

BIOrdinary: Biodiversity dilemmas in ordinary places

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BIOrdinary expands the current biodiversity agenda, moving away from protected hotspots to explore how people in ordinary places address everyday biodiversity dilemmas driven by species influxes and climate change. It goes about this in three ways. Firstly, by writing environmental histories that uncover the entangled social and cultural processes underlying species mobility and shifts in biodiversity. Secondly, by examining vernacular understandings and adaptation practices among local communities and other stakeholders at the frontline of biodiversity dilemmas, as opposed to previous research's focus on suffering, loss, and crisis. Thirdly, it contributes to the formulation of a more just, democratic and inclusive biodiversity agenda.

The program sets out to explore biodiversity in ordinary places across five ethnographic case-studies where recent biodiversity shifts can be attributed to a combination of climate change and shipping route infrastructure. Thus, the BIOrdinary spans current marine species transformation in the Mediterranean following dredging of the Suez Canal; the arrival of mosquitos to Singapore from Africa and the resultant public health threats; Kenyan plantations struggling with biodiversity loss following the introduction of the Assam tea plant; the Pacific Oyster overtaking Sweden's West Coast; and released, escaped and invasive minks threatening ground nesting birds in Stockholm's archipelago.

Research Program Part 1. Objectives, aims and state-of-the-art

Objective and aims

The objective of the research program **BIOrdinary** is to expand the current biodiversity agenda to explore how people in ordinary places address everyday biodiversity dilemmas propelled by species influxes and climate change. The project is articulated through three aims:

Aim I: To write environmental histories that uncover the entangled social, cultural and biogeographical processes that underlie species mobility and shifts in biodiversity.

Aim II: To document vernacular understandings and adaptation practices among local communities and other stakeholders at the frontline of biodiversity dilemmas.

Aim III: To formulate a more just, democratic and inclusive biodiversity agenda.

Biodiversity dilemmas in ordinary places (BIOrdinary)

The Anthropocene is characterized by drastically changing lifeworlds, climate crises and biodiversity loss at an alarming rate. The largest threat to biodiversity after humans is rapidly accelerating non-human species mobility. To protect biodiversity in vulnerable ecosystems and protected areas, the UN's Sustainable Development Goals (SDG14 & 15) advocate eradicating invasive species.¹ But if vanishing biodiversity is our time's prime concern, biodiversity research and practice cannot be confined to salvaging charismatic species and pristine nature in hotspots. Drastic biodiversity shifts are transforming the places that makes up most of the planet: "ordinary places", such as urban areas, plantations and coasts.

The research program sees the current ecological crises as the result of entangled global socio-biological processes that now return with unruly effects. In *The Columbian Exchange*, environment historian Crosby shows how exchange of flora, fauna and microbes between the Old and New Worlds spurred by transatlantic trade set in motion global sociobiological processes that fundamentally and unevenly redrew the map of existence for humans and non-humans in ways that continue to affect us.² Like so, **BIOrdinary** approaches current biodiversity crises not as isolated biological processes but as unfolding afterlives of imperial trade, infrastructural expansions, and previous species mobility.³

Combining Crosby's insights on the world's entangled nature with the fact that most biodiversity shifts unfold in places overlooked by biodiversity policy work, this research program sets out to empirically explore five places, marked by long-lasting human activities, trade and mobilities, caught in what we call "biodiversity dilemmas." These drastic ecological shifts have been propelled by species influx. Common for all cases is that the introductions of the unruly species

that now generate unexpected ecological changes can be traced back to imperial shipping routes and infrastructure projects. This affords a rare opportunity for diverse but thematically united cases to be brought together through the lens of what is, to them, extraordinary dilemmas in ordinary places.

