Half-Earth, Full-Heart:

Topics and Practices in Environmental Ethics

Justin Good, Ph. D.

Executive Director, *The Sanctuary at Sheparfields*

Chief Seattle and the Indigenous View of Land

"The President in Washington sends word that he wishes to buy our land. But how can you buy or sell the sky? the land? The idea is strange to us. If we do not own the freshness of the air and the sparkle of the water, how can you buy them? Every part of the earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every meadow, every humming insect. All are holy in the memory and experience of my people....This we know: the earth does not belong to man, man belongs to the earth. All things are connected like the blood that unites us all. 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."

Ethics:

- A branch of philosophy - the “Love of Wisdom”

- Not what you *believe to be right and wrong*, but the rational inquiry into the deeper basis of moral judgment, happiness, human flourishing and justice.

- The rational and intuitive quest to understand who and what we are, where we are going, what we owe each other, what is truly right and wrong, how we should live, to be the best version of ourselves.

- And in what follows, I want to try to express how this study has changed me as a person.

Three approaches to ethics:

- **Utilitarianism** - a theory of what is good, quantifies well-being, follows the Greatest Happiness Principle: the moral value of an action/policy is determined based on whether it serves the greatest possible well-being for the greatest number (all interests considered equal), a measure called “net utility” - the moral cost/benefit analysis of the act. E.g. does the pleasure derived from the eating of meat from a cow vis a vis the pain the cow experiences from being killed and harvested “maximize net utility”, i.e. the greatest good for the greatest number?

- **Duty Ethics** - a theory which sees ethics as rooted in the moral difference between persons and things. Unlike mere things, persons have interests, have beliefs and desires and what philosophers call *rational agency*, and we describe the meaning of the value of this faculty of will, of freedom, with the potent word *dignity.* On this view, ethics is about the protection and enhancement of human autonomy and agent, in a word freedom. E.g. Do animals count as persons? How do we understand the difference between the moral reverence that most people have for their pets with often total moral indifference to the ways customary practices in industrial food factories treat sophisticated animals like cows and pigs with extreme cruelty?

- **Virtue Ethics** - a theory which asks, What kind of person do we aspire to be morally? I.e. What is virtue? Or, What kind of character do we hope our children emulate? And what kind of society do we wish to have? E.g. Is there a kind of reverence for nature, an intuitive acknowledgement of the sacredness or divinity of nature that our modern consumer culture has forget?

What is Environmental Ethics?

“A branch of philosophy that attempts to answer basic questions about how humans should understand and relate to the environment. Key questions environmental ethicists ask include:

What environmental responsibilities, if any, do we have to future generations?

In thinking about the environment, should we be concerned only with human welfare, or should we also be concerned for the well-being of animals and other life-forms?

How should we respond to climate change?

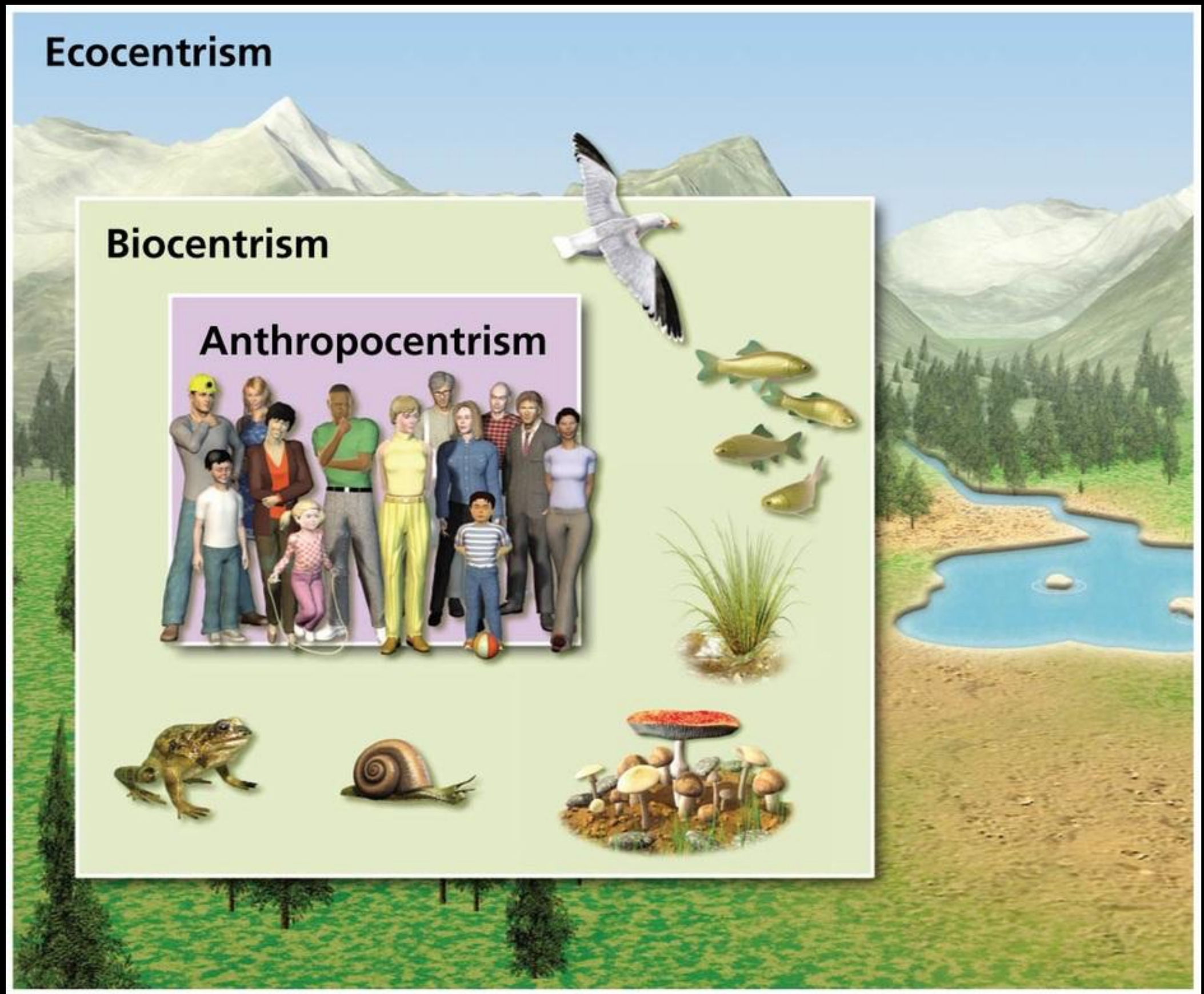
Is it ethical to eat animals?

How important is it to preserve wilderness and areas of great natural beauty?

How concerned should we be with species extinction?

Is it ever morally acceptable to break the law to protest some environmental harm? If so, when?”

Bassham, Gregory. Environmental Ethics (p. 3). Hackett Publishing Company, Inc.. Kindle Edition.



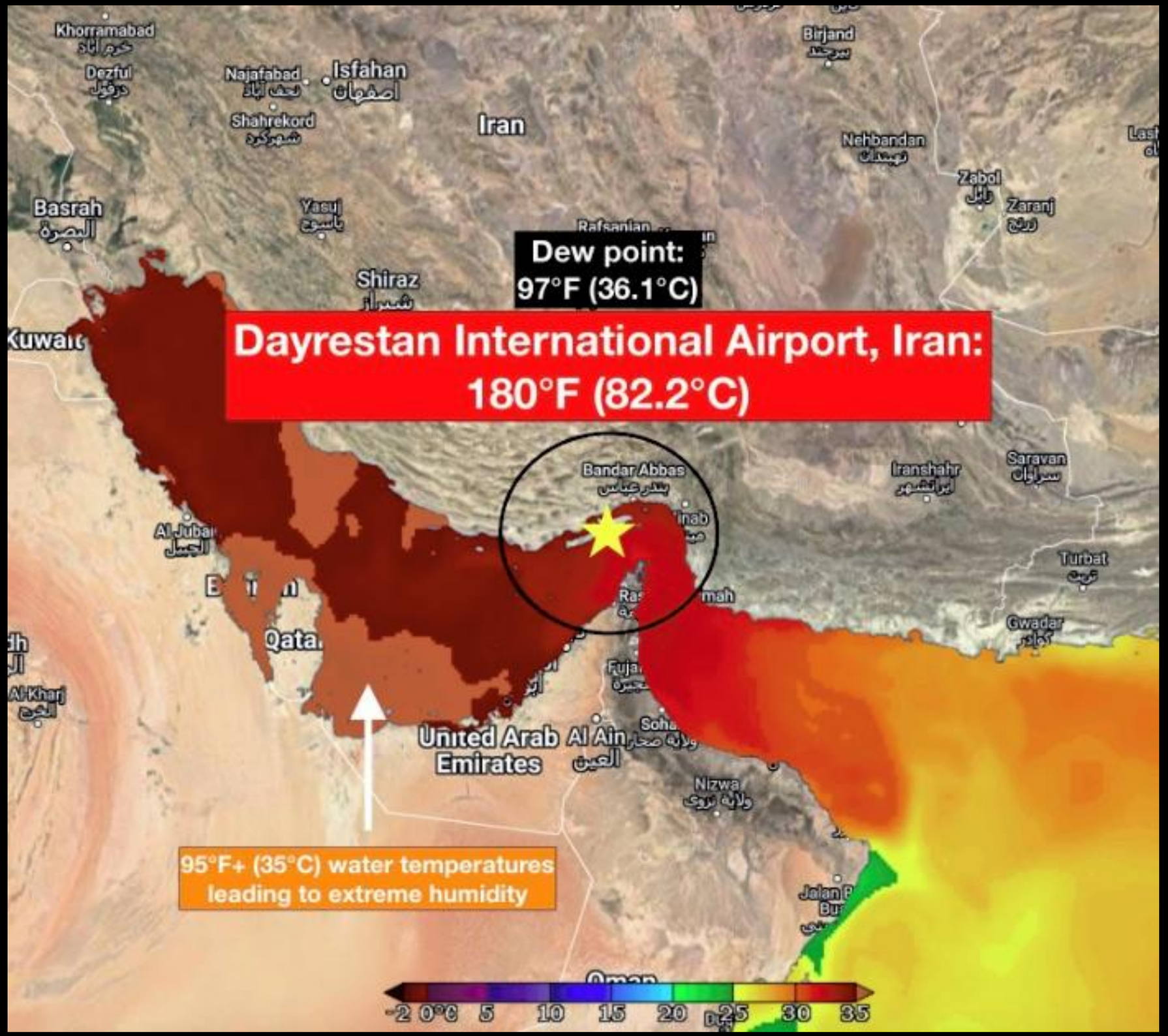
Two Worldviews

Western (Materialistic-atheistic) View

Humans can own anything. The universe is a lifeless, chaotic machine without meaning, purpose or value in itself. We are fundamentally separate from each other. We have moral duties to humans only, and mostly just to ourselves.

