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Introduction – The Human Relationship with the Changing Biodiversity

We live on a planet with one incredible property – the ability to sustain diverse life. Healthy ecosystems ensure many things we take for granted. Plants convert the sun's energy into a form that can be used by other lifeforms. Bacteria and other organisms break down organic matter into nutrients that provide a healthy growing medium for plants. Pollinators are vital for plant reproduction and to ensure our food supply. Plants and oceans are often regarded as important carbon sinks. The water cycle is also heavily dependent on living organisms.[1] Thus, the vitality of biodiversity significantly contributes to our well-being and survival on this planet.

However, the decline in this diversity has been accelerated for the last 200 years due to the rapid increase of human-induced biodiversity loss and the growing extinction rate.[2] Experts in biodiversity research have concluded that approximately 30 percent of the world's species have been threatened or made extinct since 1500. These same experts estimate that if current trends continue, further biodiversity loss is expected, and they anticipate that approximately 37 percent of species might be threatened or driven to extinction by 2100. These changes will have a major impact on how ecosystems will function in the future, and in this way they will also have a profound effect on every species on Earth, including humans.[3]

It is important to note that these changes in biodiversity are mainly due to human activities and their consequences, as various studies indicate.[4] The direct

1 See, e.g., John King, *Reaching for the Sun: How Plants Work* (Cambridge: Cambridge University Press, 1997); Inez Y. Fung et al., "Evolution of Carbon Sinks in a Changing Climate," *Proceedings of the National Academy of Sciences* 102, no. 32 (2005), doi.org/10.1073/pnas.0504949102; Carmen Astudillo-García et al., "Microbial Assemblages and Bioindicators as Proxies for Ecosystem Health Status: Potential and Limitations," *Applied Microbiology and Biotechnology* 103, no. 16 (2019), doi.org/10.1007/s00253-019-09963-0; Jeff Ollerton, *Pollinators and Pollination: Nature and Society* (Exeter: Pelagic Publishing Ltd., 2021).

2 Gerardo Ceballos et al., "Accelerated modern human–induced species losses: Entering the sixth mass extinction," *Science Advances* 1, no. 5 (2015), doi.org/10.1126/sciadv.1400253.

3 Forest Isbell et al., "Expert Perspectives on Global Biodiversity Loss and Its Drivers and Impacts on People," *Frontiers in Ecology and the Environment* 21, no. 2 (2023), 94–103, doi.org/10.1002/fee.2536.

4 See, e.g., Belinda Gallardo et al., "The Importance of the Human Footprint in Shaping the Global Distribution of Terrestrial, Freshwater and Marine Invaders," *PLoS ONE* 10, no. 5 (2015),

https://doi.org/10.1515/9783111215273-001

or indirect human impact has a significant role in the changes in animal and plant populations: humans cause changes through land use, international movement of people and non-human species and goods, pollution and climate change. Changes can also be caused by the actions of businesses and individuals but, on a larger scale, they often result from cultural habits and official decision making. Humans as a species are currently often seen as a "force of nature", and these environmental changes are referred to with the term *Anthropocene*, coined to define the current human-dominated era.[5]

The changes in biodiversity have already caused economic, health-related and social impacts around the world in addition to ecological issues such as the displacement of animal and plant species with others (Figure 1). One example is the brown tree snake (*Boiga irregularis*), a native species in the Indonesian archipelago, which have believed to have stowed away in a military plane between the 1940s and 1950s on the island of Guam, where their population exploded in the absence of predators. Not only have they managed to almost completely wipe out Guam's wild bird population, but they have also caused major outages across the island and occasionally bitten people. Brown tree snakes are very adept at hiding among cargo transported by ships and planes and are therefore widespread across Oceania.[6]

The question of species arriving in new habitats is not limited to animals alone. Plants spread to new areas not only when their seeds are disseminated by wind or other animals, but also when they are transported and planted by humans. Many of the plants considered problematic today were intentionally brought to their respective new areas either as useful plants or for gardening. For example, the beach rose (*Rosa Rugosa*), introduced to Europe from Asia as an ornamental plant, has escaped from gardens into nature where it has outcompeted the native flora, especially on the seashores. The beach rose also provides a good example of a plant species that divides opinions; some people perceive the it as a beautiful and useful plant, for instance, due to its high salt resistance, while others think it should be completely exterminated.[7]

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doi.org/10.1371/journal.pone.0125801; Gerardo Ceballos et al., "Biological Annihilation via the Ongoing Sixth Mass Extinction Signaled by Vertebrate Population Losses and Declines", *Proceedings of the National Academy of Sciences* 114, no. 30 (2017), doi.org/10.1073/pnas.1704949114.

