

Avian Ecopedagogies: Women Ornithologists and Environmental Education in Late Nineteenth-Century America

Clara CONTRERAS AMEDURI

Author:

Clara Contreras Ameduri
Universidad Complutense de Madrid, Spain
clarainc@ucm.es
<https://orcid.org/0000-0002-8446-8166>

Date of reception: 27/07/2023

Date of acceptance: 27/11/2024

How to cite:

Contreras Ameduri, Clara. 2025. "Avian Ecopedagogies: Women Ornithologists and Environmental Education in Late Nineteenth-Century America". *Alicante Journal of English Studies / Revista Alicantina de Estudios Ingleses*, no. 42: 73-94. <https://doi.org/10.14198/raei.25702>

Funding: EnviroCitizen: Citizen Science for Environmental Citizenship (Horizon 2020, G.A. No 872557)

Conflict of interest: The author declares that there is no conflict of interest concerning the publication of this article.

© 2025 Clara Contreras Ameduri



Licence: This work is shared under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International license (CC BY-NC-SA 4.0): <https://creativecommons.org/licenses/by-nc-sa/4.0/>

Abstract:

This article examines ornithological children's literature by women naturalists of the nineteenth century through the lens of citizen science for environmental citizenship, paying special attention to how such works paved the way to early forms of environmental education. It aims to discuss how these texts allowed American female ornithologists to develop ecopedagogical strategies against bird extinction by encouraging children's involvement in early animal welfare and nature conservation movements, this fomenting the development of environmental awareness from an early age at a time of recurrent bird slaughter. In order to do so, it explores didactic tools in children's books published by female members of the Audobon movement for bird protection, namely, Olive Thorne Miller, Fannie Hardy Eckstorm, and Neltje Blanchan. By publishing children's literature, these nature writers contributed to a new understanding of Victorian natural science, one which encompassed respectful interactions with non-human life and which acknowledged the role of environmental education in preventing further ecological destruction.

Keywords: citizen science, environmental education, ornithology, Victorian, women writers, environmental citizenship, children's literature, ecopedagogy

1. Introduction

The nineteenth century constituted a turning point in the treatment of both childhood and nature, as illustrated by a rich tradition of works depicting harmonious interactions between children and the non-human world. By the turn of the century, texts such as Frances Hodgson Burnett's *The Secret Garden* (1911) famously mirrored the period's concerns regarding the importance of ecopedagogical strategies for healthy human development, as well as the need to care for animals and plants (Morgan 2011, 81-82). Much like the robin in Burnett's novel, birds played a significant role in earlier texts framing the youngest generations' responsibilities towards their fellow creatures, a particularly recurrent topic in children's literature by female naturalists (Donald 2020, 55; Talairach-Vielmas 2011a, 4). While the American landscape was quickly deteriorating under the weight of industrialization and urban expansion, women's writing became an effective tool in the democratization of natural history for a popular audience, making scientific knowledge accessible to readers of all ages (Jensen and Guthrie 2006, 282; Gates 1998, 83). Such contributions were especially effective in the notorious crusade against feather fashion,¹ a transnational movement initiated in 1889 by the female activists of the Royal Society for the Protection of Birds (RSPB) (Boase 2018, 60), which inspired a prolific amount of increasingly popular short stories, poems, didactic texts (Abbott 1998, 98), periodicals and pamphlets, many of which were addressed to children (Milton 1999, 104). Yet, although the latest decades of scholarship in Victorian studies have successfully highlighted the crucial role of women in environmental activism and provided extensive ecocritical readings of the dissemination of natural science in nineteenth-century children's books (Tolley 2003, 127), the ecopedagogical potential of women's ornithological literature for young learners seems to have received scarce academic attention, perhaps because the impact of their work, especially in the context of environmental education, has been long-overlooked.

This article intends to explore the influence of female ornithologists on the origins of environmental education, paying attention to how their publication of children's nature writing functioned as a vehicle to address significant debates

1 During the second half of the nineteenth century, the demand for avian adornment in feather hats and taxidermy fashion caused the extermination of millions of birds every year, leading certain species close to extinction (Boase 2018, 209). In Britain and the United States, this alarming loss of biodiversity triggered women's advocacy for nature conservation in diverse female-led organizations, such as the abovementioned RSPB, the Fur, Fin and Feather Folk, and the Royal Society for the Prevention of Cruelty to Animals (Boase 2018, 62).

regarding animal suffering, ecological destruction, and the configuration of women and children as agents of change against the loss of national biodiversity. By examining such texts against the backdrop of reformist efforts such as Progressive Education or the Nature Study movement in late-nineteenth-century America, it is possible to observe how women naturalists used ornithological literature to shape present and future attitudes to environmental problems, incorporating avant-garde educational theories which differed from traditional approaches to science pedagogy for the youngest generations. More specifically, this study intends to focus on three women writers connected to the Audubon Society, a bird protection organization whose literary production offers valuable insight into the relevance of female leadership in early animal welfare campaigns in the United States (Breton 1998, 256). As clarified in the first issue of *Audubon Magazine* (1887), the environmental education of “young folks” was of utmost importance to the movement against the plumage trade, since children were understood as an essential part of wildlife conservation from the start (qtd. in Hines 2004, 4).

