a strand in it.
Whatever he does to the web,
he does to himself.
-Ted Perry inspired by Chief Seattle” (Capra, 1996)

For our Earth and those who are aware and care:
Part 2. Our planet

Solar output when Earth formed around 4.5 billion years ago was about 25% less than present, Earth’s atmosphere contained possibly 10,000 times more CO$_2$ than now which compensated for low solar input and most likely allowed liquid water to exist after the crust cooled (Kasting, 1993).

The fact that our sun is inexorably increasing its output is conveniently ignored by denialists who occasionally quote temperatures and CO$_2$ concentrations from past geological ages. Our Earth has compensated for increasing solar input by virtue of initial cosmic and geological “luck” then by the metabolic evolution of organisms and ecosystems which evolved to optimise productivity and amenity etc – (the climate) in a “cooperative” – synergistic exponential increase of biodiversity and functions which exceeds humans’ ability to fully measure and describe in truly biodiverse systems (Whittaker, 1972) that have mostly been destroyed but could be functionally restored if humanity acts appropriately – immediately.

The Earth and moon’s surface crystallized about 4.4 billion years ago (Morino et al., 2018) and the Earth has been globalized ever since. Globalization is not new; all Earth systems are inextricably connected in many ways.

Earths early lifeless climate was anoxic (Lovelock, 2000), all oxygen was bound into rock, water, carbon dioxide and other compounds and the oceans were full of dissolved minerals. In the broadest sense the climate is the “average” physical and chemical conditions that could be expected to exist at a location at a certain time, see (Pielke et al., 2016) for example.

Earth’s early atmospheric chemistry, temperature and hydrological cycle/s, its climate as is more commonly understood, was powered by a much dimmer sun and all surface water would have frozen solid if Earth’s atmosphere was as, it is now. But an extreme greenhouse effect with possibly 10,000 times more CO$_2$ than current atmospheric concentrations caused by the initial atmosphere and accumulation of CO$_2$ in the atmosphere from volcanic sources allowed some water to exist as liquid (Kasting, 1993; Lovelock & Margulis, 1974) etc.

As CO$_2$ and water vapor increased in the early atmosphere, increasing areas of ice melted and exposed rock to weathering which allowed exposed and dissolved minerals to react with CO$_2$ to form carbonate minerals which precipitated as sediments and slowly removed CO$_2$ from the atmosphere.

That process gradually reduced the greenhouse effect causing reflective ice cover to increase (a positive feedback component) which reduced weathering and allowed greenhouse gases to accumulate again, a predominantly “negative feedback” system (Kasting, 1993) - or “thermostat” (Lovelock, 2000) dominated by the greenhouse effect. A lifeless simple climate system powered and perturbed by solar input and orbital cycles moderated by an interaction between rock, atmospheric chemistry, the physical and chemical characteristics of water and Earth’s surface, simple but intrinsically cyclic, (Lovelock, 2000) covers the “thermostat” dynamics and implications of feedback cycles under a warming sun.

Note that Capra also identifies the fluctuations of complex resonant ecosystem dynamics that occur in functional ecosystems as part of their ‘homeostasis’ interactions as a strength, a feature that facilitates dynamic adaptation to gradual and sudden changes.
And managing “biodiversity productivity resilience” and other ecological interactions is key to developing the multiple scale “ecologically responsible geoengineering” (ERG) systems I have outlined in the hard core of my project. And “geoengineering” is another loaded and variously understood term (discussed and fully defined in another chapter).

Surface effects that influence climate include “albedo” or reflectivity of solar energy from Earth’s surface, and clouds which affects how much solar radiation is absorbed by surfaces and then released as sensible or latent heat (water vapor), the balance of which is expressed as the “Bowen Ratio” which depends on surface moisture and its characteristics, water ice also rejects heat while crystalising and absorbs heat while melting without changing temperature, another form of phase change latent or “hidden” heat which serves as a buffer and tends to hide the effect of increasing heat input to the cryosphere as the ice melts much like ice melting in a glass of water, the temperature does not change much until the ice melts.

Heterogenous surface heating transferred into the atmosphere by contact and radiation interacting with greenhouse gases and aerosols which also variously reflect or absorb solar radiation, causes convection of air and latent heat - water vapor, and sensible heat which creates air current which interact with the Coriolis effect and all those Atmosphere/surface/water components interacted to create Earths prebiotic climate system.

Before the emergence of life our Earth had a relatively simple abiotic hydrological cycle or climate system. When life began to dominate Earth’s climate system which it has until recently, and still does as human life and activities attempt to destructively dominate, our Earth developed increasingly complex and powerful “Ecohydrological” (Falkenmark & Rockstrom, 2004) and biogeochemical cycle/s.

In other terminology, before life commenced Earth had a “Geophysical” and or “Geochemical” climate system with hydrological cycles. After life began to dominate atmospheric chemistry and Earth’s surface and waters a “Biogeophysical” and or “biogeochemical” or “Gaian” climate system with “Ecohydrological” cycles began to evolve.

Heavy bombardment of large meteorites ceased about 3.9 billion years ago, and the first evidence of life appeared in the fossil record around 3.5 billion years ago (Campbell & Reece, 2002).

Some authors argue that earth was still too hostile for life to emerge in the short window between where evolution was possible and the earliest evidence of life, and present evidence that life could have begun to evolve more than 3.6 billion years ago, possibly on Mars, or elsewhere and was deposited on earth by comets and meteorites – the panspermia hypothesis.

One panspermia proponent (Line, 2007) also notes that phylogenetic evidence indicates that it is possible that the Domains of Archaea and Eukarya (later, via endosymbiosis) evolved from gram positive Bacteria, some of which are resistant to radiation, more than 3.6 billion years ago, However, recent research shows that precursor molecules necessary for life to emerge can form in reactions between ammonia, cyanide and CO$_2$ (Pulletikurti et al., 2022) and others have found that chains of RNA can spontaneously assemble on basaltic glass (Jerome et al., 2022) and other papers on plausible prebiotic chemistry that could initiate life are mentioned in those papers and elsewhere.
Details and timing of the origin of life are still being researched and debated. In any case it seems certain that all life in Earth is related – our “family”; “the biosphere”, “Gaia”, “Earth’s climate system” – all terms describe aspects of our singular interconnected Earth, we are part of the climate system we depend on.

And if life came from space as panspermia proponents suggest, then there are possibly no aliens in our universe, just distant relatives.