5 See, e.g., John W. Kress and Jeffrey K. Stine, eds., *Living in the Anthropocene: Earth in the Age of Humans* (Washington, D.C.: Smithsonian Institution, 2017).

6 Daniel Simberloff and Marcel Rejmanek, "100 of the World's Worst Invasive Alien Species: A Selection from The Global Invasive Species Database," in *Encyclopedia of Biological Invasions* (Auckland: ISSG, 2019), 4. doi.org/10.1525/9780520948433-159.

7 See, e.g., Harri Uusitalo et al., "Alien Plants between Practices and Representations: The Cases of European Spruce and Beach Rose in Finland," *Plant Perspectives* 2 (2024) doi.org/

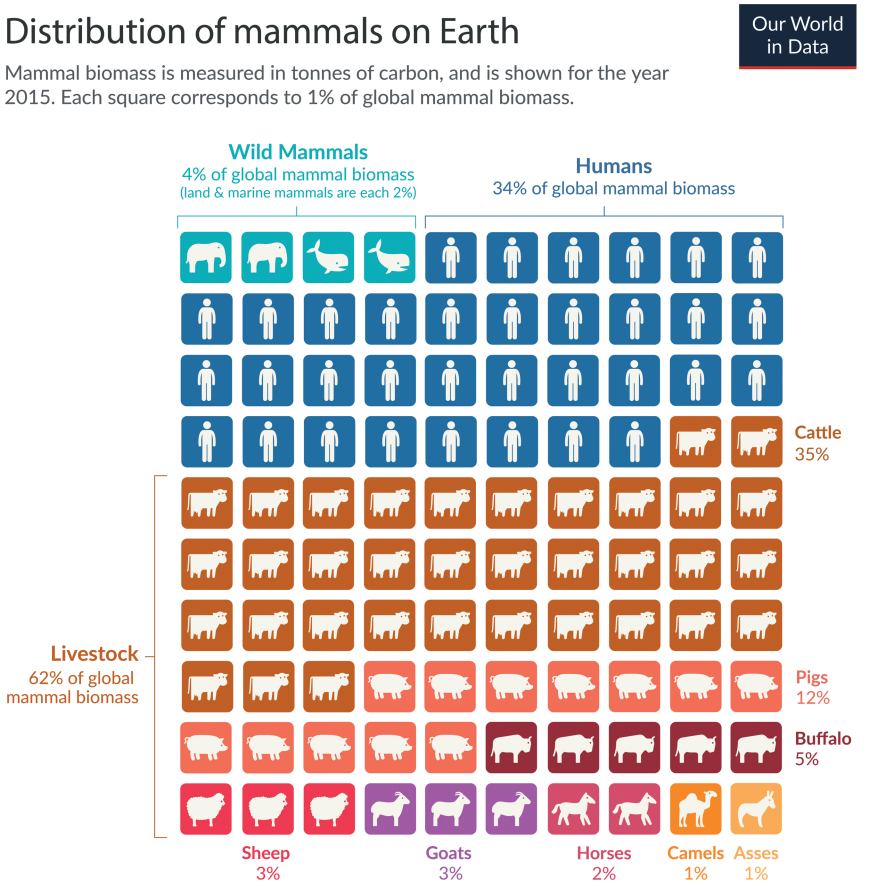

Figure 1: This figure demonstrates human dominance over the mammal kingdom. Humans and their livestock cover altogether 96 percent of mammals on Earth. From the time of the arrival of humans, the biomass of wild mammals has declined by approximately 85 percent. Source: https://ourworldindata.org/wild-mammals-birds-biomass. Accessed November 21, 2023.