As I shall argue, women’s commitment to raising environmental awareness among boys and girls through nature writing reflects not only the emergent conservationist ethics of the period, but also meaningful transformations in scientific research, which presented an unprecedented compatibility between academic inquiry and the protection of nature (Jensen and Guthrie 2006, 25). Scholars such as Barbara Gates (1998), Kim Tolley (2003), or Laurence Talairach-Vielmas (2011) have thoroughly documented how female naturalists encouraged the development of an environmentally aware scientific education through non-mainstream methods which differed from the traditional approach of the academic institutions from which they were excluded. For instance, in her *Handbook of Nature-Study* (1911), Anna Comstock, a pioneering supporter of outdoor schooling, argued that “[t]he nature-study teacher, if she does her work well, is a sure aid in inculcating a respect for the rights of all living being to their own lives” (1911, 11). By influencing public attitudes to non-human creatures through children’s literature, conservation clubs (Merchant 1996, 105), and the popularization of natural history (Talairach-Vielmas 2011, 4), middle-class women, such as the members of the Audubon Society, found opportunities to anticipate the contemporary concept of environmental citizenship, a term coined by Andreas Hadjichambis and Pedro Reis to define “pro-environmental behaviour, in public and in private [...] in participation and in the co-creation of sustainability policy” (2020, 1). According to Finn Arne Jørgensen and Dolly Jørgensen, this notion is closely connected to the development of alternative scientific methods through what Alan Irwin denominates citizen science, a form of knowledge production driven by individuals on the margins of academic fields

of expertise (1995, 10). These present-day terms are particularly applicable to address the flexibilization and democratization of nineteenth-century natural history (Gates 2007, 540), noting how the participation of female researchers raised questions concerning how the boundaries of professional science could be redefined in more inclusive ways.

2. Environmental Education and the Animal Question in Nineteenth-Century Women's Writing

Ecopedagogical texts were a key element in the origins of environmental activism, marked by the first animal protection and nature conservation movements (Murphy 2019, 23). At a turning point in interspecies encounters due to elements like industrial expansion and the cultural impact of Charles Darwin's well-known *On the Origin of Species* (1859) (Denenholz and Danahay 2007, 2), female-led organizations such as the Audubon Society reflected rapid changes in the understanding of nature, the education of children, and the condition of women in the public sphere. As pointed out by Carol Adams and Josephine Donovan, women were the main agents in the defence of non-human life in Britain and the United States (1995, 5), contributing to social and political reform through associations like the Royal Society for the Prevention of Cruelty to Animals (RSPCA), the Animal Defence and Anti-Vivisection Society (Donald 2020, 56-57), or the abovementioned RSPB (Boase 2018, 62). Such groups often overlapped with children's animal welfare clubs where members swore to "be kind to all dumb creatures" and promised to protect "all weak children and dumb animals" (Milton 2009, 119), as was the case of the Bands of Mercy (Milton 2011, 106), the Kind Hearted Brigade (Milton 2009, 106), or the RSPCA, which shared its founder with the Society of Prevention of Cruelty to Children (Hines 2004, 22). The active role of female reformers in these organizations reveals significant implications concerning the shared vulnerability of women, children, and non-human creatures in the androcentric microcosm of the Victorian household (Danahay 2007, 99; Hines 2004, 20).

In line with the era's intersecting preoccupations with non-human suffering and other silenced and marginalized perspectives (Kreilkamp 2005, 94), animal literature may suggest a symbolic solidarity between women and children in association with nature (Lansbury 1985, 84; Rowland 2012, 25) due to their common interests as oppressed and othered individuals in nineteenth-century culture (Murphy 2019, 6; Benziman 2012, 82).² Taking into account their

² As indicated by theorists like Carol Adams, Josephine Donovan, and Ynestra King, such associations are the problematic product of androcentric cultural binaries connecting

shared status as targets of reform laws and humanitarian literature (Hines 2004a, 20), women's nature writing grants subjectivity to childhood, female voices, animals, and plants, while at the same time reminding their youngest readers of their responsibility towards their fellow creatures, including avifauna. As an example, Menella Bute-Smedley and Fanny Wheeler Hart's poem "A Bird's Eye-View" (1868) functions as a vehicle to denounce ecological destruction through a dialogue in which a girl urges a boy to stop torturing birds. This female defence of avifauna not only alludes to a recurrent theme in nineteenth-century culture (Moine 2015, 191),³ but also to the configuration of girls as role models for environmental citizenship in children's literature by women.

In her study *Women Against Cruelty* (2020), Diana Donald highlights how, from the eighteenth century onwards, children's didactic literature by female authors frequently presented women as the main agents of change in attitudes to animal suffering, thus emphasizing their role as environmental educators (2020, 55). Hunting, egg-collecting, the destruction of nests and other forms of attacking avifauna, like the feather industry, soon became the subject of numerous protectionist texts aimed at younger readers (Moine 2015, 190), such as Sarah Trimmer's *The History of the Robins: For the Instruction of Children on Their Treatment of Animals* (1786). As shown in Bute-Smedley's and Hart's poem, such works usually portrayed girls as the preservers of wildlife and boys as its destroyers, contributing to a trend of moralistic nature stories in which boys are converted from harming nature into protecting it (Tolley 2003, 110):

Quoth the boy, "My senses whirl;
Until now I never heard
Of the wisdom of a girl,
Or the feelings of a bird!" (Bute-Smedley and Hart 1868, 63).

Likewise, it is the revelation of female knowledge about birdlife which draws attention to non-human emotions and restrains boys from killing birds in Susana Watts' *The Animals' Friend* (1831), Dinah Craik's "The Wren's Nest" (1859), Alicia Donne's *Peeps into Bird Life* (1896), and other publications for children.

women and other subaltern subjects to nature in order to configure them as secondary to culture and men (King 2003, 331). These tropes have long been the subject of ecofeminist considerations which are beyond the scope of the present study.

- 3 Fabienne Moine notes how girls in Bute-Smedley's and Hart's poem side with avifauna because they "realize their common interests in the face of male oppression" (2015, 191). The use of avian imagery to denounce social injustice and interlocking practices of domination in nineteenth-century culture has already been finely documented (Danahay 2007, 109; Moine 2015, 189).

Similar texts like Lydia Maria Child's "Who Stole the Bird's Nest" (1844) and Eliza Cook's "On Seeing a Bird-Catcher" (1845) warned against the problematic role of young men in bird extinction, a topic which was also addressed in the nature writing of Susan Fenimore Cooper and many other women ornithologists who wondered why "[y]oung boys, scarcely old enough [...] to carry a gun" were "allowed to shoot the birds with impunity in the spring" (Cooper [1878] 2002, 39).

