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The Interplay Between Non-Human Animals and Modernising Forestry in Finland During 1910s

Introduction

At the turn of the twentieth century the Second Industrial Revolution was rapidly transforming the European continent, creating new opportunities for businesses and governments to expand their production in various sectors. This article discusses the 1910s, during which forestry was becoming modernised in Finland: it found a new foundation in German science; took advantage of new means of transport and logistics; required an ever-growing amount of standardised raw material and it became an export industry on a global scale. While these processes have been under scholarly scrutiny, developments of motivations and ideas behind these processes remain undone.[1] This investigation explores the ideas linking forestry and non-human animals of a Finnish forestry professor A. K. Cajander (1879–1943). It addresses the following question: How did Cajander argue that non-human animals should have been taken into consideration in processes of modernizing forestry? Central arguments in relation to Cajander's works are that 1) non-human animals were subjected to economic function and seen mainly as a disturbance to it and 2) his point has to be understood in the contemporary contexts, such as political, economic, social, artistic and animal treatment.

In the Finnish context Cajander was an impactful person: he was the last Headmaster of Evo forestry school right before he was tasked to move forestry teaching from Evo to the University in Helsinki in 1908. He became a professor of forestry from 1911 onward, and his career took him to serve the independent Finnish state in many and often simultaneous positions that connected forestry to politics and the economy. The article's seminal context is rooted in the rise of industrialised forestry in Finland during 1910s, a period when the polity was predominantly agrarian. However, the impact of the forestry sector is difficult to overestimate as roughly 70 per cent of Finnish exports were forest products, and the sector accounted

[1] For examples of diverse Finnish historiography on forests, see: Markku Kuisma, *Metsäteollisuuden maa*. SKS, Helsinki 2006; Petri Keto-Tokoi and Timo Kuuluvainen, *Suomalainen aarniometsä*. Maahenki, Hämeenlinna 2010; Sakari Siltala, *Cutting Edge. The Pihlava Sawmill 1875–2025*. Siltala, Helsinki 2025.

for about 50 per cent of the total GDP.[2] Forestry was intertwined with agriculture as most farmers and landowners owned forests as well and most tenant farmers supplemented their income with forest works. This co-existence was well understood by the contemporaries, but there was also a clear opposition between the two sectors especially in regard to determining the direction for the emerging nation as a whole.[3]

To answer the research questions, the paper uses Cajander's unpublished manuscript on forestry titled *Metsänhoidon perusteet III*[4] [*The Foundations of Forestry pt. III*] as its main source. Despite signing a contract with publishing house Werner Söderström (WSOY) for the publication of all three parts in 1915, however the third part was never published.[5] As the first two parts exceeded from their intended length, Cajander had to justify even the publication of the second part and, ironically, the reason for the decision not to publish might have been caused by a paper shortage during the First World War and the subsequent Civil War in Finland.[6]

The manuscript is known to scholars but its potential as a specific argument to modernise forestry is rarely discussed. Here, Cajander is most explicit and direct in his quest to find new approaches to forestry and its relation to the economy, nature and human-animal relations. The document was drafted between 1916 and 1917 and, while it is not a finished text, it consists of 465 typed pages and is mostly proofread. This suggests that Cajander invested a significant amount of time on it. Following the first two published parts on biological and geographical points of botany and silviculture, the unpublished manuscript offered a book-length account on how and why the economic utility between forestry and agriculture should be established in

2 Reino Hjerppe, "Suomen talous itsenäistymisen aikaan". *Kansantaloudellinen aikakausikirja*, 113, no. 3, 2017; for the most recent takes, see: Elina Kuorelahti and Niklas Jensen-Eriksen, "International Commodity Governance: Softwood Timber Trade 1870–1970", 65, no. 2, 2024, https://doi.org/doi:10.1515/jbwg-2024-0021; Heikki Mikkonen, *National Wealth, Income and the History of Economic Growth: Finland from the Late 19th Century until the Second World War*. Routledge, Abingdon 2025.

3 The scope of this article does not permit any deeper analysis on the details of these discussions, but the contemporary discussions can be read in the local newspapers. See for example: "Aatelmia järkiperäisestä metsänhoidosta". *Waasa* (Vaasa) 06.04.1905; "Piirteitä metsäkaupoista Pohjanmaalla. Täysmittaisten metsien kulutus". *Ilkka* (Vaasa) 18.09.1906; "Mikä on metsiemme wastainen kohtalo?". *Ilkka* (Vaasa) 29.04.1910; "Yleisen metsänäyttelyn hanke". *Ilkka* (Vaasa) 12.10.1911.

4 A. K. Cajander, Metsänhoidon perusteet III, 1917, A. K. Cajanderin Arkisto II, C Käsikirjoitukset, The National Archives of Finland. The manuscript was written in Finnish and all translations cited here are translated by the author of this article.

5 [n.a.], Kirjailijakirjeenvaihto: Cajander, A.K., 1913–1933, WSOY:n arkisto, The National Archives of Finland. The proposal for Cajander's book series was sent to WSOY on 8 Jan 1915 and an offer to publish all three parts was send on 19 January 1915. The correspondence between Cajander and WSOY show that the bulk of the writing of the first two parts was done in 1915 and 1916, see e.g. letters dated 8 November 1915 and 5 January 1916.

6 A. K. Cajander, Yksityinen promemoria, 1916, WSOY:n arkisto, The National Archives of Finland, 6–9.

Finland. This was to be achieved by abandoning the accumulated traditional and practical knowledge on how to use forests and replace it with scientific forestry. In many cases the manuscript presents Cajander's thought on forests and animals in a state in which the influence of editors and others is minimal.

To support the main source, the paper analyses a variety of sources. Cajander's archival materials, such as his correspondence and unpublished autobiography as well as other published texts.[7] Other sources include an early handbook of forestry written in Finnish by P. W. Hannikainen[8] (1858–1928)—an Evo forestry school trained forester and the future director of *Metsähallitus*—as well as a book on animal taxonomy by Thorsten Renvall[9] as well as local newspapers such as *Ilkka* and *Vaasa*.