Whether life evolved elsewhere and came to Earth, or it began here, it is highly likely that all life in Earth is related and can be traced back to a bacterium (and Archaea if one insists).

The origin and identity of our “last universal common ancestor” or “common ancestral community of primitive cells” (Campbell & Reece, 2002) are still disputed by some but no serious biologist would dispute that all visible and known life in Earth is related – our family, and we rely totally on a cooperative complex interaction of all domains of life from the ecosystems in our digestive tract, on skin and elsewhere and the larger ecosystems that provide our food and used to recycle our waste.

(Lovelock, 2000) covers how microorganisms helped retain Earths water by fixing hydrogen in sulphur compounds in the anoxic Earth and then by creating free oxygen and hydroxyl radicals in the subsequent oxygenated atmosphere and explains how life most likely acted to retain nitrogen in Earth’s atmosphere and many other aspects of the evolution of our climate system not covered in this section. Perhaps life was maintaining Gaia’s “womb” at that time.

The details of the transition from oceanic anoxic conditions dominated by anoxygenic photosynthetic bacteria (photosynthetic but does not produce oxygen) to dominance by cyanobacteria are still uncertain but have been recently reviewed. The ecological characteristics of the anoxygenic and oxygenic photosynthetic bacteria and their interactions with available iron and phosphate were modelled by (Olejarz et al., 2021). Those Authors found that a reduction of available iron and an increase of phosphate coupled with possible influxes of cyanobacteria from freshwater sources relatively low in iron probably shifted the balance towards oxygenic photosynthesis which finally became dominant during the “Great Oxidation Event (GOE) around 2.4 billion years ago.

(Schirrmeister et al., 2012) state that cyanobacteria or ‘blue green algae’ are the only organisms that evolved oxygenic photosynthesis which was transferred into and created eukaryotic algae by endosymbiosis with cyanobacteria leading to the formation of chloroplasts and eventually terrestrial vegetation when some eukaryotic algae evolved into plants. Those authors observations are apparently not disputed.

The paper “Metabolic evolution and the self-organization of ecosystems” (Braakman et al., 2017) describes how a simple functionally reconstructed freshwater cyanobacteria evolved into *Cyanobium gracile* also a freshwater species of which some evolved into the marine species *Synechococcus* and then branched to *Prochlorococcus* which populated the Earths early ocean and profoundly altered its chemistry by creating excess oxygen and excreting dissolved organic carbon (DOC) which fed the complementary, synergistic, evolution of the SAR 11 bacteria.
The DOC included Malate, Pyruvate and Citrate which also served to reduce the rate that iron was being oxidised and precipitated from the ocean, a process which initially formed the iron deposits being exploited now, and the plankton released organic acids which mineralised dust inputs thus enhancing iron supply in an oxygenated ocean and possibly enhanced the availability of phosphate. Life evolved into different species which cooperated by sharing exudates which facilitated diversification, specialisation, and speciation by allowing previously compulsory metabolic processes to be “outsourced” while new metabolic processes evolved with a net effect of enhancing overall ecosystem functions and amenity. Cooperation. Sentience is not required, successful systems survive, and synergistic relationships evolve, selection pressures operate on all component scales of evolving systems.

As described by (Braakman et al., 2017), the Synechococcus and Prochlorococcus cyanobacteria began to strip the ocean of nutrients and evolved strains that were increasingly photosynthetically efficient, particularly the Prochlorococcus strains which altered near surface oceanic chemistry to oligotrophic (nutrient poor) conditions.

As the surface waters became increasingly stripped of nutrients the original strains descended with the nutrient gradient and new strains evolved and followed the nutrients and low light levels down. (Braakman et al., 2017) identified two surface/near surface ‘high light’ ecotypes and a further four ‘low light’ adapted ‘ecotypes’ of Prochlorococcus strains, with the oldest lineages at the greatest depth and in conditions where Synechococcus remained, below which very low light adapted cyanobacteria reside. As new conditions “climatic habitats” or “niches” evolved, life evolved and diversified to fill, modify, and expand them.

(Schirrmeister et al., 2012) define the GOE as occurring about 2.45 – 2.32 billion years ago and their phylogenetic analysis of cyanobacteria revealed that multicellular Cyanobacteria had evolved about half a billion years before their defined GOE time. Those authors concluded that multicellularity (of prokaryotes) evolved in the Archaean and would have provided advantages and enhanced metabolic capacity which facilitated the GOE and subsequent evolution of oxygen respiring or organisms. Teamwork.

(Olejarz et al., 2021) noted that oxygenic photosynthesis had been occurring in localised areas at times for hundreds of millions of years before the GOE and concluded that a combination of biological factors interacting with a changing geological environment caused the transition to an oxygenated atmosphere. Once the transition was completed the anoxic organisms that previously dominated the oceans survived in greatly reduced numbers in anoxic environments.

Some authors say the GOE was the first mass extinction event although many of the anoxic species would have survived, but if it had not occurred it is likely that Earth would have experienced a runaway greenhouse event long before now and there would certainly be no mammals around.

Prochlorococcus is the most efficient photosynthetic organism identified in the literature, and is one of the oldest strains of cyanobacteria according to (Braakman et al., 2017) and by my non anthropocentric definition of “Geoengineering” explained in a subsequent review I define bacteria and cyanobacteria in particular as “The original and most powerful geoengineers in Earth”. 

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See (Uhl & Anderson, 2020) for a justification of the term “in Earth” instead of “on Earth” which ignores the reality of our dependence on the life created and maintained Atmosphere we exist within but destroy. Water, air, and soil are parts of an interconnected matrix of life and matter created and or profoundly modified and maintained by life.

One interpretation of (Braakman et al., 2017) is that the GOE was the birth of our living climate system, after a long gestation as life gradually altered the oceans chemical climate, Gaia or “Mother Earth” (a useful but limited anthropocentric term) was born, a cooperative matrix of life which profoundly altered the atmosphere, oceans, and crust – the global climate. And as solar output increased more energetic and complex life evolved which served to increasingly stabilise our climate.

In other words, the GOE was the result of an evolving cooperative phenomena where bacteria and subsequent energetically co-evolving cyanobacterial communities modified the ocean and atmospheric chemistry to a point where the ocean could be considered as the fluid of a single super cell, encased in a photosynthetically created reactive atmospheric skin.

