James Bridle, *My delight on a shining night* (2018), single-channel digital video. Reproduced with permission from the artist.

INFRASTRUCTURES IN + OF + FOR THE ANTHROPOCENE

A workshop of the KTH Centre for Anthropocene History

THURSDAY

ARRIVAL AND COFFEE 09:45-10:00

Oscar Hartman Davies, Sabine Höhler and Adam Wickberg
KTH Royal Institute of Technology

Zachary Caple and Heather Swanson
Aarhus University

LUNCH 12:00-13.00

George Cusworth
University of Oslo

Steven Gonzalez Monserrate
Goethe University, Frankfurt

Sebastian Lundsteen Nielsen
University of Copenhagen

DINNER(18:00-)

FRIDAY

ARRIVAL AND COFFEE 09:30

Austin Read
University of Oxford

Erica von Essen
Stockholm Resilience Centre

Annie Welden
UC Berkeley

LUNCH 12:00-13.00

OCTOBER 2ND & 3RD 2025

KTH VETENSKAP OCH KONST

Center for ANTHROPOCENE HISTORY

ABOUT THE WORKSHOP

Interest in infrastructure amongst social scientists and humanities scholars engaging with the Anthropocene continues to proliferate. This work understands infrastructure not simply as neutral matter underpinning social life and produced through human actions, but as political, processual, and more-than-human. A "wider ontology" (Barua 2021) of infrastructure encompasses, amongst others, digital, data and knowledge infrastructures (Karasti et al. 2016), infrastructural renderings of nature (Barua 2021; Wakefield & Braun 2019; Welden 2023), and even how the planet itself engages in "infrastructuring" processes (Szerszynski 2022).

For scholars in Anthropocene History, infrastructures offer a compelling analytic for approaching the ideas, politics, economic systems, and science and technologies involved in bringing about the Earth system changes currently underway. Yet as ever more things and processes are collated under the umbrella of infrastructure, we might also ask whether the term remains useful for critical scholarship on the Anthropocene. Wagering that it does, we seek to use this workshop to reflect on recent scholarship exploring intersections between infrastructure and Anthropocene, share ongoing work, and collaboratively advance a research agenda. We wish particularly to focus on three main themes:

i) Infrastructures in the Anthropocene, referencing the changes wrought by the Anthropocene to existing infrastructures and understandings and imaginaries of infrastructure. Infrastructures often promise modernity and development, but their promise lies also in what is revealed when they fail or break down and when we interrogate who/what their desired functioning serves (Anand et al. 2018).

ii) Infrastructures of the Anthropocene, meaning those that have contributed to creating the conditions of the Anthropocene, such as fossil fuel/energy infrastructures, transportation, mining and industrial infrastructures. Here, we are also interested in infrastructures developed to know the Anthropocene, for instance global expert organisations, global earth observation networks, etc.

iii) Infrastructures for the Anthropocene, referring to new infrastructures inaugurated to manage the unruly conditions of the Anthropocene. These include, for example, living infrastructures (forests, peat bogs, phytoplankton, 'green cattle', and other 'nature-based solutions') as well as proposals for carbon dioxide removal and geoengineering, infrastructures of adaptation and of "resilience, ruins and survival" (Wakefield 2018).

ABOUT THE CENTRE

The Centre for Anthropocene History is a multi-disciplinary, research-focused centre based at the Division of History of Science, Technology and Environment at KTH and supported by the Swedish Research Council. We aim to build a novel, integrated approach to the past, present and future of the cumulative anthropogenic environmental transformation of the planet. We contend that modern history is an essential sense-making and navigational tool for the understanding of our contemporary world.

SESSION 1

Infrastructural Concerns and Cascades

Oscar Hartman Davies, Sabine Höhler and Adam Wickberg, KTH Royal Institute of Technology

"Introductions and Infrastructural Research at the Centre for Anthropocene History"

Infrastructure, conceptualised and approached in diverse ways, is a core concern for researchers in Anthropocene History. In this introductory presentation, we present the Centre for Anthropocene History at KTH and its main aims, provide an overview of infrastructural scholarship pertinent to the workshop's focus and aims, and introduce some ongoing research from the Centre.

Zachary Caple and Heather Swanson, Aarhus University

"Infrastructures of Anthropocene-Making: Industrial Landscapes, Trophic Capitalism, and the Work of Repair"

Infrastructure is both emblem and engine of the industrial age, a material force central to the making of the Anthropocene. This talk, based on a collaboration and forthcoming article with Pierre du Plessis (Aarhus Institute of Advanced Study) and Sara Asu Schroer (University of Oslo), advances the concept of infrastructural cascades (IC) as a framework for analyzing the historical emergence of infrastructure and its ecological reverberations. Drawing from the ecological idea of trophic cascades, we argue that infrastructures can be productively conceptualized as metabolic nodes in globalized capitalist systems, disruptive events that disrupt long-established ecological histories, and as landforms that warp ecosystems and food-webs.

