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

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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

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.feralatlas.org](http://www.feralatlas.org)
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
From the field to the digital, and back again....
The Anthropocene Working Group (IUGS)

May 2019 Votes:

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

Ongoing research:

• Ongoing research: How to locate the Anthropocene stratigraphically

Sources: AWG 2019; see also M. Subramanian, 2019 in Nature

Image Source: quaternarystratigraphy.org/working-groups/anthropocene
## Proposed Anthropocene Start-Dates

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Geographical extent</th>
<th>Primary stratigraphic marker</th>
<th>Potential GSSP date*</th>
<th>Potential auxiliary stratotypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Megafauna extinction</td>
<td>50,000–10,000 yr BP</td>
<td>Near-global</td>
<td>Fossil megafauna</td>
<td>None, diachronous over ~40,000 yr</td>
<td>Charcoal in lacustrine deposits</td>
</tr>
<tr>
<td>Origin of farming</td>
<td>~11,000 yr BP</td>
<td>Southwest Asia, becoming global</td>
<td>Fossil pollen or phytoliths</td>
<td>None, diachronous over ~5,000 yr</td>
<td>Fossil crop pollen, phytoliths, charcoal</td>
</tr>
<tr>
<td>Extensive farming</td>
<td>~8,000 yr BP to present</td>
<td>Eurasian event, global impact</td>
<td>CO₂ inflection in glacier ice</td>
<td>None, inflection too diffuse</td>
<td>Fossil crop pollen, phytoliths, charcoal, ceramic minerals</td>
</tr>
<tr>
<td>Rice production</td>
<td>6,500 yr BP to present</td>
<td>Southeast Asian event, global impact</td>
<td>CH₄ inflection in glacier ice</td>
<td>5,020 yr BP CH₄ minima</td>
<td>Stone axes, fossil domesticated ruminant remains</td>
</tr>
<tr>
<td>Anthropogenic soils</td>
<td>~3,000–500 yr BP</td>
<td>Local event, local impact, but widespread</td>
<td>Dark high organic matter soil</td>
<td>None, diachronous, not well preserved</td>
<td>Fossil crop pollen</td>
</tr>
<tr>
<td>New–Old World collision</td>
<td>1492–1800</td>
<td>Eurasian–Americas event, global impact</td>
<td>Low point of CO₂ in glacier ice</td>
<td>1610 CO₂ minima</td>
<td>Fossil pollen, phytoliths, charcoal, CH₄ speleothem δ¹⁸O, tephra^</td>
</tr>
<tr>
<td>Industrial Revolution</td>
<td>1760 to present</td>
<td>Northwest Europe event, local impact, becoming global</td>
<td>Fly ash from coal burning</td>
<td>~1900 (ref. 94); diachronous over ~200 yr</td>
<td>UW-14⁷³Nd and diatom composition in lake sediments</td>
</tr>
<tr>
<td>Nuclear weapon detonation</td>
<td>1945 to present</td>
<td>Local events, global impact</td>
<td>Radionuclides (¹⁴C) in tree-rings</td>
<td>1964 ¹⁴C peak$</td>
<td>$²⁴¹Pu:²³⁹Pu ratio, compounds from cement, plastic, lead and other metals</td>
</tr>
<tr>
<td>Persistent industrial chemicals</td>
<td>~1950 to present</td>
<td>Local events, global impact</td>
<td>For example, SF₆ peak in glacier ice</td>
<td>Peaks often very recent so difficult to accurately date$</td>
<td>Compounds from cement, plastic, lead and other metals</td>
</tr>
</tbody>
</table>

*GSSP: Global Stratotype Section Point

Source: Lewis & Maslin, 2015
Is “Anthropocene” too Anthropocentric?

The Atlantic

SCIENCE
What Made Me Reconsider the Anthropocene
Whether our civilization is transient or not, its effects on the living world will last forever.

PETE BRANNEN, OCTOBER 11, 2019

RECOMMENDED READING
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)
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

Historical processes that repeat across time and space

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

Drawings: FeiFei Zhou
Tippers: 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

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”
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 the social sciences <-> Trends in the natural sciences

New phenomenology <-> Complexity, Adaptation

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
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) Represenational Tools

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

Screenshot of Maia Lin’s What is Missing (whatismissing.net)
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, Alark Saxena  
Associated Program: Pursuit Program

Photos: Alder Keleman Saxena, Alark Saxena

Conceptual mapping -> Participatory Modeling

New Projects (2021)
- Covid-19 Pandemic and Forests in India
- Long-term Refugee/IDP camps as social-ecological systems
On Anthropocene Humility

From “environmental management” to “collective flourishing”
Thanks for your attention!

Feral Atlas: The More-than-Human Anthropocene
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