Kinship or Indigenous Worldview

1. Humans belong to the land, not vice versa.
2. There is a mysterious, loving creative force [Wakantanka, “the Great Spirit] who, with helpers from the nonhuman world, created an interconnected world.
3. This original energy pervades everything, making us humans - along with all other forms of life - family or kin. This comes with responsibility for caring for all members of this family.
4. Every element of creation has a spiritual presence that we all share but also has its own agency and unique wisdom designed to foster flowing balance in the universe.
5. All elements, including rocks, water, mountains, and thunder are animated with individual personalities.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خرم آباد
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دزفول
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Isfahan
اصفهان
Shahrekord
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Iran
Birjand
بیرجند
Nehbandan
نهبندان
Zabol
زابل
Zaranj
زرنج
Basrah
البصرة
Yasuj
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Rafsanjan
Shiraz
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Dew point:
97°F (36.1°C)
Dayrestan International Airport, Iran:
180°F (82.2°C)
Bandar Abbas
بندر عباس
Iranshahr
ایرانشهر
Saravan
سراوان
Turbat
تربت
Gwadar
گوادر
Qatar
United Arab Emirates
Al Ain
العین
Nizwa
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Oman
95°F+ (35°C) water temperatures
leading to extreme humidity
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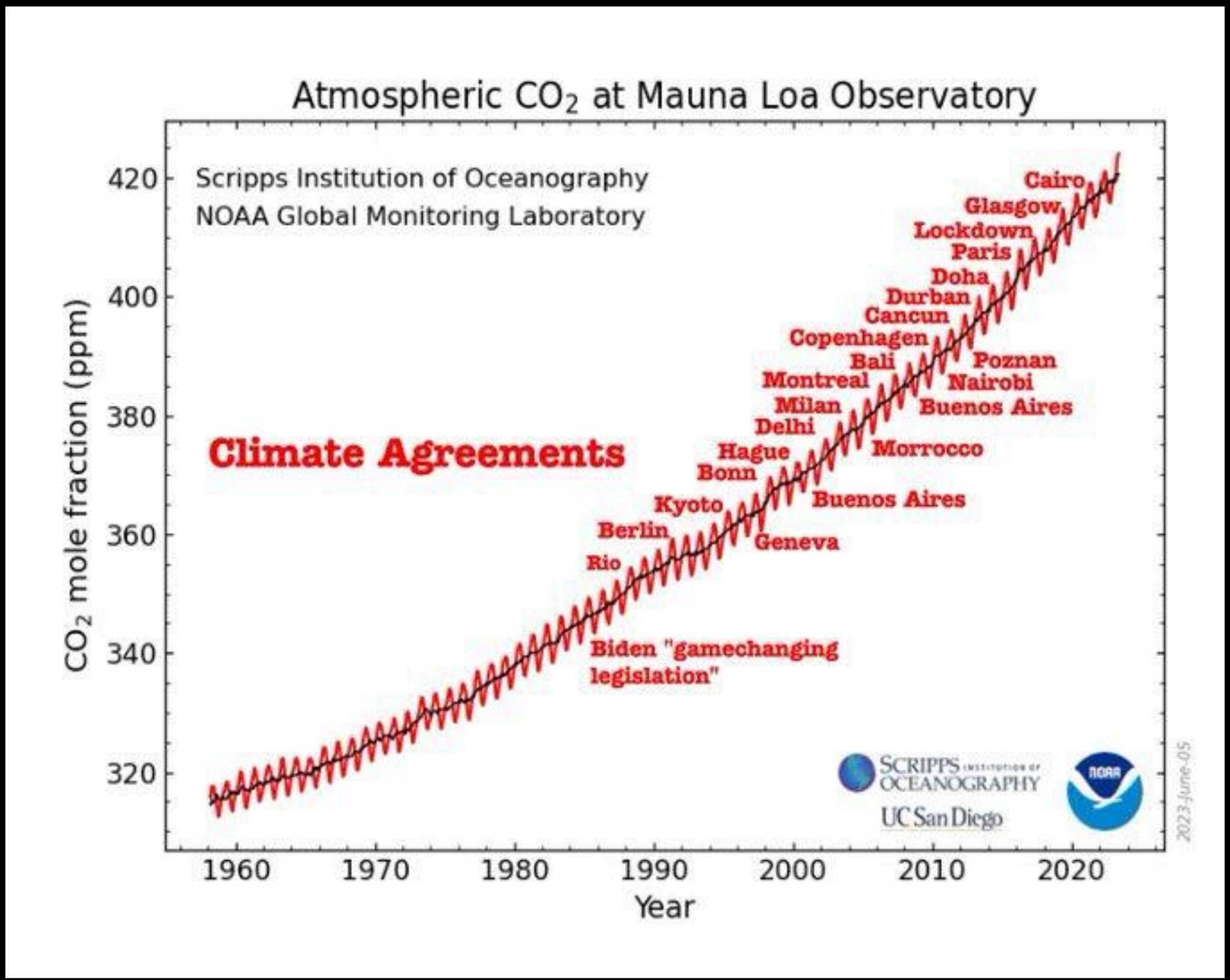
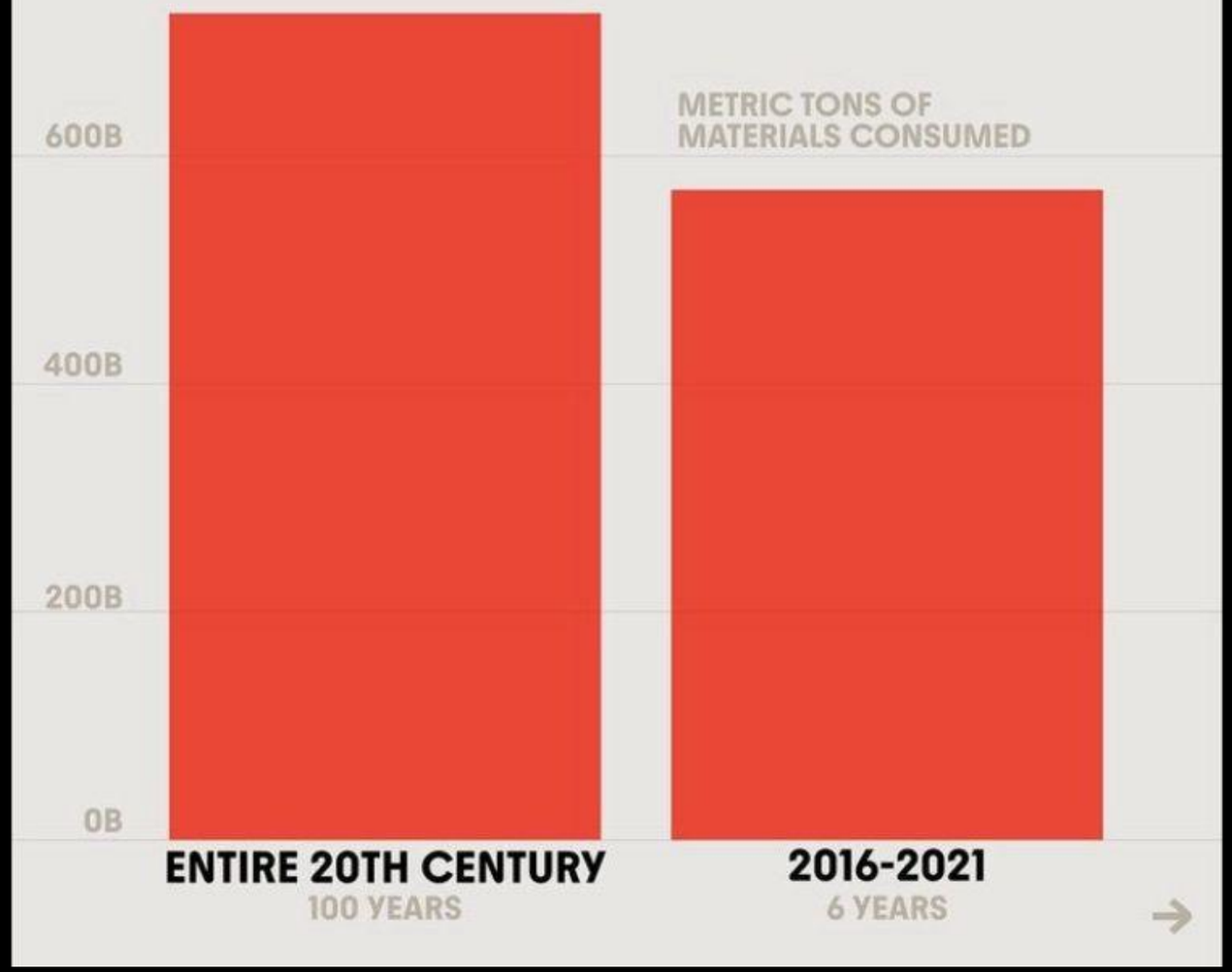

Atmospheric CO_2 at Mauna Loa Observatory
Scripps Institution of Oceanography
NOAA Global Monitoring Laboratory
Climate Agreements
Cairo
Glasgow
Lockdown
Paris
Doha
Durban
Cancun
Copenhagen
Bali
Poznan
Montreal
Nairobi
Milan
Buenos Aires
Delhi
Hague
Morrocco
Bonn
Kyoto
Buenos Aires
Berlin
Geneva
Rio
Biden "gamechanging legislation"
SCRIPPS INSTITUTION OF OCEANOGRAPHY
UC San Diego
NOAA
2023-June-05
CO_2 mole fraction (ppm)
420
400
380
360
340
320
1960
1970
1980
1990
2000
2010
2020
Year

COMMONS

OVERCONSUMPTION IS OUT OF CONTROL.

In just six years, we've globally consumed over 75% of what we consumed for an entire century.

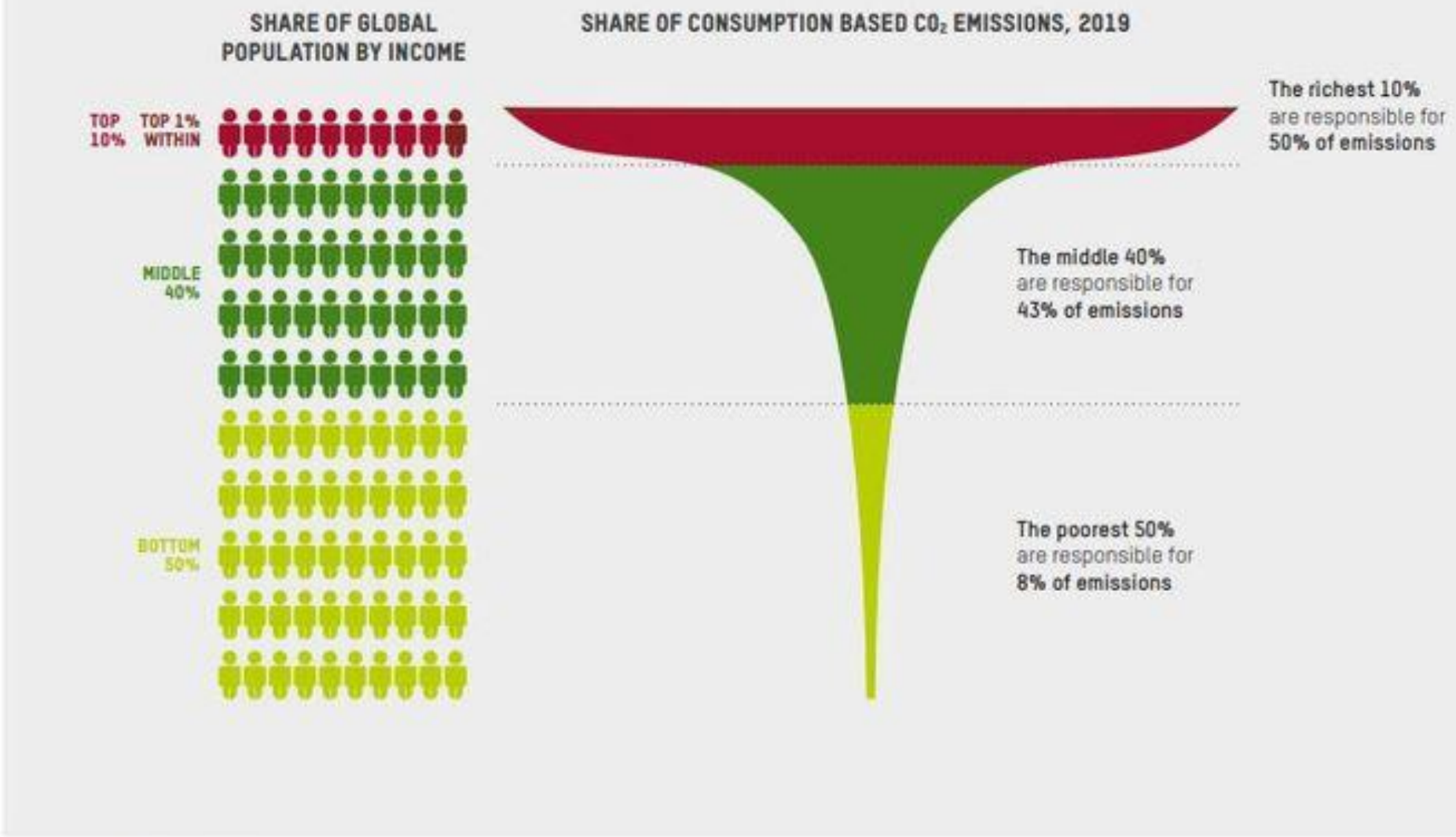


Your eco-footprint calculator

A measure of our over-consumption of resources and problem for fairness.

FIGURE 2 THE GLOBAL RICHEST 10% ACCOUNT FOR 50% OF CARBON EMISSIONS

Share of global emissions by income group



Source: Oxfam (2023).[17]

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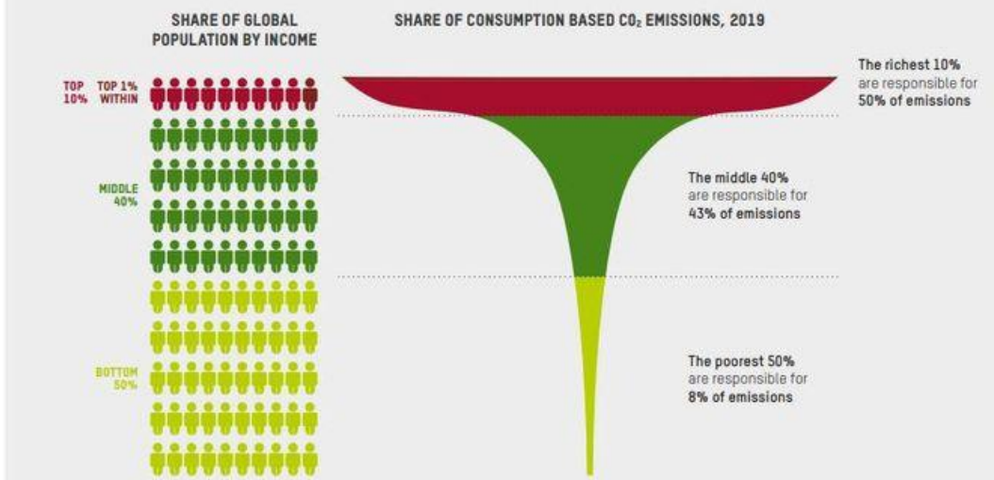


Source: Oxfam (2023).[17]

Key Ethical Questions for Climate Change

How should the burden of global warming be shared between richer and poorer countries?

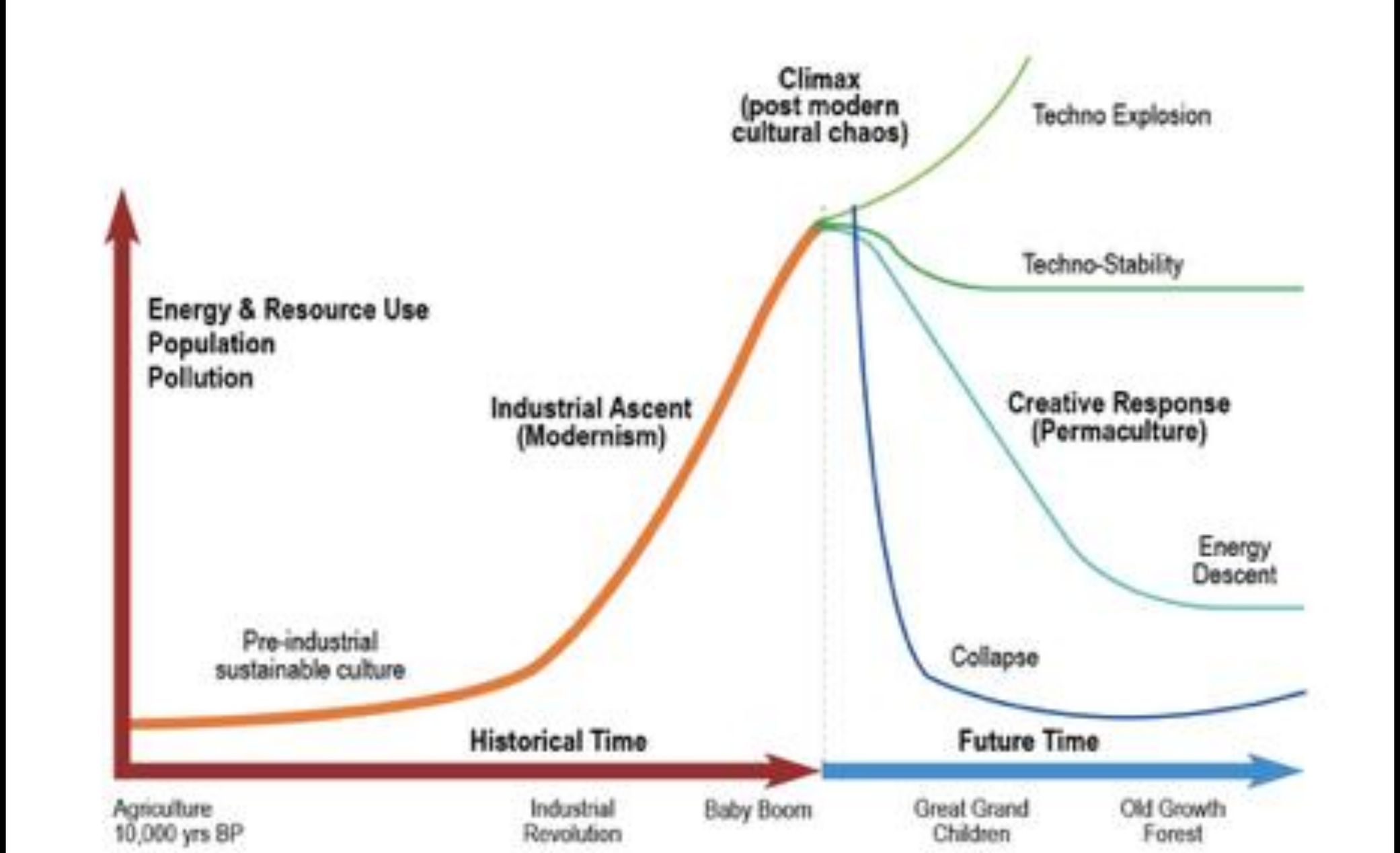
How should we assess our responsibility to future generations?

