

Feral Atlas: Seeing Anthropocene Complexity as More-than-Human

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Prepared for ShiftN Webinar: *Alive in the Anthropocene*

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Central Question: Why think of the Anthropocene as “more- than-human”?

Four Parts:

1. Introduction to Feral Atlas
2. [Some] Anthropocene Debates
3. Feral Atlas: Field Reports
4. Thinking with complexity (and humility) in transdisciplinary research

Feral Atlas: An Introduction

Part 1

Feral Atlas Editorial Team

Editorial Team



Anna L. Tsing



Jennifer Deger



Alder Keleman Saxena



FeiFei Zhou

AARHUS
UNIVERSITY
RESEARCH ON THE
ANTHROPOCENE

And over 100 contributors and “makers,”
including:

- Lili Carr
- Victoria Baskin Coffey
- Andrew Herzog
- Nicky Tesla
- Santiago Carrasquilla
- Jos Diaz
- Jovan Maud

Feral Atlas tells the stories of “feral entities”: beings, both living and non-living which, *acting in relationship to human-built infrastructures*, develop behaviors that exceed human design or control

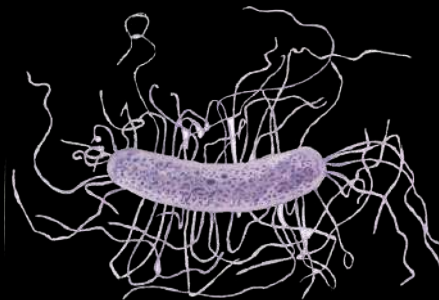
Take a look! www.feralatlaser.org



Carbon Dioxide



Coffee Rust Fungus



Antibiotics



Anti-Fouling Paint

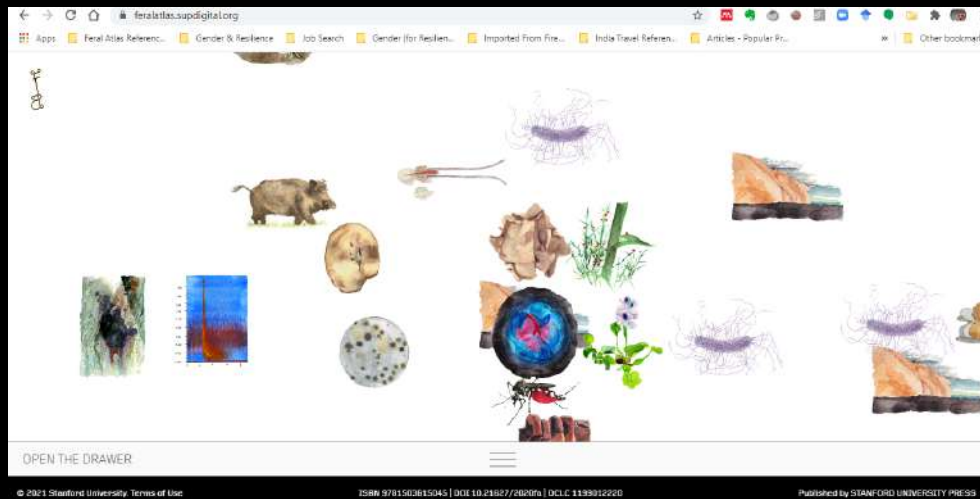


Emerald Ash Borer

Drawings for Feral Atlas by FeiFei Zhou & June Tong

Feral Atlas Key Characteristics

- A digital environmental humanities experiment
- Interactive and open access
- Multimedia: drawings, video, original imagery
- Lives on a purpose-built website
- ~80 research-based and artistic field reports on “feral entities”
- 6 Framing essays by leading thinkers on the Anthropocene
- ~35 short framing essays by editorial team
- Teaching supplement (including syllabuses!)
- Published by Stanford University Press, Digital Projects Section (Oct 2020)

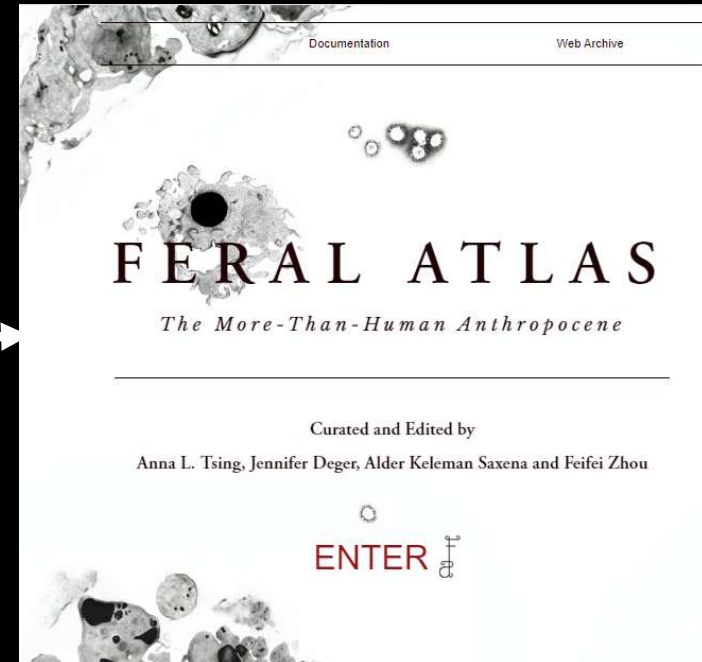


Three Analytical / Organizational Axes

- Anthropocene Detonators
- Tippers: Modes of Infrastructural State Change
- Feral Qualities