Although the justification behind women's literary defences of non-human creatures was often rooted in patriarchal notions of sexual difference which labelled expressions of pity at the sight of others' suffering as essentially feminine behaviour (Donald 2020, 45),⁴ such texts provided, as Carolyn Merchant argues, opportunities for female authors to influence ecological consciousness and position themselves as producers and disseminators of knowledge (1996, 105). Animal welfare messages were closely connected to the era's views on women's responsibility for the moral education of the young (Talairach-Vielmas 2011, 2-3), since learning to respect other species was considered a crucial part of children's emotional development by authors like Mary Wollstonecraft (Cosslett 2017, 48). Therefore, in agreement with Mary Hilton, writing children's books was a way for women writers to educate themselves and others in the natural sciences while defining themselves as the "nation's teachers" to construct "a variety of intellectual and pedagogical practices" (Hilton 2007, 110). For this reason, women citizen scientists and environmental educators like the members of the Audubon Society occupied a rarely acknowledged central role in early efforts for the preservation of nature, as the American forester Gifford Pinchot reflected in 1910:

I believe that the part of the work which falls to the women (and it is not a small part) is to see that the children, who will be the men and women of the future, have their share of these [natural] resources uncontrolled by monopoly and unspoiled by waste [...] Few people realize what women have already done for conservation, and what they may do (Pinchot [1910] 1967, 105).

In the United States, this realization that the decreasing fauna and flora of the country should be protected before they were completely lost was directly linked to the emerging interest in outdoor education and other pedagogical innovations

⁴ Numerous educational texts written by women between the eighteenth and early twentieth centuries stress the feminine duty to dissuade men from cruelty towards animals, presenting women's civilizing function in society as complementary to the traditionally masculine attributes of boldness and activity (Donald 2020, 48).

of the late nineteenth century (Jensen and Guthrie 2006, 25). Despite the fact that the Nature Study movement has commonly been documented as the achievement of male educators and conservationists like Pinchot, John Muir, or Theodore Roosevelt (Jensen and Guthrie 2006, 282), the following evidence confirms that women also played an important part in the development of ecopedagogical policies (Tolley 2003, 127).

3. Ecopedagogical Strategies in Women's Ornithological Literature

As the nineteenth century drew to a close, the increasing deterioration of the American landscape became the subject of school readers, children's magazines, and other vehicles for the dissemination of natural science, which was gradually being introduced in the public education system (Tolley 2003, 127). This transmission of environmental awareness ran parallel to a growing interest in the scientific education of girls in female seminaries, where middle-class ladies were prepared for their aforementioned role as the moral compass of the nation (Hilton 2007, 110). Taking into account the success and significance of animal stories in the formation of youth culture throughout the nineteenth century (Dobrin and Kidd 2004, 4), natural history texts allowed female educators to access progressive intellectual circles connected to educational reforms (Cosslett 2017, 57), such as the American Nature Study Society, the Nature Study educational movement, and Progressive Education (Jensen and Guthrie 2003, 282). Outdoor education, adventure pedagogy, experiential learning, and other innovative approaches adopted by these campaigns called into question conventional teaching methods, working towards more inclusive and accessible forms of education in direct contact with the natural world (Jensen and Guthrie 2003, 282). Such transformations fomented a suitable context for women's contributions to environmental education through their influence on the literary market for children.

From the 1850's onwards, publications concerned with ecology, natural science, and human-animal interactions thrived among children's weeklies and monthly publications such as *The Youth's Companion* (1827–1929), *Aunt Judy's Magazine* (1866-1885), (Talairach-Vielmas 2011, 96), *Our Dumb Animals* (1868-1970) (Tolley 2003, 96), and *St. Nicholas* (1896-1943), the most important American periodical for young readers of the day (Dobrin and Kidd 2004, 4). However, although such magazines were the main vehicle for the first publications of several Audubon naturalists (Musil 2014, 42), few of these texts truly encouraged women to take action in scientific research and nature conservation beyond the domestic sphere (Talairach-Vielmas 2011, 3). Instead, as pointed out by Tolley, female citizen scientists were generally expected to

remain as “helpers to male scientists, as collectors, or as popularizers, rather than as producers of scientific knowledge” (2003, 101). These obstacles were rooted in the well-known ideology of the separate spheres (Donald 2020, 59), according to which women were “not expected to enter into the recesses of the temple of science”, as argued by the botanist and educator Almira Hart Lincoln Phelps (1876, 161).

Most notably, as stated above, such assumptions could be echoed in women’s ecodidactic literature, as in the case of Watts’ *Animal’s Friend*, where the writer urges girls to soothe the masculine hunting instinct by exerting the characteristic gentleness of the “quiet, meek” feminine spirit, uniquely suited for inculcating “the Law of LOVE” (1831, 75). Yet, whereas didactic strategies originated in the eighteenth century often stressed alleged cognitive differences between men and women to justify the defence of animals and nature (Donald 2020, 43), female ornithologists adopted an alternative approach, advancing towards more egalitarian forms of environmental instruction for men, women and children. As it is possible to appreciate in the work of the following authors, such changes required a democratic approach to ornithological citizen science, one which would grant any learner access to birdlife, regardless of class, gender, and age barriers.

3.1. Olive Thorne Miller: *Birdwatching as Environmental Education*

Olive Thorne Miller (1831-1918) was among the first women of the Audubon movement to raise environmental awareness through “sugar-coated pills of knowledge” for children (Bailey 1919, 165). An avid and self-taught birder who began studying avifauna in her fifties (Bailey 1919, 165), Miller was keenly aware of the importance of education in conservation activism, which led her to publish works of scientific dissemination “for little people” and for “any-one who is curious” about the ways of birds (Miller [1873] 1879, 1). This view coincided with the period’s pedagogical reforms, which were rooted in the argument that scientific learning ought not to remain “[l]ocked up in a few colleges, or royal societies, or inaccessible volumes”, but should, instead, be shared as the result of mutual aid and citizen collaboration (Tolley 2003, 96).