By discussing the intellectual foundations of Cajander's views, the study moves away from the traditionally defined histories such as political or economic and forms the first study of environmental intellectual history on forestry and animals. The aim is to investigate how animals can be understood with the method of contextualist intellectual history, which analyses the contexts of Cajander works in relation to the other textual evidence and the surrounding practical realities as well. There is no single context that can explain Cajander's thought but his arguments have to be explained in relation to many contexts such as political and economic situations as well as arguments put forth by other people touching on similar ideas.[10] However, the crux of Cajander's argument can be best understood in the contexts of evolving forestry science, modernising forestry industry and agriculture that competed for resources such as land and capital. Intellectual history is expanding away from traditional themes prioritising political thought as historians are focused

7 A. K. Cajander, Kopio omaelämäkerrasta, 1922, A. K. Cajanderin arkisto II, National Archives of Finland; A. K. Cajander, "Kauneudelliset näkökohdat metsien hoidossa". *Suomen metsänhoitoyhdistyksen julkaisuja*, 30, no. 1, 1913.

8 P. W. Hannikainen, *Metsien hoidosta. Metsän ystäville. Vihko 1.* Suomalaisen Kirjallisuuden Seuran Kirjapaino, Helsinki 1882.

9 Thorsten Renvall, *Wahingolliset eläimet ja metsästyslakimme turwattomat*. Turun Suomal. Kirjapaino- ja Sanomalehti o.y., Turku 1912.

10 Annabel Brett, "What is intellectual history now?". *What is history now?*. Edited by David Cannadine. Palgrave Macmillan, New York, NY 2002; Quentin Skinner, *Visions of Politics*. 3 vols., vol. I. Cambridge University Press, Cambridge 2002; Richard Whatmore, *What is intellectual history?*. Polity Press, Cambridge, UK 2016.

on intellectual histories of, for example, economic[11] and environmental thought.[12] Furthermore, the article leans towards the animal turn that has, since the 1980s, gained traction and has become a vibrant historical approach.[13] It is clear that historians are restricted by the fact that the source materials on animal history are one-sided and require interpretation.[14] However, pursuits of historical agency of animals continue to provide new historical interpretations testifying and theorising the existence of animal agency.[15] The historical animal studies have widened its empirical and theoretical sphere and maintain that it is crucial that animal agency is recognised.[16]

11 Koji Yamamoto, *Taming Capitalism before its Triumph: Public Service, Distrust, and 'Projecting' in Early Modern England*. Oxford University Press, Oxford 2018; Philipp Robinson Rössner, "Capitalism, Cameralism, and the Discovery of the Future, 1300s–2000s: Europe's Road to Wealth". *History of Political Economy*, 53, no. 3, 2021; Carl Wennerlind, "The Magnificent Spruce: Anders Kempe and Anarcho-Cameralism in Sweden". *History of Political Economy*, 53, no. 3, 2021; Fredrik Albritton Jonsson and Carl Wennerlind, *Scarcity: A History from the Origins of Capitalism to the Climate Crisis*. Harvard University Press, Cambridge, Mass. 2023.

12 *The Environment: A History of Idea*. Edited by Libby Robin, Sverker Sörlin, and Paul Warde. Johns Hopkins University Press, Baltimore, Md. 2018; Erland Mårald and Christer Nordlund, "Modern Nature for a Modern Nation: An Intellectual History of Environmental Dissonances in the Swedish Welfare State". *Environment and History*, 26, no. 4, 2020; David Larsson Heidenblad, *The environmental turn in postwar Sweden: A new history of knowledge*. Lund University Press, Lund 2021; Julia Nordblad, "Forest Time and the Passions of Economic Man". *Times of History, Times of Nature*. Edited by Staffan Bergwik and Anders Ekström. Berghahn Books 2022.

13 Harriet Ritvo, *The Animal Estate: The English and Other Creatures in the Victorian Age*. Harvard University Press, Cambridge, Mass. 1987; Donna J. Haraway, *When Species Meet*. University of Minnesota Press, Minneapolis, MN and London 2008; Nora Schuurman and Taina Syrjämaa, "Shared Spaces, Practices and Mobilities: Pet-Human Life in Modern Finnish Homes". *Home Cultures*, 18, no. 2, 2022; Taina Syrjämaa, "Eläimet, eläinperäiset tuotteet ja edistysusko". *Tunteva tuote — kuinka eläimistä tuli osa teollista tuotantoa?*. Edited by Taija Kaarlenkaski and Otto Latva. Vastapaino, Tampere 2022.

14 On the historiographical and methodological possibilities and problems, see articles by, for example, Swanson, Jørgensen and Cortes Zuluéta in *The Historical Animal*. Edited by Susan Nance. Syracuse University Press, Syracuse, NY 2015.

15 *Considering Animals: Contemporary Studies in Human-Animal Relations*. Edited by Carol Freeman, Elizabeth Leane, and Yvette Watt. Routledge, London and New York, NY 2011; Carol Freeman, "Extinction, Representation, Agency: The Case of the Dodo". *Considering Animals: Contemporary Studies in Human-Animal Relations*. Edited by Carol Freeman, Elizabeth Leane, and Yvette Watt. Routledge, London and New York, NY 2011; Tim Low, "When is Nature Not?". *Considering Animals: Contemporary Studies in Human-Animal Relations*. Edited by Carol Freeman, Elizabeth Leane, and Yvette Watt. Routledge, London and New York, NY 2011.

16 Erica Fudge, "What Was it Like to Be a Cow? History and Animal Studies". *The Oxford Handbook of Animal Studies*. Edited by Linda Kalof. Oxford University Press, Oxford 2017; Erica Fudge, "Rumination 2.0: The History of Animals in the Present Moment". *Humanimalia*, 13, no. 1, 2022; *Animal Industries: Nordic Perspectives on the Exploitation of Animals since 1860*. Edited by Taina Syrjämaa et al. De Gruyter, Berlin 2024; Sandra Swart, *Riding High: Horses, Humans and History in South Africa*. Wits University Press, Johannesburg 2010, 4–5, 9–11; Sandra Swart, *The Lion's Historian: Africa's Animal Past*. Jacana Media, Johannesburg 2023, 29–34.

Via environmental intellectual history, we can explain what the authors, such as Cajander, were trying to do with their ideas connected to animals. Thus, we can broaden our own view away from anthropocentric and towards non-human animals, accepting that there is historical agency performed by non-human animals. This agency is constructed by various historical human actors. Cajander's texts on forestry show that animals have various kinds of agencies, and at the same time, these agencies tell us something about the humans as well. The relations and effects of historical agency of animals on Cajander's texts on forestry form the core of what I wish to explore in this article.