Photos: Alder Keleman Saxena, Alark Saxena



www.feralatlas.org

From the field to the
digital, and back again....



[Some] Anthropocene Debates

Part 2

The Anthropocene Working Group (IWUGS)



Image Source: quaternarystratigraphy.org/working-groups/anthropocene

May 2019 Votes:

- Recognize “Anthropocene” as a formal “chrono-stratigraphic
- Use mid-20th-century stratigraphic signals as the base for the

Ongoing research:

- Ongoing research: How to locate the Anthropocene stratigraphically

Sources: [AWG 2019](#); see also M. Subramanian, 2019 in *Nature*

Article Will Steffen, Paul J. Crutzen and John R. McNeill

The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?

We explore the development of the Anthropocene, the current epoch in which humans and our societies have become a global geophysical force. **The Anthropocene began around 1800 with the onset of industrialization, the central feature of which was the enormous expansion in the use of fossil fuels.** We use atmospheric carbon dioxide concentration as a single, simple indicator to track the progression of the Anthropocene. From a preindustrial value of 270–275 ppm, atmospheric carbon dioxide had risen to about 310 ppm by 1950. Since then the human enterprise has experienced a remarkable explosion, the Great Acceleration, with significant consequences for Earth System functioning. Atmospheric CO₂ concentration has risen from 310 to 380 ppm since 1950, with about half of the total rise since the preindustrial era occurring in just the last 30 years. **The Great Acceleration is reaching criticality. Whatever unfolds, the next few decades will surely be a tipping point in the evolution of the Anthropocene.**

discernible at the global scale? How has this imprint evolved through time?

- How does the **magnitude and rate** of human impact compare with the **natural variability** of the Earth's environment? Are human effects similar to or greater than the great forces of nature in terms of their influence on Earth System functioning?
- What are the **socioeconomic, cultural, political, and technological developments that change the relationship between human societies and the rest of nature** and lead to accelerating impacts on the Earth System?

Pre-Anthropocene Events

Before the advent of agriculture about 10000–12000 years ago, humans lived in small groups as hunter-gatherers. In recent centuries, under the influence of noble savage myths, it was often thought that preagricultural humans lived in idyllic harmony with their environment. Recent research has painted a rather different picture, producing evidence of widespread human impact on the environment through predation and the

Proposed Anthropocene Start-Dates

Event	Date	Geographical extent	Primary stratigraphic marker	Potential GSSP date*	Potential auxiliary stratotypes
Megafauna extinction	50,000–10,000 yr BP	Near-global	Fossil megafauna	None, diachronous over ~40,000 yr	Charcoal in lacustrine deposits
Origin of farming	~11,000 yr BP	Southwest Asia, becoming global	Fossil pollen or phytoliths	None, diachronous over ~5,000 yr	Fossil crop pollen, phytoliths, charcoal
Extensive farming	~8,000 yr BP to present	Eurasian event, global impact	CO ₂ inflection in glacier ice	None, inflection too diffuse	Fossil crop pollen, phytoliths, charcoal, ceramic minerals
Rice production	6,500 yr BP to present	Southeast Asian event, global impact	CH ₄ inflection in glacier ice	5,020 yr BP CH ₄ minima	Stone axes, fossil domesticated ruminant remains
Anthropogenic soils	~3,000–500 yr BP	Local event, local impact, but widespread	Dark high organic matter soil	None, diachronous, not well preserved	Fossil crop pollen
New–Old World collision	1492–1800	Eurasian–Americas event, global impact	Low point of CO ₂ in glacier ice	1610 CO ₂ minima	Fossil pollen, phytoliths, charcoal, CH ₄ , speleothem $\delta^{18}\text{O}$, tephra†
Industrial Revolution	1760 to present	Northwest Europe event, local impact, becoming global	Fly ash from coal burning	~1900 (ref. 94); diachronous over ~200 yr	¹⁴ N: ¹⁵ N ratio and diatom composition in lake sediments
Nuclear weapon detonation	1945 to present	Local events, global impact	Radionuclides (¹⁴ C) in tree-rings	1964 ¹⁴ C peak§	²⁴⁰ Pu: ²³⁹ Pu ratio, compounds from cement, plastic, lead and other metals
Persistent industrial chemicals	~1950 to present	Local events, global impact	For example, SF ₆ peak in glacier ice	Peaks often very recent so difficult to accurately date§	Compounds from cement, plastic, lead and other metals

Feral Atlas start-point

AWG potential start-points

Source: Lewis & Maslin, 2015

Is “Anthropocene” too Anthropocentric?