How should the costs be shared between richer and poorer citizens of a country?

Do rich people have a moral obligation to moderate their carbon footprint?

How should the interests of animals be taken into account?

Do nations have an ethical obligation to preserve areas of exceptional climate value?

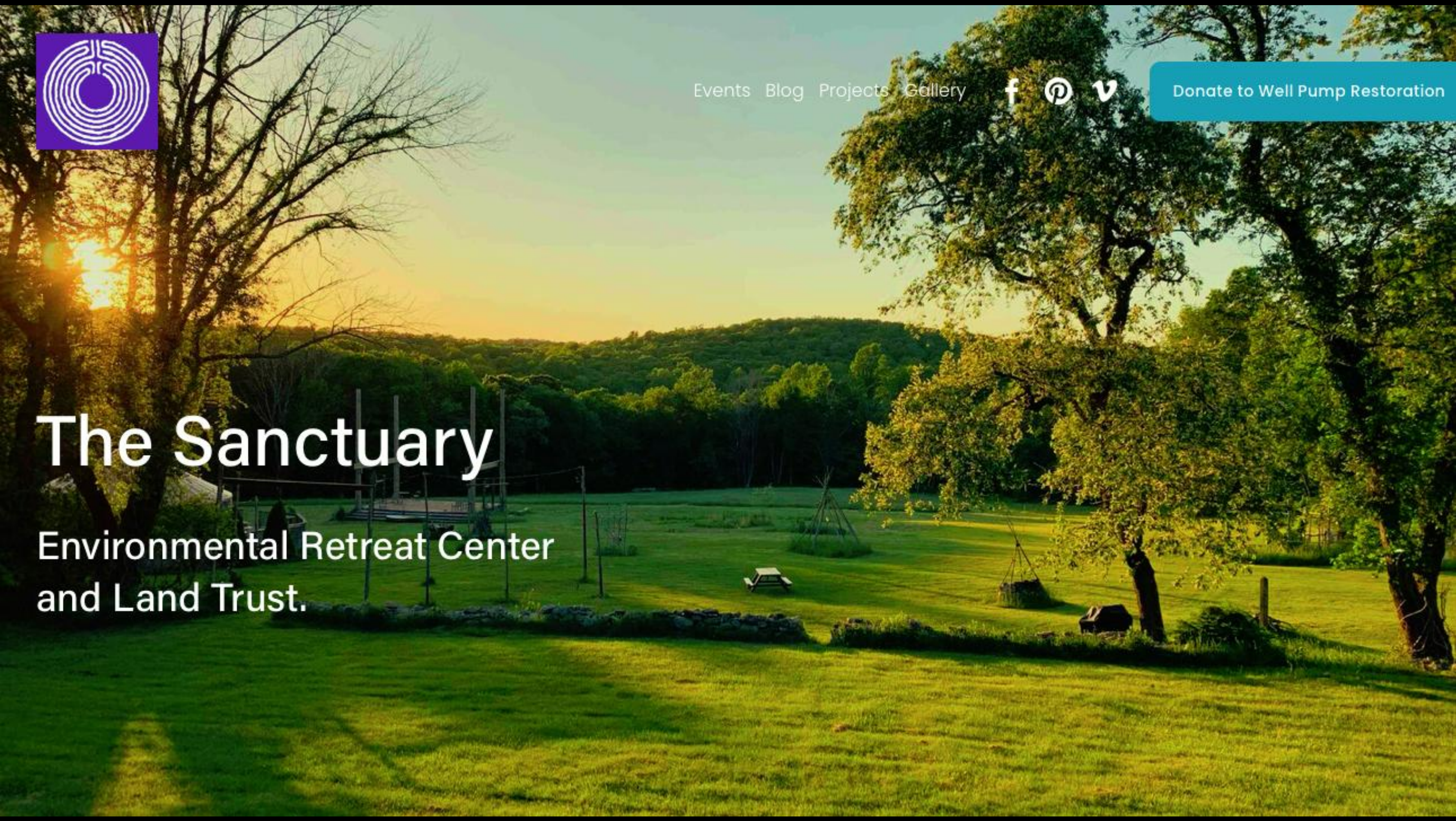


When will we hit Peak Oil,
and therefore Peak Grow?

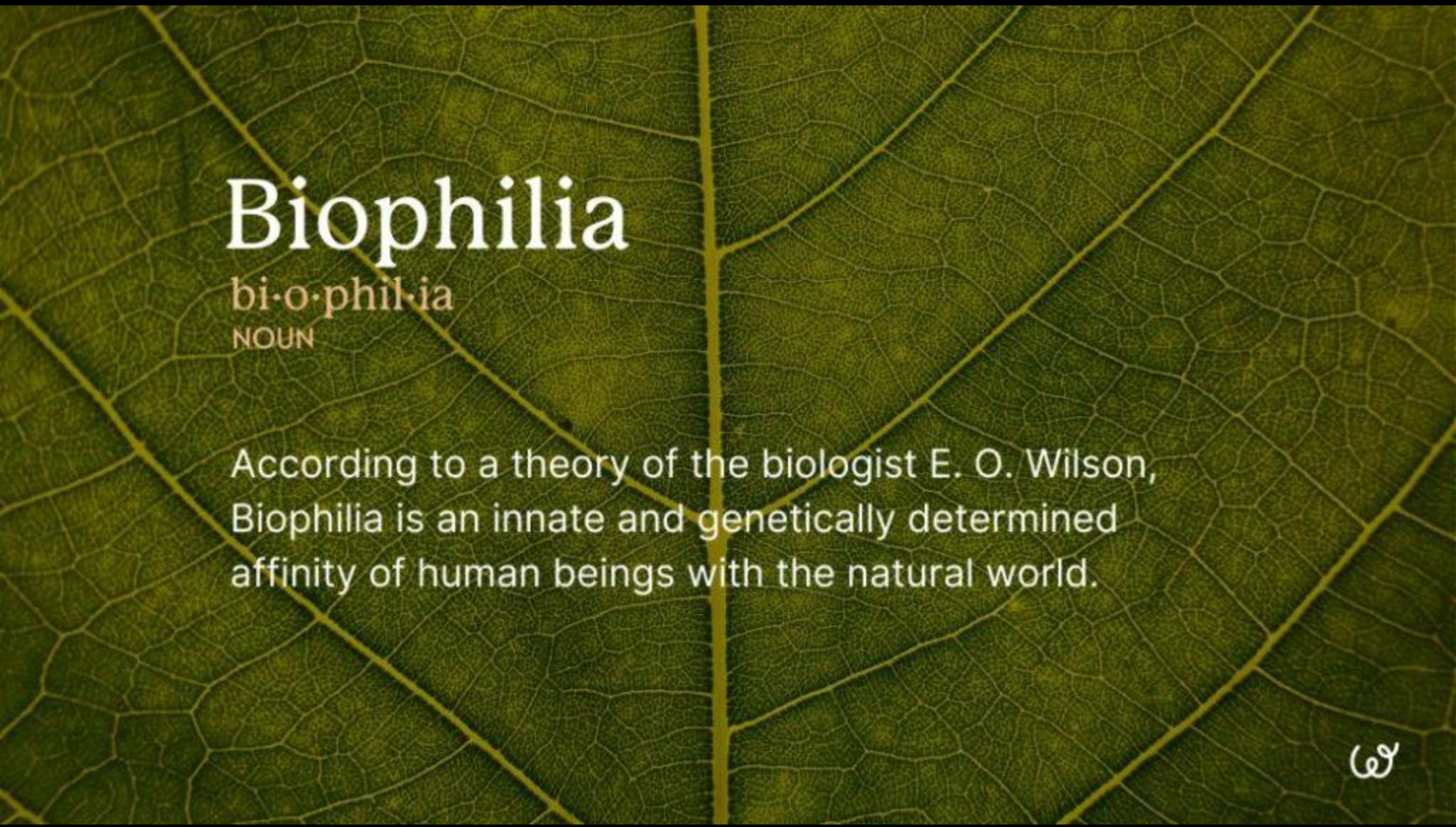
SADANDUSELESS.COM

Imagine what we can do with this land, Lewis...

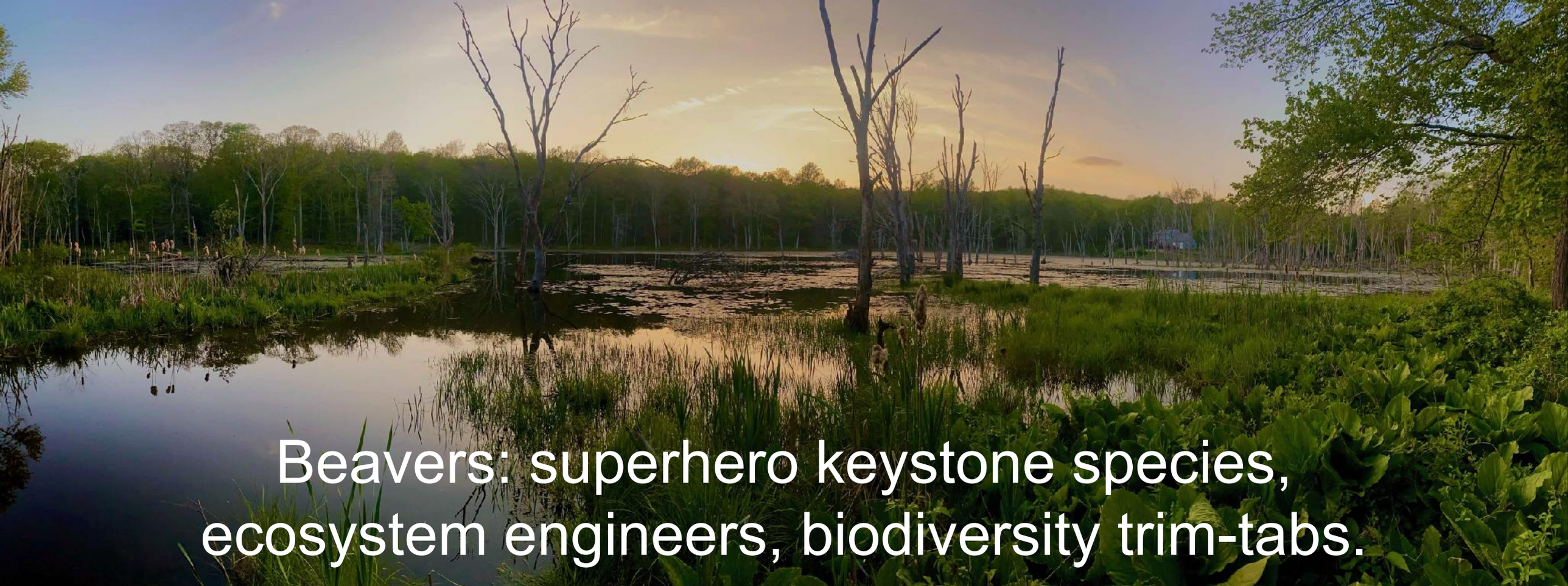
I can almost see it now, Clark!


Events
Blog
Projects
Gallery
Donate to Well Pump Restoration
The Sanctuary
Environmental Retreat Center
and Land Trust.


Connecticut
1AT·HH9
Constitution State


Biophilia
bi·o·phil·ia
NOUN
According to a theory of the biologist E. O. Wilson, Biophilia is an innate and genetically determined affinity of human beings with the natural world.

My wife and Co-Executive Director of *The Sanctuary*, **Jen Taylor**, singing to Maxine. Did you know how much goats appreciate human contact and music?