Asserting the dominance over nature

Cajander offered two definitions of forestry. In the narrow definition, forestry was applied only to the main raw material, wood, and side products such as mushrooms and berries. However, the wider definition should be preferred by historians. The second definition crucially added linked industries that refined and used the various raw materials extracted from forests, most notably pulp and paper industries. Furthermore, Cajander maintained that contemporary forest sciences were used to investigate the essence of forestry by examining different methods of logging, methods of regenerating forests and refining the products and institutions involved with forestry to stress the economic utility of forestry.[17] He insisted that forestry sciences were based on a symbiosis between nature and technology, controlled by an empirical science performed by expert scientists and contrasted it with traditional knowledge and practices, which were considered as a hindrance by the forestry industry.[18] He explicitly forbade forests to be used in traditional ways—most notably the practice of forest pastures for feeding cattle—and, as a consequence, Cajander had set the prime economic concern of the emerging state of Finland on forestry and forestry under utility of economy, downplaying any other forms of priorities or uses for forests.

For Cajander, the evaluation of any economic action was to be conducted using economic evaluation and acknowledged that, if agriculture proved to be as lucrative as forestry in any plot of land, those areas should indeed be allocated for agricultural

17 Cajander, Metsänhoidon perusteet III, 3.
18 Cajander, Metsänhoidon perusteet III, 3–5.

production.[19] However, he also argued that forests pastures were only profitable in scenarios in which wood held no monetary value.[20] He made examples showing how even activities like growing willows for 'weaving baskets […] would be as profitable as farming'.[21] Such remarks clarify Cajander's stance: agriculture was not profitable in Finland and thus forestry was to be preferred. His views are repeated in accounts by his contemporaries and even by modern scholars who suggested that Cajander was 'hostile' towards farming.[22]

The schism between forestry and agriculture was all about how to allocate and prioritise inputs: as the forest industry grew in size, it had to compete more fiercely with other means of production, such as feeding the farm animals or farmer's own use of wood as a fuel, building materials and even as food supplement. Cajander did not provide any specific figures, but an estimation made in 1922 declared, that in 1916 approximately half of the wood was used directly by the landowner.[23] If half of the annual yield never appeared in the market, and agricultural production was gaining more and more land resources, it is understandable why Cajander's stance was hostile towards agriculture. Cajander's utilitarian view must be connected with how nature is defined in relation to human activity. He vehemently opposed the idea that forests should fall under the control of agricultural production. Instead, he advocated for an evaluation of the outputs of these sectors to determine, which one contributed more value to create a foundation for the contemporary forestry which should be understood as a scientific and industrial economic quest to produce added value from the raw materials forests provided.

He rejected the usefulness of 'natural' and placed the power of his argument on sciences *vis-à-vis* 'natural'. Yet, Cajander's language gave nature an active role, describing how 'nature often uses its methods' but also noted that it usually 'was forced to do so'.[24] He cemented his point by comparing forestry to 'agriculture,

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19 Cajander, Metsänhoidon perusteet III, 205, 322, 37; while Mikkonen (2025) has analysed the difficulties of the idea of growth in Finland in the early twentieth century, there were attempts to force dominance of one over another. See for example: J. E. Sunila, *Suomen maatalouden kannattavaisuudesta*. Suomen maatalousseurojen keskusliitto, Helsinki 1915; Jalo Lahdensuo, "Suomen maatalouden kannattavaisuudesta I". *Vaasa* (Vaasa) 29.06.1915; Jalo Lahdensuo, "Suomen maatalouden kannattavaisuudesta II". *Vaasa* (Vaasa) 01.07.1915; Jalo Lahdensuo, "Suomen maatalouden kannattavaisuudesta III". *Vaasa* (Vaasa) 03.07.1915.

20 Cajander, Metsänhoidon perusteet III, 204.

21 Cajander, Metsänhoidon perusteet III, 191.

22 A. Benj. Helander, *Suomen metsätalouden historia*. WSOY, Porvoo 1949, 316; Lauri Vaara describes Cajander's take on agriculture as 'hostile', see *Metsähoitajien maa: Tutkimus metsäalan Korporatismista*. Politiikan ja talouden tutkimuksen laitoksen julkaisuja, Helsinki 2013, 102–106; The idea the agriculture was indeed profitable was also pushed forward, see for example: Sunila 1915.

23 Olli Heikinheimo and Eino Saari, "Forestry in Finland". *Acta Forestalia Fennica*, 19, no. 2, 1922, 13–14.

24 Cajander, Metsänhoidon perusteet III, 123.

dairy farming and gardening via natural method', which were discarded as soon as more effective methods were created, arguing that 'natural methods were a brake' for advancement. He went as far as to claim that forests felt 'closer' to those who had invested their own labour and toil into them.[25] Thus, Cajander argued that forestry should replace the weaknesses in nature's method with best practices based on scientific knowledge, and aimed to remove the influence of nature as much as possible from the industry. He viewed nature as a reserve from which raw materials could be extracted, processed, refined and sold for profit. Notably, this was a process designed and controlled by human beings. Cajander had adopted a positivist and objectivist view of knowledge, and he subscribed to a common contemporary belief by which nature could be managed and controlled, reflecting his utilitarian approach to forestry and its relationship with nature.

The point reached animals as well. In his unpublished autobiography, Cajander narrated a hunting scene which explicitly shows the dominance of man against nature and wildlife, as he described, how his fellow scientist shot a golden eagle (*Aguila chrysaetos*) in Siberia.[26] Cajander noted that the people in Siberia considered eagle as a holy animal. He did not justify the act of killing, it was, simply, reported. Cajander used the specific example of eagle as a conveyor of negative connotations, and it is clear that he was not particularly interested in protecting predatory animals that existed in forests of Siberia. However, in *Metsänhoidon perusteet*, he mentioned establishing nature reserves in Finland and discusses especially Kutsa and Oulanka reserves in North-East Finland.[27] Cajander admitted that even in the nature reserves the "effect of man" was significant. Large mammals— "deer" (possibly, *Rangifer tarandus fennicus*), wolf (*Canis lupus*) and bear (*Ursus arctos*)—have lost their habitats while others—pine martens (*Martes martes*) and moose (*Alces alces*)—have suffered from extensive hunting. He stated that the small predators—fox (*Vulpes vulpes*), stoat (*Mustela erminea*) and least weasel (*Mustela nivalis*)—had "likely not suffered" from human impact.[28] These two reserves—Kutsa and Oulanka—were meant as a protected habitat for the Finnish fauna but their fates were simply noted and there was no attempt to amend the situation. The consequences that were visible for Cajander in these reserves, were similar and fortified in forests under different forestry practises.