The Anthropo

On geological timescales,

Story by Peter Brannen

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SCIENCE

What Made Me Reconsider the Anthropocene

Whether our civilization is transient or not, its effects on the living world will last forever.

PETER BRANNEN OCTOBER 11, 2019



JOE & CLAIR CARNEGIE / LIBYAN SOUP / GETTY

Ad removed. [Details](#)

RECOMMENDED
READING

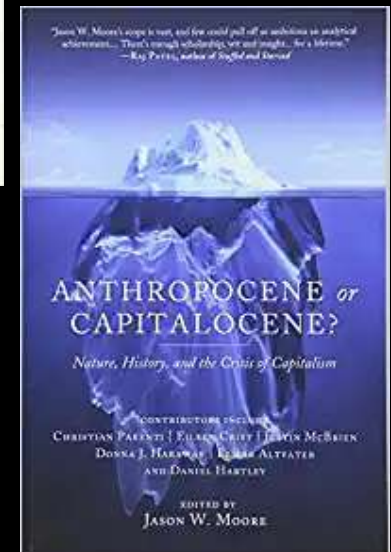
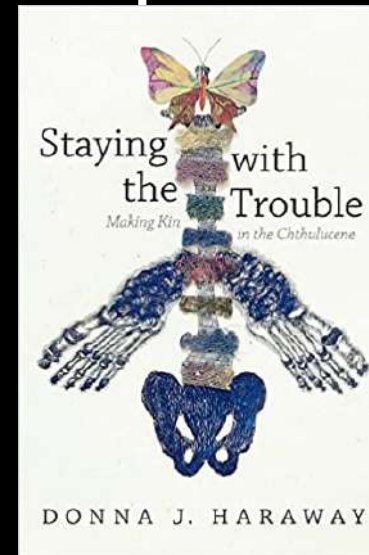
Screenshot from: /www.theatlantic.com/science/ar

Screenshot from: www.theatlantic.com/science/archive/2019/10/anthropocene-epoch-after-all/599863/

Is “Anthropocene” too Anthropocentric?

.... And why should it matter?

- An uncritical use of the concept overemphasizes the importance, power, and agency of humans (cf. Haraway 2016)
- And also risks lumping all that is “human” into a single category, without recognizing major differences in class, race, nationality, etc. (cf. Moore 2017)



Images: Amazon.com

Social and Environmental Crises Intertwined

Feral Atlas demonstrates:

- more-than-human entanglements: “Every event in human history has been a more-than-human event” (FA, Introduction)
- ... interrelationship between social and environmental injustices (genocide of the indigenous Americas starting at Euro-American contact; Cf. Lewis & Maslin 2015)



Drawings for Feral Atlas by FeiFei Zhou & June Tong

“Decentering the Human” in Social Science

Recent theoretical movements emphasizes that the environment not just something acted upon, by humans but also an actor (or a set of actors) in human events

Feral Atlas draws from:

- Environmental history
- New Materialism
- Multispecies ethnography
- (Political Ecology / Feminist STS)

The great forces of
nature

vs.

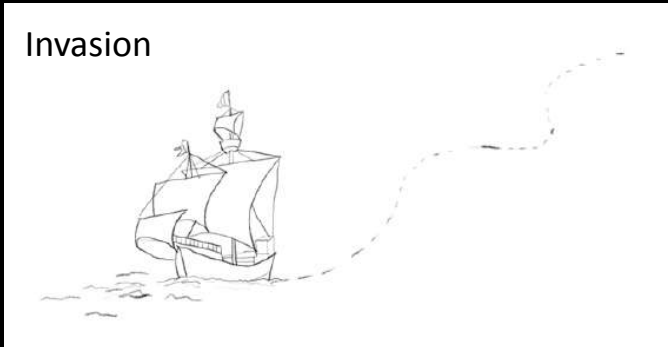
The cumulative forces
of many small, more-
than-human actors