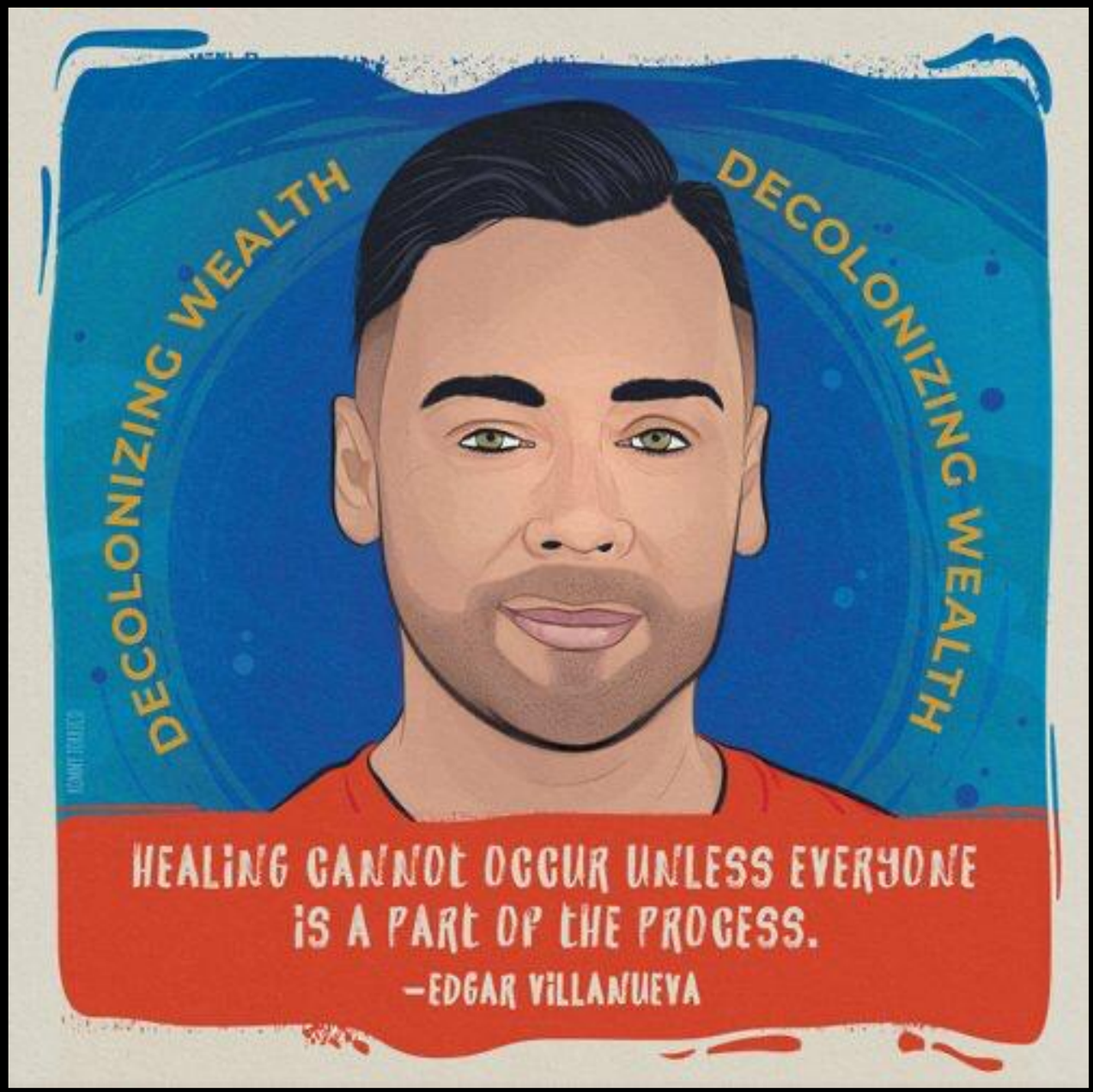
Beavers: superhero keystone species, ecosystem engineers, biodiversity trim-tabs.

“The pools beaver created saturated the surrounding areas, making them suitable for water-loving plants. The water in the beaver ponds and the lush vegetation attracted a greater variety and numbers of wildlife. During summer months, the water in the saturated areas would slowly seep back into the channel providing permanently flowing water when streams would otherwise be low or even completely dry. Beaver, in essence, allowed fish and their young to survive in many streams when they would have otherwise perished. Beaver ponds provided winter habitat for trout and salmon when temperatures were frigid, being the only place in the streams that didn’t freeze to the very bottom. Beaver ponds created habitat for waterfowl and amphibians. They also supported insect species normally only found in lakes. Because a drainage with beaver dams would have free-flowing streams stair-stepped with beaver ponds, they provided a greater diversity of insects, birds, mammals, amphibians, plants, and trees.” - From *Racing to Extinction: Why Humanity Will Soon Vanish* by Lyle Lewis

Two Different Worldviews, defined by our relationship to LAND

What makes a people indigenous? Indigenous people believe they belong to the land, and non-indigenous people believe the land belongs to them.

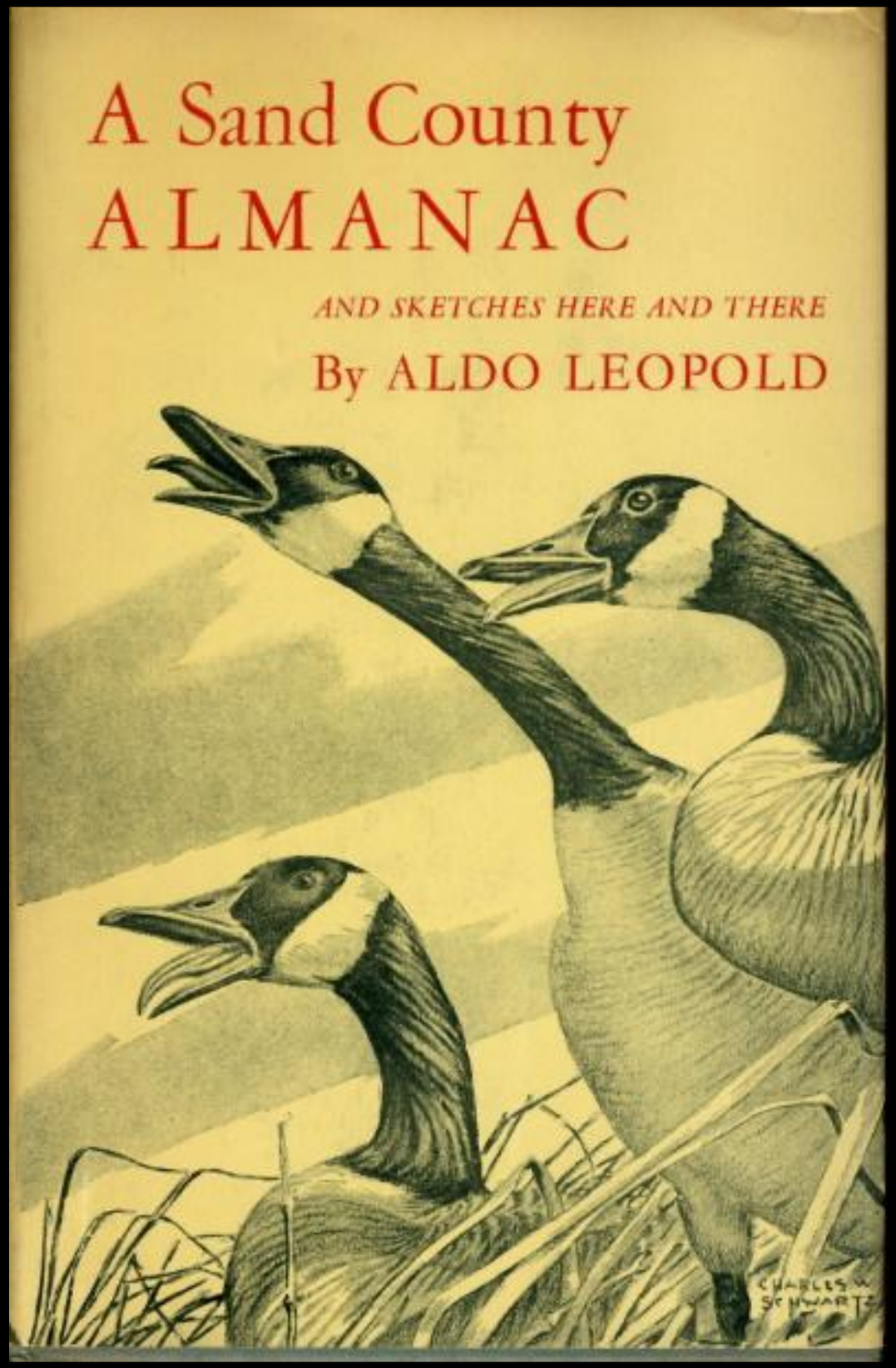
Edgar Villenueva, Lumbee Tribe



The Land Ethic

We abuse the land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.

Aldo Leopold, A Sand County Almanac (1949)



The Commons

“the sum of all we inherit together and should pass on, undiminished, to our heirs. In this way of viewing things, the economy is divided between the market and the commons. The market encompasses private things (which we mostly manage for short-term monetary gain), while the commons comprises shared things (which we manage, or should manage, for shared long-term life enhancement).”
- Peter Barnes

E. F. SCHUMACHER

Small Is Beautiful

ECONOMICS AS IF PEOPLE MATTERED

INTRODUCTION BY THEODORE ROSZAK

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Permaculture Flower

The permaculture journey begins with the Ethics and Design Principles and moves through the key domains required to create a sustainable culture. The spiral evolutionary path joins together these domains, initially at a personal and local level, and then proceeding to the collective and global level.

Some of the specific fields, design systems and solutions that have been associated with the wider view of permaculture are listed below.

Land & Nature Stewardship

- Bio-intensive gardening
- Forest gardening
- Seed saving
- Organic agriculture
- Biodynamics
- Natural Farming
- Keyline water harvesting
- Holistic Rangeland Management
- Natural Sequence Farming
- Agroforestry
- Nature-based forestry
- Integrated aquaculture
- Wild harvesting & hunting
- Gleaning

Building

- Passive solar design
- Natural construction materials
- Water harvesting & Waste Reuse
- Biotechture
- Earth sheltered construction
- Natural disaster resistant construction
- Owner building
- Pattern Language

Tools & Technology

- Reuse & creative recycling
- Hand Tools
- Bicycles and electric bikes
- Efficient & low pollution wood stoves
- Fuels from organic wastes
- Wood Gasification
- Bio-char from forest wastes
- Co-generation
- Micro-hydro & small scale wind
- Grid-tied renewable power generation
- Energy storage
- Transition engineering

Education & Culture

- Home Schooling
- Waldorf education
- Participatory arts and music
- Social ecology
- Action Research
- Transition culture

Health & Spiritual Well-Being

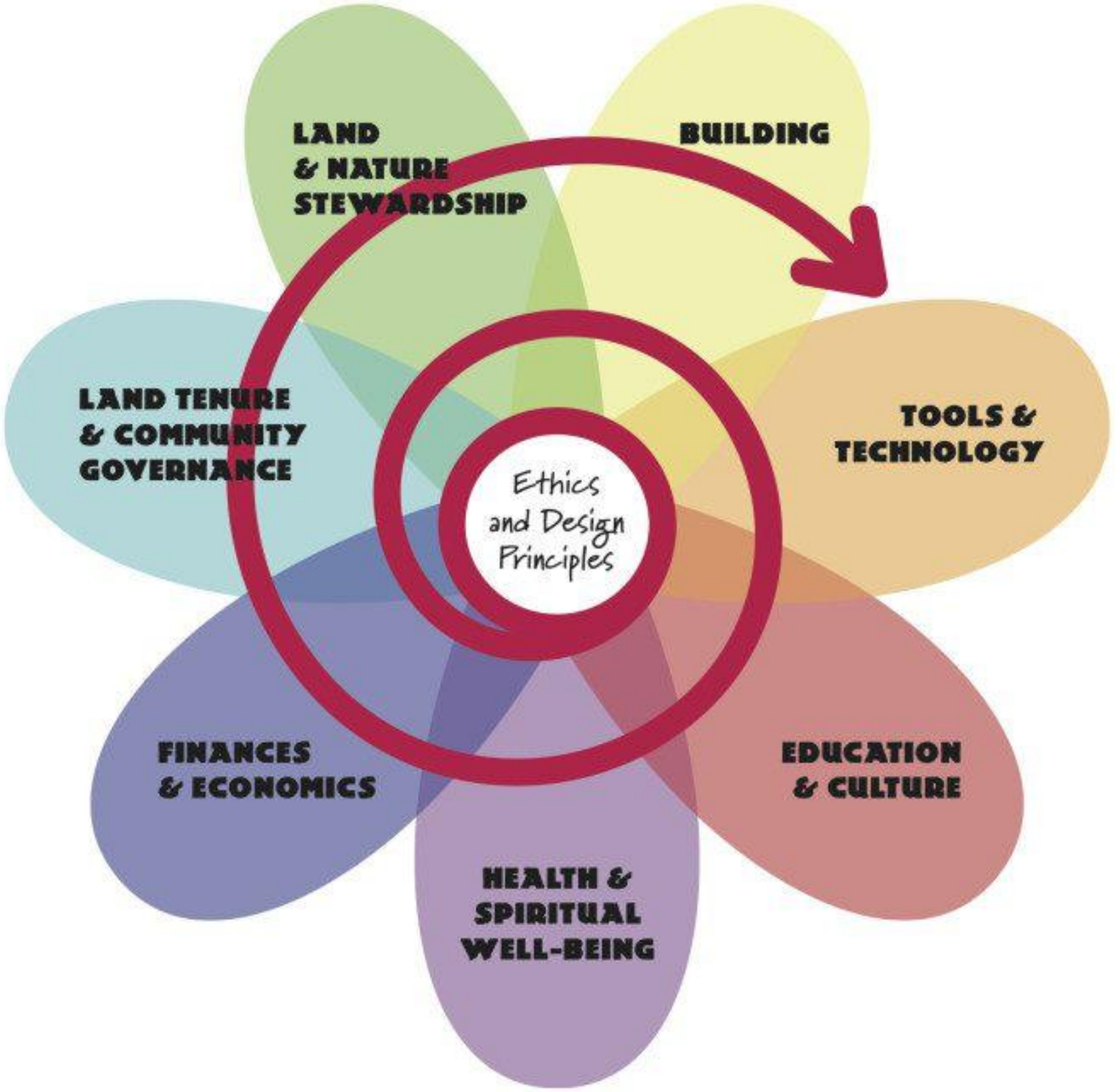
- Home birth & Breast feeding
- Complementary & Wholistic Medicine
- Yoga, Tai Chi & other body/mind/spirit disciplines
- Spirit of place, indigenous cultural revival
- Dying with dignity

Finances & Economics

- Local and regional currencies
- Carpooling, Ride sharing & Car share
- Ethical Investment & Fair Trade
- Farmers markets & Community Supported Agriculture (CSA)
- WWOOFing & similar networks
- Tradable Energy Quotas
- Life Cycle Analysis & Emergy Accounting