IC analysis unfolds in two components. The upstream component describes the sociohistorical forces that materialize in infrastructure form, while the downstream phase follows infrastructure's cascading ecological and more-than-human effects. Considering both together opens new ground for collaboration across natural and social sciences and provides a framework for narrating the Anthropocene as an uneven geography shaped by appetitive industrial systems. Taken as a whole, these appetitive systems form, what we call, the capitalist "superomnivore."

We develop this framework through du Plessis's work on veterinary fences in Botswana, and we extend it toward questions of repair. Specifically, we ask how IC analysis might inform ecological management in relation to hydroelectric dams, riverbank hardening, and coastal salmon farms in Norwegian rivers, drawing on research from Swanson's participation in an additional research team focused on trout and river management.

SESSION 2

Data, Energy, Environment

George Cusworth, University of Oslo

"Data infrastructures and the metabolic subjects eating for planetary health"

Capitalist modes of agricultural production—premised on the acceleration and simplification of agricultural landscapes and the active creation of markets for cheaply produced but unhealthful products—are undermining attempts to nurture just and sustainable planetary futures. These causal relations connect the dietary habits of (some) humans to the remaking of the environmental medium of life itself, involving the aggregation of individual moments of bodily consumption into large-scale landscape re-organisation. New data infrastructures are emerging to make these causal relationships visible, revealing which foodstuffs are driving agriculture's vast environmental footprint and which might offer a more promising path forward. These infrastructures synthesise vast amounts of data about the ecological impacts of different farm systems, and the way agricultural production interacts with the planet's overarching biophysical systems. Increasingly, these data-intensive technologies are being used to design and promote sustainable diets. Large scale modelling projects and reports predicated on these methods and ambitions are working to create a corpus of aspirational metabolic subjects who reflect on, and act/eat in response to, the way their food choices drive planetary-scale dynamics of environmental change. Paying particular attention to the case of the EAT-Lancet Report and its hugely influential Planetary Diet, this talk will explore the new modes of environmental subjectivity premised around these metabolic, dietary, and environmental interactions. It is a subjectivity that is being made possible by novel data infrastructures, and it cuts across two different ways of understanding what it is to be a subject. In the first instance, metabolic subjectivity is predicated on the internalisation of ecological issues into an individual's habits, identities, concerns, desires, and agencies. In the second, becoming a metabolic subject is to become part of a distributed spatial-material network of power composed of the metabolic capacities of individual human bodies.

Steven Gonzalez Monserrate, Goethe University, Frankfurt

"Terraforming Earth for Computers: How data centers infrastructuralize the environment for computation"

The "AI boom" has precipitated a surge in data center construction. What are the ecological implications of such an expansion? How do computational infrastructures harness and transform the environment on a local and global scale? Drawing on multi-sited ethnographic research in data centers, this paper mobilizes case studies in different settings to theorize the relationship between computation and ecology. Case studies range from the arid American southwest, to the Arctic and the Caribbean. Meshing metabolic rift theory, science fiction, anthropology, and science and technology studies, computation is theorized as an act of terraforming. By attending to both the environmental impacts of computation and the required inputs for the metabolism of data, the paper concludes by asking how the terraforming threatens as much as it assures the continuity of digital capitalism.

SESSION 2

Data, Energy, Environment

Sebastian Lundsteen Nielsen, University of Copenhagen

"Utopia and the Afterlives of Fossil Fuel Infrastructure In, Of, and For the Anthropocene"

This paper contends that the existence the Danish welfare state is a utopia, deeply contingent on the North Sea as a frontier available for extraction and dumping. Moreover, the destitute environmental consequences in the wake of exploitative activities in the North Sea can only be concealed through a process of distancing enabled by material, epistemic, discursive and political infrastructures. Beginning with the 1970s Danish scramble for oil and gas in the North Sea, in order to rescue a welfare state under financial and political scrutiny, the paper focuses on the role of infrastructures in rendering the North Sea as an offshore: an imaginary site holding a promise of unbounded economic growth. Keeping the welfare state on life support through North Sea extractivism, however, was only possible through different types of infrastructures, that severed and invisibilized the multiple consequences of oil production.

Linking the historical circumstances of the 1970s with the current welfare state utopia, where Denmark consumes resources amounting to 4.2 planets annually, the North Sea once again emerges as a frontier managing an environmental havoc caused by an imperial mode of living. The new predicament is managed by a technophilia pervading Danish climate politics, most prominently CO2 storage in depleted oil fields in the North Sea. In this sense, the paper shows the afterlives of fossil fuel infrastructure continues to dominate the green transition, thus sabotaging any meaningful abolition of fossil fuels.