A single organism created by an interaction between Earths geology and our sun moderated by Earths evolving genome – our extended family which profoundly altered Earth’s surface and near surface characteristics and made free oxygen available while setting the stage for the next phase in the metabolic evolution of our biosphere.

Although competition did occur between the anoxic and oxygen producing organisms my impression of the GOE is that the major ecological drivers of the transition and subsequent evolution until colonial Homo sapiens became “dominant” were cooperative.

Note that microalgae are not all passive drifters “Evolution of Phototaxis” (Jékely, 2009) describes how phototaxis – the ability to move toward or away from light evolved in rudimentary form in eubacteria and archaeabacteria (archaea – I occasionally encompass in “bacteria”) and subsequently evolved at least 8 times in eukaryotes which allowed them to move in 3 dimensions to optimise their position in a light gradient to maximise photosynthetic efficiency or for other purposes covered in that review which also covers the intricate gene swapping, endosymbiotic events and other innovative mechanisms nature has that facilitate rapid evolution towards increasing efficiency, complexity, and “intelligent” or perhaps more accurately “cognitive” behaviour, a feature of life as defined by (Capra, 1996) who also explores the evolving ability of life to “intelligently” react and respond to environmental gradients to maximise their functionality.

Phototaxis contributes significantly to the functional efficiency and resilience of the Gaian climate system “Vertical migration by bulk phytoplankton sustains biodiversity and nutrient input to the surface ocean” (Wirtz & Smith, 2020) explains how phototaxis capable phytoplankton pump nutrients from the dark nutrient rich ocean depths to the sunlight surface and estimates that the process powers half of the oceans net primary productivity which I interpret as representing about a quarter of Earths total primary productivity and ability to draw CO₂ from the atmosphere and power oceanic food webs and the animal vectors that transported those nutrients uphill from the oceans to terrestrial ecosystems. The following section outlines some of the mechanisms and drivers of evolution that allowed us to be.
Ecological factors that affect ecosystems (climate systems) functions & evolution.

Note, my literature review this is summarised from was focused on optimising plankton ecosystem functions in wastewater ponds and other water bodies. “Functions” in those ponds included enhanced primary productivity and overall ecosystem resilience to optimise effective nutrient and carbon interception functions from wastewater and atmospheric or other CO\textsubscript{2} sources into microalgal biomass which could be harvested and returned to degraded soils to restore those terrestrial ecosystems to help optimise their nutrient and carbon interception and ecohydrological (climate) functions by establishing positive “biodiversity/productivity/resilience” interactions that seemed to prevail in natural functional aquatic (Worm et al., 2006) and terrestrial (Whittaker, 1972) ecosystems and the product of all ecosystems – Our biosphere or “Gaia” before destructive colonial human impacts.

Two main categories of mechanisms (Bruno & Cardinale, 2008) have been described to explain the generally positive correlation on all trophic levels between increased species richness (increased number of species) and increased productivity or ecosystem function:

1) Resource partitioning, or “dietary complementarity” effects in predator richness studies, includes “niche differentiation” or the “complementarity effect” where increased primary producer diversity increases nutrient uptake and use, and other synergistic effects including mutualism and facilitation, and:

2) the “selection effect”. Otherwise known as “Natural selection” which does not always improve ecosystem functions.

Darwinian “Competition” is just one driver of evolution whose importance was apparently exaggerated to suit the narrative of colonial hierarchies and justify the dispossession of other peoples and animals and can often degrade ecosystem functions.

The ‘niche differentiation complementarity effect’ (resource partitioning) occurs when different species in a community utilise resources in different ways, for example, one species of plant may have deep roots and draw nutrients from deeper soil than an adjacent plant with shallow roots (Cardinale et al., 2007) thus the different plants can exist closer together than two plants with the same rooting depth might, and overall productivity is then enhanced.

An example of complementarity in algae communities can be found in (Admiraal et al., 1986) who found that different species of diatoms absorb nitrogen from amino acids at different rates for different types of amino acids and some diatoms could not absorb aspartic acid while other species could. Note that the complementarity effect operates on phenotypic diversity (or functional diversity), not always necessarily on species diversity. And see (Braakman et al., 2017) for details of the previously mentioned example.

Another form of complementarity is ‘mutualism’ where some association between species provides mutual benefit, for example, most plant roots form associations with fungi (Begon et al., 1996) the plant provides energy to the fungi in the form of carbohydrates while the fungi help the plant by extending hyphae through the soil which extract nutrients and water from the soil and provide them to the plant, thus effectively extending and improving the plants root system, overall health, ecohydrological and nutrient recovery and recycling functions.
Mutualism can occur between bacteria and algae in sewage treatment ‘waste stabilisation’ or ‘oxidation’ ponds where bacterial oxidation of organic carbon produces CO$_2$, which is used by algae during photosynthesis, the algae then release oxygen which is used by the bacteria for respiration (Ludwig et al., 1951).

Facilitation occurs when a species or group of species moderate harsh conditions and/or provide needed resources for other species (Hooper et al., 2005). A possible example of facilitation in algae communities could occur where flagellate algae agitate the water and thus increase nutrient flux through the boundary layer around non-motile algae species. Another example is where vitamin B12 producing bacteria aid vitamin B12 requiring diatoms (Haines & Guillard, 1974). Terrestrial examples abound of course.

Functional niche differentiation usually applies to interactions within one trophic level, mutualism often applies to interactions across trophic levels, and facilitation can occur within and across trophic levels. Obligate symbiosis – where two species must interact to survive or reproduce is an extreme form of mutualism (Begon et al., 1996). We are all obligate symbiotes of Gaia. (Lovelock did not like “biosphere”, can’t please everyone).

The selection effect (in the context of biodiversity/productivity) can occur because a diverse community is more likely to contain a species that is highly productive and can become dominant (Cardinale et al., 2009).

The complementarity effect, mutualism and facilitation have the potential to maintain and increase biodiversity, but the selection effect may cause the development of a monoculture.

It is also possible to get a ‘negative selection effect’ when the most competitive species is not the most productive (Loreau, 2000) “weeds” for example. The negative selection effect seems to have occurred in many human cultural and institutional interactions too.

Competition itself can lead to reduced productivity or growth because resources are diverted from growth and maintenance and squandered on the competitive interaction (Tanner, 1997) which in extreme cases can destroy the resource base the competitors need to survive – civilised humanity and our many prior collapsed civilisations are the best example of that.