Echoing similar convictions to those from the Nature Study movement (Jensen and Guthrie 2006, 282), Miller’s texts challenged traditional education by presenting accessible ornithological information that was intricately linked to the defence of non-human life.

One of her first books for children, *Little Folks in Feathers and Fur* (1873), makes such intentions clear, announcing that, in order to translate ornithological discoveries “into the vulgar tongue” so “every-one may enjoy” them, “[l]ong

words are carefully left out, nothing is said of scientific classification, and very little of scientific names” (Miller [1873] 1879, 1). For the writer, adapting the content to the level of young readers constitutes a necessary step towards the protection of avifauna, since this gesture involves transferring knowledge on birdlife not only to the next generation, but also to other learners who, like herself, had been left out of formal academic training (Bailey 1919, 165). Autodidactic ornithological study therefore becomes an essential tool to encourage citizen involvement in conservation, thus anticipating the notion of citizen science for environmental citizenship (Jørgensen and Jørgensen 2021, 1345). In Miller’s charismatic descriptions of avifauna, this is achieved by emphasizing the cruelty of human practices like hunting ([1873] 1879, 82), feather fashion ([1873] 1879, 98), egg collecting ([1873] 1879, 95), taxidermy ([1873] 1879, 91), the meat industry (1885, 204),⁵ and even candle-making using dead birds ([1873] 1879, 82). Although, according to the author’s conventionally feminine modesty (Gilbert and Gubar 1979, 23), *Little Folks* “makes no pretensions to be a scientific work” ([1873] 1879, 1), her writing contributed to remarkable changes in natural history by establishing innovative connections between ecopedagogical approaches and alternative methods for ornithological research.

For instance, birdwatching also functions as the main tool for environmental education in her *Children’s Book of Birds* (1899-1901), intended to interest young people in avifauna to “stimulate them to further study” (1899, 1) and “to make children love and respect the living bird” (1899, 2). Once more, Miller presents an inclusive view of scientific instruction across gender and age, available to “children in and out of school and other beginners in the study of birds”, “[f]rom the youngest kindergarten scholar to boys and girls of sixteen and eighteen” (1899, 1). Most importantly, the author offers her readers a newly respectful way of exploring avifauna, one which would not involve the by-then conventional technique of shooting birds to dissect their corpses (Brooks 1980, 89):

Men who study dead birds can tell how they are made, how their bones are put together, and how many feathers are in the wings and tail. Of course, it is well to know all these things. But to see how the birds live is much more interesting than to look at dead ones (Miller 1899, 25).

5 Miller’s work also offers evidence of women’s participation in the early stages of the vegetarian movement (Adams and Donovan 1995, 5), since the author denounces the killing of birds and other animals to satisfy human appetites: “Not until man has outgrown the barbarism of nourishing his body at the expense of his soul can we hope to touch those who eat birds” (Miller 1885, 204).

Much like other women naturalists of the Audubon Society,⁶ Miller proposes an accessible and ecoethical form of ornithological study by encouraging her pupils to simply step outdoors and watch live birds in their natural habitat. At a time when scientific work was becoming increasingly located in male-dominated spaces like laboratories (Talairach-Vielmas 2011, 2), and when “[s]erious fieldwork, especially in ornithology, still depended on the gun” (Brooks 1980, 89), the author challenges the norm for scientific excellence through her ground-breaking approach as a citizen scientist. She had previously experimented with alternative methods while researching for *Bird-Ways* (1885), another ornithological text based on the observation of birds “enjoying the freedom of a large room, without attempting to tame them [...] to inspire confidence and dispel fear” (1885, 204-205). This trusting relationship between the scientist and her object of study, where birds are “gladly allowed to depart” “the moment one shows a desire for the world outside [her] windows”, sets the paradigm for the entire book in alignment with the aims of the Audubon movement (1885, 5-6).

As we have seen, earlier animal welfare literature for children was often characterized by its moralizing didacticism (Talairach-Vielmas 2011, 3), as well as by appealing to gendered approaches to animal suffering (Donald 2020, 43). In contrast, Miller’s ecopedagogical strategies involve “attractively put information on matters of fact” (Bailey 1919, 165). Rather than emulating the traditional praise of women’s nurturing qualities in children’s reform literature, she justifies her conservation arguments through empirical data concerning bird extinction. As pointed out by the acclaimed Audubon leader Mabel Osgood Wright, this was a particularly important strategy in response to the millinery business’ attempts to discredit anti-plumage efforts by labelling female protesters as “extremists” and “sentimentalists” (Wright 1901, 169). Similar caricatures of bird protection activists as “aggressively dictatorial” “feather faddists” and “frothy fanatics” (Boase 2018, 228, 112) drew on a long tradition of dismissal of women’s anger over the treatment of animals as overly emotional hysteria (Luke 1995, 293). Therefore, in order to avoid the trivialization of their environmental advocacy, female ornithologists needed to prove their ability for analytical thought and reasoning power, providing sensible logical arguments against bird slaughter, as clearly manifested in their educational literature (Forbes and Jermier 2002, 461).

In this respect, Miller’s line of reasoning evolves around avian contributions to human well-being, the main idea being that birds should be protected not just out of compassion, but also because of their useful role in society, a notion

6 As a similar example, her colleague Florence Merriam Bailey proposed the use of binoculars and a photographic camera to study birds without killing them in her book *Birds through an Opera Glass* (Bailey 1889, 5).

that would later become the argument of Wright's better-known children's book *Citizen Bird* (1897).⁷ To justify this view, Miller provides abundant evidence of, for example, how stormy-petrels get rid of "all the disagreeable things left floating on the sea" ([1873] 1879, 82), or how the screech owl, "far from being troublesome, [is] the most useful servant a farmer can have, for he is a wonderful mouse-catcher" ([1873] 1879, 87). By focusing on birds that were particularly vulnerable to human attack, the author attempts to defend them by rectifying their configuration in the cultural imaginary, stressing that "[m]any farmers and country boys have a great prejudice against [the screech owl], and take every occasion to kill him" (1873, 87), and "sailors, if they only knew it, have reason to thank [the stormy-petrel] for his services, instead of abusing him." ([1873] 1879, 82). Therefore, if bird population numbers continued to decrease, humans would eventually be deprived of these avian helpers.