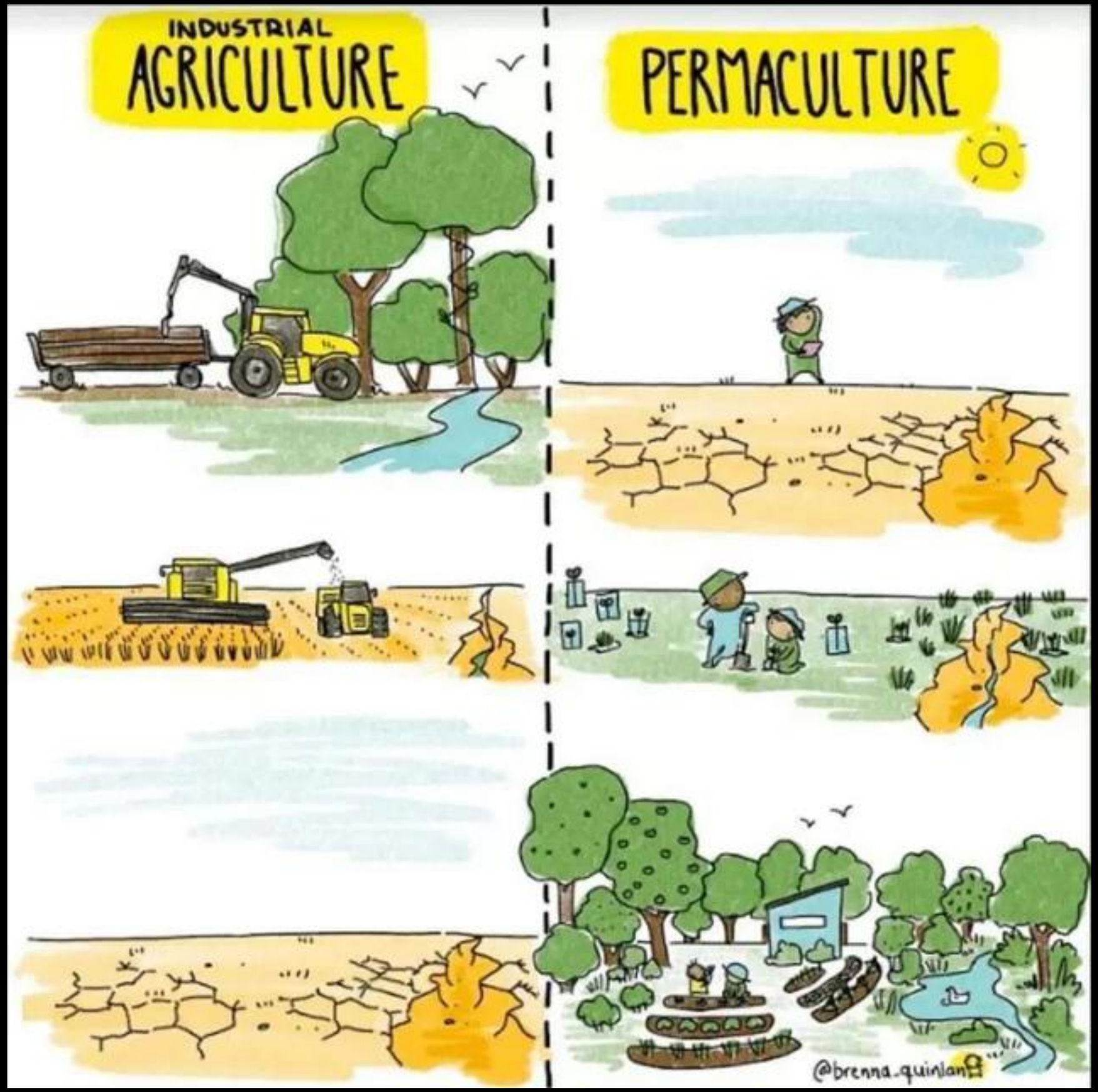
Land Tenure & Community Governance

- Cooperatives & Body Corporates
- Cohousing & Ecovillages
- Native Title and traditional use rights
- Open Space Technology & Consensus Decision Making



permacultureprinciples.com

HOLMGREN DESIGN SERVICES
www.holmgren.com.au


INDUSTRIAL
AGRICULTURE
PERMACULTURE
@brenna.quinlan

The Tiny Hermitage

A Self-Sufficient, Off-grid Tiny House Located on Land Trust

Proof of Concept Demonstration Project

For a New Model of Sustainable and Affordable Housing

One of the Sanctuary's environmental education projects is the Tiny Hermitage, a fully self-sufficient off-grid tiny house designed on principles of small footprint living, elegant ecologically-regenerative design, and sacred geometry. Once completed, it will serve as proof of concept for a truly environmentally-harmonious and affordable living. Sited on the land trust's 40 acred preserve, the project demonstrates the opportunities which land trusts, voluntary simplicity and design inspired by balance with nature can offer as a solution to both the environmental crisis as well as a the crisis in affordable, human-scale housing.

"Designing the layout for this tiny home was a process of intense elimination. Rather than trying to load the space with all kinds of things possible. I reduced my needs to three major functions: eating, sleeping, hygiene."

Hans Lohse

Small is Beautiful

This project was originally-conceived and designed by **Hans Lohse**, a visionary sustainability architect, musician and author of ***Earth Song*****,** his memoir which documents his quest from Post-War Germany to sacred geometry and small house, low impact archiecture. true design maverick, Hans has spent his career exploring ways to live more simply, to design structures which do not, like much conventional architecture, disrupt the ecology of their environs, but rather still softly in balance with their location while not depending on fossil-fuel inputs or conventional unsustainable infrastructure.

Public Vs Private Morality

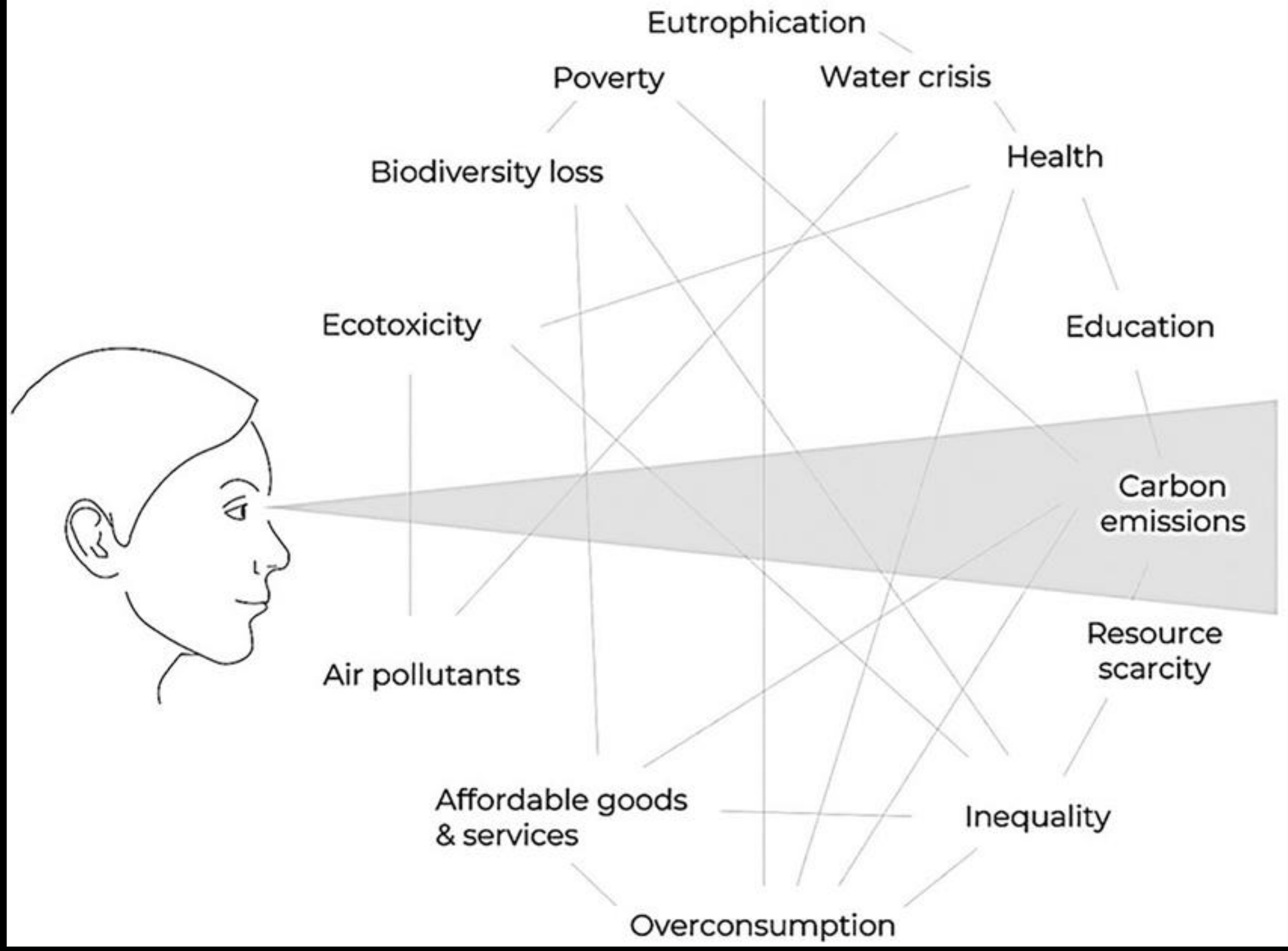
Public Morality: Duties of States and Communities