Feral Atlas: Field Reports

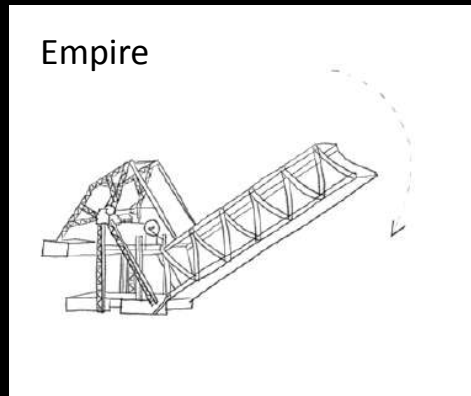
Part 3

Anthropocene Detonators

Invasion

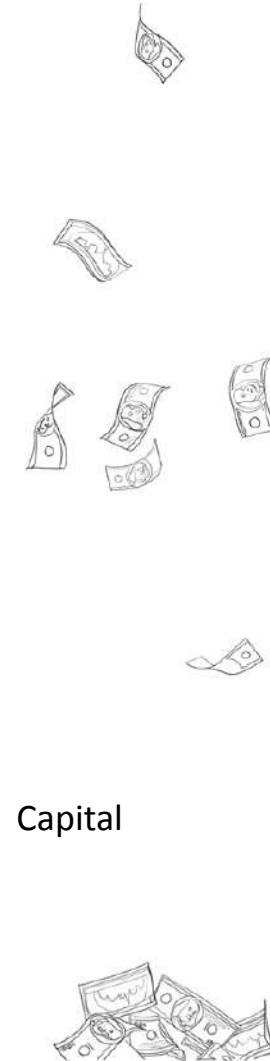


Empire



Historical processes that
repeat across time and
space

Founding conjunctures
with world-making (or
world-disrupting) effects



Capital



Acceleration

Drawings: FeiFei Zhou

Tipplers: Modes of Infrastructure-Mediated State-Change

Imperial and industrial infrastructures that create new ecological conditions, spurring the proliferations of feral entities

- Burn
- Crowd
- Dump
- Pipe
- Smooth/Speed
- Take



Short video poems for the tipper "Grid" (www.feralatlas.org)

Feral Qualities

Traits that arise in the relationship between an entity and an infrastructure, leading to out-of-control (or “feral”) activity.

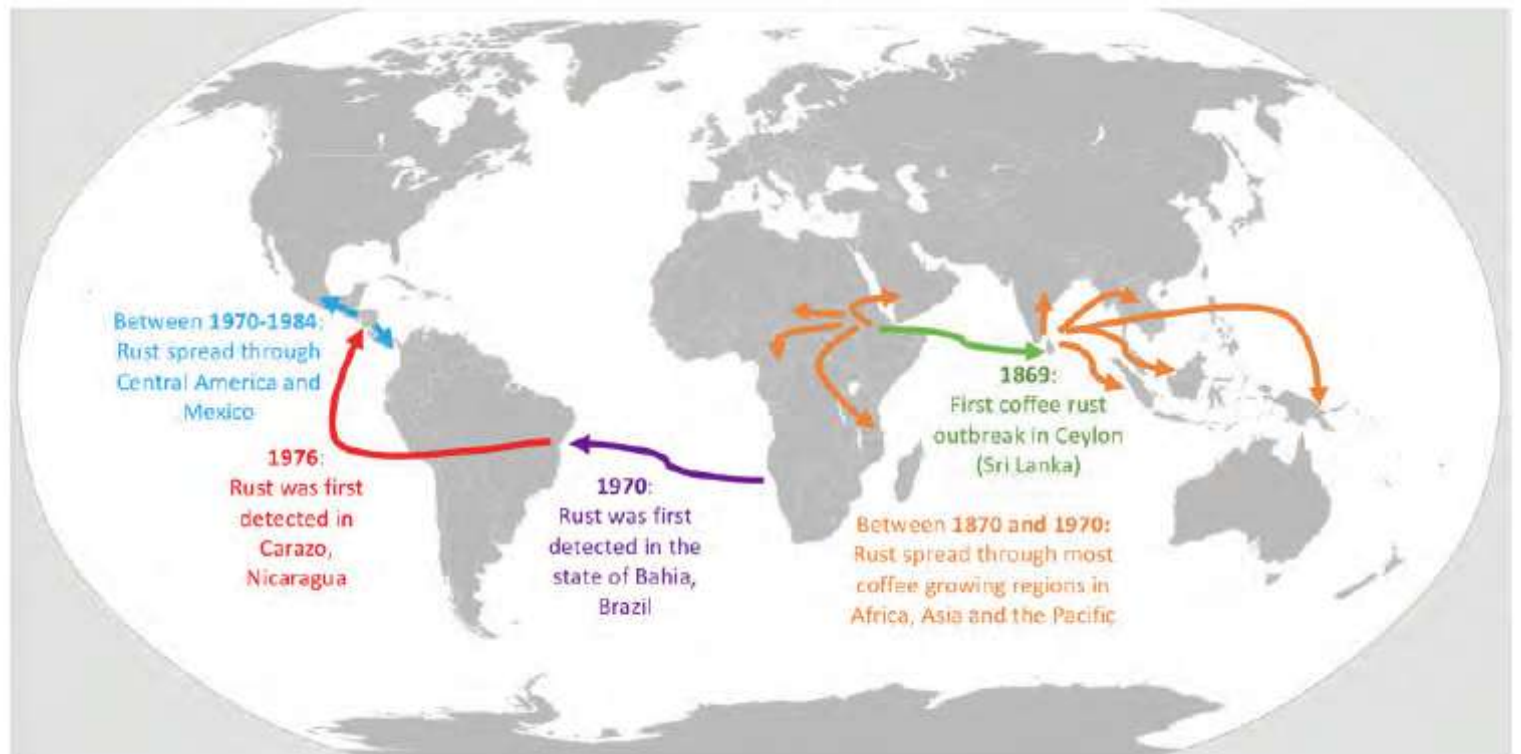
- Accelerated by climate change
- Creatures of conquest
- Industrial stowaways
- Legacy effects
- Likes human disturbance
- Partners
- Superpowers
- Thrives with the plantation condition
- Toxic environments
- Uncontainable