10.3197/whppp.63845494909721; Inger Weidema, "NOBANIS – Invasive Alien Species Fact Sheet – Rosa rugosa," *Online Database of the European Network on Invasive Alien Species – NOBANIS.* Accessed November 24, 2023. https://www.nobanis.org/globalassets/speciesinfo/r/rosa-rugosa/rosa_rugosa.pdf;

The arrival of animal and plant species in new environments has many planetary effects that go beyond species boundaries. Equally impactful is the disappearance of species; biodiversity loss is a major threat to ecosystems, remembering that humans are an integral part of these ecosystems, with the disappearance of species also known to evoke strong feelings in people.[8] Human emotions are often rather contradictory, varying from hate and anger to sadness and worry, as demonstrated by the case of the porpoises habituating the Baltic Sea. Porpoises were still abundant in the Baltic Sea area at the beginning of the twentieth century, but their numbers decreased dramatically in the mid-twentieth century. Some estimates suggest that there are only about 500 individuals in the Baltic Sea today; based on preliminary studies, the population of harbour porpoises in the Baltic Sea declined for a variety of reasons, but almost all of them were caused by humans.[9] People, in turn, have started to worry and feel sad about the porpoises' potential extinction after the massive destruction of the species.

The previous examples show that changes in biodiversity are not just things that happen outside the human realm; they also occur in a multispecies network in which humans are deeply embedded. Despite this, the majority of research on biodiversity change has been conducted in the field of natural sciences rather than in the humanities or the social sciences. Those studies conducted, for instance, in the field of biology are important and vital, but we argue that the natural sciences are unable to exclusively explain the human influences on other species and how these influences have been formulated and changed in the course of time. The changes occurring in species populations are closely linked to human activities and the views concerning the use and control of the environment, which have all been culturally and linguistically formulated in a long-term historical process.

Thus, we also need research investigating the human relationship with the whole range of biodiversity conducted within the humanities and the social sciences in order to tackle environmental crises such as biodiversity loss. We need to understand how human knowledge of nature and emotions towards different

8 Dolly Jørgensen, *Recovering Lost Species in the Modern Age: Histories of Longing and Belonging* (Cambridge: The MIT Press, 2019); Hannah Comtesse et al., "Ecological Grief as a Response to Environmental Change: A Mental Health Risk or Functional Response?", *International Journal of Environmental Research and Public Health* 18, no. 2 (2021), 734, doi.org/10.3390/ijerph18020734.

9 Sven Koschinski, "Current Knowledge on Harbour Porpoises (Phocoena Phocoena) in the Baltic Sea," *Ophelia* 55, no. 3 (2001), doi.org/10.1080/00785326.2001.10409483; Linnea Cervin, Tero Harkonen and Karin C. Harding, "Multiple Stressors and Data Deficient Populations; a Comparative Life-History Approach Sheds New Light on the Extinction Risk of the Highly Vulnerable Baltic Harbour Porpoises (Phocoena Phocoena)," *Environment International* 144 (2020): doi.org/10.1016/j.envint.2020.106076.

species of animals and plants have developed in different cultures over time. This will help us to understand our actions towards non-human nature and how, for example, current traditions of decision making about nature have evolved. It will also help us to understand terms used in science, such as invasive alien species or biodiversity, that have a cultural context and have emerged for a specific time and culture, which is why they may carry different meanings that can be used for several purposes.[10] Therefore, we need multidisciplinary approaches that can explain how society, culture and language all have their own influence on how people think about biodiversity and its changes.

The significance of the environmental humanities becomes evident when there is a need to challenge and give new perspectives to previous research on nature. Evolution theory has shown that all life on Earth is in a state of constant change, although nature is often seen as an unchanging entity, particularly in Western culture(s). This has been reflected not only in western societies' everyday thinking but also in science, which has long been based on the search for universal and timeless laws of nature. However, through historical and cultural research into the relationship between humans and nature, we are able to show that our current understanding of nature, as an entity that does not change and has a perfect status quo that should not be disturbed, is not a permanent or unchangeable "truth". It was formed in the early modern period and did not become a widely established worldview before the turn of the 1800s and 1900s and is by no means universal.[11]

The study of environment in the humanities and in cultural studies shows that nature is never complete but is under continuous construction.[12] Despite this, some natural environments, such as the sea or the wilderness, have been perceived as unchangeable and ahistorical places because the environments that fulfil the expectations human cultures have set for them have come to be considered "natural" or "normal". These notions are often forced on the material world, for instance, by protecting species that are, according to humans, in their "natural" or "normal" environment and by exterminating those that are not. Thus, regardless of other spe-

10 Arran Stibbe, *Animals Erased. Discourse, Ecology and Reconnection with the Natural World* (Middleton: Wesleyan University Press, 2012), 119; Harri Uusitalo and Karita Suomalainen, "Ecolinguistic Approach to Online Finnish Discourse on Invasive Alien Species," *Language@Internet* 21, no. 3 (2023), http://www.languageatinternet.org/articles/2023/uusitalo.