Though not exempt of ecocritical complications (Jax et al 2018, 22), Miller's tactic communicates that bird protection was not a feminine sentimental whim divested of political significance, but a necessity, thus contradicting milliners' accusations against anti-plumage activists (Forbes and Jermier 2002, 461). Furthermore, this citizen scientist consolidates her role as an environmental educator "in the hope of diminishing the enormous slaughter for purposes of personal adornment" (1885, 203), presenting her ornithological notes as inseparable from her position as an animal protection advocate in the public sphere. This intertwining of research, activism, and educational theories sustains her ecopedagogical teachings, which are structured as a scientific study, rather than a moralizing sermon. Lacking the religious overtones of eighteenth-century didactic literature, in which children were taught to care for 'dumb creatures' because animals occupied an inferior position in God's *Scala naturae* (Tolley 2003, 101), *Bird-Ways* proposes, instead, a renegotiation of interspecies boundaries. Relying on evidence of the usefulness of birds, Miller presents her hypothesis by quoting the French writer Jules Michelet: "[t]o reveal the bird as a soul, to show that it is a person" is a crucial step towards conservation (Michelet 1879, 57). Granting birds this status is, according to both authors, an educational question, since most people would prefer to maintain androcentric hierarchies only because of "prejudice" and "traditional and derived opinions" (Michelet 1879, 271) which "from an early age, [have] been impressed upon them" (Michelet 1879, 57). Miller's ornithological literature therefore deconstructs public attitudes to non-human creatures by reforming the perspective of early learners, ending her book with a firm message of interspecies harmony: "These Are Your Brothers" (1885, 203).

7 I would like to thank Meghan Freeman and Elizabeth Cherry for pointing this out in their illuminative talk "The Making of *Citizen Bird*: Recruiting Children to the Cause of Bird Protection in Progressive-Era America" at the EnviroCitizen conference in 2023.

3.2. Fannie Hardy Eckstorm: Birdwatching as Experiential Learning

By the turn of the century, Miller's legacy had been taken up by younger generations of Audubon educators like Fannie Hardy Eckstorm (1865-1946). Much like her predecessor, this ornithological citizen scientist encouraged a respectful approach to avifauna through emerging ecopedagogical philosophies that redefined the boundaries of scientific inquiry in a non-exclusionary way. Her writing reflects how women popularizers of science "gradually moved away from didactic literature" to promote "a new view of children's literature" as "no longer dry and boring" (Talairach-Vielmas 2011, 5). By paying attention to elements like amusement and motivation in learning processes (Cosslett 2017, 59), Eckstorm framed her texts within the Progressive Education movement, which took into consideration the needs of the student in order to shape self-sufficient learners (Jensen and Guthrie 2006, 282). As manifested in her *Bird Book* (1901), an ornithological guide for children, such approaches entailed a democratized view of education (Dewey 1916, 17), as well as innovative views on natural science that sustained children's role as environmental citizens.

Echoing Miller's advice to get to know birds through direct observation (Miller 1899, 62), *The Bird Book* offers practical instructions for accessible environmental education through birdwatching, "because its materials are abundant and easily referred to" and "because it is pleasurable to beginners" (Eckstorm 1901, 3). Here, Eckstorm's defence of ornithology as the main vehicle to teach zoology is rooted in two main aspects connected to Progressive Education: it is entertaining and within the reach of any learner. As a female citizen scientist, her discussion shows the influence of ecopedagogical techniques on inclusive reinterpretations of science, since she emphasizes the need to "keep the nature study free from memorization of any text-book" in order to develop less elitist learning methods based on experiential fieldwork (Eckstorm 1901, 3):⁸

It should be remembered [...] that the collection and study of facts by direct observation is scientific work. The comparison and analysis of them is also scientific work. Observation and comparison – not learning hard names – is science (Eckstorm 1901, 4).

Her redefinition of science challenges the restrictive standards dictated by the official institutions from which women and students from oppressed social backgrounds had been barred for centuries (Talairach-Vielmas 2011, 2), since it

⁸ This emphasis on practice over memorization is another characteristic trait of late-nineteenth-century Progressive Education (Jensen and Guthrie 2006, 282).

prompts her readers to become actively involved in natural history without the need of previous academic knowledge or expensive tools. It also reveals the effect of Progressive Education on Nature Study and outdoor schooling in the late nineteenth century, which encouraged teaching in the open air through activities that would be inherently interesting to the student (Jensen and Guthrie 2006, 282). As manifested in *The Bird Book*, such methods stressed the importance of psycho-emotional factors like motivation in the learning process: “The pupil who can tell one new fact about a bird”, argues Eckstorm, “has done more real work [...] than the other pupil who has learned all its Latin names” (1901, 4). Paralleling her forebearer’s recommendations to spark children’s love for avifauna by arousing “sympathy and interest in the living bird” (Miller 1899, 3), the author prioritizes the pupil’s enthusiasm for live interspecies encounters over a more traditional and detached way of teaching nature that, in the words the environmental educator John Burroughs, “lacks soul and emotion”, and “misses the accessories of the open air and its exhilaration” (1912, 249). Therefore, by using ornithology to teach her young readers that “science is not [...] dry and hard and uninteresting” (1901, 121), Eckstorm configures birdwatching as an egalitarian form of experiential learning that would allow for the development of ecological sensitivities in direct contact with the non-human world (Eckstorm 1901, 4).