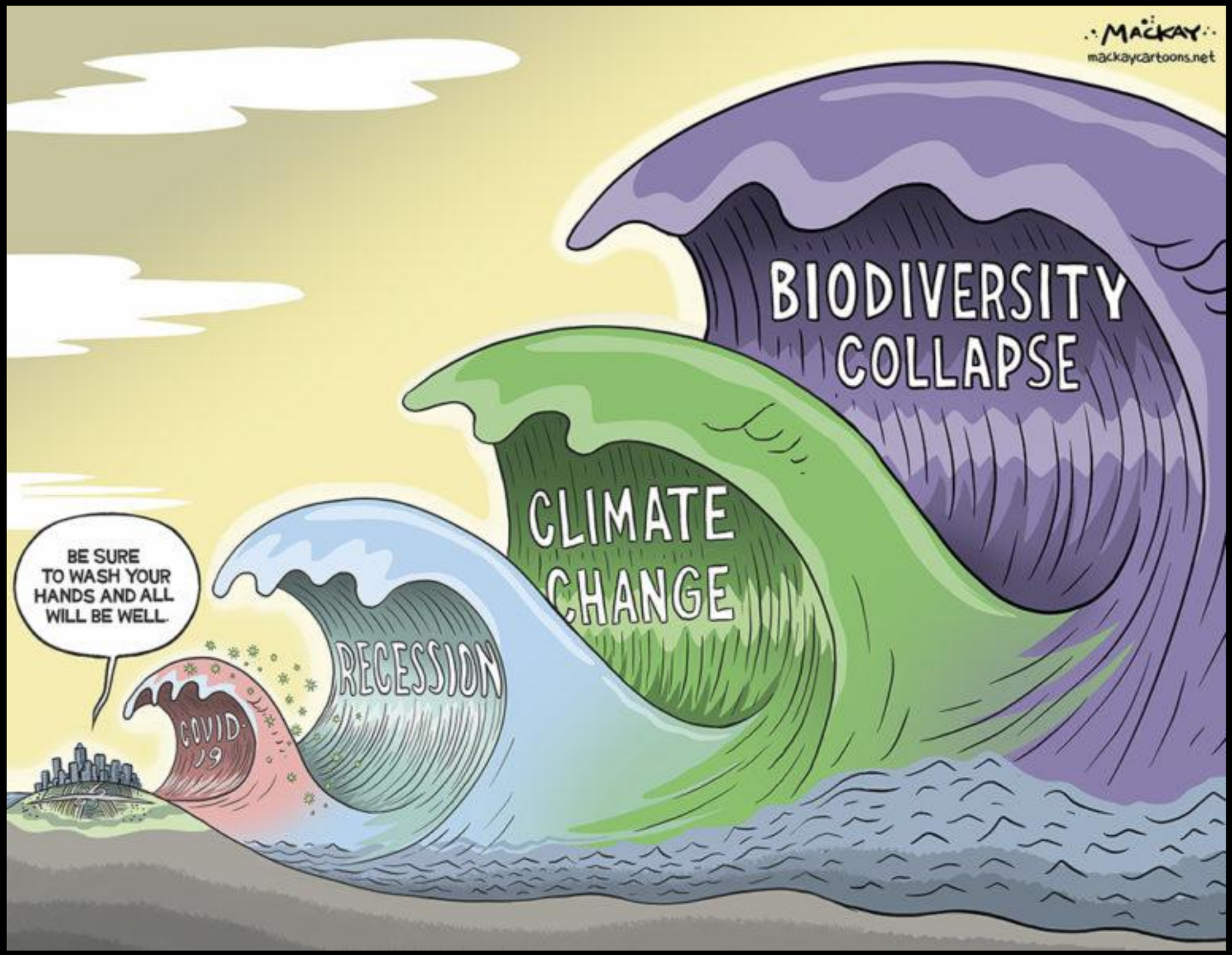
vs

Private Morality: Duties of Individuals

Duties of Justice - To not harm others
Duties of Goodness - To improve the world

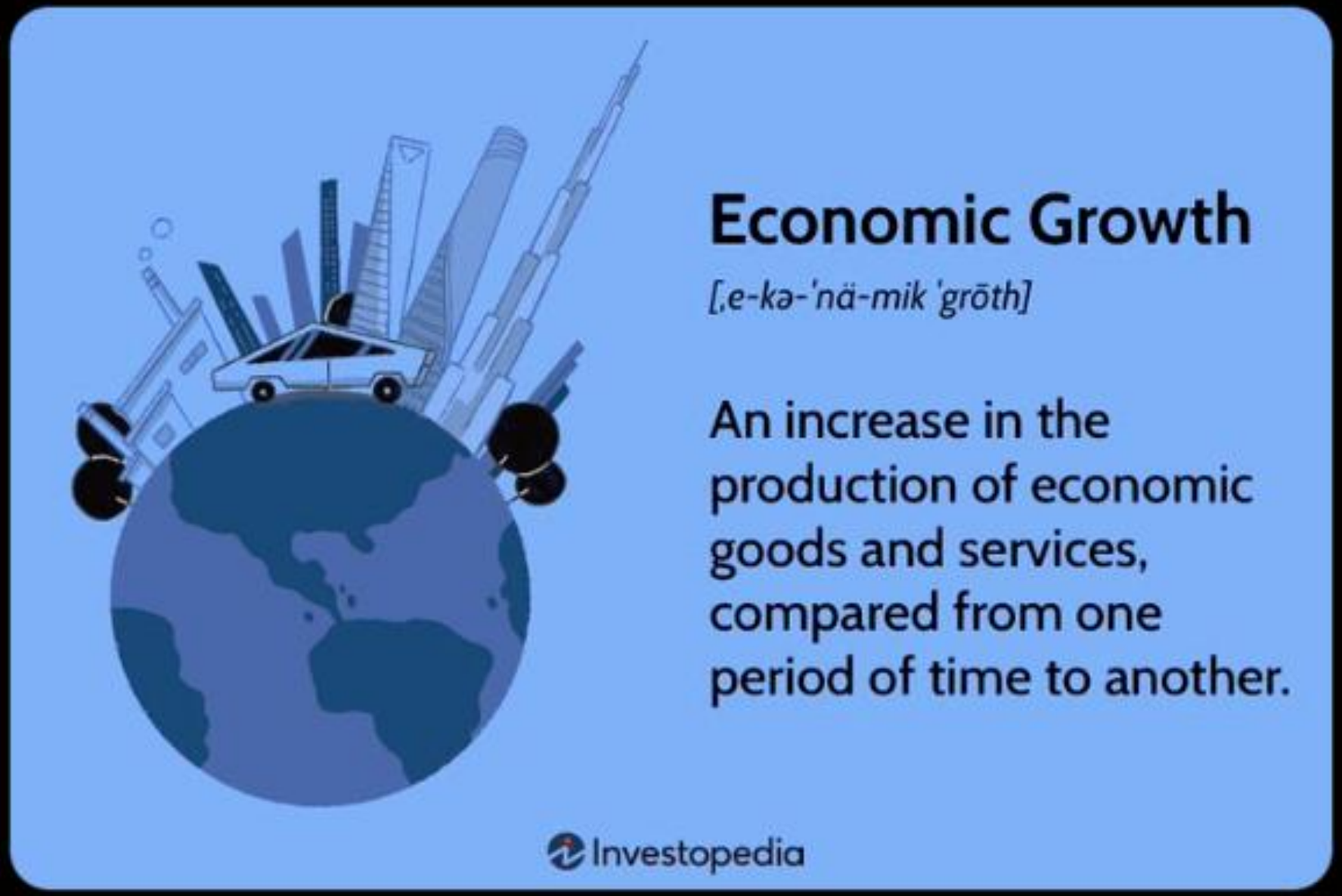
Carbon Tunnel Vision




MACKAY
mackaycartoons.net
BIODIVERSITY COLLAPSE
CLIMATE CHANGE
RECESSION
COVID-19
BE SURE TO WASH YOUR HANDS AND ALL WILL BE WELL.

Martin Tye @martinrev21 · Apr 4, 2024

GDP measures the size of the parasite,
... not the health of the host



10 70 171 7.5K

Anyone who thinks consumption can expand forever on a finite planet is either insane or an economist.

E.F. Schumacher

Distribution of mammals on Earth

Our World in Data

Mammal biomass is shown for the year 2015. = 1 million tonnes carbon (C)

Wild mammals
4% global mammal biomass

Humans
34% global mammal biomass

Livestock & pets
Poultry are not included
62% global mammal biomass

Cattle 35%

Buffalo 5%

Horses 2%

Goats 3%

Sheep 3%

Pigs 12%

Camels <1%

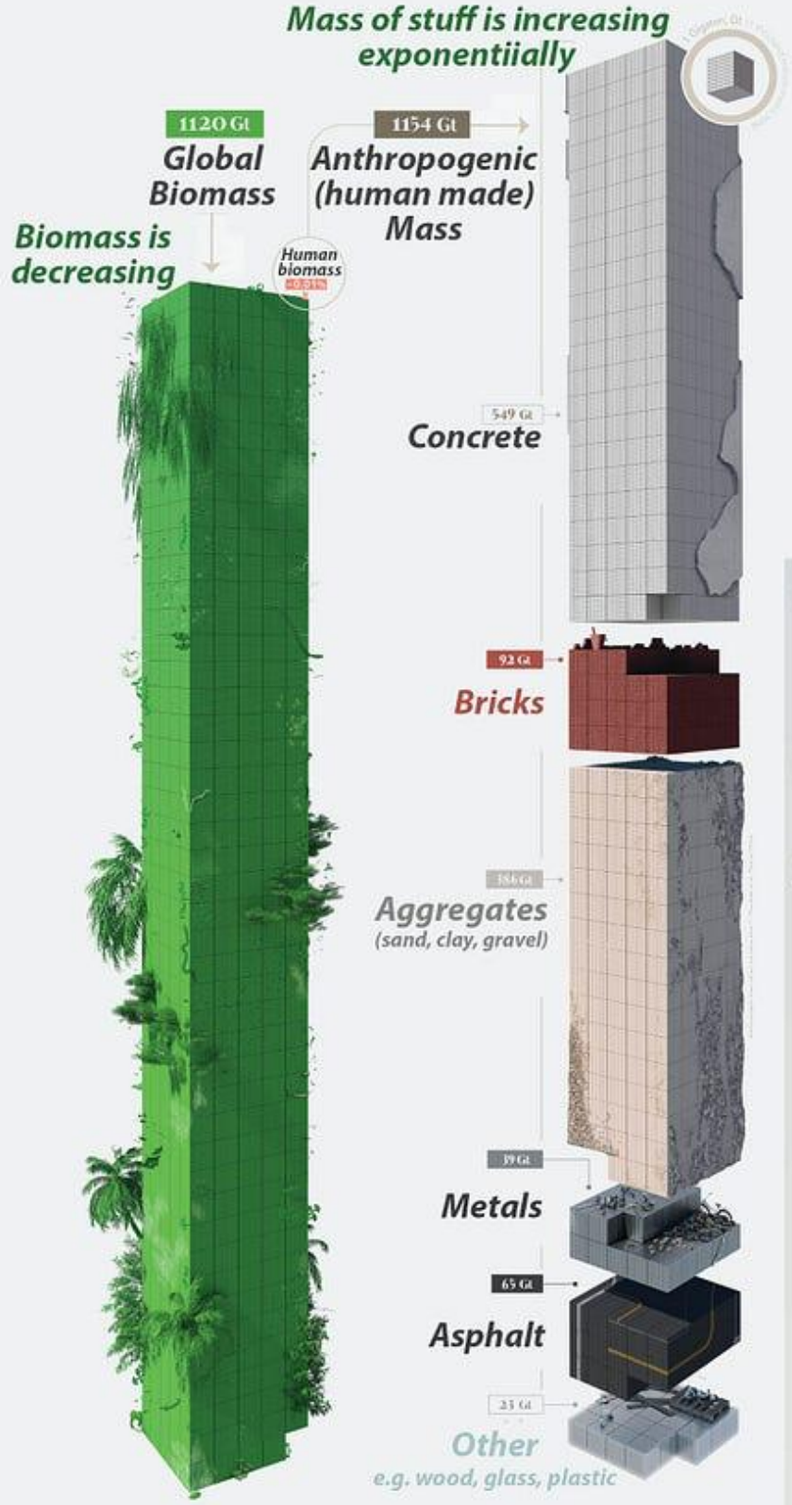
Asses <1%

Pets* <1%

*Bar-On et al. (2018) provide estimates of livestock only, without estimates of mammalian pets (e.g. cats and dogs).
Pets have been added as an additional category based on calculations from estimates of the number of pets globally and average biomass.
Data source: Bar-On et al. (2018). The biomass distribution on Earth. Images sourced from the Noun Project.
OurWorldinData.org – Research and data to make progress against the world's largest problems.

Anthropogenic Mass

In 2020, the amount of anthropogenic mass exceeded the weight of all global living biomass.



The better news (for life on Earth) is that the projected (by humans) growth in anthrpogenic mass production (economic growth) by three fold by 2040 will not occur (it's a biophysical limits and socioeconomic-political system thing).

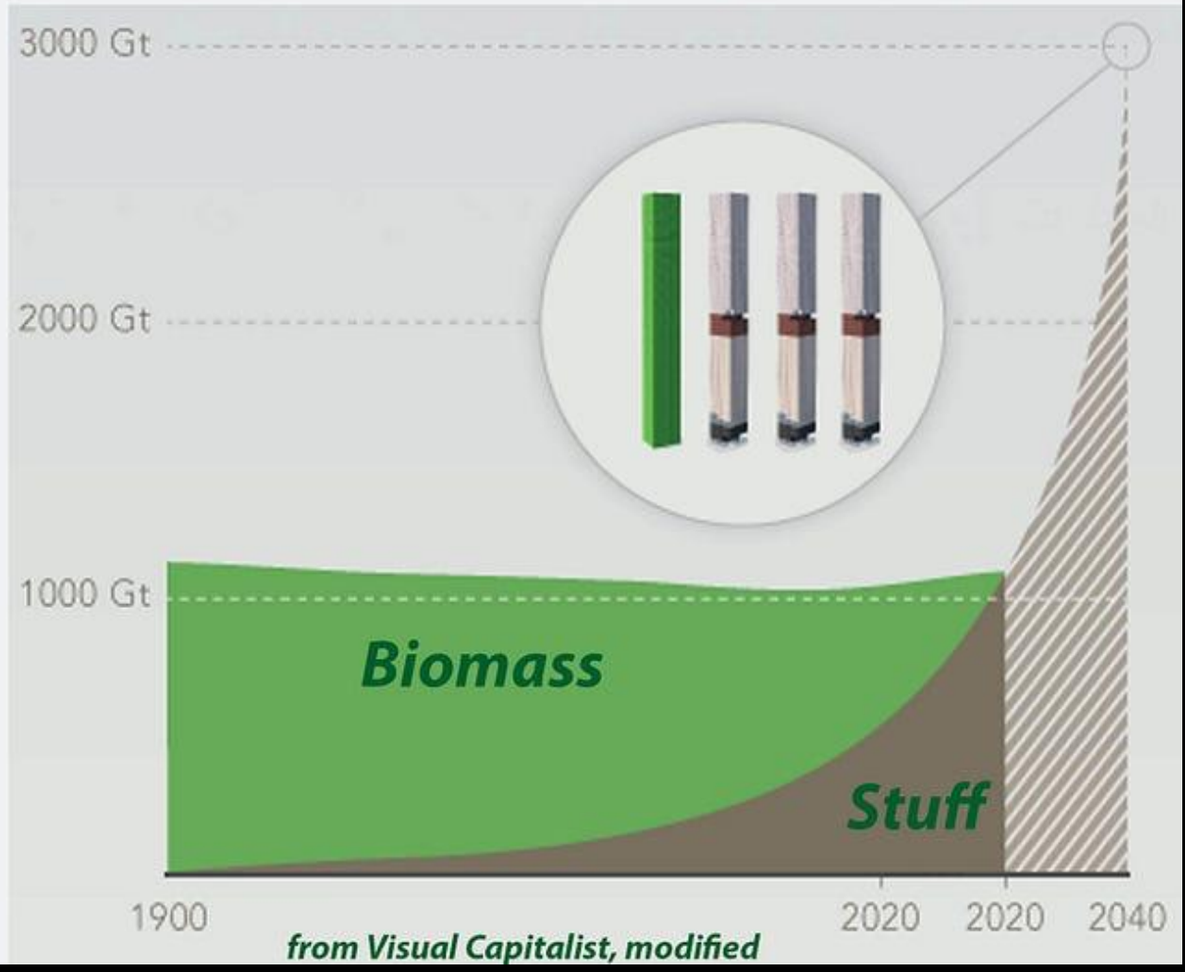
Human biomass, 0.01% of total (and crop, livestock, and pet biomass) will contract.

In 10 to 20 million years, new species will evolve and biodiversity will be restored.

The biosphere will recover.

Humans may not be part of it.

Or humans could renormalize as K-strategist animals, end the Anthropocene, and perhaps shorten biosphere recovery to less than 10 million years.



from Visual Capitalist, modified

$$EROI = \frac{\text{Energy Delivered}}{\text{Energy Required to Deliver that Energy}}$$

Energy Returned on Energy Invested (EROEI)

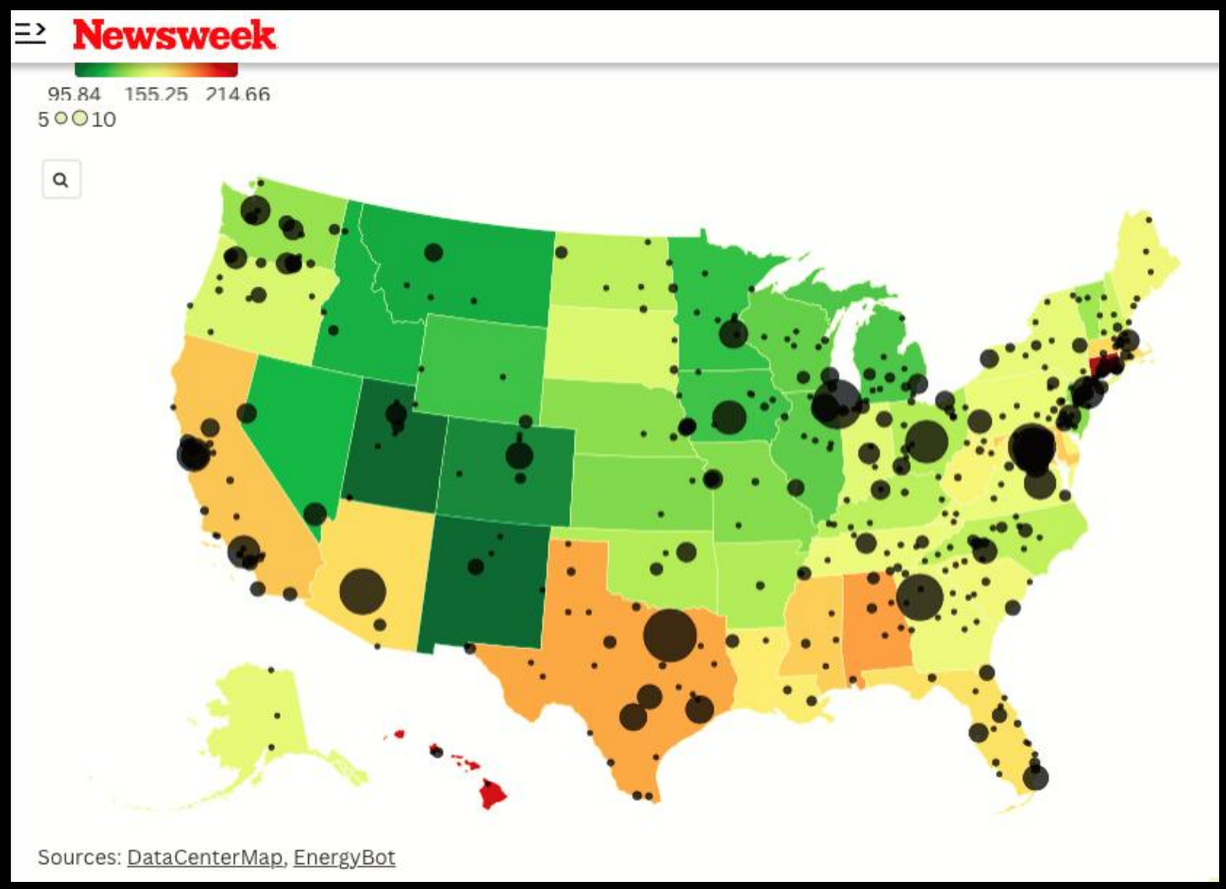
“In energy economics and ecological energetics, energy return on investment (EROI), also sometimes called energy returned on energy invested (ERoEI), is the ratio of the amount of usable energy (the exergy) delivered from a particular energy resource to the amount of energy used to obtain that energy resource. Arithmetically the EROI can be defined as:

“When the EROI of a source of energy is less than or equal to one, that energy source becomes a net "energy sink", and can no longer be used as a source of energy. A related measure, called **energy stored on energy invested** (**ESOEI**), is used to analyse storage systems. To be considered viable as a prominent fuel or energy source a fuel or energy must have an EROI ratio of at least 3:1.”