The first case explores tea plantations in Kenya. British settlers brought the Assam tea plant from India to the **East African highlands (CS1)**, turning dense forests into monocultural plantations. Climate change and plant breeding reducing the tea species' internal biodiversity have now made these plantations highly vulnerable. The second case turns to a species movement from the African colonies to Asia: the arrival of the *Aedes Aegypti* mosquito, a highly effective vector for *dengue* and *zika* that thrives in warming temperatures, to the **Urban Singapore (CS2)**. But eradicating this vector comes with high costs: a massive reduction of biodiversity. The third case investigates how the **overexploited Mediterranean Sea (CS3)** is undergoing one of the world's largest marine species transformations. Suez Canal, dug to shorten the route between East and West, today constitutes a "highway" for tropical marine species moving north. Some migrant species threaten local biodiversity, other migrants enrich it. The fourth case continues along the Suez Canal shipping route, following the journey and impacts of Pacific Oyster in **Sweden's West Coast (CS4)**. Originating in the Pacific Ocean, the oyster escaped aquaculture facilities in France, and settled along Western Sweden's shorelines. Accused of outcompeting local species, the story is complicated by the toil leisure boat traffic and tourism have assert on local ecologies. Case five turns to the unintended ecological effects of transatlantic fur trade, exploring how mink brought to Sweden for commercial exploitation escaped captivity and now threaten bird and fish diversity in the **Sweden's East Coast (CS5)**.

State-of-the Art

Often referred to as **more-than-human studies**⁴ and **multispecies anthropology**⁵, this scholarship has challenged human exceptionalism, and man as the sole writer of history, by turning attention to assemblages of humans, other species and material, that are entangled in shifting ways. This processual understanding of the world suggests a distributed understanding of agency beyond human actions. By expanding anthropology's key expertise – the study of relations and humans as first and foremost social beings – to other species, Tsing uses *more-than-human socialities* to approach non-human species as *social beings* embedded in webs of multispecies relations.⁶ Applying this approach ethnographically, Kirksey challenges models of "ecosystems" as constituted by indispensable species that together uphold equilibrium and stability. Instead, he proposes the concept *emergent ecologies* to better capture how "multi-species communities"⁷ are made up by emerging "contingencies of unexpected connections".⁸ These insights allow **BIOrdinary** to understand today's environmental crises not as process in nature only, but as the remains of imperial interventions that return with unintended effects; lively and unruly "histories of the present."⁹

These insights have ramifications for understanding alien and endemic species. If ecologies are ever emerging, the protection of endemic species seem to be underpinned by nativist frameworks that values endemic species and render invasive species killable.¹⁰ More-than-human scholarship

brings attention to lifeforms that thrive in man-made destruction and warming climates,¹¹ and hence re-cast species mobility as the norm rather than an exception.

Critical scholars have critiqued the preoccupation with biodiversity protection within the confines of policed protected areas.¹² The protection of vulnerable landscapes through “green grabbing” and “fortress conservation”¹³ regularly ignore local knowledge and alternative sustainable cohabitation that often leads to the dispossession of local populations.¹⁴ Put in relation to the ongoing impoverishment in biodiversity through monoculture agriculture, these violent conservation projects appear misguided. This recognition calls for research on biodiversity in disrupted landscapes or simply “ordinary places.”

Research Program Part 2. Research design: work packages, theoretical approach and methodology

To achieve its objective, **BIOrdinary** empirically investigates biodiversity dilemmas through five case studies in ordinary places. As detailed above, the case studies have been carefully selected to exhibit a variety of different biodiversity dilemmas triggered by species influx. Their common denominators provide a comparative angle as for how biodiversity shifts transform human-non human relations and livelihoods. At the same time, the cases’ different histories and dilemmas will generate constructive analytical frictions between the sites, that allows us to scrutinize dominant ideas underpinning current biodiversity protections. **Table 1: Case Studies** provides more information about each case’s biodiversity dilemma and its socio-biological histories.

The following working premise underpins the research program:

The current crisis of biodiversity needs to be understood as a result of bio-social historical processes and empirically studied in ordinary places, to create democratic biodiversity strategies that considers environment, economic and social sustainability, health hazards and multispecies justices.

Three work packages constitute the scaffolding for a robust research design:

- **WP1 More-than-human histories,**
- **WP2 Vernacular understanding**
- **WP3 Democratising biodiversity**

Corresponding to **BIOrdinary**’s three research aims, each WPs ensure that research activities will be catered towards generating findings and analyses that address the program’s objectives. Applied to each case study, each WP further structure empirical research and synchronize research questions and methods that will help produce comparable data sets.