Field Report: Coffee Rust Fungus

Ivette Perfecto, University of Michigan



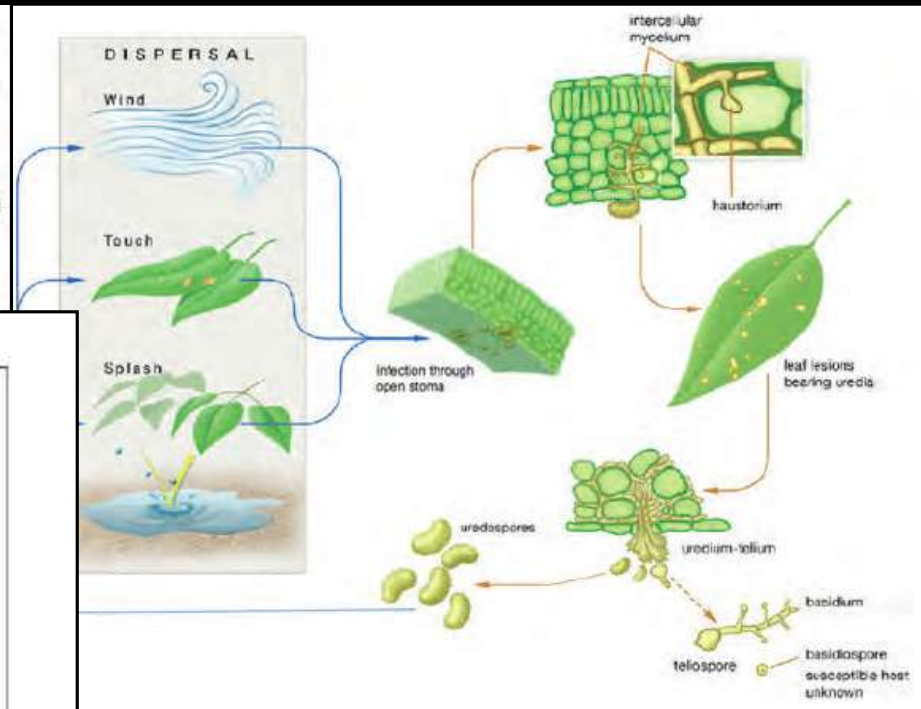
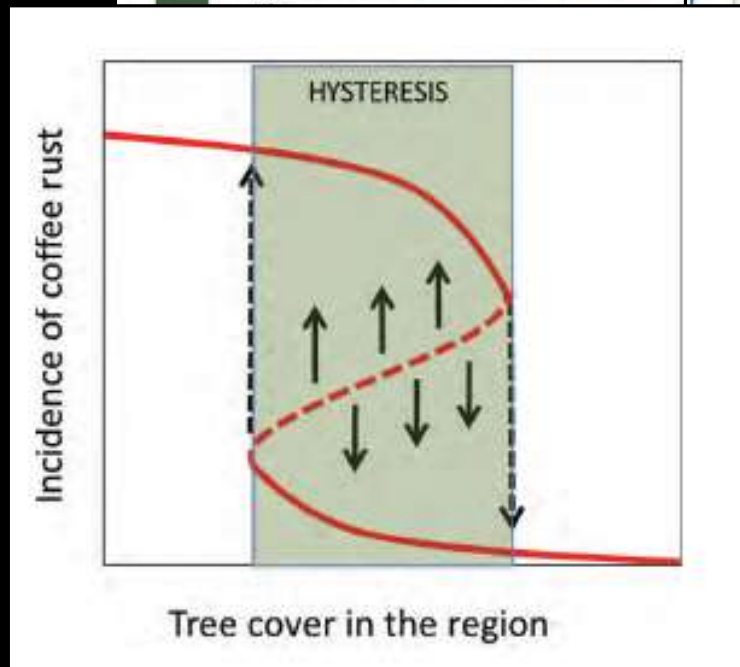
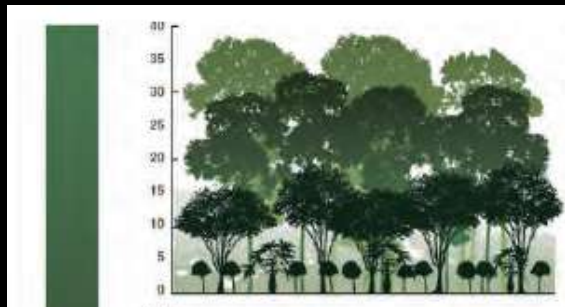
COFFEE
TOGETHER
PLANTATION