SESSION 3

Infrastructural Life

Austin Read, University of Oxford

"Infrastructure as Archive: tracing historical geographies of ideology in the River Severn, UK"

This paper argues that ongoing interest in infrastructure among scholars of the Anthropocene must be bolstered by spatio-temporally specific accounts of infrastructural politics. More precisely, I argue that increasingly popular ontological interpretations of infrastructure, which have largely focused on developing materialist and more-than-human accounts of politics, must also consider the ideological forces of infrastructure, particularly as they are shaped by longue durée historical geographies of racial capitalism. This argument is based on ethnographic and archival research on infrastructure in the River Severn in southwest Britain, where from 2021 to 2024 I examined a large EU-funded conservation project that constructed four fish passes to reconnect a river previously divided by 19th-century weirs and canals. I challenge popular technocratic framings of these new fish passes as a silver bullet solution to biodiversity decline by conceptualising infrastructure as a sedimented archive of ideological forces. This framing, which I develop empirically by analysing the records of the Severn Navigation Commissioners (1835–c.1948), shows how fish passes subtly reinforce racial capitalist ideologies that have shaped the river for over five centuries. Overall, I propose that viewing infrastructure as an ideological archive offers a valuable analytical tool for navigating the current political conjuncture in Britain and other nations, where the eco-infrastructural gains of liberal-technocratic environmentalisms seem to be waning amidst the rise of reactionary right-wing populisms, because it highlights the importance of developing anticolonial ideologies aimed at confronting the root causes of socio-ecological injustice.

Erica von Essen, Stockholm Resilience Centre

"Fence and fensibility: Examining the lives of wildlife fencing as biosecurity infrastructure"

This paper explores fencing as a biosecurity infrastructure within the context of One Health and contemporary infectious disease anxieties. While extensive infrastructures exist to regulate human mobility, this work focuses on a less scrutinized domain: wildlife management and the use of biosecurity fences—including emerging virtual fencing technologies. These infrastructures do more than contain or exclude; they materialize political, ecological, and cultural imaginaries of control and order in the Anthropocene. Drawing on cases of wild boar management and African swine fever containment along European borders, I examine how fences operate as spatial and temporal interventions by anticipating disease transmission, lingering as infrastructural "ghosts," and shaping multispecies relations long after their removal. Beyond their materiality, fences are communicative devices, signaling to humans and nonhumans alike, yet prone to failure and rupture that expose the fragility and politics of biosecurity regimes. By attending to the infrastructural life of fences, this paper contributes to critical debates on the infrastructures for the Anthropocene: those designed to govern its perceived risks.

SESSION 3

Infrastructural Life

Annie Welden, University of California, Berkeley

"Enrolment, Enmeshment, Enfleshment: A typology of Animal Infrastructure for the Anthropocene"

From the reintroduction of beavers for natural flood management to the managed grazing of cattle for biodiversity gain, the inclusion—or use—of nonhumans in/as environmental interventions is gaining traction in the Anthropocene, associated with a policy turn towards 'Nature-based Solutions' (NbS) to climate change and biodiversity loss. NbS are defined by the IUCN as actions that protect, manage, or restore ecosystems while addressing societal challenges (Cohen-Shacham et al., 2016), often involving humans 'working with nature' (Seddon et al., 2021). In this paper, I will build upon my past work on NbS (Welden, 2023; Welden et al., 2021), forming a critique of the NbS concept with nonhumans at the centre and demonstrating how this concept necessarily discursively enrols, materially enmeshes, and metabolically enfleshes certain nonhuman animals as infrastructure.

While infrastructure is 'conceptually unruly' (Larkin, 2013), I define it as material relation with (environmental) objects in the (re)production of an organised practice. Drawing from a year of fieldwork with beaver restorationists, regenerative farmers, organisation directors, and the beavers and cattle themselves in Britain, I explore the different ways in which beavers and cattle are made to be the infrastructure of Nature-based Solutions. Weaving together more-than-human geography, political ecology, and STS, I will share my typology of the process of making animal infrastructure: Enrolment, Enmeshment, and Enfleshment, the latter two expanding upon language from Barua (2021)'s ontology of nonhuman infrastructure. In this paper, infrastructure serves both as an analytic and a useful subject to think with and through, as I consider the futures that are opened up or closed down for the particular animals involved and for broader human-environment relations.

DISCUSSANTS

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Lakin Anderson
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Jia Hui Lee
Bayreuth University

Franek Korbański
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Malin Kristine Graesse
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OTHER INFO

On Thursday the workshop venue is: Division of History of Science, Technology and Environment, Teknikringen 74D, Floor 5

On Friday the venue is: Gamla Styrelserummet D36, Lindstedtsvägen 5 (note our slightly earlier start on Friday at 09:30)

Both locations are a short walk from the Tekniska Högskolan subway station, accessible via a direct connection from Slussen (the closest station to the hotel)

We will meet for **dinner on Thursday** at 18:00 at Växthuset, Hammarby Slussväg 2. A group will walk together from Skanstull subway station at ca. 17:50

Lunch on Friday will be at Syster o Bror, a restaurant on KTH campus

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