Other interactions that can occur in biodiverse systems are predator/prey which includes plant (or algae)/herbivore interactions, parasite/host interactions and “Commensalism”, where a parasite requires a resource or habitat from a host, but the host suffers no tangible disadvantage from the interaction (Begon et al., 1996). “Parasite” is another loaded, variously used and variously understood word.

An example of commensalism is where a lichen or moss requires a tree to grow on, to receive enough light but does not affect the host tree. Lichen is also a symbiotic alliance between fungi and microalgae and coral reefs are communities of small animals in symbiotic relationships with microalgae. Coral reefs are perfect examples of microorganisms creating the conditions for exponentially increasing biodiversity to thrive, within a reasonable climatic envelope of course.
After the GOE:

Eukaryotic cells arose around 2.1 billion years ago when various prokaryotic cells engulfed smaller prokaryotes and formed symbiotic relationships in a process called “endosymbiosis” which evolved into cells with a nucleus and organelles and allowed more diverse life forms to involve including ourselves. Endosymbiosis was a “dormant” idea which was “revived” in 1967 by Lynne Sagan (then married to Carl – now Lynne Margulis who did a lot of ground-breaking research on the subject) according to (Gray, 2017) who critically reviewed the topic 50 years after its formal inception by Margulis.

Endosymbiosis is important in other aspects of biology and ecology too for example (Margulis & Chapman, 1998) explored cyclic endosymbiosis which is often a cause of disease and listed examples of eukaryotic cells that had Bacterial and Archaean contributions.

Lynn Margulis co-authored “Atmospheric homeostasis by and for the biosphere: the Gaia hypothesis” (Lovelock & Margulis, 1974), I began this section in a very similar way to that paper which I only discovered when I found the paper a few weeks ago, Lovelock’s book also covers the implications of our evolving sun and how our living climate system evolved to compensate of course, as that is its focus, and the focus of this section.

It seems that life cooperated from the beginning in diverse ways and continued that cooperation to form increasingly complex organisms as solar energy input increased.

Increased nitrogen and phosphate availability due to increased rock weathering after the breakup of Pangaea and the spread of terrestrial plants are also proposed as drivers of the evolution of increasingly energetic and diverse organisms in “Geologic controls on phytoplankton elemental composition” (Sharoni & Halevy, 2022) who modelled major biogeophysical linkages between temperature, weathering, and carbon storage in sediments. Those authors noted the biological climate stabilising effects of diverse microalgae and the increased weathering that also drove cooling by increasing oceanic N & P availability in their models when algae colonised the land and terrestrial plants evolved.

Microalgae also influence cloud formation and the atmospheric transportation of sulphur as it released dimethyl sulfide (DMS) which reacts in the atmosphere to produce H₂SO₄ which forms Cloud Condensate Nuclei (CCN) leading to cloud formation and increased albedo and thus surface cooling (Lovelock, 2000; Park et al., 2021).

Charlson, Lovelock and two colleagues were the first to attempt to quantify the potential climate regulating significance of DMS in (Charlson et al., 1987) and they attributed the original hypothesis of the DMS, CCN effect to a 1983 paper by Shaw.

DMS is a significant source of airborne sulphur contributing 13 to 37 Tg (million tons) of S according to (Kettle & Andreae, 2000) who contributed to an extensive review published in 1999 (Kettle et al., 1999) which found significant seasonal variations at high latitudes with high concentrations in spring and summer around Arctic and Antarctic regions and elevated concentrations over nutrient rich oceanic upwelling areas. A 2008 review (Korhonen et al., 2008) delves further into distribution and seasonality and other details, and an analysis (Park et al., 2021) conclusively proved the significant effect of DMS CCN contribution to cloud formation in the arctic.
also noted that methanesulfonic acid (MSA), an oxidative product of a proportion and indicator of DMS, had moved north as ice had retreated and arctic ocean emissions had increased by ~30% in the decade from 1998 to 2009 which “could possibly moderate Arctic warming” by increasing cloud cover.

Ecological and other factors affecting DMS flux to the atmosphere are discussed in all the papers referenced in the paragraph above and the scarcity of data in some areas is also noted but the topic has drawn a lot of interest due to the potentially significant effects on regional and global climate.

The flux of sulphur deposited in rainfall would also have a potentially significant effect on sulphur deposition on land and landscape fertility. In any case it seems certain that there is a negative feedback effect caused by the interaction between increased temperature and insolation and the production of DMS in high latitudes and DMS is also likely to increase cloud formation and surface cooling in other areas. The abundance of anthropogenic aerosols in lower latitudes are noted by several of the authors above and those aerosols probably reduce the relative significance of DMS in those regions where anthropogenic aerosols could act to suppress rainfall in many cases, aerosols can have complex effects depending on their composition, location, and distribution in the atmosphere see (National Research Council, 2005) for an outline of all major climate - (as generally ~understood) and weather drivers.

The paper “Nutrient acquisition by symbiotic fungi governs Palaeozoic climate transition” (Mills et al., 2017) models the effect of fungal symbiosis with the earliest terrestrial plants that evolved from algae on enhanced rock weathering, CO₂ drawdown mechanisms and increasingly efficient CO₂ drawdown by woody vegetation in terms of phosphate use efficiency in biological carbon sequestration because wood contains much less phosphate per kg of carbon than algae. They found that their models of early plausible mycorrhizal fungi / liverwort (early non vascular plant without roots) associations based on fossil evidence then tested biologically with two fungal species in the high (and control) CO₂ conditions that prevailed ~475 million years ago revealed a strong primary productivity sensitivity to fungal efficiency which when coupled to carbon drawdown models indicated that efficient fungal/plant symbiosis was probably essential for driving the enhanced carbon drawdown and concurrent increases in atmospheric oxygen.

(Mills et al., 2017) concluded that the mutually beneficial relationship between plants and fungi was probably essential for raising oxygen and reducing CO₂ to levels that precipitated a deep ice age ~300 million years ago. The structure and hydrological (ecohydrological) functions of mycorrhizal fungi are described in “Mycorrhizal Fungi: Highways for Water and Nutrients in Arid Soils” (Allen, 2007).

Mycorrhizal fungi vastly increase plants access to water and nutrients and stabilise soils which increases soil water and nutrient storage and facilitates increasing landscape fertility, nutrient and water retention, productivity, habitat and resources for new species, and functions such as ecohydrological cycling – rainfall, clean infiltration dominated inputs into streams and rivers, are enhanced.