Setting nature under human dominion was a crucial context in how nature and animals were discussed in Finland at the turn of the twentieth century. Cajander expanded the human influence to cover nearly all aspects of nature: he included all

[25] Cajander, Metsänhoidon perusteet III, 123–24.
[26] Cajander, Kopio omaelämäkerrasta, 58.
[27] Cajander, Metsänhoidon perusteet III, 351–53.
[28] Cajander, Metsänhoidon perusteet III, 352. Cajander identifies "peura" which—especially in the context of northeast Finland—is likely Finnish forest deer (Rangiferus tarandus fennicus).

non-human animals as well as landscapes.[29] Both domesticated animals and wildlife were obviously useful in many ways, but a common thread among all non-human animals was an explicit stance that forestry should have the priority to resource allocation over other uses of forests. Setting the priority of forestry over animals, touches the general attempts to revise and redefine the categories of useful and non-useful.[30] Usually this was done in relation to specific animal species.

Cajander's contemporary Thorsten Renvall redefined taxonomies of the Finnish fauna, reasserting that even predatory animals could be useful either as performing a specific role as a part of fauna or as national symbols, and, therefore, should be protected from being hunted.[31] Renvall gave many examples: foxes were beneficial as they killed mice and moles in farms; apex predators such brown bears (*Ursus arctos*) were not only mostly herbivores but also possessed great symbolic value.[32] In contrast, northern goshawks (*Accipiter gentilis*) were deemed as 'a harmful bird of prey' as their method of hunting 'did not spark compassion'.[33] Thus, the categories of useful and non-useful were changing in the 1910s and this was a seminal context for Cajander who explicitly places not only flora and fauna but also scenery under economic hegemony and utility.

This should be linked to a transformation of non-human animals into 'sentient commodities'[34]—that is, viewing sentient animals as commodities—which was a direct consequence of the integration of the Finnish agricultural sector into a global network, which, since the 1860s, has emphasised economic utility and profit making.[35] Jørgensen debates how we should define human influence and cultural aspects in contrast to natural processes and notes how scientific terms are used and adapted not only in the realm of science but also in spheres of activism and political

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29 Cajander 1913.

30 Timo Vuorisalo and Markku Oksanen, "'Mikä on toiselle hyödyksi, voi usein olla toiselle vahingoksi': Pohdintoja eläinluokitteluista". *Kanssakulkijat: Monilajisten kohtaamisten jäljillä*. Edited by Tuomas Räsänen and Nora Schuurman. SKS, Helsinki 2020; Tuomas Räsänen, "Tyhjenevä maa – suhde luonnonvaraisiin eläimiin". *Suomen ympäristöhistoria*. Edited by Esa Ruuskanen, Paula Schönach, and Kari Väyrynen. Vastapaino, Tampere 2021.

31 Renvall 1912, 1.

32 Renvall 1912, 3–5.

33 Renvall 1912, 6.

34 I follow Kaarlenkaski and Latva who use "sentient commodity" and refer to Rhoda Wilkie's paper: Rhoda Mary Wilkie, "Sentient commodities and productive paradoxes: the ambiguos nature of human-livestock relations in Northeast Scotland". *Journal of Rural Studies*, 21, no. 2, 2005.

35 Marja Jalava, "Lihansyönnin edistäminen Suomessa 1900-luvun alkupuolella". *Tunteva tuote — kuinka eläimistä tuli osa teollista tuotantoa?*. Edited by Taija Kaarlenkaski and Otto Latva. Vastapaino, Tampere 2022; Marja Jalava, "Knowledge in the service of profit: Pig fattening performance testing in the first half of the twentieth century". *Animal Industries: Nordic Perspectives on the Exploitation of Animals since 1860.* Edited by Taina Syrjämaa et al. De Gruyter, Berlin 2024; Syrjämaa 2022.

processes.[36] However, while Cajander did not explicitly discuss the possible sentient nature of animals, this paper argues that he should be linked to this tradition as he clearly discussed animals directly in connection to commerce. Evaluating Cajander's actions via our contemporary norms and concepts is anachronistic, but it is important to show Cajander's approach was anthropocentric, and he paid little attention to the well-being of non-human animals. His arguments affected the fates of countless non-human animals, yet he remained silent about the consequences of the actions he proposed.

In Cajander's view, whatever importance was attributed to nature, it was considered useful and valuable only within the context of human activity. Cajander worked with a natural entity—forests—but did so under the pretext of forestry, which determined the intrinsic values of forests only in terms of human action upon them. Cajander formulated his definitions of forestry, its economic utility and prioritisation over agricultural production amid a heated intellectual debate on the environment and within in the contexts of unsolved prioritisation between agriculture and forestry. The debates on economic utility were intertwined with cultural features, as the beauty as well as symbolical and mythical values of forests, trees and nature.[37] The negative consequences of Nordic industrial and environmental policies are scrutinised very recently by environmental historians.[38] While the intrinsic value of nature was established, the dilemma of whether natural resources should be used as raw material for different industries or as building blocks for a mythical identity of the Finnish people remained unsolved.

Land allocating and providing feed

In the late 1910s, when Cajander drafted his manuscript, agricultural production was also undergoing a process of modernisation and commercialisation, and forestry had to compete with agrarian production for resources such as land and investments.[39] A similar argument has been made about the development in Sweden.[40] This competition was becoming more intense as, from the 1870s onwards, agricultural production was becoming ever more monetised, specialised and mechanised. At the forefront of this

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36 Dolly Jørgensen, "Rethinking rewilding". *Geoforum*, 65, 2014.

37 Keto-Tokoi and Kuuluvainen 2010, 32–53.

38 Tuomas Räsänen, "Converging Environmental Knowledge: Re-evaluating the Birth of Modern Environmentalism in Finland". *Environment and History*, 18, no. 2, 2012; Mårald and Nordlund 2020; Esa Ruuskanen and Janne Valkonen, "Suomalaisen kulutuksen suuri siirtymä". *Suomen ympäristöhistoria*. Edited by Esa Ruuskanen, Paula Schönach, and Kari Väyrynen. Vastapaino, Tampere 2021; *Green Development or Greenwashing?: Environmental Histories of Finland*. Edited by Viktor Pál, Tuomas Räsänen, and Mikko Saikku. Whitehorse Press, Winwick 2023.