COFFEE RUST FUNGUS

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Map from *Feral Atlas*, used courtesy of Ivette Perfecto



Sun-grown coffee = Better dispersal of rust spores

Extensive monoculture = higher density of spores in air

Hysteresis = Critical transition or "tipping point"

Images from *Feral Atlas*, used courtesy of Ivette Perfecto



Ivette Perfecto

Coffee rust outbreak in Soconusco, Chiapas, in 2012-2013 agricultural season

Image from Feral Atlas, courtesy of Ivette Perfecto

Coffee Rust Fungus

Anthropocene Detonator: Capital

Tipper: Grid

Feral Qualities:

- Thrives with plantation condition
- Uncontainable

Let's take a look....



Thinking with Complexity (and Humility) in Transdisciplinary Research

Part 4

Feral Atlas Takeaways

Trends in
New

"Decentering the Human"

Recent theoretical movements emphasize the environment not just something acted upon by humans but also an actor (or a set of actors) in human events

Feral Atlas draws from:

- Environmental history
- New Materialism
- Multispecies ethnography
- (Political Ecology / Feminist STS)

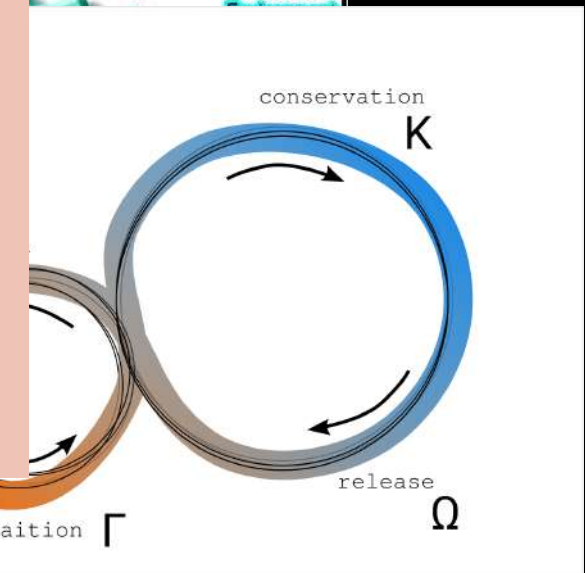
Alternate take-away:

The sciences (social or natural) do not have a monopoly on the study of complexity

Art, music, humanities, can help us visualize and comprehend processes that are difficult to grasp through empirical (small-scale) observation

natural sciences
adaptation

Changing
External



Environment

Image by Acdac/

Image by Hernan de Angelis, [Wikimedia Commons](#), CC BY SA 4.0

Ethnography and Complexity

I understand complexity to mean:

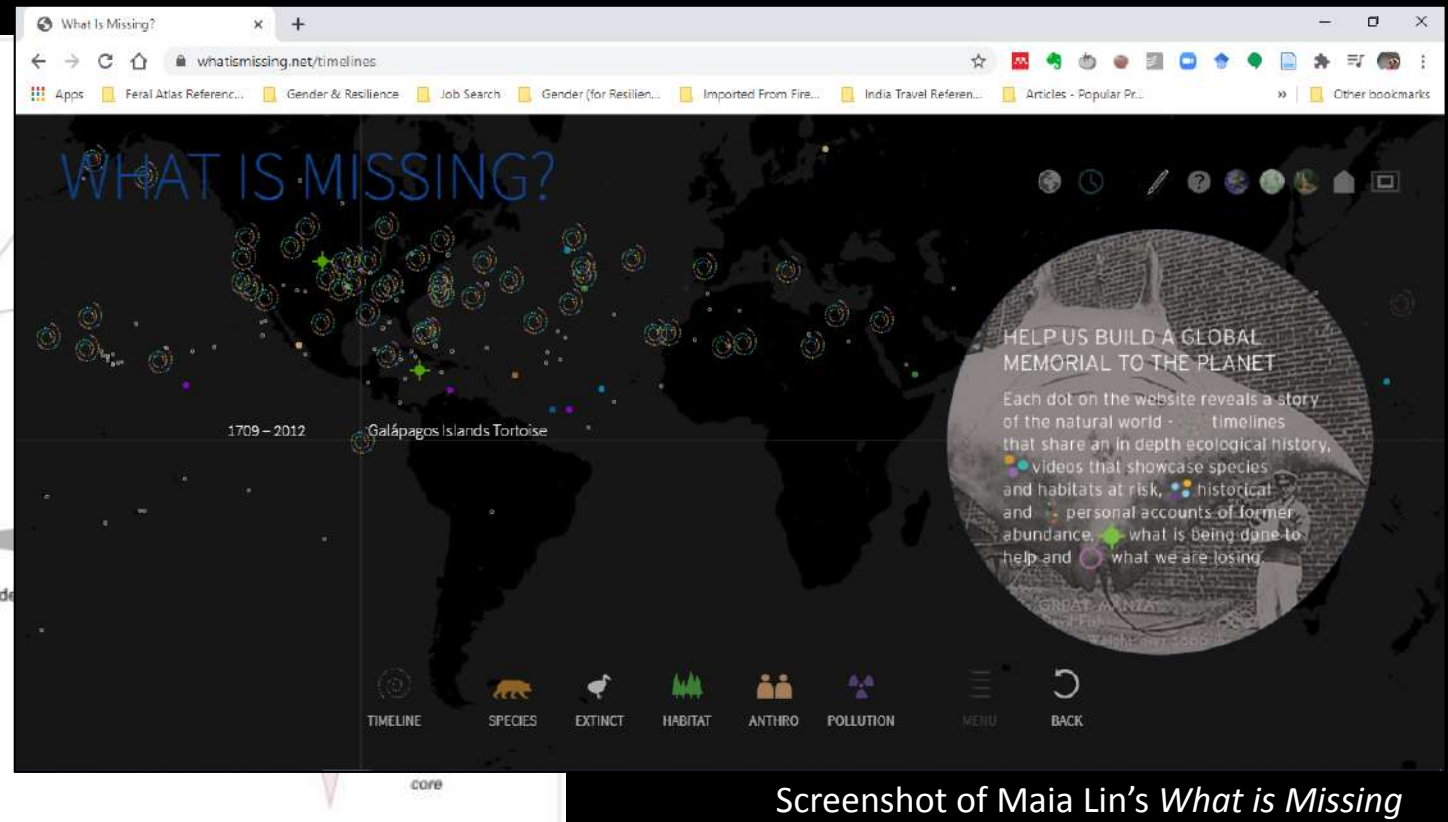
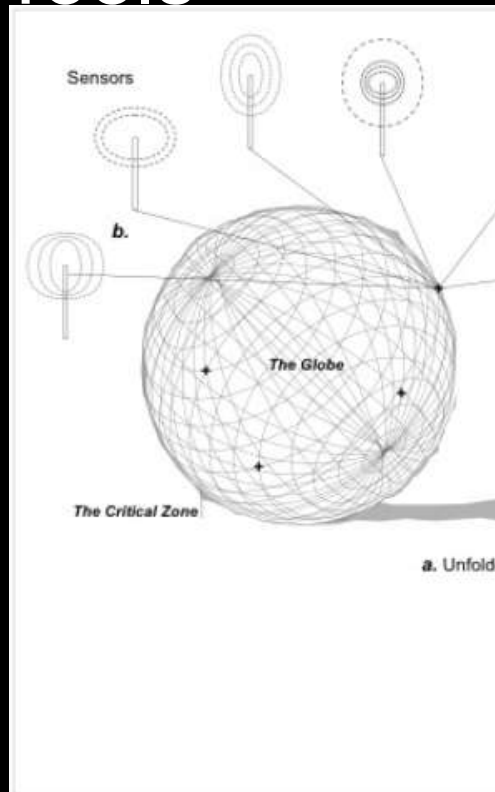
- Real-world systems are more than the sum of their parts
- And they are constantly changing

Understanding our current real-world environmental messes requires understanding entanglements; this means not just disembedding single variables for analysis, but understanding (analytically) how multiple variables relate to one another, and change over time

New Possibilities for Collaboration in Social-Ecological Research

- Complexity emerges relationally
 - Historical relations
 - Inter-species / inter-being relations
 - Inter/intra-group social relations
- Ethnography (and qualitative social science) at its best excels at studying processes and relations – across scales and over time
- In the right settings (with the right colleagues), the conversation about complexity within socio-ecological systems can open space for conversations also about history, power relations, capitalism and political economy, etc.