The evolution of terrestrial vegetation increased the formation and retention of clays and other sediments on continental surfaces.
Roots and associated biota increased weathering but also retained the weathered minerals which would previously rapidly erode into oceans where clay formation was dominant until the woody vegetation altered landscapes (Spencer et al., 2022) noted in “Composition of continental crust altered by the emergence of land plants” that river systems changed from braided channels where sediment was rapidly eroded and transported, into vegetation stabilised, sediment accumulating, meandering channel systems and wetlands that retained sediments and changed the nature of sediment isotopic signatures which could be seen to change significantly around 430 million years ago when terrestrial vegetation became widespread and that change was recorded in the isotopic profiles of zircons which were formed from sediments subducted into Earth’s mantle then ejected by volcanic activity, thus life even affected the composition of rock deep within our Earth.

As life emerged from the water it bought the water with it within its cells and acted to retain water in landscapes where it previously washed off barren mineral surfaces it was now increasingly stored in the landscapes and increasingly cycled through the atmosphere and increasingly hydrated landscapes as life established increasingly vigorous terrestrial ecohydrological cycles and climates increasingly amenable to the life which evolved with it, a dynamic interaction of biotic and abiotic factors increasingly stabilised by its increasing complexity. Exponential increase cannot proceed forever but can accelerate recovery.

As life expanded from a possibly single point – simple subjective bacteria, it diversified and formed chains and webs of interactions and ultimately a complex dynamic matrix literally a “Womb” of increasing power and complexity, Gaia, an immaculate conception, a self-created or “autopoietic” self-regulating system that thrived on cooperative interactions moderated by competition which was not “tolerated” for too long (in geologic time) by nature in most cases when it became excessive and damaged the overall system.

Note that my usage of “matrix” may have been formed from a personal assumption or impression of the meaning of matrix as an n (any number) dimensional lattice within which interactions occur as interactions occur between the linkages of the mental “lattice” which I have been developing since childhood. Capra uses the perhaps superior, in terms of visual translation and comprehension, term “network” to describe the interactive linkages that create the dynamic reality we are an indivisible part of with its myriad of interconnections that are often invisible to our senses, like gases and microorganisms but have profound impacts.

And those linkages which are visible are often ignored by most as we subjectively define subsets of the realities we variably perceive to “bring forth our world” in the words of Capra who also noted that when reptiles then mammals left the water, they bought that water onto land in their eggs and wombs as they nurtured their embryos, vehicles of Earth’s evolving genome. Modern humans seem to concentrate on nodes and ignore the linkages.

A crude geometric analogy of the evolution of life is that it began as a subjective singularity, a one dimensional point that diversified and became a line between two or more points and became a subjective 2 then 3 dimensional construct as more life evolved and began to encompass and alter its space and became more powerful as simple frameworks became increasingly diverse multi-dimensional web encompassed hypervolumes where every new species, innovation, adaptation and forms of relationships – the multiple connections, interactions and interconnections evolved and the matrix gained complexity and power not just from the sum or simple product of all species, exponential evolution occurred.
The complexity of biodiverse systems increased beyond the ability of a human mind to fully grasp in all its details. Especially rigorously reductionist minds, but the complexity can be managed and enhanced, First Nations Australians (Gammage, 2011) and other indigenous groups proved that and set examples we must understand, respect, and adopt with or without technological enhancement where appropriate and accommodate those who cannot contribute directly but can stop destroying Earths limited resources if they are. In any case the paper “Evolution and the measurement of species diversity” (Whittaker, 1972) covers ~” the exponential growth in the hyperspatial niche volumes (habitat) of evolving life” best, and the limits of the methods subjectively applied to selected subsets of generally artificially simplified, damaged ecosystems that many ecologists and others use to attempt to explain complex systems that are usually beyond the capability of those methods to fully describe.

Even so, every effort to understand the complexity we rely on does add to our understanding of our living planet and are worthy in most cases and do illustrate very important aspects of the complexity. Humility is required though, I understand much of the complexity to a useful degree but it has not been easy, one must identify and attempt to understand Giants like many of the authors referenced here and more, and understand the classical scientific disciplines to a workable degree and straddle those and check and recheck and evolve, 60,000 hours focused study after a lifetime of keen but poorly informed observations is what it took me, I am sure others could do better, especially if they were identified and trained from childhood as recommended in “restoring the quality of our environment” (Environmental Pollution Panel, 1965) tabled when I was 5 months old which clearly spelled out all of the problems humanity still effectively ignores, see page 9 for example, I had to train myself at great multidimensional expense despite my dysfunctional civilisation and its institutions and people to attempt to become a person as described on page 39.

And most of the damage we do to complex systems is blatantly obvious but may have complex consequences and require consideration of complex details to attempt to repair but complexity should not be used as an excuse for ignorance, we do know more than enough to begin to restore the quality of our environment but seem to be dedicated to destroying it.

Capra’s “Network” metaphor (he explores the limits of words and metaphors too) is possibly a more useful and easily understood analogy of the interactive fabric of life than my clumsy “matrix” and attempt at a ~geometric analogy above. He also explores the mathematics of complexity and chaos and the connection of mind and matter with reference to cutting edge mathematical theories which I struggle to encompass, as higher mathematics are not one of my natural or generally practiced strengths but I manage the maths when necessary with perseverance, but can see many of the interactions in any case and struggle to understand why others cannot simply see what we are doing and alter our behaviours to survive.

Not to worry, I am hopeful our civilisation will soon wake up, care, and earn a modicum of the respect it currently demands with destructive force. More on Gaia now.

No” intelligence” or “intelligent design” is required for the evolution of Gaia, the product of all life now and in the past. Yet I perceive a wonderful apparent emergent intelligence in the interaction’s “cognition” processes, cycles, and products of life, in ecosystems and the global ecosystem and it is to my perception an intelligence far greater than human intelligence could achieve, if intelligence exists at all.
We learn from nature, it provides the settings, creatures and characters humans build their legends from. We can never “dominate nature”, that arrogant delusion is what helps us collectively destroy our climate or more commonly our “environment” for those with the reductionist training that helps maintain the illusion of separation we are encouraged to adopt. We must work With Nature on its complex, ultimate, terms.

Animals evolved which improved and maintained Gaia before we nearly wiped them out and almost killed Gaia’s nutrient cycles, if those animals become extinct Gaia cannot be saved in a state that will tolerate primates or anything with a spine for long, and we are nearly at the point of the ultimate cascade of collapse as we needlessly create hell in Earth and rush to our own extinction.