39 Kuisma 2006, 334–47.

40 Mårald and Nordlund 2020.

development were farms specialised in milk production and independent dairies to process the milk.[41] Furthermore, agriculture was socially important. Land allocation was used as a social policy, and it followed that the majority of the people in Finland drew their livelihood from working on the fields or sectors directly connected to agriculture, such as transporting agricultural goods.[42] Perhaps the most detrimental agricultural method, slash-and-burn farming was in decline since the 1890s and was being replaced by animal farming.[43]

Cajander's argument is about land allocation, prioritisation of forestry over agriculture in order to find a new, modernised path for the polity and reflected the issue via land allocation on forestry. According to Cajander, the existing forests were poorly organised from the industry's point of view.[44] First, Cajander argues that a third of the land area in Finland was peatland, which offered little to anyone.[45] In 1916 Cajander concluded, that the "low value" alder species (*Alnus incana* and *Alnus glutinosa*) covered 7,5% of the forest in counties Savonia and Karelia.[46] In South Finland, roughly half of the forests were suitable for spruce, but the species covered only 14% of the land area. In the 1917 manuscript, Cajander argued in a similar manner that 10% of "productive forest lands" was growing birch, which was seen as wasteful.[47] Forestry provided both an additional source of income as well as employment opportunities for the hired hands. However, forestry alone, Cajander conceded, could not by itself provide enough earnings to cover the income from agricultural production and the accumulating interests.[48] It is clear that while Cajander saw the forests potential for growth, he could not have abolished the agricultural sector from Finland, as too many people relied directly on farming as their main source of income.

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41 Ann-Cathrin Östman, "Mekanisoinnin ensimmäinen aalto". *Suomen maatalouden historia II: Kasvun ja kriisien aika 1870–luvulta 1950-luvulle*. Edited by Matti Peltonen. SKS, Helsinki 2004.

42 Östman 2004.

43 Jan Kunnas, "A Dense and Sickly Mist from Thousands of Bog Fires: An Attempt to Compare the Energy Consumption in Slash-and-Burn Cultivation and Burning Cultivation of Peatlands in Finland in 1820–1920". *Environment and History*, 11, no. 4, 2005.

44 The shortage of wood was not only a very dire situation but also a common trope. See, for example: Edmund von Berg, *Kertomus Suomenmaan metsistä 1859*. University of Helsinki Department of Silviculture: Research Notes, vol. 63. University of Helsinki Department of Silviculture, Helsinki 1988, 8–12; Matti Leikola, "Edmund von Berg ja hänen kertomuksensa Suomenmaan metsistä". *Kertomus Suomenmaan metsistä 1859*. Edited by Edmund von Berg. University of Helsinki Department of Silviculture, Helsinki 1988; Nordblad 2022.

45 Cajander, Metsänhoidon perusteet III, 459.

46 A. K. Cajander, Yksityinen promemoria, 1913–1933, Kirjailijakirjeenvaihto: Cajander, A. K., WSOY:n arkisto, 6, The National Archives of Finland; Cajander, Metsänhoidon perusteet III, 459.

47 Cajander, Metsänhoidon perusteet III, 93.

48 Cajander, Metsänhoidon perusteet III, 120.

However, one of the contested points of Cajander's argument was the question how to feed the domesticated animals—most notably dairy cattle—who traditionally had found a substantial part of the calories they needed from forest-pastures. Cajander's negative expressions towards agriculture were intended as a rhetoric point: land was a finite resource at the turn of the twentieth century, and he had to establish why forestry should be prioritised over agricultural production. The agricultural production was drawn away from subsistence farming, and it is clear that concepts such as money, price and interest and the seasonal variations between them, were known and in widespread use.[49] Finally, proper feeding required an ever growing area of land devoted to producing feed for the animals.[50] Consequently, the amount of land in agricultural use doubled from 1880 to 1910.[51] The most important reason why agricultural production was growing was related to the availability and quality of cattle feed, especially during the winter months.[52] Cajander, rather than looking at the overall situation in Finland, understood that forestry and agriculture could be profitable only in certain areas of the polity, which reduced the amount of available land considerably.

Cajander's point hinged on forest pastures, and he suggested that a new equilibrium between farming, dairy and forest industries must be found. The direct consequence was that mixed-species forests suffered due to grazing and leaf-eating, and whatever was saved from the mouths of herbivore beasts was eventually crushed by the animals.[53] Disfigured trees were of second-tier quality for the forest industry.[54] In practice, the first step was to reallocate land from agriculture towards forestry by banning forest pastures that were used to feed cattle and other animals within the household.[55] As the dairy sector became modernised and commercialised, even more attention was focused on feeding the cattle, three things followed: the value of cattle rose; animals became subjects to intensified breeding and agricultural production became more tightly connected to the money economy than before.

While the economic benefits of prioritisation of forestry industry were evident, the consequences of diminishing agricultural production remained unaddressed by Cajander. Downsizing agricultural production would have had significant consequences not only for the majority of the Finnish people but also to sheep and cattle on the farms. In 1945, August Jäntti published a calculation to testify that forest

49 Matti Peltonen, "Uudet kaupallistumisen muodot". *Suomen maatalouden historia II: Kasvun ja kriisien aika 1870–luvulta 1950-luvulle*. Edited by Matti Peltonen. SKS, Helsinki 2004.

50 Eeva Nikkilä, "Kotieläinten ruokinta, jalostus ja arvottaminen 1800-luvun lopun Suomessa". *Tunteva tuote — kuinka eläimistä tuli osa teollista tuotantoa?*. Edited by Taija Kaarlenkaski and Otto Latva. Vastapaino, Tampere 2022.

51 Östman 2004.

52 Peltonen 2004.

53 Cajander, Metsänhoidon perusteet III, 222–23.

54 Cajander, Metsänhoidon perusteet III, 70.

55 Cajander, Metsänhoidon perusteet III, 204.

pastures provided about 45 per cent of calories consumed by domesticated non-human animals. Jäntti claimed that forest pastures could have been replaced with higher-yielding pastures, thus reducing the total amount of area required to feed the farm animals, but did not present any applicable solution to realise his proposition.[56] It is safe to say that such an increase in the quality of feed was not possible, especially in the 1910s, and forest pastures remained as an important source of energy. Cajander conjectured in a similar fashion that growing feed would become more efficient, but it also meant that animals were mainly expendable commodities.[57]

The second negative aspect of allocating land to forest pastures was their contribution to creating patchy forests consisting of trees of different ages and sizes, which were considered beyond repair. Cajander argued such forests should simply be 'put down' and a new one had to be regenerated.[58] Forests in such state of disarray did not resemble the picture of normal forest[59] grown via scientific methods that Cajander had aimed to establish. In addition, they were unable to serve as a reserve of raw material for the forest sector. Clearing forests and starting anew was a contemporary solution to forests that did not fulfil the qualitative standards.