3.3. Neltje Blanchan: Birdwatching as Conservation Activism

Analogous ecopedagogical strategies appear in the ornithological works of Neltje Blanchan (1865-1918), a less known nature writer who was equally engaged in bird protection against the plumage trade.⁹ Her didactic publications present significant evidence of the evolution of scientific methodologies towards more ethical and less elitist techniques through environmental education in rural areas. Lessons in avifauna are interwoven with conservation messages concerning, particularly, the destructive impact of feather fashion, hunting, and deadly ornithological habits for bird collection and dissection (Blanchan [1897] 1903, 192). As she indicates in *Birds that Hunt and Are Hunted* (1898), “personal, friendly acquaintance with the live birds, as distinguished from the technical study of the anatomy of dead ones” (1898, 9), is the only way to engage young people in the defence of nature. Like Miller and Eckstorm, Blanchan presents outdoor learning as the best vehicle to combat cruel human practices, allowing “Nature, the best teacher of us all” to raise awareness about bird extinction in a

9 There have not yet been, as far as I am concerned, any academic studies on Blanchan beyond brief mentions in anthologies like *The Biographical Dictionary of Women in Science* (2004) or *Rachel Carson and Her Sisters* (2014).

democratic way, involving boys and girls in environmental study and conservation efforts (Blanchan 1907, 7).

In order to achieve this, the author foments a system of environmental upbringing which bears remarkable similarities to Miller's and Eckstorm's pedagogical instructions. Blanchan proposes a holistic notion of education with birdwatching at its centre, explaining how outdoor ornithological activities benefit the child's physical, emotional, and intellectual development (1907, 5), as she claims in *Birds Every Child Should Know* (1907). For this purpose, she provides comprehensive training for easy avian identification in *Bird Neighbors* ([1897] 1903), classifying birds by size and colour instead of by scientific names and adapting ornithological language to children's perspective. Once again, women's avian literature makes room for less privileged learners for whom, as pointed out by Eckstorm, the study of nature "does not [...] exceed the limits of what [they] have seen and experienced" (1901, 4). Most importantly, Blanchan exposes how, beyond training eyesight and analytical skills without the need of textbooks, "[i]nterest in birdlife exercises sympathies [...] It is nature sympathy, the growth of the heart, not nature study, the training of the brain, that does most for us" (1907, 8).

Besides taking into account the emotional impact of learning, just like Eckstorm does in her book, Blanchan reinforces Miller's ideas on the need for interspecies empathy in environmental education: "what is needed at first is not the science of ornithology", but to appreciate the bird "neither as a target nor as a producer of eggs, but as a fellow-creature whose acquaintance it would be pleasant to make" (Miller 1899, 3). Therefore, in these texts, teaching children to feel for animals and to undermine androcentric subjectivities is more urgent than teaching them strictly scientific terms (Cosslett 2017, 48). Furthermore, Blanchan's use of ecopedagogical strategies to transfer ornithological knowledge for conservation purposes are reminiscent of Miller's *Bird-Ways*, since both authors resort to objective scientific observations as arguments for bird defence, thus anticipating Wright's instructions to secure the protection of wildlife among upcoming generations (1901, 169):

To really know the birds in their home life, how marvelously clever they are, and how positively dependent agriculture is upon their ministrations, cannot but increase our respect for them to such a point that willful injury becomes impossible (Blanchan 1898, 9).

As it has previously been stated, women ornithologists needed to prove their ability for analytical thought and rational action not just to avoid being discredited as overly sentimental activists (Luke 1995, 293), but also to manifest

supposedly masculine skills that, according to Victorian gendered stereotypes (Donald 2020, 50), were required to access spheres of learning in nineteenth-century culture (Donald 2020, 69). For this reason, Blanchan, Miller, and other women naturalists of the time, like Mary Elizabeth Barber,¹⁰ referred to their research results to highlight how birds benefit human society, in the hope that “people [would] care enough about them to reinforce the law with unstrained mercy” (Blanchan 1898, 9). To clarify that her advocacy has “a solid foundation in economic facts”, Blanchan mentions, among many other examples, that American farmers were losing millions of dollars every year after killing the owls that would have otherwise fed on the ravaging fieldmice which damaged human crops (Blanchan 1898, 9). Such remarks remind the reader that “Nature adjusts her balances so wisely that we cannot afford to tamper with them” (1898, 9), thus demonstrating the writer’s acquaintance with the latest discoveries by possibly alluding to Darwin’s views on the unbreakable connection between human beings, other animals, and interdependent ecosystems ([1859] 1909, 528).

Educational ornithological texts were therefore a way for female citizen scientists to justify their demands for avian welfare through active participation in the production and transmission of knowledge. For bird protection advocates like Blanchan, ecopedagogical literature constituted a path towards the preservation of nature on a national scale, since it promoted the cooperation of children in environmental activism on a political level. Just like youth movements such as the Dicky Bird Society motivated children to campaign against feathered millinery (Milton 2009, 105),¹¹ Blanchan’s bird guides inspired boys and girls to join the bird protection crusade by supporting changes in legislation before the last endangered species had “yielded their bodies to the knife of the plume hunter” (1907, 257-258): “What do you think about protecting [the great blue heron] by law? Anyone may shoot him now” (1907, 257-258). Her suggestion implies a meaningful shift from environmental education to specific environmentalist action that empowered the youngest generations to pave the way for twentieth-century conservation laws.¹²

10 Barber, the first woman ornithologist in colonial South Africa, made a similar point in her essay “Plea for Insectivorous Birds” (1886).

11 A children’s bird protection society founded in 1876 through the *Newcastle Weekly Chronicle*, where children wrote letters to the editor expressing their concern regarding bird slaughter, egg collecting, feathered millinery, and other forms of cruelty towards animals (Milton 2009, 105). It inspired similar initiatives in children’s clubs like Sister Mercy, or the Busy Bee Society (Milton 2009, 119).