In a sense animals became the blood supply that maintained and enhanced the major organs of Gaia, the ocean biome, and productive soils, created and maintained by life. As nutrients were leached and eroded from landscapes into the ocean’s depths, food webs based on microalgae consumed by animals recovered them and transported them into and distributed across landscapes which more than made up for nutrient losses in most ecosystems which accumulated nutrients suited to life which enabled increasing biodiversity, resilience and ecohydrological water recycling to occur. Animals are essential for maintaining our climate.

Most modern animal phyla appeared in the “Cambrian explosion” (of life) that occurred at the start of the Palaeozoic era 543 million years ago. The Cambrian period led into the Ordovician period – 510 to 439 million years ago during which plants and arthropods colonised the land (Campbell & Reece, 2002). The exact timing of many events apart from major ones in the distant past are imprecise and can vary in the literature as events are often reconstructed from limited geological and or fossil evidence, new evidence is constantly adding to the understanding of events in the distant past as well.

In any case the major theme of an evolving climate system is the focus of this section and the details here are used to support and convey the concept of a living climate system, pedantic precision is not the priority, the priority here is to outline a utilitarian perspective of Gaia as a “superorganism” or system/s that must be understood and appreciated as such if we are to effectively work with it and within it as “us” to survive as nothing else will suffice.

Animals evolved in the water and served to enhance nutrient cycles in their aquatic environment and accelerate its primary productivity and carbon management functions.

When animals emerged from the water, they also bought the water within their bodies but more significantly perhaps: They bought the nutrients that were washed, blown and leached from the landscape and stored in the oceans within its biota onto land, and then they began to carry those nutrients up hills in their bodies and droppings and disperse them throughout the lands (Doughty et al., 2015).

The algae and animals acted to maintain a fertile yet clean ocean then to transport nutrients recovered from below the oceans photic zones, through whales, fish and phytoplankton onto land when fish were caught and eaten by terrestrial dwelling animals and seabirds etc, as the water washed and leached nutrients from the landscape life intercepted the nutrients essential for life and returned them to landscapes where they accumulated as more was replaced than was lost due to the effects of weathering.
Life gleaned and concentrated the nutrients essential for life and enhanced landscape functions which continued to increase in terms of energy and matter (energy) processing power, productivity, efficiency, and resilience.

The biogeophysical factors that created and maintained our climate system which in the broad sense includes all Earth systems as most accessibly defined in “Land’s complex role in climate change” (Pielke et al., 2016) also include the impact of animals that are generally not included in climate change literature. Animals began to transport nutrients from the deep ocean to continental interiors as they evolved and spread across the land.

(Doughty et al., 2015) calculated the likely late-Quaternary nutrient recycling capacity of animals and how that reduced after the megafauna extinctions and recent human impacts on animals and found that vertical movement of phosphorus from ocean depths to surface waters has decreased by 77% and movement of P from sea to land has declined by 96% due to whale hunting and the decimation of seabird and anadromous fish populations in recent times. Those authors also found that the lateral distribution of nutrients from concentrated patches on land declined to 8% of pre-extinction levels and to 5% of prehuman impacts in the oceans. Note that the P serves as a proxy for N, Fe, and other nutrients required by organisms.

Contemplation of a ground-breaking thesis on diadromous fish in Australia (Miles, 2007) coupled with an impression of how First Nations Australians managed their bountiful paradise which can be glimpsed in (Gammage, 2011; Jordan, 2012; Pascoe, 2014, 2018, 2019) and early European colonists accounts reviewed in a subsequent section may give the reader an insight into how First Nations Australians enhanced the productivity and biodiversity of their piece of Gaia – our Earth, and how we can restore its functionality.

Note also that average figures can be worse than useless at times, projected average global temperature rises due to the enhanced greenhouse effect give comfort to small minds who do not or choose not to realise that land and the polar regions heat up far more rapidly than the huge thermal mass of the oceans which are actually absorbing more than 90% of the heat retained by global warming, an energy input around 50 times the magnitude of all human primary energy use which is exponentially increasing and is deoxygenating and killing the oceans (Cheng et al., 2019), even as they are being ecologically destroyed by overfishing, CO₂ acidification, other pollutants, sea bed mining and fossil fuel exploration etc.

In the context of nutrient transport from an ocean that will likely revisit the Archaean on its way to the new final, yet ~maybe avoidable with nuanced mighty efforts, lifeless baking Hell created by my stupid or evil culture – take your pick, natural animal mediated nutrient supply, distribution, and retention systems have been killed in most places.

Those tiny remnant, localised uphill trickles of nutrients into ravaged increasingly barren landscapes are insufficient to counter the rapacious waste of our current ecosystem destroying nutrient mining and haemorrhaging livestock, farming and “waste disposal” practices that must be reformed. Half-baked “silver bullets” sprayed inappropriately by rent seekers concentrating on their personal economy will do more harm than damage, like using seawater on land to grow microalgae to feed 10 billion people I will not even bother referencing here. I covered many of those details and potential issues in my honours thesis (Baker, 2009) and in even more depth in reviews for this overdue unwanted suppressed PhD now “inverse school strike” (defined in conclusion).
“Iron defecation by sperm whales stimulates carbon export in the Southern Ocean” (Lavery et al., 2010) describes how sperm whales which feed below the photic zone but defecate in the photic zone, cause a net export of carbon to the deep ocean by providing iron and stimulating phytoplankton growth. Iron is often a limiting nutrient in large areas of ocean. Those authors found that despite their respiration each sperm whale could stimulate the removal of 20 tons of carbon from the atmosphere each year (12,000 sperm whales, 240,000 tons of carbon removed) and that prior to the huge reduction of numbers caused by modern whaling southern ocean sperm whales alone would have stimulated the removal of two million tons of carbon from the atmosphere each year, and they mentioned other species that also fed in deep water and fertilised near surface waters.

I have reviewed artificial Fe fertilisation of oceans, it is a net waste of resources when the full impacts of the exercise are accounted for. The oceans require healthy ecosystems and more whales. And animals do not just transport a single nutrient, which could perturb ecosystems. The authors of the sperm whale analysis also mentioned the “Baleen Whale Krill paradox” where baleen whales eat Krill which feed on algae and defecate in the photic zone which also stimulates phytoplankton growth but when whale populations were reduced, the krill they preyed on also suffered declines in population. It seems that the whale’s nutrient recycling stimulated a net increase in primary productivity and their prey even as they consumed the krill and enhanced wider food webs.