WP1: More-than-human histories

Collect data for Aim I

To compose environmental histories that documents the entangled social, cultural and biogeographical processes that have led up to each site's biodiversity dilemma.

Research questions

- What are the most relevant social, cultural and environmental processes that have contributed to the current biodiversity dilemma in each site? What are the social and more-than-human journeys of the introduced species that now cause problems?
- What type of histories (ecological, human, merged) do relevant stakeholders use to explain drastic transformations in these places? What stories do they tell about mobile species and their effects on the landscape?
- How have people in each site historically related to the other species they have shared the space with? What were the forms of cohabitation and conflicts of the past, and what adaptive strategies gave these rise to?

Theory

Building on environmental history and more-than-human studies, **BIOrdinary** challenges the tendency tell histories of human lives and histories of animals' lives separately.¹⁵ This encourage a double move: it relocates humans from outside to inside environmental history¹⁶ and render other species and their live projects as active co-writers of history.¹⁷ Through these theories, we approach ecological crises as “imperial debris” and afterlives of human and non-human circulations. This in turns encourage a minute tracing of the processes that have triggered current biodiversity dilemmas. In parallel, the WP is guided by one of anthropology's core interest: to explore and compare different actors' worldviews. This approach has led the discipline to provincializing assumed universal ideas or truth, in favor for staying with “the trouble“, i.e. the competing worldviews/perspectives presents.¹⁸ This disciplinary outlook encourages a leveling of scientific views with indigenous or popular ideas and renders all interlocutors “theorists” whose vernacular theories and values are of high interest.¹⁹ We will explore vernacular, indigenous and scientific “theorizations” when it comes to past and present species mobility, biodiversity and climate change.

Methodology

Material will be gathered through systematic overviews of existing literature of the place, in for different disciplines, such as biology, history and policy. These perspectives will be supplemented by interviews and participant observation in the field. Different actors and stakeholders (local residents, biologists, elders, farmers and fishers, biological experts) will be consulted, and their historical understandings documented and analysed. This multi-modal methodology will gather diverse set of histories of each place, which will allow for a richer understanding of both continuities and ruptures in the ways peoples over time forged their livelihoods and have adapted to ecological change.²⁰

WP2: Vernacular understandings

Collect data for Aim II

To document vernacular understandings and adaptation practices among local communities and other stakeholders at the frontline of biodiversity dilemmas.

Research questions

- Who are the affected actors? How are they tied to the particular place? How do they use the ecologies and relate the other actors (human and non-human) in this place?
- How are they affected by the current biodiversity dilemma? What adaptation strategies have they developed?
- How do they describe the biodiversity dilemma and the processes that have generated the crisis? Is the contemporary dilemma connected to issues of biodiversity? And how do different stakeholders relate to shifting biodiversity, the settling of new species and emerging ecologies?

Theory

Emergent ecologies suggest moving beyond notions of closed ecosystems, equilibrium and stability. Instead, it captures how life in most places unfolds in relation to constantly changing circumstances and multitudes of other living beings or “multi-species communities.”²¹ The concept helps us think beyond the binary of endemic and “invasive” species, which has been a common starting point for research on biodiversity. As the focus is on vernacular understandings, different perceptions of the environment can also be grounded in more basic ontological differences.²² In her study of the oil palm plantations in West Papua, Chao points to how the recently introduced African oil palm is perceived by indigenous Marind communities as both a stranger and a kin: the cause of their misery but itself a victim.²³ Such differences might also be revealed through different professional roles and practices, as Lien explores in the context of Salmon farming in Norway and the different perceptions relating wild and farmed salmon.²⁴

Methodology

Data for **WP2** will be gathered through ethnographic research (participant observation and interviews) in each site with an emphasis on a *multi-perspectival* methodology. This entails the documentation of identified stakeholders’ different perspectives on the biodiversity dilemmas, and their adaptive strategies. Possible actors are people to whom the ecology is part of their everyday lives and livelihoods (such as fishermen, farmers, factory workers and local residents), tourists and recreational users, local authorities, as well as policy makers and research experts. It is important to note that the objective of this research is to glean a better understanding of the biodiversity dilemma in each site and its impacts on different actors, not an in-depth exploration of the lifeworld of one particular group.