I.e. If you have a negative EROI, that means that it takes MORE energy to create the energy system than the system produces over the course of its lifetime. This is true of many so-called ‘renewable energy systems’ or ‘green fuels.’

Newsweek, Aug. 2025: “Map Shows States With The Most Data Centers As Electricity Bills Rise”

“…extremely resource-hungry, especially for electricity and water, leading to concerns that areas near the centers could see spikes in bills…An average midsize data center typically uses 300,000 gallons daily, which is roughly comparable to the same water consumption from 1,000 households in the same timeframe.In 2025, data centers in Texas alone are projected to use 49 billion gallons of water, enough to supply millions of households, primarily for cooling massive banks of servers that power generative AI and cloud computing…The most expensive bills at the time of writing are found in Connecticut at $214.66 a month, a state with 60 data centers.”



Google and Microsoft now consume more electricity than 100+ countries

In 2023, the two tech companies both consumed 24 TWh of electricity, more than the entire country of Iceland consumed.

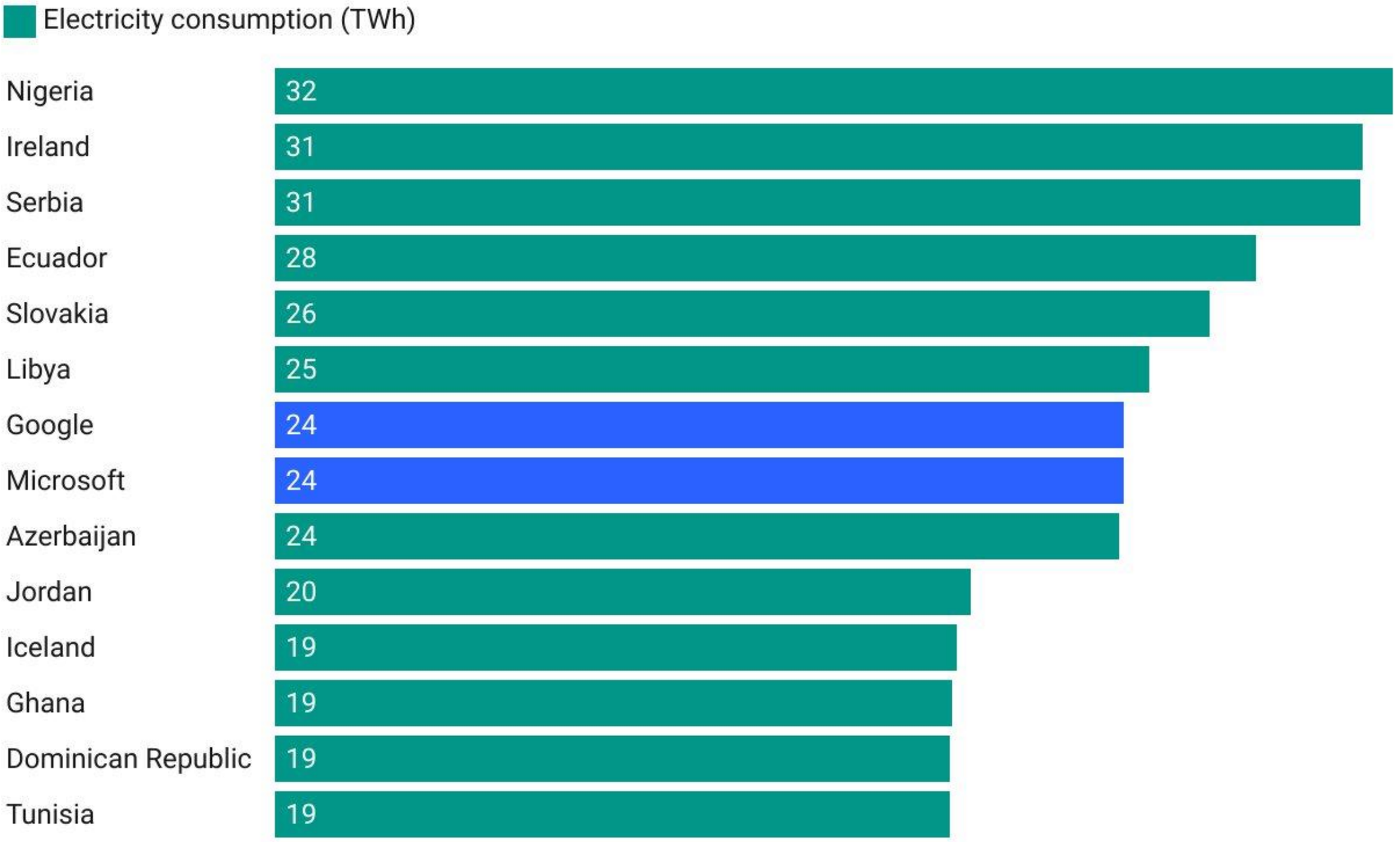


Chart: Michael Thomas • Source: EIA Monthly Energy Review / Company reports • Created with Datawrapper

GO GREEN @ECOWARRIORSS · Apr 5, 2024

Over 1.446 billion cars on Earth right now Replacing all of these with electric cars would cause environmental damage on a massive scale
People need to get out of cars
Invest in public transport, walk cycle, Recycle and find alternatives to cobalt and lithium already possible

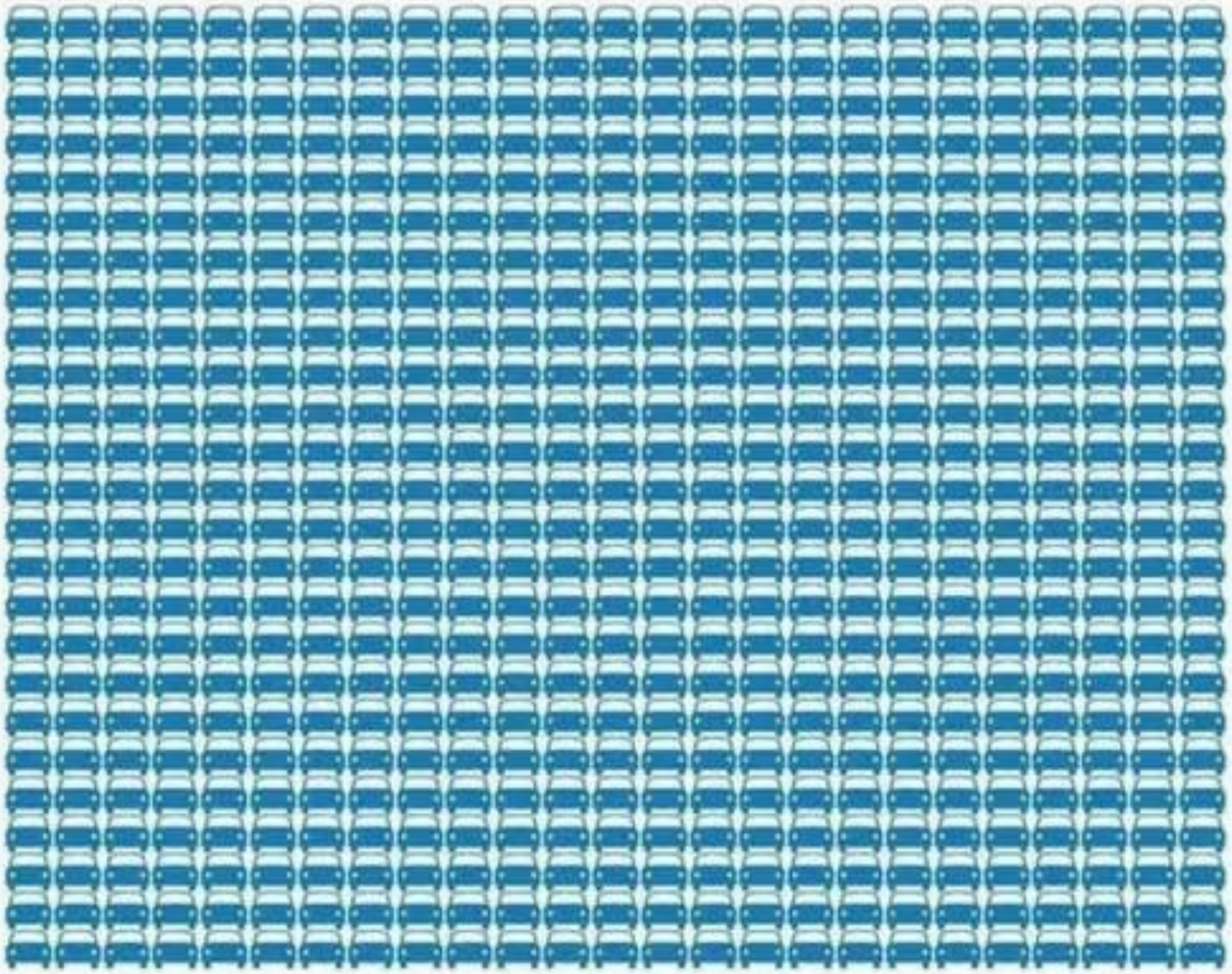
184 324 740 22K

What does it take to move a thousand people?
ST3 edition

One Link train (4 cars)

15 Buses

625 Cars*

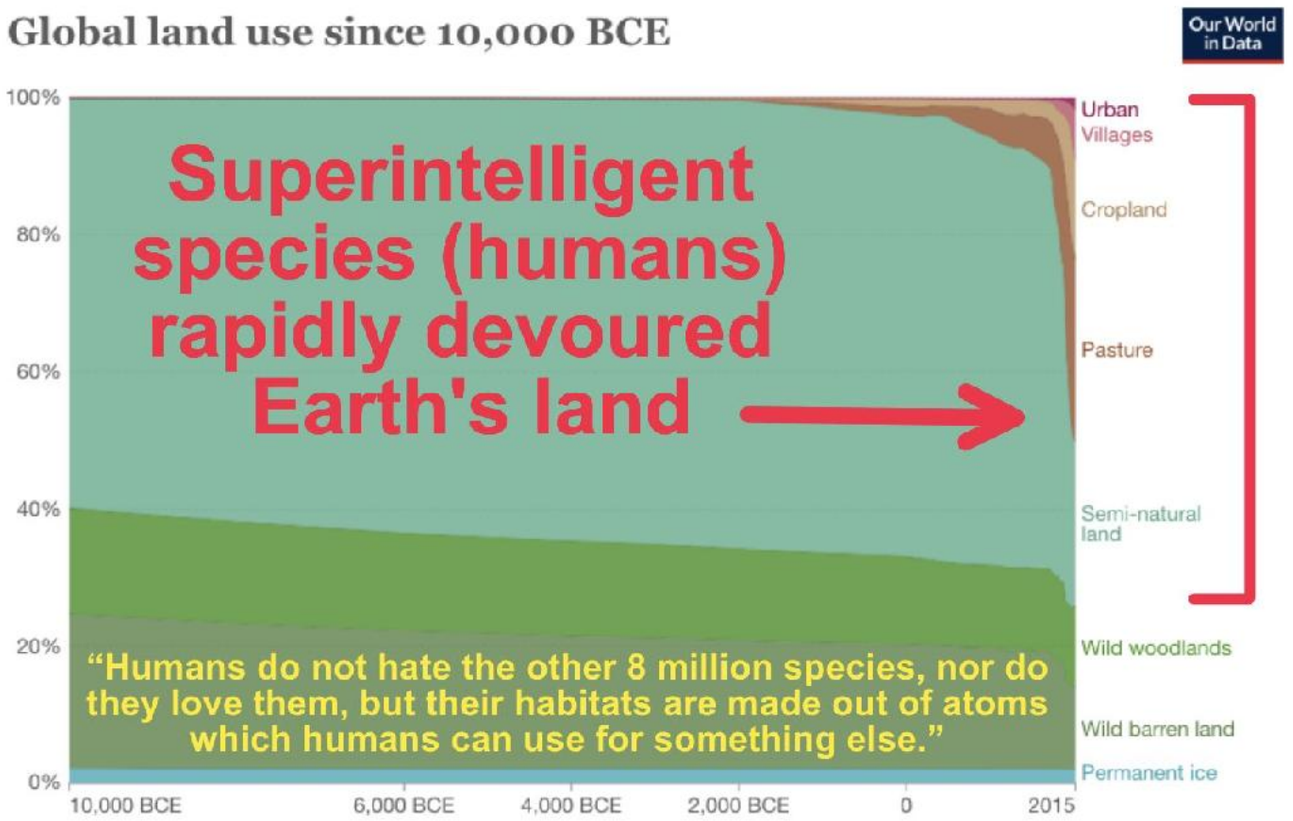


* Car option also requires over five acres of parking at both start and destination

seattle subway

Capitalist and socialist economies alike are eco-cidal.