11 See, e.g., Michel Foucault, *The Order of Things: Archaeology of the Human Sciences* (New York: Routledge, 2002), 139–144; Otto Latva, *The Giant Squid in Transatlantic Culture: The Monsterization of Molluscs* (London: Routledge, 2023), 4–5, https://doi.org/10.4324/9781003311775.

12 Tim Ingold, *The Perception of the Environment. Essays in Livelihood, Dwelling and Skill* (London: Routledge, 2000).

cies' own preferences for their natural environment, humans are actually defining and dictating what belongs to a certain environment and what should be left out.[13]

Studying changes in biodiversity from the perspective of the humanities and the social sciences shows how the disappearance and arrival of new species turns the ideal of "natural environments" upside down because they break the image of an authentic environment. The debate regarding defining animals and plants as invasive or alien species well reflects the images of such authentic environments. Overall, the question of what is alien or invasive is very complicated; how do we draw a line between problematic and unproblematic and decide if there is a need for action?[14] This complexity of the issue is reflected in the terminological conversation about species being alien, invasive alien, non-native, foreign or perhaps something else.[15] The European Commission, for instance, has defined the term invasive alien species as "animals and plants that are introduced accidentally or deliberately into a natural environment where they are not normally found, with serious negative consequences for their new environment".[16] IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services), working under the UN, has emphasised in their recent report the enormous economic costs that the more than 37,000 invasive alien species will cause globally,[17] yet it is still important to ask whether all invasive species are dangerous and whether the resistance they face is also associated with cultural notions of resisting change rather than a biological threat.

Discussions on invasive alien species are often characterised by narratives of cultural perceptions of resisting change. For instance, historian Peter Coates has pointed out how new and previously unknown species of animals and plants have been spoken about in the American public discussion with a negative tone

13 See, e.g., Chris Philo and Chris Wilbert, "Introduction," in *Animal Spaces, Beastly Places. New Geographies of Human-Animal Relations*, ed. Chris Philo and Chris Wilbert (London: Routledge, 2000), 1–35.

14 Peter Coates, *American Perceptions of Immigrant and Invasive Species: Strangers on the Land* (Berkeley: University of California Press, 2007), 5; Ian D. Rotherdam and Robert A. Lambert, "Balancing Species History, Human Culture and Scientific Insight: Introduction and Overview," in *Invasive and Introduced Plants and Animals. Human Perceptions, Attitudes, and Approaches to Management*, ed. Ian D. Rotherdam and Robert A. Lambert (London: Earthscan, 2011), 5.

15 Robert I. Colautti and Hugh. J. MacIsaac, "A neutral terminology to define 'invasive' species," *Diversity and Distributions* 10 (2004), doi.org/10.1111/j.1366-9516.2004.00061.x.

16 "Invasive Alien Species," European Commission. Accessed October 23, 2023. https://environment.ec.europa.eu/topics/nature-and-biodiversity/invasive-alien-species_en.

17 Media release: IPBES Invasive Alien Species Assessment 4.9.2023. Accessed October 21, 2023. https://www.ipbes.net/IASmediarelease.

similar to the xenophobic discourse on ethnic minorities and people of foreign origin.[18] It is also relevant to ask when people "permit" a species to be native instead of invasive, how many decades or centuries does this acceptance take? Is it possible for some invasive alien species to be beneficial to the ecosystem? For example, introduced earthworms have been beneficial to agricultural productivity, particularly in places where earthworms did not occur historically, such as in the Midwestern USA.[19] These questions related to both "arriving" and "departing" species are relevant everywhere in the world, and it is these questions that we also aim to answer in this book.

The Study of Biodiversity Changes in the Humanities and the Social Sciences

Considering the urgency of preventing environmental crises, the study in the humanities and the social sciences of the human relationship with the changing biodiversity is surprisingly scarce. Animals and plants have been, of course, an integral part of the humanities and the social sciences research since the late nineteenth century, however, these early studies treated animals and plants mainly as numbers and economic units rather than as living beings that shaped the past and present. This research in the humanities and the social sciences, which understands non-human nature as an active agent like humans, was not conducted until the turn of the 1990s and 2000s, or at least not before the 1980s,[20] while geographers have been interested in the human-animal and human-plant relations regarding space, place and location since the beginning of the 2000s.[21] Some historians and anthropologists have also focused during these decades on the extinction of ani-

18 Coates, *American Perceptions*, 1–7.

19 Dov F. Sax et al., "Valuing the contributions of non-native species to people and nature," *Trends in Ecology & Evolution* 37, no. 12 (2022), 1058–1066, doi.org/10.1016/j.tree.2022.08.005.