The second non-human animal species Cajander discussed was sheep. Contemporaries considered sheep to be low maintenance species, but even sheep required feeding during the winter months. Tree topping had formed as a habit in South-West Finland, where the treetop of a birch (*Betula pendula* and *Betula pubescens*) or willow trees (*Salix* species) was cut off to force the trees to produce new branches that could be harvested to be used as feed during winter months. Cajander argued that, while this system was somewhat efficient in producing feed, and birch and willow were not considered as valuable tree species, the trees could not sustain the stress of being constantly cut and ultimately would perish.[60] People were allowed to collect leaves and branches during logging, for example, but making a habit of tree topping was problematic.[61] Cajander explained that using trees to feed

56 August Jäntti, *Suomen laidunolot*. Suomalaisen kirjallisuuden seuran kirjapaino oy, Helsinki 1945, 166–67, 83, 235–37. Perhaps Jäntti referred to AIV fodder that was patented in 1933.

57 Cajander, Metsänhoidon perusteet III, 204–05, 316, 448.

58 Cajander, Metsänhoidon perusteet III, 236.

59 There is no space here to discuss Cajander's take on 'normal forest'. For the German formulations of 'normal forest', its history and impact beyond Germany, see for example: Richard Hölzl, "Historicizing Sustainability: German Scientific Forestry in the Eighteenth and Nineteenth Centuries". *Science as Culture*, 19, no. 4, 2010; Olli Tahvonen, "Optimal Harvesting of Forest Age Classes: A Survey of Some Recent Results". *Mathematical population studies*, 11, no. 3–4, 2004, https://doi.org/10.1080/08898480490513616.

60 Cajander, Metsänhoidon perusteet III, 192; for the importance of using coppice as a source fuel for humans and as a feed for animals, see for example: Hölzl 2010; T. C. Smout, Alan R. MacDonald, and Fiona Watson, *A History of Native Woodlands of Scotland, 1550–1920*. Edinburgh University Press, Edinburgh 2007, 10, 16, 35, 70–73.

61 Cajander, Metsänhoidon perusteet III, 192–93.

the animals should be immediately stopped, because it damaged the trees, prioritised agriculture over forestry and the value of forests declined in this process. Cajander's views on agrarian production had an impact on his views about animal feeding, and it was the crucial example of how a forestry could be destroyed by production animals.

Cajander prioritised horses as the most valuable asset on a farm but horses were discussed only in relation to the labour they provide: transporting goods, being used to soil preparation in agriculture and forestry or their dung being used as a fertiliser.[62] Given the similarities and differences between various production animals, it is noteworthy to mention that Cajander remained silent in contrast to his main complaint of cattle: feeding.[63] This creates a hierarchy and priority among domesticated production animals, and this can be explained only via the status of the horse as a source of power and its uses in the forestry jobs. The unique nature of horses becomes evident as Solala stresses cultural norms and the affectionate connections between horses and their owners. They were important, highly effective elements of farming: horses transported human beings and goods and also offered a power source for the first generations of mechanised farming machines, and this affected their status.[64] While horses were a part of the workforce, Nikkilä argues, that horses were also dealt with on a personal level.[65] That is not to say that the people were not affectionate towards their cattle. On the contrary, as Syrjämaa has shown, while at least some individual cattle enjoyed an elevated status, their fellows were primarily production animals: cattle provided milk, meat and butter to feed the growing human population.[66] As monetary value of horses grew, humans began to look for desired characteristics from a standpoint systematised breeding, much like cows were selected based on their milk production.[67] Nonetheless, it is somewhat clear that some horses had indeed transcended their utilitarian roles and enjoyed of an elevated status in the hierarchy of production animals.

Controlling wildlife

Cajander distinguished between wild and domesticated animals, but his proposed solutions remained consistent regardless of the species or status of the animal. While the domesticated animals and the consequences of their actions could be controlled,

62 Cajander, Metsänhoidon perusteet III, 24, 45, 57–58.
63 Cajander, Metsänhoidon perusteet III, 25, 45, 52, 53.
64 Hilja Solala, "Hevosvetoinen yhteiskunta: Hevosen taloudellinen merkitys Suomessa 1800- ja 1900-lukujen vaihteessa". *Kanssakulkijat: Monilajisten kohtaamisten jäljillä*. Edited by Tuomas Räsänen and Nora Schuurman. SKS, Helsinki 2020; For an account of the importance of horses in a completely different contexts, see for example: Swart 2010, 2–3.
65 Nikkilä 2022.
66 Syrjämaa 2022.
67 Östman 2004.

Cajander sought to highlight the uncontrollable role of wildlife in the context of modernising forestry. The negative impact of large herbivores was due to their diets, which included consuming tree bark, leaves, branches and young trees. As the forest plots were becoming more efficiently standardised the negative consequences became ever more imminent. Moose were particularly problematic, as Cajander explained their winter behaviour: the animals found an area within which there was an abundance of seedlings and young trees and remained there until the food source—the growing forest—was completely consumed.[68] Similarly, smaller mammals such as mountain hare (*Lepus timidus*) and birds such as western capercaillie (*Tetrao urogallus*) caused direct economic losses by consuming parts of trees.[69]

The second discussed group of wildlife were insects and bacteria. Insects were damaging trees, and Cajander's stance towards them was similarly hostile.[70] He maintained that especially selective cutting—Cajander used *harsinta* or *hirren harsinta*—exposed forests to dry conditions which provided favourable conditions for the various insects to attack also healthy trees. As a remedy against exposed forests, Cajander suggest preventing the insects from regenerating by clear cutting the infected forests and, when necessary, burn the branches and treetops not used in forestry.[71] Cajander's treatment is very straight forward and drastic when compared to other accounts. In 1882, P. W. Hannikainen—Evo trained forester and future director of *Metsähallitus*—maintained that saving rowan trees in forests would secure a winter food source for birds so that they, come summer, would provide help by eating insects.[72]

The contrast between insects and micro-organisms such as bacteria is great. While the insects merely added cost, bacteria were recognised as having clear benefits.[73] Cajander's argument hinged on the notion that significant amounts of labour and capital was lost if planted areas were consumed by animals and that inputs could be saved if bacteria provided nitrogen for trees. The complexity of the forest ecosystem was not at all clear for Cajander and his contemporaries, but the idea of the human ability to control natural processes was unwavering. What was equally important was Cajander's language as it attributed agency to the wild animal themselves via their feeding strategies and other actions. Surely, in many cases Cajander wished to downplay the impact, but, nonetheless, there was a clear interaction between human and animals. Crucially, scientific forestry had to respond to these interactions.