Collaboration through New(er) Representational Tools



Screenshot of Maia Lin's *What is Missing* (whatismissing.net)

Source: Arenes et al. on *Gaiagraphy* (Critical Zones of Observation), 2018

Agrobiodiversity as a Coupled Human-Natural System



Diverse pathways to nourishment: Understanding how agricultural biodiversity enhances food security and nutrition

Award Year: 2018
Principal Investigator:
Alder Keleman Saxena, AA
Garrett Craddy-Lovelace, A
Associated Program:
Pursuit Program

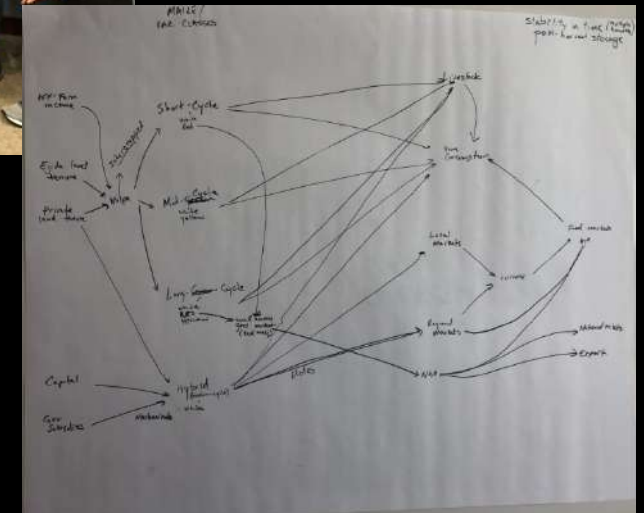


Photos: Alder Keleman Saxena, Alark Saxena



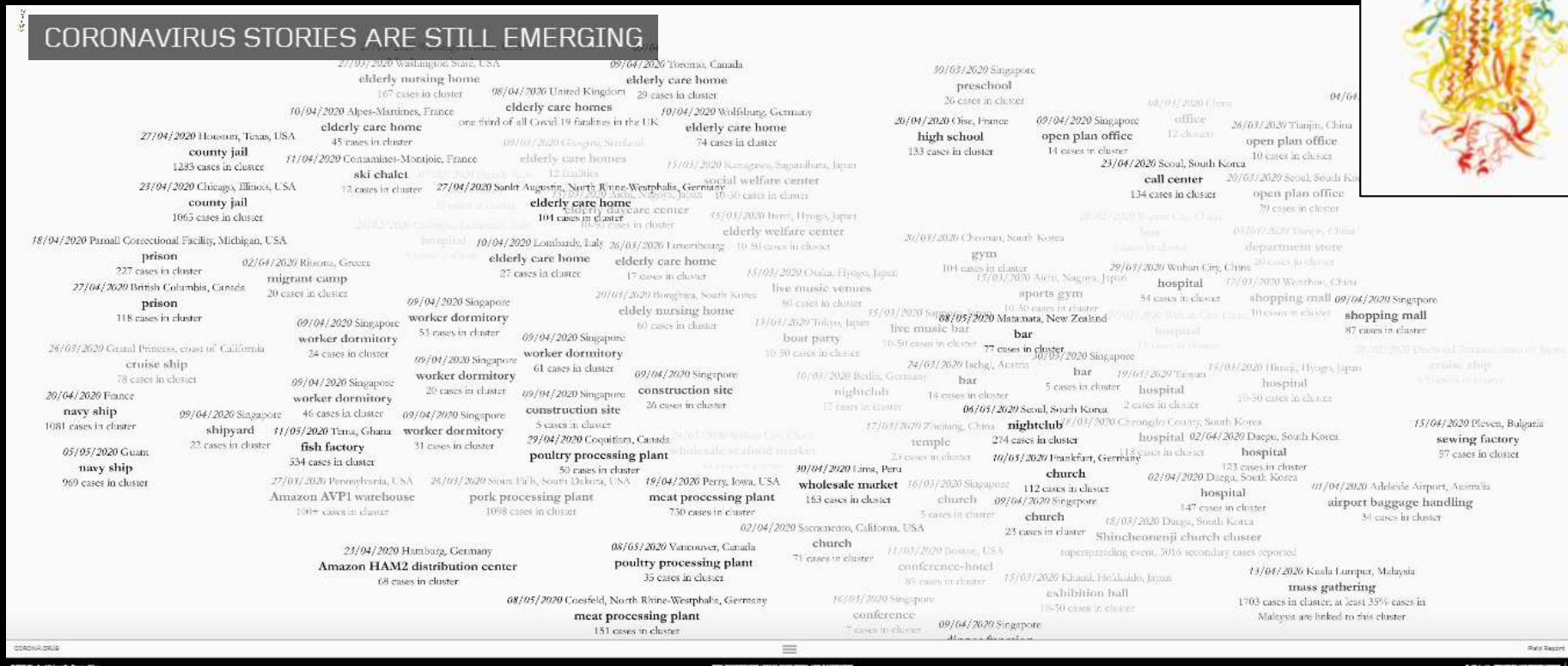
New Projects (2021)

- Covid-19 Pandemic and Forests in India
- Long-term Refugee/IDP camps as social-ecological systems



Conceptual mapping -> Participatory Modeling

On Anthropocene Humility



Screenshot of Coronavirus flow map from *Feral Atlas*, jpg by Lili Carr

From “environmental management” to “collective flourishing”

Thanks for your attention!

Feral Atlas: The More-than-Human Anthropocene

www.feralatlas.org

@FeralAtlas on Twitter

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