20 See, e.g., Harriet Ritvo, "On the Animal Turn," *Daedalus* 136, no. 4 (2007), http://www.jstor.org/stable/20028156; Kathleen Cruz Gutierrez, "From Objects of Study to Worldmaking Beings: The History of Botany at the Corner of the Plant Turn," *History Compass* 21, no. 8 (2023), doi.org/10.1111/hic3.12782.

21 Philo and Wilbert, "Introduction"; Owain Jones and Paul Cloke, *Tree Cultures: The Place of Trees and Trees in Their Place* (Oxford: Berg, 2002).

mals,[22] on the political ecology of traditional livelihoods and conservation[23] and on how rare and endangered animals have been perceived,[24] but little research has also been conducted on the arrival of species in new environments and on human perceptions of alien and non-native plants[25]; the perspectives of ecolinguistic research have mainly occurred recently in the linguistics field.[26] On the whole, many of these previous studies have been related to the field of human-animal studies, which has been a growing field of study since the 2000s, or to the field of human-plant studies, which has been a very marginal field of study until recent years. Not all, but many, of these studies have also focused on well-known and charismatic species[27]; most importantly, these previous studies are also not directly defined as research on the relationship between humans and the changing biodiversity.

The research in the field of biodiversity studies has mainly been conducted in the natural sciences and biodiversity as a term is also easily associated with biology. However, environmental problems such as biodiversity loss do not respect the boundaries of science, which is why we want to demonstrate in this book what kind of biodiversity-related studies can be carried out in the field of humanities and social sciences and what kind of results can be achieved through such research. Overall, our aim is to lay the foundations for an interdisciplinary approach to biodiversity research, in which the role of environmental research in the humanities and social sciences is taken more clearly into account.

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22 Deborah Bird Rose et al., eds., *Extinction Studies: Stories of Time, Death, and Generations* (New York: Columbia University Press, 2017); Jørgensen, *Recovering Lost Species.*

23 Arturo Escobar, "Whose Knowledge, Whose nature? Biodiversity, Conservation, and the Political Ecology of Social Movements," *Journal of Political Ecology* 5, no. 1 (1998), doi.org/10.2458/v5i1.21397; Genese Sodikoff, "Totem and Tobii Reconsidered. Endangered species and Moral Practice in Madagascar," in *Anthropology of Extinction – Essays on Culture Species Death*, ed. Genese Sodikoff (Bloomington: Indiana University Press, 2012), 81–100; Kirsi Sonck-Rautio, "The Endangered Coastal Fishers along the Coast of the Archipelago Sea: The Environmental Conflict in Policy-Making," *Ethnologia Fennica* 46 (2019), 5–35, https://doi.org/10.23991/ef.v46i0.75027.

24 Ursula K. Heise, *Imagining Extinction: The Cultural Meanings of Endangered Species* (Chicago: University of Chicago Press, 2016); Latva, *The Giant Squid in Transatlantic Culture*.

25 Coates, *American Perceptions*; Dolly Jørgensen, "Migrant muskoxen and the naturalization of national identity in Scandinavia," in *The Historical Animal*, ed. Susan Nance (New York: Syracuse University Press 2015), 184–201; Michaela Fenske and Bernhard Tschofen, *Managing the Return of the Wild. Human Encounters with Wolves in Europe* (New York: Routledge 2020).

26 Arran Stibbe, *Ecolinguistics. Language, ecology and the stories we live by* (London: Routledge, 2015).

27 See, e.g., Lisa Jean Moore and Rhoda M. Wilkie, "Introduction to The Silent majority: Invertebrates in Human-Animal Studies," *Society and Animals* 27, no. 7 (2019), doi.org/10.1163/15685306-00001903; Latva, *The Giant Squid in Transatlantic Culture*, 243.