68 Cajander, Metsänhoidon perusteet III, 110.
69 Cajander, Metsänhoidon perusteet III, 449.
70 Cajander, Metsänhoidon perusteet III, 194. Cajander identified specific species for example: Pachyrhina pratensis, Galleruca lineola, Phyllodecta vulgatissima, Phyllodecta vitellina.
71 Cajander, Metsänhoidon perusteet III, 290–91, 379, 84–86.
72 Hannikainen 1882, 48.
73 Cajander, Metsänhoidon perusteet III, 385–86, 428, 58, 62.

Cajander had three solutions for the wildlife problem. First, he suggested to fencing in tree nurseries as a means of protection.[74] Once tree nurseries were established and the ground was taken over by weeds such as 'heather, mosses or lichen', cattle would not have wandered there anymore and protecting nurseries was fairly easy.[75] There were very few tree nurseries in Finland but for example the one in Tuomarniemi—located in Ähtäri in Central Finland—provided saplings not only to nearby farms and towns but also to locations across the polity.[76] The benefits of tree nurseries were clear for Cajander: the forest experts were able to select specific tree species and control which individual trees were selected to be planted.

Second, he mentioned Yellowstone as an example of a nature reserve and linked it to the discussions on how national parks should be established in Finland.[77] The topic was not new, and it was debated in Finland from the 1890s onwards until the late 1930s when the first national parks were established. National parks were planned not only to preserve specific patches of land but also to serve as tourist attractions.[78] Cajander placed only a finely defined value on the aesthetic points in regard to the value of forests.[79] The utility of national parks was evaluated only in respect what was happening in areas designated to forestry. National parks were touted as useful outdoor museums; they were expected to be an economic asset and socially beneficial as well. The national parks were not easy to establish as there were competing views on their location and purpose. To compromise, Cajander suggested that wildlife sanctuaries should be established so that animal populations could grow and migrate from there to other locations.[80] Cajander did not discuss the details of these sanctuaries, but as such the idea represented somewhat controlled attempt to not only have animals in the forests but also control their numbers. However, again, the value of these sanctuaries was also to make sure that the hunters had animals to be hunted.

Third, Cajander proposed actions on the animal themselves. He presented the idea of exterminating all deer to the point of 'extinction'.[81] The drastic proposal was framed within the context of German forestry and hunting practices. Cajander noted that in Germany, the future of hunting was secured due to the investments in

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74 Cajander, Metsänhoidon perusteet III, 247–48.

75 Cajander, Metsänhoidon perusteet III, 267.

76 See for example: Taimien lähetykset 1907–1910, Metsähallituksen Tuomarniemen metsäopiston ja hoitoalueen (Ähtäri) arkisto, The National Archives of Finland.

77 Cajander, Metsänhoidon perusteet III, 337.

78 Juho Niemelä and Esa Ruuskanen, "References to Iconic Landscapes in the Debate Surrounding the Founding of Finland's National Parks, circa 1880–1910". *International Journal for History, Culture and Modernity*, 7, no. 1, 2019; for Cajander's take on the state of national parks in Finland see pages 346–358 in Metsänhoidon perusteet III.

79 Cajander 1913.

80 Cajander, Metsänhoidon perusteet III, 359–60.

81 Cajander, Metsänhoidon perusteet III, 248.

protective measures for plants and feeding wildlife to ensure their survival.[82] While the proposition to eradicate the deer population was not advanced beyond the short passage, the mere suggestion has implications for an intellectual environmental historian. The stance emphasised Cajander's firm focus on economic reasoning, and the existence of an individual species did not hold an intrinsic value. In fact, the negative economic effect of the animal's actions was greater than the value derived from the park rangers' right to hunt. Thus, the value of the whole animal species was calculated by its perceived value on human beings. The suggestion made very explicit Cajander's anthropocentric approach.

Finally, as the act of wiping out an entire species was not reprimanded in itself, it shows that Cajander had little regard to issues of biodiversity[83] in regard to animals, which is also reflected in his views of forests types and tree species.[84] However, he was aware of the concept of 'extinction', as he described how Yellowstone was established to protect particular plant and animals species from disappearing.[85] This aligns with Jørgensen's definition of 'end of an evolutionary line' and there was also accumulating amount of evidence of extinct or near extinct animal species such as the passenger pigeon (*Ectopistes migratorius*), thylacine of Australia (*Thylanicus cynocephalus*) and American bison (*Bison bison*) during the nineteenth century.[86] Wildlife represented a somewhat uncontrollable category. While efforts to protect tree nurseries and areas with young forests were implemented, there was little that could be done to protect the forests from moose and deer and the direct economic losses they inflicted. The situation was similar with domesticated animals, but their actions could be controlled by influencing the attitudes of their owners.

Cajander was very explicit about reindeer herding's negative impact on forests in North Finland.[87] Beyond feeding, the herders used trees to build fences, causing further damages to the fragile northern ecosystem.[88] Cajander maintains that reindeer

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82 Cajander, Metsänhoidon perusteet III, 247–48.

83 Here biodiversity is an anachronistic term, but I use it to describe how Cajander's anthropocentric views were concerned with points that whatever value nature had, it was in relation to human activities. However, early forms of 'biodiversity', as the examples of Renvall (p. 44) and Hannikainen (p. 50) show, biodiversity can be indentified in texts originated at the turn of the century. Some scholars have described Cajander as a proto-environmentalist and the first mention is in: Erkki Laitakari, *Metsähallinnon vuosisataistaival*. Tampereen kirjapaino-osakeyhtiö, Tampere 1960; Laitakari is then adopted and adapted by many: Pekka Borg, *Herättäjät, tulenkantajat ja muutoksentekijät*. Pilot-Kustannus, Tampere 2008; Antti Parpola and Veijo Åberg, *Metsävaltio: Metsähallitus ja Suomi 1859–2009*. Edita Prima, Helsinki 2009; Keto-Tokoi and Kuuluvainen 2010. Based on my own findings I state, that presenting Cajander as a proto-environmentalist is not easily defendable.