WP3. Democratising biodiversity

Collect data for Aim III

To formulate a more just, democratic and inclusive biodiversity agenda

Research questions

- What would more democratic and inclusive biodiversity look like?
- What are the underlying assumptions in current biodiversity paradigms?
 - In which places and for which species are biodiversity valued, where is it ignored or consciously dimensioned? For what reasons?
 - Where and how are decisions about biodiversity made?
- How do people at the frontline of drastically changing landscapes, understand biodiversity and the predicaments of other species, new or native?
- How do these understandings, worldviews and ideas of justice affect their ideas of future actions?

Theory

Anthropology's prime occupation is the study of relation, understood as the different ways people are connected to one another and society. This understanding highlights power as a key to understand and analyse different relation, such as love, care, domination or animosity.²⁵ Lately, the Decolonizing anthropology movement has sought to unshackle the discipline from its own problematic relations of power, and mobilize the discipline's knowledge in the service of a safer and more just society.²⁶ Primarily focused on formerly enslaved, exploited or colonized people, these calls for justice have also been extended to labouring and exploited non-human species.²⁷ This form of ethics is not new. In many places, indigenous cosmologies stake out less violent ways of living as discussed in WP2. But with a few exceptions, an attention to relations as imbued with power illustrates the multitude forms they take between humans, other species that share landscapes: care, reciprocity tensions, conflicts or exploitations.²⁸ Empirical research is need to uncover them. **BIOrdinary**'s ambition to democratise biodiversity uses decolonial theories to critically scrutinize present biodiversity paradigms, and to document alternative ways for relating from above and below. Recognizing the ubiquity of power in any relation, we are cognizant that democratization and inclusion processes also imply renegotiations of power and privilege. For these reasons, debates about biodiversity, climate change or multispecies justice are contentious. Instead of shying away from conflicting interests, **BIOrdinary** draw on queer politics insights the see conversations as the means not to reach an already formulated goal, but the beginning of a process necessary for moving forward.²⁹

Methodology

Data will be collected in the field through similar methods as in WP3. Findings from WP1&WP2 will be systematized and analysed through critical power theories to compare how processes of biodiversity loss and protection unfold in different locales. Each researcher will also organize workshops in their sites to bring local stakeholder together to create a space for actors to discuss biodiversity dilemmas, and possible ways forward. In this, the workshops methodologically

become ethnographic sites that provide insights into opportunities and challenges of cross-actor dialogues. Yet, the workshops are also trial spaces. By initiating and staging inclusive dialogues, AimIII is turned into practice. The same methodological duality is extended to other outreach activities and communication with publics (detailed below). Like the site-specific workshops, these activities are not only avenues of communication, but empirical cases of and trials for biodiversity-democracy in progress.

Project organization

Team composition

The 42 months research program will run over five calendar years, from December 2022 to May 2026. The core research team is made up by **five researchers** at the Department of Social Anthropology, Stockholm University. The researchers have in varied degree carried out preliminary research on their respective cases and are in contacts with several of the relevant actors and stakeholders.

Research activity levels are motivated by the distance to the field, faraway research is more time consuming, and by the fact that Karlsson's has conducted previous research in his site. As project leader, Karlsson has 5% to oversee progress and scientific quality. 20% of Ahlberg's and Cole's time will devoted to managing the program's research activities and outreach plans (which also are understood as empirical sites to learn from).

Case	Researcher	Activity level research/admin
CS1: Tea plants in Kenyan plantations	Beppe Karlsson	35/5%
CS2: Mosquitoes in Singapore	Tomas Cole	60/20%
CS3: Marine Biota in the Eastern Mediterranean	Karin Ahlberg	60/20%
CS4: Pacific oysters on Sweden's west coast	Ivana Macek	40%
CS5: North American mink on Sweden's east coast	Erica von Essen	40%

Workplan & Project Activities

The program is structured by described WP1-WP3. Each WP will make up activities for a year sparing the last 6 months where concluding and conclusive activities are planned. 2023 (roughly) will be devoted to WP1: more-than-histories, 2024 to WP2: Vernacular understandings and 2025 to WP3: Democratizing biodiversity. Each year is divided into two 6-months periods (7 periods in total, P1-P7). The first half year structures research activities at home (P1, 3, 5 & 7) and while the second, periods of field research (P2, 4 & 6). For each WP-year, the first 6-months period

includes weekly meetings, thematic reading groups, and presentations of work-in-progress organized around relevant scholarship. The second 6-month period is devoted to field research, during which the team meets weekly, to share insights, challenges and ideas. While there will be overlaps between WPs, the overall structures ensure that team members conduct similar research at the same period of time, which will enrich conversation and simplify joint publications. This periodization also create continuity over the years when activities and milestones reoccur around the same date annually.