Other authors have examined “The Biogeochemical Role of Baleen Whales and Krill in Southern Ocean Nutrient Cycling” (Ratnarajah et al., 2014) and analysed iron, cadmium, manganese, cobalt, copper, zinc, phosphorus and carbon in whale muscle, whale droppings, and krill and found that krill most likely retain 24% of the iron in the photic zone of the southern ocean and note the carbon export capacity of some species, and that productivity and carbon export to the deep ocean would most likely be enhanced by allowing whale populations to increase. Obviously. Minor nutrient fluxes are also ecologically significant.

A recent paper “Baleen whale prey consumption based on high-resolution foraging measurements” (Savoca et al., 2021) presents evidence that the whales may have had an even more profound effect on nutrient cycling and ecosystem enhancement than previous authors calculations because their measurements of Baleen whale prey consumption revealed that they ate three or more times more food than previous estimates which were based on metabolic models.

Those authors found that in the Southern Ocean alone before whaling mysticetes consumed 430 million tons of Antarctic krill annually which is twice the current estimated biomass of that species and more than twice the current human global catch from marine fisheries today and those whales recycled an estimated 12,000 tons of iron annually compared to 1,200 tons a year now. Most scientists are conservative and seem to underestimate past productivity. Gaia’s oceans and landscapes were at least three times to an order of magnitude more productive – processed much more energy and matter (energy) and did so with far greater efficiency than now up until ~12,000 years ago, see (Bar-On et al., 2018; Clayton-Dixon, 2019; Manning, 2004; Mayshar et al., 2022; Stephens et al., 2019) which encompass aspects of what happens when some groups of humans began to attempt to ‘dominate’ nature. I provide more evidence and arguments to support my higher estimate elsewhere.
“The biomass distribution on Earth” (Bar-On et al., 2018) quantifies the carbon contained in all of Earth’s living biomass and estimates that current vegetation contains a total of around 450 Gt of C, note a similar analysis put that figure at 861 Gt C but they included soil carbon to a certain depth, and (Lal, 2018) whose carbon cycle chart I adapted to create my version, used a figure of 560 Pg or Gt of C in live vegetation. My detailed analysis of that aspect of Earth systems revealed that scientists are very conservative there too and every new analysis of prehuman carbon content increases the estimates, but actual vegetation C is declining precipitously now and that will continue unless we get serious. (Bar-On et al., 2018) whose figures I largely adopted, estimated that pre-human impact vegetation contained up to 1,107 Gt C but I strongly suspect that figure could be at least doubled and have explained my reasoning in a review of the topic I hope to publish somewhere after this, summary, which should suffice as part of my introduction.

Another example of conservatively constrained underestimation I discovered was in “Soil carbon debt of 12,000 years of human land use” (Sanderman et al., 2017) where five recent soil carbon analyses from Australia were used to inform an estimation that Australia lost (oxidised) around 10 Gt of C from the destruction of soils since colonisation. However, they were confined to extrapolating data from an already severely degraded continent and their proxies for “undisturbed” soils were inappropriate but the best they could do under the often-constrained norms of scientific evidence and analysis, no disrespect intended and note the correction after references in that paper which allows a summation of the supplementary data. We all make errors, there are probably some here, and are generally constrained but unreasonable (Eleanor Gordon-Smith, 2019) efforts are now required in our current unreasonable situation.

In any case I evaluated historic accounts from the early European arrivals in Australia and estimated that 600 cubic km of real topsoil was destroyed rapidly and that would have contained around 40 Gt of carbon at least 4 times the estimate mentioned above and that is my conservative estimate - details in a following literature reviews chapter.

From my research it seems that Gaian systems had multiple backup systems and cycles and redundancies that became variously significant under sudden or gradual changes generated from outside and within Earth’s atmosphere that were corrected by basic evolved mechanisms that served to maximise the individuals own wellbeing and helped to maximise ecosystem functions and stability in most cases and which became increasingly resilient over time. An example of a backup system can be seen when the 2019–20 Australian bushfires cruelly incinerated 3 billion innocent animals and sent an estimated 715 million tonnes of CO₂ (195 Tg, or million tons of C) into the atmosphere which stimulated algal blooms in the southern ocean that intercepted most of that carbon (Tang et al., 2021) but how long it stays there is another matter.

It seems that as human actions destroyed the terrestrial component of Gaian carbon management systems the Ocean compensated as it was stimulated by nutrients being burned, blown, leached, and washed off landscapes degrading to wasteland and deserts as we mined the fertility that had accumulated in them over aeons in an exponentially increasing destructive disaster which has destroyed at least 90% of Gaia’s vital functions. Then when we began to industrially mine the life and minerals out of the oceans many treat as a cesspit Gaia could tolerate the insults no longer and began to collapse.
One symptom of that collapse is the rapidly increasing levels of CO$_2$ that are now occurring as humanity pours increasing amounts of that and everything else into our atmosphere while continuing to destroy each other and all life.

Conclusion: (Apologies to my initial recipients and those who care for the harsh tone)

This part of the introduction to my unusual but necessary “thesis” attempts to introduce some aspects of the biosphere we are an indivisible part of, and which must be preserved and protected from ecocidal maniacs and other idiots who dominate our whole structurally unjust terminal civilisation. An inverse school strike is part of an answer to Greta Thunberg’s school strike. I have outlined the work required to save our currently worse than worthless civilisation in my unwanted “thesis” that that civilisation should have dedicated itself to addressing with all its resources since the year of my birth if not long before then. I have picked up much of my civilisation’s slack – in subsequent chapters and have been treated with utter contempt and worse for my efforts as I battle with “Climate scientists grief” (Corn, 2019) and fury at the increasingly destructive behaviours of most of my fellow citizens as they continue to destroy all futures.

I have designed systems and built and successfully tested pilot scale apparatus to enable the manipulation and selective to bulk harvesting of microalgal ecosystems and have submitted that chapter and others to my ignorant university which apparently prefers to avoid unpopular but crucially existentially important topics as do all of our increasingly dysfunctional institutions and civilisation whose dysfunctions I have examined the hard way which shall be illuminated in the subsequent section so the dysfunctions can be addressed and or removed.