12 As a result of women’s avian welfare activism, the Supreme Court of the United States eventually forbade the feather trade in 1921 through the Migratory Bird Treaty Act (Boase 2018, 210).

4. From Protest to Policy: Victorian Echoes in Contemporary Ecopedagogies

The authors examined above show how, at a historical moment of intense debates over the proper reading material for the young, the women of the Audubon movement contributed to educational reforms by authoring works of science popularization for children. Their ornithological texts offer significant examples of how citizens scientists in the nineteenth century contributed to developing pedagogical philosophies for environmental citizenship, confirming the central position of women and children in the first animal protection and nature conservation campaigns. Ornithological literature for early learners also discloses the ways in which female naturalists transferred their influence from the margins of nineteenth-century dominant culture to intellectual circles in the public sphere, fomenting decisive transformations in scientific methodologies and human approaches to the natural world.

Furthermore, considering ornithological texts by Victorian women through the lens of citizen science for environmental citizenship sheds light on how nineteenth-century children's literature foreshadowed present-day environmental concerns (Adkins and Parkins 2018, 2), helping contextualize, for example, current debates around the paradox of care and violence in ornithological science and avifauna conservation practices (Van Dooren 2014, 87). In addition to granting insight into the origins of a more compassionate ethics of care in interspecies interactions (Gruen 2015, 226), the didactic literature of the early Audubon Society also engages with issues such as environmental generational amnesia (Kahn Jr 2022a, 93) children's nature deficit disorders (Heneghan 2018, 26),¹³ and other issues affecting infant contact with the natural world which deserve further scrutiny in future research. Another element that ought to be explored in forthcoming investigations is the emotional dimension of nature study, an additional pioneering aspect of women's ornithological writing which challenged the paradigm of nineteenth-century science, as manifested especially clearly in Blanchan's work.

In this respect, the Audubon movement also anticipated contemporary academic considerations, particularly in the field of affective ecocriticism. As noted by Lawrence Buell, nineteenth-century environmental narratives were among the first to explicitly connect human-nature relationships to public activism, under the conviction that "a deeply personal love and reverence for the nonhuman

¹³ The latest research in environmental education shows how children's interest in nature has been decreasing quickly among the last generations due to lack of encouragement, of role models, and of contact with the outdoors, especially in urban areas (Heneghan 2018, 26).

led, over time, to a deeply protective feeling for nature” (1995, 137). More recently, works such as Alexa Weik von Mossner’s *Affective Ecologies: Empathy, Emotion, and Environmental Narrative* (2017) have observed similar phenomena among contemporary readers, tracking emotional responses to environmental narratives from the interdisciplinary fields of cognitive science and affect theory (Weik von Mossner 2017, 3). According to Weik von Mossner, this cognitive ecocritical approach confirms the long-lasting effects that nature writing has on the attitudes and behaviours of their readers (Weik von Mossner 2017, 8), as it establishes altruistic emotions as the foundation for environmental action (Bladow and Ladino 2018, 3). Additionally, the affective turn in environmental humanities has allowed scholars to track emotional reactions to overwhelming data on ecological destruction, addressing emerging concepts like psychic numbing, compassion fatigue, climate grief, or other “Anthropocene disorders” (Bladow and Ladino 2018, 2). Such considerations demonstrate how nature study and emotion ought to be understood simultaneously, thus overturning the Cartesian dualism between reason and feeling (Bladow and Ladino 2018, 2). Women ornithologists achieved this long before the emergence of terms such as ‘affect theory’ and ‘environmental justice’, foregrounding a coexistence of rational argumentation and compassionate sensitivity through their educational work. For such reasons, Miller’s, Eckstorm’s, and Blanchan’s pioneering texts seem particularly applicable at this moment in history, not only because they anticipate innovative eco-critical theories, but also because they contain the seeds of some of the main activities of contemporary environmental education (Bayer and Finley 2022, 5). As documented throughout this study, their works include key ecopedagogical strategies like organization through collective action, connecting citizens to nature through first-hand experience, and passing on knowledge and power to the next generation (Bayer and Finley 2022, 5-6), thus laying the groundwork for effective tools to face today’s environmental crisis.

Funding

This research has been supported by EnviroCitizen: Citizen Science for Environmental Citizenship (Horizon 2020, G.A. No 872557).

Works Cited

- ABBOTT, Rebecca. 1998. “Mabel Osgood Wright, A Friend of Nature.” *Sacred Heart University Review* 18 (1): 91-109.
- ADAMS, Carol J., and Josephine Donovan. 1995. “Introduction.” In Adams and Donovan 1995, 1-9.