The 6th Mass Extinction

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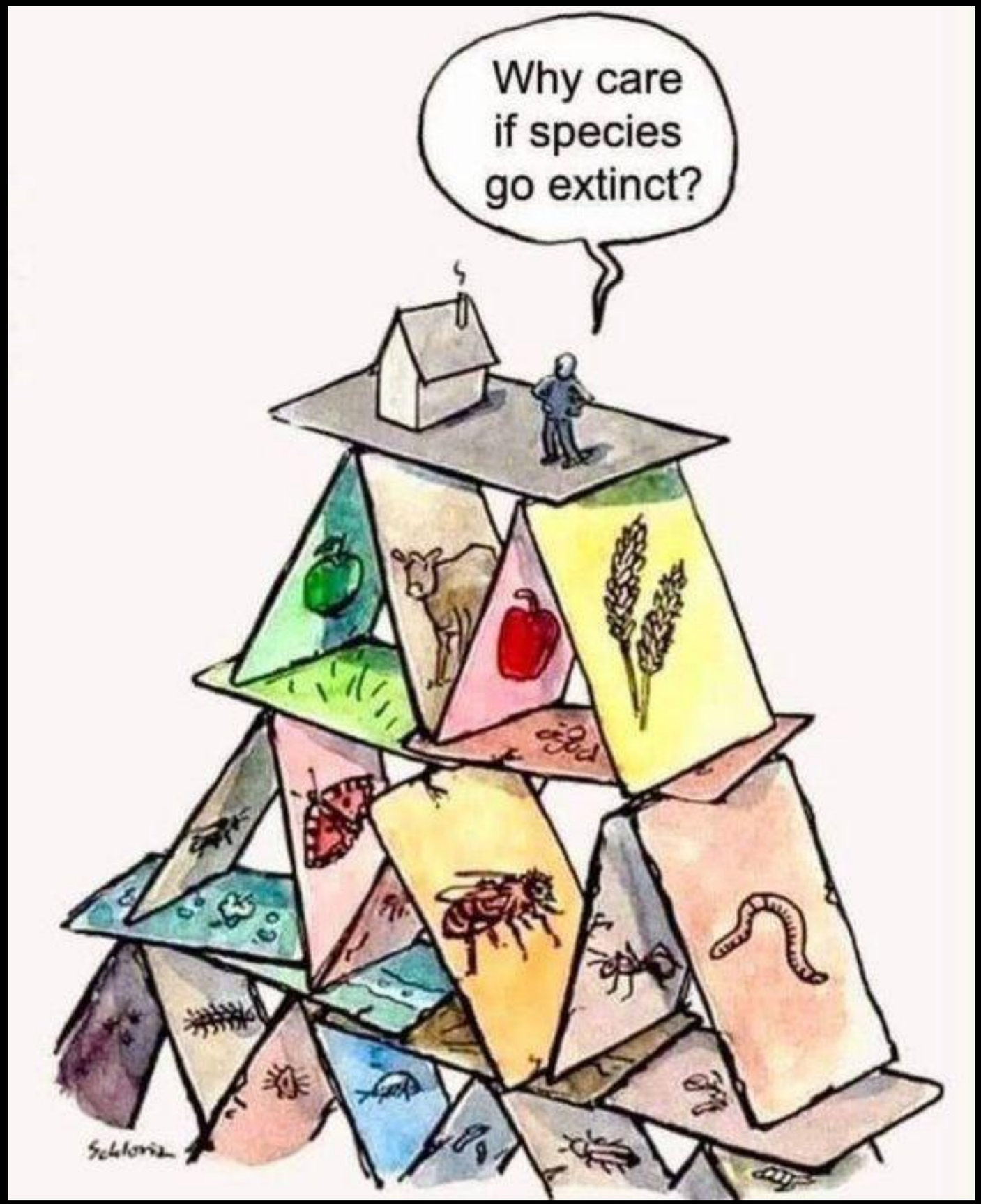
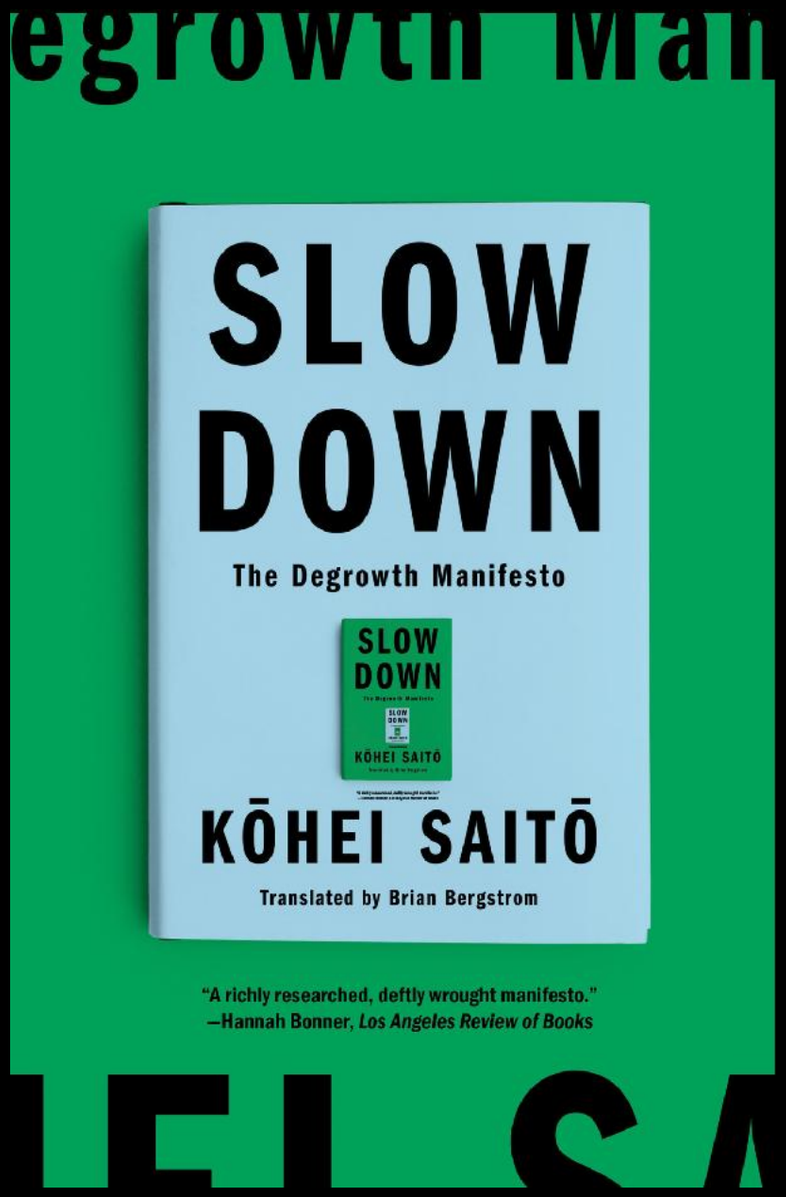
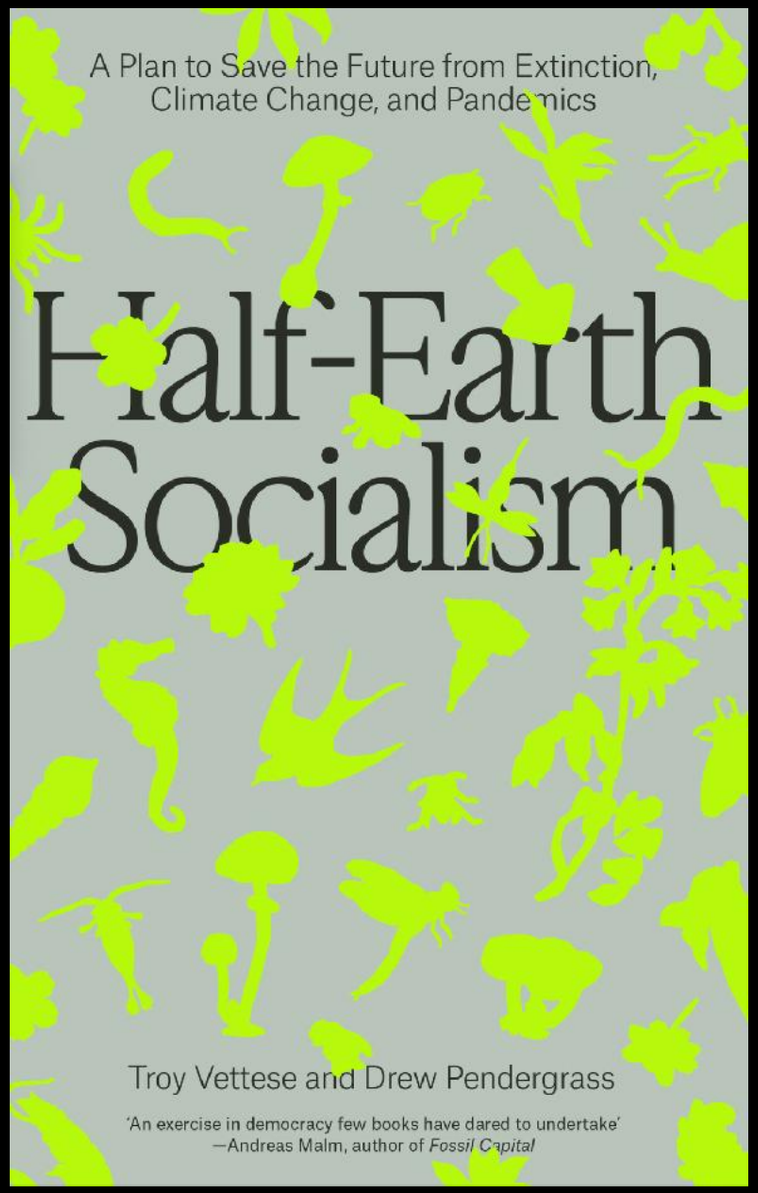
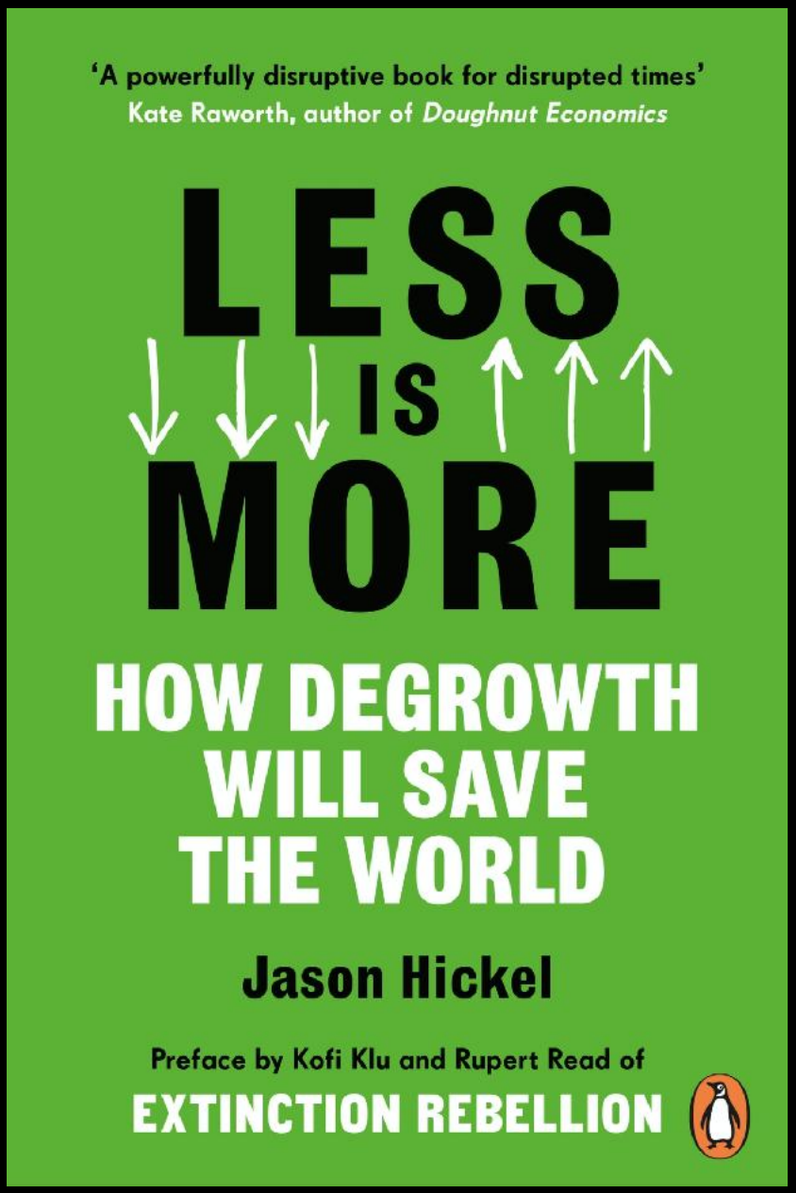
2021


Why care
if species
go extinct?

Have you ever questioned economic growth?







e.o.wilson BIODIVERSITY FOUNDATION

What is the Half-Earth Project?

The E.O. Wilson Biodiversity Foundation's mission is to reimagine the way we care for our planet. The core program of the foundation, the Half-Earth Project, inspires informed collective action to save the biosphere, the land and waters that global biodiversity depends upon.

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half-earth project

MAP LAYERS

ANALYZE AREAS

Biodiversity

1

Protection

Human pressures

Carbon

Let's have a look at its potential by exploring the Amazon, an area of incredible biodiversity under great threat.

The Half-Earth Project

“Why one-half? The crucial factor in the life and death of species is the amount of suitable habitat left to them. As defined by the theory of island biogeography, a change in area of a habitat results in a change in the sustainable number of species by approximately the fourth root. As reserves grow in size, the diversity of life surviving within them also grows. As reserves are reduced in area, the diversity within them declines to a mathematically predictable degree swiftly – often immediately and, for a large fraction, forever.

When 90% of habitat is removed, the number of species that can persist sustainably will descend to about a half. Such is the actual condition of many of the most species-rich localities around the world. In these places, if 10% of the remaining natural habitat were then also removed, most or all of the surviving resident species would disappear.

If, on the other hand, we protect half the global surface, the fraction of species protected will be 85%, or more. At one-half and above, life on Earth enters the safe zone.[23]

Advice from Guy McPherson in dealing with Near Term Biosphere Collapse

1. Remain calm: Nothing is under control
2. Pursue excellence, however defined.
3. Pursue love, as you define it
4. Decommission nuclear facilities
5. Be kind, beginning with yourself
6. Comfort the afflicted and afflict the comfortable.


The End
Thank You!

SANCTUARY

AT SHEPARDFIELDS