I have summarised a generic outline of a system of systems designed to be effectively contextually integrated with our environment and infrastructure – our anthropogenic climate system no less, in order to repair it and directly mitigate regional and global climates while rapidly drawing carbon dioxide from our atmosphere and stabilising it from other sources and providing alternative food sources while repairing our complex climate ecosystems I have called “Ecologically Responsible Geoengineering” (ERG), note again that “geoengineering” is also a loaded term I have explored in detail in one of my ~32 topic reviews.

My ERG system is designed as a multifunctional “crutch” and augmentation system capable of rapidly restoring ecosystems and climate systems functions after which much of the ERG infrastructure can be modified, reduced, or removed as our Earth systems regain their full functions.

There is only one example of a functional climate system available to humanity and that is the Earth before colonial humans decided to “dominate it”, our Earth, Gaia, our biosphere, as it was 12,000 years ago. Rapidly restoring those systems functionally with all the remaining species and local variants we can save and re extend across landscapes is the only way to effectively address climate change, there are no “magic bullets” there are very useful technologies that can do a lot of damage if applied in inappropriate context – like many of the technologies I would use in the ERG system – nuance is required and many dynamic factors must be considered before implementing actions and installing systems which must then be adaptively managed in the wider dynamic context of Earth systems. My honours thesis (Baker, 2009) covers the basic foundations considerations and impacts of the major technical components of the now ERG system which was an initial model.
I would no longer recommend using some components of my initial system like compressed air energy storage systems in most situations, but each situation must be evaluated individually and in wider dynamic context with all impacts and aspects accounted for “externalities” cannot be tolerated.

Hopefully this will allow the reader to begin to glimpse the amazing complexity and potential of the living climate system we are part of and must now restore and manage to survive, I shall edit and provide further documents to facilitate that as I am able in trying circumstances. However, most of the referenced authors are much better writers than I and cover many more details than are tacked together here and are certainly worth reading.

The main theme I wished to introduce here is that our climate system arises from a dynamic interaction between life and geology and solar input etc. Our climate system is our biosphere or Gaia or our living Earth or whatever the dinosaurs called it if any bothered to – it is a single system created by life for life and we must restore it as a living resilient system because my intensive research has revealed to me that all of humanities technologies and hubristic self-serving industries and institutions cannot recreate and maintain a climate system suitable for our lives and our wider families lives to persist in. I am sure that the Dunning Kruger idiots could concoct a selective non argument to satisfy themselves that our Earth is flat, or God will fix it but that is all “B.S” – lies that people believe by one definition.

B. S. by all definitions backed by whatever amount of fiat currency is behind it will not save us from extinction, all the kings horses and all the king’s men never could put Humpty Dumpty together again and never will because they are a major part of the problem the destructive imbeciles who are just performing as trained but require retraining.

And wimpy political correctness is also part of the problem and prevents one from using the concise descriptions of colonialised humanity it deserves. The mice have indeed inherited the crumbs, but they won’t last long.

We must restore healthy oceans and landscapes, our Earth’s lungs, and restore the quality of our waters that flow through our earth and on it, that bathe in the water that flows through us all and through the atmosphere in an intricately interconnected system of cycles, and we must repair the red and white blood cells – the animals that maintain and can improve our living systems of networks for the good of all our family, our animals that carry the nutrients, pollen, spores and seeds and used to maintain a wonderful dynamic balance of increasing complexity until the last few seconds, or second of Earth’s history if it is compressed into a week.

It is our collective choice to start another analogous week and we have no time to waste, our choice is life or extinction, those who think they can ‘sit’ on a fence have effectively chosen extinction and are a major part of the problem with colonial “humanity” which will guarantee our extinction unless they can be knocked off that fence, or preferably dragged because it seems that my “diplomatic” efforts have knocked several parasites over the wrong side of the non-existent fence, too bad, research can have unintended consequences.

This will have to do as an introduction, comprehension would be greatly facilitated if the reader has read Lovelock and Capra at least and some of the other references below and many of the 800 odd ones that underlie my “Inverse school strike” covered in subsequent sections.
Again, I apologise to my initial recipients and those who care for my hard-edged tone, but I also believe that those people already understand many of the topics I have covered and would well understand my despair for our Earth that I can only overcome with fury at those who continue to destroy our futures and the apathetic mobs that facilitate the ongoing destruction.

I drew the section above from the start of page 24 to the page above from my 64th odd attempt to introduce this project over the last 3 years as my understanding of the human aspect of ACC has grown with focused research and I struggle to introduce confrontational truths in a way that will hopefully not be ignored this time.

And I have been wasting much of my time in the struggle to survive in poverty while trying to complete at least part of this multidimensionally stressful and difficult task.

The following diagrams are drawn from my research, the ERG flowchart is a vastly simplified generic representation of the sort of systems I have been iteratively developing and improving as I incorporate new information and insights since I first conceived the concepts in 2004.

Simply put, all components of our climate system and their interactions must be considered and incorporated into a viable whole systems model designed to restore our environment not to enrich rent seeking parasites as a first priority but those types must be negotiated with if it is possible to get through their echo chambers of acolyte parasites and their thick skulls that seem to equate great wealth with high intelligence where I only see they have benefited by being born into the right place at the right time and have a highly developed rat cunning which is great in the rat race, but the rat race must end now.

We must simply stop using fossil fuels and destroying vegetation and everything else as our utmost priority, non excuses and diversionary pies in the sky must end and the warmongering parasites who rule our terminal civilisation must be reformed, or restrained, or replaced.

I hope that this is not just another document that goes off into the void.

I shall continue to edit and send subsequent chapters which cover diverse issues and solutions in utilitarian detail as I complete them and hopefully, we can engage with practical reformation and restoration works soon, I am better at practical things than I am at writing and understanding most humans, and profound changes are needed in the real world now. Subsequent documents or “chapters” cover the details behind the following charts as well.

This should suffice as a preface and partial introduction to my project, and myself as a person who understands much more about how our Earth and Human systems work and interact than most people in Earth and is prepared to undertake complex stressful work and be brutally honest where brutal honesty is required as it is now because if humanity does not face hard facts now those brutal facts will destroy us all.

Thank you to my initial recipients and those who care (a verb) for your efforts to help create a better, survivable world.
The figures above are from the body of my thesis and are slightly outdated now to delays caused by becoming a pariah and the events leading up to that, the last two charts are adopted from a similar analysis by Lal (2018) and modified according to an analysis of too many references to list in this section of an introduction to an extremely large project.
Figure 6) Me (Bob Baker) and the major component of my microalgae ecosystem management and harvesting apparatus.
References


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