This book approaches the human relationship with the changing biodiversity from three different angles that form the book's sections: belonging and non-belonging, emotions and environmental policy. These three approaches partially overlap, which binds them closely together. Multidisciplinary approaches include cultural, environmental and multispecies history, literature studies, linguistics, anthropology and political ecology, with our writers looking at these topics from a Trans-Atlantic context in Europe, North America and the Caribbean. As noted before, these themes are global, and we wish to encourage other scholars to tackle similar themes in other regions than the aforementioned ones.

Questions of belonging and non-belonging are crucial because we need to understand why some species are understood to have the right to exist somewhere and others do not. What species do we "allow" to exist in certain places and which ones do we want to protect? Which species are we willing to exclude and let perish or even actively exterminate? Who are the welcomed and the unwelcomed ones? In the first chapter authored by Otta Latva, Kirsi Sonck-Rautio and Aino Jämsä, the unwelcomed other is blue-green algae, or cyanobacteria, a topical subject of public discussion in the context of the Baltic Sea. One of the main reasons for the debate is the toxicity of blue-green algae blooms that prevents people from using seawater, for instance, for swimming. The biomass of blue-green algae in the Baltic Sea has also increased considerably over the past decades, particularly due to eutrophication. However, despite being toxic and unwanted by humans, blue-green algae are extremely important for life on Earth because they produce and release large amounts of oxygen into the atmosphere. Their chapter explores how people's perceptions of blue-green algae have changed over time in Finland by analysing vast newspaper archives and ethnographic data. They particularly analyse why blue-green algae have become an increasingly undesirable organism over the past decades and what issues and discourses have been associated with the undesirability of these cyanobacteria. This topic offers interesting insights into the human-bacteria relationship, which is still rarely studied because blue-green algae are a contradictory bacterium for humans, being simultaneously both dangerous and beneficial.

The framework of political ecology offers insights into the questions of belonging and non-belonging – who gets to decide which species belong and, even more, who determines the ways we are allowed to co-exist with certain species? Sonja Åman's chapter explores this topic by discussing how local and traditional ways of existing with whales, and interacting through whaling, can be criticised and denied for the sake of biodiversity conservation. The gray whale (*Eschrichtius robustus*) was removed from the list of endangered species in 1994, news which was received with general jubilation, but for the Makah, a tribe Indigenous to the Pacific Northwest, it also marked the beginning of what would become a long and

arduous process of affirming their treaty-protected rights. The Makah have secured a livelihood from their customary waters for thousands of years by fishing, sealing and, crucially, whaling. Sonja Åman investigates what happened when the tribe applied to resume their whaling practice following the re-categorisation of the gray whale and how different extinction entanglements are negotiated in environmental governance.

Yota Batsaki draws attention to a rarely discussed topic: humans as responsible for a species unlikely to survive extinction. Batsaki reminds us that we understand humans as agents of extinction, but what if they were responsible for a species' unlikely survival? *Franklinia alatamaha*, a tree last sighted in the wild in 1803, now grows in gardens around the globe due to human propagation. Its extinction in the wild was initially attributed to the destructive practices of the Anthropocene, but biogeographers now suggest the reason for the reversal may lie in the vagaries of plant migration after periods of glaciation and climate change. *Franklinia*'s survival speaks to the complexities of belonging when the nature/culture distinction no longer holds.

Questions of belonging and non-belonging are also relevant in the urban context. Urban areas, such as parks, yards and gardens, are often species-rich habitats, and many wild animals can thrive in urban spaces due to urbanisation; still, humans are more willing to share urban space with some animals than others. Heta Lähdesmäki's chapter examines the concept of belonging in multispecies cities by looking into the inclusion and exclusion practices that birds and rats faced in Helsinki, Finland's capital. Various sources, from newspaper articles to archived material, reveal that people have fed birds in Helsinki since the late nineteenth century and have welcomed these species as their neighbours through this practice. However, some bird species' belonging has been challenged; for instance, urbanites' attitudes toward pigeons drastically changed during the twentieth century. In contrast, Helsinki citizens have consistently deemed rats as unwanted neighbours through different practices for hundreds of years. Urban biodiversity is constantly changing, and so is the human idea of what species belong in cities. As Lähdesmäki writes in her chapter, belonging or non-belonging is always negotiated: some people are ready to exclude certain species from the fauna, yet others might appreciate them and want to protect them, such as what happened with city pigeons in twentieth-century Helsinki.