BIOrdinary has an **Expert group** consisting of six researchers with expertise in environmental history, environmental humanities and more-than-human anthropology. The expert group ensures scientific quality and progress. Convening annually, team members will circulate work-in-program in advance to receive feedback. As such, the meetings serve as milestones for preparation of publications. In addition, the Expert group fills an important check-and-balance function, preventing individual team members to dictate conditions or infringe on other members' academic freedom. **Table 2: Expert group** outlines an example of a desired Expert group.

Dissemination of findings

Explained in detail under **Communication with stakeholders**, the program will result in one edited volume, 15 peer-reviewed articles in disciplinary and interdisciplinary outlets, in addition to some shorter popular pieces. Conference participation, workshops and organization of summer schools are other ways in which findings will be disseminated. Timelines for these milestone can be found in **Table 3: Work plan, timeline and milestones**.

Visualization: Workplan, timeline & milestone

Table 3: Work plan, timeline and milestones presents a comprehensive overview of the program's workplan over the 42-month period, including team activities, fieldwork periods and milestones.

National and international cooperation

Table 4: National and international cooperation provides an overview of current networks that the research team is involved with and will continue exchanging knowledge with throughout the project.

Research program Part 3. Benefits to society and contributions to sustainable development

BIOrdinary will help society move beyond dominant understandings of biodiversity protection as confined to hotspots and nature reserves (SDG 14 & 15). By focusing on biodiversity in ordinary places, we locate biodiversity in “society.” In parallel, we place the human “within history”³⁰ to underline how many current biodiversity dilemmas are results of previous human projects. This starting point not only problematizes the dichotomy between pristine natures and ecologically disrupted places. It questions the premise that biodiversity has no significance in the latter. Instead, we will reveal what may be surprising manifestations of shifting biodiversity states in sites habited by people, plants, insects and animals.

By advancing the idea that species mobility is an *expected effect*, the program suggests species mobility to be a standing item when planning healthy and resilient ecologies, be they wild, plantations or industrial. EU calls to revise invasive alien species (IAS) plans to become more humane to animals illustrate the turning tides of public opinion.³¹ Thus, abandoning the idea that species are passive or ought to be sedimentary, **BIOrdinary** acknowledges that mobile species are becoming “climate refugees,” who, like humans, are searching for livable habitats³² due to climate crises.

In ordinary places, i.e. human society, biodiversity become a concern among others. New species may destroy livelihoods, infest people or turned into a source of nutrition, generating conflicting interests, which echoes the SDG:s greatest challenge: finding a balance between *economic, social and environmental sustainability*. Multiple vernacular understandings across the globe will analyzed to develop more democratic biodiversity strategies that considers biodiversity in relation to economic and social sustainability, health hazards and multispecies justices. They will also lay the foundation for more *inclusive and accessible public participation*. Indeed, popular enthusiasm for close-to-home projects, like *Meet your Wild Neighbors*, suggest that public engagement with conservation can be leveraged at sites that connect people through habitation, work and leisure.

Communication with stakeholder and the public

BIOrdinary pursues multiple pathways towards impact among different audiences

(1) The academic community

Findings will be disseminated to the scholarly community through **one co-edited volume** with contributions from team members and expert group, and **15 peer-reviewed articles** (single and co-authored). Publication avenues are traditional journals such as *Cultural Anthropology* and *Environmental Humanities*, and in interdisciplinary journals *Pathways: Human Dimensions of Wildlife* and *Conservation Biology*. Shorter or experimental formats will be submitted to *The Conversation* and *Society & Space*, *AlphaGalileo*, *Live Science* and *Anthropology Today*. Publication progress is ensured through annual writing retreats. Two international workshops organized by **BIOrdinary** and