84 Cajander, Metsänhoidon perusteet III, 285–95.

85 Cajander, Metsänhoidon perusteet III, 337.

86 Dolly Jørgensen, "Extinction and the End of Futures". *History and Theory*, 61, no. 2, 2022.

87 Cajander, Metsänhoidon perusteet III, 70.

88 Cajander, Metsänhoidon perusteet III, 282–83, 449.

herding was "a general strain in North-Finland and the state of Lapland", particularly in places such as Oulanka where it prevented the formation of "an animal reservation area".[89] The reindeer (*Rangifer tarandus tarandus*) was immersed in the same economic system as cows, benefitting from human interaction that provided feed and protection. The reindeer remained semi-wild, surviving in the wilderness on its own during the periods between round ups. Cajander's argument was focused on forests and their economic utility, often leading him to disregard or overlook other considerations. However, modern researchers stress the unique nature of public and scientific discussions about reindeer and noted that both forestry and agricultural producers in the early twentieth century categorised the reindeer as a pest that caused damages to forests and crops.[90] It is true that the rights of the indigenous Sami people—the indigenous hunter-gatherers in Lapland—were very much oppressed across the board in the Nordic countries throughout the twentieth century.[91]

Horses, reindeer and cows should be understood as production animals in relation to forestry, although the tasks assigned varied for each species. Horses and cows fit this category quite intuitively, while reindeers were kept by the Sami people where forestry was not an economically viable sector. However, Cajander took on a hostile stance towards cattle and reindeer and remained silent in relation to horses, which can be explained by their different status within the agricultural production and the forestry industry. It is evident that there was room for domesticated animals to move fluidly between categories of being useful and being harmful, but there was also a potential for non-human animal agency.

Conclusions

I conclude the article by revisiting the research question posed in the beginning: how animals should have been taken into consideration in the process of modernizing forestry? My focus has been specifically in 1910s, a pivotal moment when the newly established agricultural production, combined with technological innovations, clashed with the rising industrial forestry sector. Cajander's argument was built upon a negative view of non-human animals, seeing them as capable of destroying forests in two particular ways. First, the use of forest pastures caused physical damages in

89 Cajander, Metsänhoidon perusteet III, 389–91.

90 Jukka Nyyssönen, "Ympäristöuhka ja kanssatoimija, objekti ja hyötyjä: Poron sijoittuminen poronhoidon tutkimuksessa". *Kanssakulkijat: Monilajisten kohtaamisten jäljillä*. Edited by Tuomas Räsänen and Nora Schuurman. SKS, Helsinki 2020; Helena Ruotsala, "Porot, porokoirat ja ihmiset samoilla palkisilla". *Kanssakulkijat: Monilajisten kohtaamisten jäljillä*. Edited by Tuomas Räsänen and Nora Schuurman. SKS, Helsinki 2020.

91 Kukka Ranta and Jaana Kanninen, *Vastatuuleen: Saamen kansan pakkosuomalaistamisesta*. S&S, Helsinki 2019.

the forests, and, second, the modernised agricultural production presented a viable contender for forestry as the leading industrialised sector in Finland. The competition between these two sectors was most visible in land allocation issues.

However, it is crucial to understand that Cajander's involvement with the context of establishing forestry in Finland in the 1910s must be considered when analysing the fates of non-human animals. Thus, Cajander's confrontational take on domestic animals must be contextualised within competing cultural and economic phenomenon, rather than individual non-human animals. The fact that Cajander wished to forbid the use of forest pastures must be understood as opposition to the agricultural sector not only to specific animal species. Nonetheless, it is important to acknowledge that this suggestion had dire consequences for the animals involved. Consequences that Cajander did not explicitly disclose. While he suggested that feed could be grown more efficiently, his silence on the ramifications of his prioritisation suggests, that he understood the bleak outlook of his proposal on the Finnish livestock and herbivore wildlife.

Wildlife was beyond the land allocation issues, but wild animals emphasised the existential threat to forestry. Herds and wild animals consumed, harmed and even destroyed forests in a very literal sense by trampling trees or feeding on them. This issue partly relates to the situation in agriculture, where forest pastures provided a considerable share of energy for the animals. However, it pertains to the qualitative and direct economic losses when trees were damaged.

The practical and symbiotic development of forestry and agriculture is crucial in order to understand Cajander's comparisons between the two industries, and it can explain a great deal of Cajander's attacks on agrarian production and animals. At the heart of these practical contexts was a process of economic and political modernisation, with the definitions and strategies established dictating, how a polity could become modernised. Although Cajander juxtaposed forestry with agriculture, the relationship was reciprocal and, to certain a point, mutually beneficial: forestry greatly benefitted from developments in agricultural production, which helped forestry to emerge as an industry. Conversely, those involved in agrarian production received capital—by selling wood or labour to forestry industry—to purchase modern agricultural equipment such as cast-iron ploughs, separators to skim the milk or to pay off loans on the farm itself. Both industries benefited from the growth of commercial markets and the improvement of financial services for industrial trades and commerce. However, for Cajander, these mutual benefits did not outweigh the competition for resources, which remained a significant concern for him.

At the core of these conclusions is the notion, that forestry and agriculture competed for land allocation to produce wood as a raw material to which animals caused a significant strain. His point was emphasised by his deliberated silence on its consequences: if forest pastures were to be prohibited, roughly a third of feed used to feed animals in Finland would have vanished, forcing agricultural producers as well as the non-human animals to adapt to this change. The silence on the impact on animals reveals a critical aspect of Cajander's negative perspective and broader implications of his thought on non-human animals. His argument is clear on the matter of prioritisation itself: the potential and utility of forests was to be reserved first and foremost for the forest industry, then for agriculture and, lastly, to non-human animals. The question of how and by whom this resource was to be used, defined the interest of the polity and the prioritisation of the economic and political hegemony, but Cajander discussed it only within the context and in connection to human economic activity i.e. forestry.

Abstract

This paper examines the interplay between forestry and non-human animals in the early twentieth century Finland, a period of modernisation, economic upheaval and shifting paradigms. The argument focuses on the precedence of the economic utility over non-human animals revealing the impacts of this competition. The paper explores Professor A. K. Cajander's (1879–1943) unpublished manuscript *Metsänhoidon perusteet III* [*Foundations of Forestry pt. III*], a work that provides a nuanced insight into the simultaneous roles animals played in shaping forestry discourse and reflecting ideologies connected to forestry. To contextualise Cajander's arguments, the paper discusses other books by Cajander as well other published book and newspaper sources. The article makes the case for a new methodology of environmental intellectual history by positioning animals as a critical focal point of analysis thus challenging anthropocentric views and uncovers transformative perspectives on the agency of non-human animals in historical texts and their roles in environmental dynamics.