The second part of the book focuses on emotions, which have a significant role in human-nature relations. Those chapters examine the ways we feel sympathy for one species, yet are capable of deep anger towards others. Emotions are not constant, however, and they often alter over time and are also affected by, e.g., others' opinions, the media, public discourse and popular culture. Elina Valovirta's chapter enlightens the human relationship with the corals in Caribbean

romance novels. Corals and coral reefs are frequently mentioned in many popular romances taking place in the Caribbean; some are more explicitly linked with corals and marine life, while others barely mention corals despite taking place in a seaside environment, making coral reefs visible by their absence. Valovirta's analysis mines the use of corals and marine life in popular romance fiction that is booming on the electronic literary market. She argues for their importance not only for the biodiversity of marine life in the Caribbean but also for a seemingly apolitical genre of popular literature. Putting corals and their loss into conversation with environmentalist concerns helps envision sustainability in connection with "the creative economy of literature".

Hannu Salmi looks at a conservation icon in Finland, the white-tailed eagle, one of the largest birds of prey in the Nordic countries and a common species throughout Eurasia, as well as a species that has been on the verge of extinction in Finland since the beginning of the twentieth century. The white-tailed eagle was specifically known at the beginning of the twentieth century as a species of the archipelago and coastal regions, and its preservation aroused extensive debate in the 1920s, with the species protected in Åland in 1924 and elsewhere in Finland in 1926, even if its status was extremely endangered in practice throughout the century. Salmi's chapter examines the public debate related to the white-tailed eagle and analyses what kinds of emotions were associated with the species and its endangered status.

Tracie L. Wilson's chapter analyses the tensions that emerge when recovering populations of endangered predators become more numerous, generating conflict with specific stakeholder groups. Wilson examines the ways that these disputes are entangled with broader narratives that provoke ambivalence toward open borders, migration and cultural and biological fluidity. She also reflects on the complex linkages between Germany and Poland, relationships to other contested mobilities and the increasingly transregional aspects of debates about the return of wolves. Many politicians, religious leaders and media in Poland have depicted environmental organisations as "eco-fascists" in the last 25 years, working on behalf of alien interests. Debates surrounding the return of the wolf to Germany express attitudes about coping with "the other" or "the foreign", as well as that which we feel has been foisted upon us.

The third and last part of the book dwells on environmental policy. Environmental policies or governing policies are affected by societal discussion, emotion, scientific research and topical concepts and how these policies shape biodiversity and our perceptions of different species.

Małgorzata Kowalska's chapter draws upon research in a Natura 2000 conservation site in central Poland, where one of the protected habitats is benthic stonewort meadows, underwater carpets of engineer algae that induce the high

clarity of the lakes. Kowalska argues that while we are paying attention to the ways the landscapes and environments are created and sustained within multi-species relations, we are opening a possibility for shifting responsibility and care, as well as for repositioning the human role in nature planning. This chapter moves beyond understanding nature conservation as expertise-based management and proposes thinking of protected sites as more-than-human webs of entanglements.

Teja Šosterič's chapter deals with the topics of biodiversity and species conservation in the contemporary cli-fi (climate – fiction) novel *Freedom* by Jonathan Franzen, which attempts to satirise the US economic and political system as much as it mocks conservationists. Šosterič's comparative analysis of the novel shows how the protagonist slowly gives up more and more ideological ground and sacrifices what were once his ideals, with his eventual failure and breakdown unavoidable because of the neoliberal ideological context in which the novel is created.

Emile Bellewes' study is an example of a theme that overlaps more than one of the book's themes. It is simultaneously tied in with the question of belonging and non-belonging while focusing on the Swedish environmental policy on wildlife through an ecofeminist reading. His study is an eco-critical discourse analysis of the Swedish Environmental Protection Agency's wildlife management strategy report to gain an understanding of the agency's ideological stance towards nature and of Swedish government discourses on our relationship with wildlife. The results find that through their report, the agency constructs a perspective on sustainability that is strongly anthropocentric and places non-human animals in problematic positions. Bellewes discusses how wild animals are objectified as products, commodified as hunting experiences and homogenised as either being problematic or representing resources, as well as how their contributions to functioning ecosystems are denied.

Common to all contributions in this book is the objective to expand our current understanding of the relationship between humans and nature and to add historical and cultural depth to the debate on environmental problems related to the increase and decrease in the number of species. The chapters in this book offer readers respective case studies, but together they form a comprehensive entity of describing the cultural and political underpinnings, emotions and historical developments related to human relationships with the changing biodiversity from a multidisciplinary point of view.

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