conference participation (3-5 conferences such as European Association of Social Anthropologists and POLLEN) allow for multidirectional academic knowledge exchange. The project advances the second duty of the University, education, through a yearly 7,5 ECTS elective summer course *Biodiversity dilemmas in ordinary places* in 2023, 2024, and 2025; a yearly week-long summer schools (3 in total). It will be held in Norberg, a place marked by past mining and iron industries, large-scale logging, monocultural tree plantations and wildfires. Prof. Karlsson's owns a premise and an art gallery in Norberg, which will be the base for the school. Targeting postgraduate students, the school will be structured around interdisciplinary field-laboratories, local engagements with the surrounding landscape³³ and invited workshop leaders. Both elective courses and summer schools will equip future citizens and scholars in the social sciences and humanities with conceptual, methodological and analytical skills to analyze climate crises more inclusively. Cross-collaboration will be sought with University of Kent's Centre for Biocultural Diversity, given their extant postgraduate training of anthropologists working with biodiversity.

(2) Involved actors and stakeholders of case

Local actors and stakeholders will be engaged primarily through smaller workshops in the field, as well as through shorter briefs of the key findings in each site. Participants include fishermen, hunters, farmers, plantation laborers and local residents, local authorities and biological experts. Communication and learning in these workshops are understood as multi-directional, in which the researchers learn from other participants and *facilitate knowledge exchange between different stakeholders*. As such, they contribute to the project vision of democratizing biodiversity (as described in WP3).

(3) Policy & practitioners

Research findings will be presented at some of the following intergovernmental secretariats whose current work engages with biodiversity, invasive species and climate change: the *Centre for Agricultural Biosciences International*, *Convention on Biological Diversity*, *CITES*, the *IPCC*, *International Maritime Organization*, the *Food and Agriculture Organization* and the *World Organisation for Animal Health*. Particular efforts will be made to collaborate with the *Eurogroup for Animals* (EGA), which connects a consortium on a pilot project funded by the EU in 2021 to establish **best practices for the humane management of invasive alien species – a first of its kind**. While such initiatives are easy to reconcile with growing animal welfare and animal ethics agendas, it remains an open question how 'humane' the response to IAS may be when seen in light of biodiversity and zoonotic health threats. We aim to participate at the EGA's seminars and symposia, and if possible, organize a workshop with them. This will facilitate policy and media uptake, as well as cross-pollinate to other interparliamentary EU groups, like *Hunting, Biodiversity & Countryside*, in which we have presented before. Nationally, findings will be regularly disseminated at the Swedish Environmental Protection Agency's annual wildlife management conference. We will also seek to consult for their future revisions of plans, on everything from zoonoses and IAS management to biodiversity goals.

(4) The broader public

By turning to biodiversity dilemmas outside nature reserves, we aspire to make the crises produced by climate change more tangible. **BIOrdinary** will run an active Instagram account to communicate different approaches to biodiversity and our research findings to the public. By making use of key hashtags (#invasivespecies, #biodiversity, #speciesextinction), the account will serve as an alternative voice to accounts that celebrate the killing of invasive species. The account will also be connected to our project blog where we will publish shorter stories relating to our respective case studies. Multi-species cohabitation and human-animal-plant relations are popular topics on the art and museum scene (cf. *The Non-Human Animal – Negotiating Bio-relations*, Uppsala Art Museum 2019 and *Experimentalfältet* at Accelerator, Stockholm University). **BIOrdinary** will cooperate with exhibitions like these, to make public lectures and workshops part of the exhibition program. The program will also cooperate with biologists, to offer guided tours to ordinary places in the Stockholm area undergoing biodiversity dilemmas (infestations of bark beetle in Lill Jans Skogen & beavers in Gröndal). These events are understood as learning opportunity for the team members. To reach out to a younger audience, the program will work together with a children's' book author to compose a book or pamphlet in which migrant species histories are presented in a story format.

¹ Target 15.8: By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species. (<https://sdgs.un.org/goals/goal15>)

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⁷ **Kirksey** 2015, p. 3. Fn. 5

⁸ **Kirksey** 2015, p. 5. Fn. 5

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