- ADAMS, Carol J. And Josephine Donovan, eds. 1995. *Animals and Women: Feminist Theoretical Explorations*. London: Duke UP. <https://doi.org/10.1215/9780822381952>
- ADKINS, Peter and Wendy Parkins. 2018. "Introduction: Victorian Ecology and the Anthropocene." *Interdisciplinary Studies in the Long Nineteenth Century* 19 (26): 1-15. <https://doi.org/10.16995/ntn.818>
- ANDERSON, Lorraine and Thomas S. Edwards, eds. 2002. *At Home on this Earth: Two Centuries of U. S. Women's Nature Writing*. Hanover: UP of New England.
- BAILEY, Florence Merriam. 1889. *Birds through an Opera Glass*. New York: Chautauqua.
- BAILEY, Florence Merriam. 1919. "In Memoriam: Olive Thorne Miller." *The Auk: A Quarterly Journal of Ornithology* 36 (2): 163-169. <https://doi.org/10.2307/4073034>
- BARBER, Mary Elizabeth. 1886. "A Plea for Insectivorous Birds: A Paper by Mrs Barber." *Grahamstown Journal* 58 (6930): 3-12.
- BAYER, Ellen and Judson Byrd Finley. 2022. "Out of the Classroom and into the Wild: Ecopedagogies in Action." In Bayer and Finley 2022, 1-17. <https://doi.org/10.4324/9781003221807-1>
- BAYER, Ellen and Judson Byrd Finley, eds. 2022. *Ecopedagogies: Practical Approaches to Experiential Learning*. London: Routledge. <https://doi.org/10.4324/9781003221807>
- BENZIMAN, Galia. 2012. *Narratives of Child Neglect in Romantic and Victorian Culture*. New York: Palgrave Macmillan. <https://doi.org/10.1057/9780230348837>
- BLADOW, Kyle and Jennifer Ladino. 2018. "Towards an Affective Ecocriticism: Placing Feeling in the Anthropocene." In Bladow and Ladino 2018, 1-22. <https://doi.org/10.2307/j.ctv75d0g8.5>
- BLADOW, Kyle and Jennifer Ladino, eds. 2018. *Affective Ecocriticism: Emotion, Embodiment, Environment*. Lincoln: University of Nebraska Press. <https://doi.org/10.2307/j.ctv75d0g8>
- BLANCHAN, Neltje. [1897] 1903. *Bird Neighbors: An Introductory Acquaintance with One Hundred and Fifty Birds Commonly Found in the Gardens, Meadows, and Woods about our Homes*. New York: Doubleday, Page & Co. <https://doi.org/10.5962/bhl.title.121888>
- BLANCHAN, Neltje. 1907. *Birds Every Child Should Know*. New York: Grosset & Dunlap.
- BLANCHAN, Neltje. 1898. *Birds that Hunt and Are Hunted: Life Histories of One Hundred and Seventy Birds of Prey, Game Birds and Waterfowls*. New York: Doubleday and McClure Co.
- BRETON, Mary Joy. 1998. *Women Pioneers for The Environment*. Lebanon: UP of New England.
- BOASE, Tessa. 2018. *Mrs Pankhurst's Purple Feather: Fashion, Fury and Feminism – Women's Fight for Change*. London: Aurum.



- BROOKS, Paul. 1980. "Birds and Women." *Audubon Magazine*, 82 (5): 88-97.
- BUELL, Lawrence. 1995. *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture*. Cambridge: Harvard UP. <https://doi.org/10.2307/j.ctv1nznfgsv>
- BURNETT, Frances Hodgson. [1911] 1999. *The Secret Garden*. New York: Aladdin Classics.
- BURROUGHS, John. 1912. *The Writings of John Burroughs, Vol. XIV: Time and Change*. New York: The Riverside Press.
- BUTE-SMEDLEY, Menella and Fanny Wheeler Hart. 1868. "A Bird's Eye-View." *Poems Written for a Child*. 62-65. London: Strahan & Co.
- CHILD, Lydia Maria. 1877. "Who Stole the Bird's Nest." *Our Children's Songs*. 44-45. New York: Harper & Brothers.
- COMSTOCK, Anna Botsford. 1911. *Handbook of Nature-study for Teachers and Parents, Based on the Cornell Nature-study Leaflets, with Much Additional Material and Many New Illustrations*. Ithaca, New York: Comstock Publishing Company. <https://doi.org/10.5962/bhl.title.1425>
- COOK, Eliza. 1861. "On Seeing a Bird-Catcher." *Poems*. 133-134. London: Routledge.
- COOPER, Susan Fenimore. (1878) 2002. "Otsego Leaves I: Birds Then and Now." In Anderson and Edwards 2002, 34-41.
- COSSLETT, Tess. 2017. *Talking Animals in British Children's Fiction, 1786-1914*. New York: Taylor & Francis. <https://doi.org/10.4324/9781315241852>
- CRAIK, Dinah Maria Mulock. 1859. "The Wren's Nest." *Poems*. London: Hurst and Blackett. 315-317.
- DANAHAY, Martin. 2007. "Nature Red in Hoof and Paw: Domestic Animals and Violence in Victorian Art." In Denenholz and Danahay 2007, 97-121.
- DARWIN, Charles. [1859] 1909. *On The Origin of Species*. New York: P. F. Collier & Son. <https://doi.org/10.4324/9781315235073-7>
- DENENHOLZ MORSE, Deborah and Danahay, Martin A. 2007. "Introduction." In Denenholz and Danahay 2007, 1-13.
- DENENHOLZ MORSE, Deborah and Danahay, Martin A., eds. 2007. *Victorian Animal Dreams: Representations of Animals in Victorian Literature and Culture*. Hampshire: Ashgate.
- DEWEY, John. [1916] 1955. *Democracy and Education: An Introduction to the Philosophy of Education*. New York: Macmillan.
- DOBRIN, Sidney I. and Kenneth B. Kidd. 2004. "Introduction: Into the Wild." In Dobrin and Kidd 2004, 1-16.
- DOBRIN, Sidney I. and Kenneth B. Kidd, eds. 2004. *Wild Things: Children's Culture and Ecocriticism*. Detroit: Wayne State UP.
- DONALD, Diana. 2020. *Women Against Cruelty: Protection of Animals in Nineteenth-Century Britain*. London: Manchester UP. <https://doi.org/10.7765/9781526115430>
- DONNE, Alicia. 1896. *Peeps into Bird Life, With a Prelude by the Right Rev. the Lord Bishop of Wakefield*. Chester: Phillipson and Golder.

- ECKSTORM, Fannie Hardy. 1901. *The Bird Book*. Boston: D. C. Heath & Co. <https://doi.org/10.5962/bhl.title.6943>
- FORBES, Linda and John Jermier. 2002. "The Institutionalization of Bird Protection: Mabel Osgood Wright and the Early Audubon Movement." *Organization & Environment* 15 (4): 458-465. <https://doi.org/10.1177/1086026602238172>
- GATES, Barbara. 1998. *Kindred Nature: Victorian and Edwardian Women Embrace the Living World*. Chicago: University of Chicago Press.
- GATES, Barbara. 2007. "Why Victorian Natural History?" *Victorian Literature and Culture* 35 (2): 539-549. <https://doi.org/10.1017/S1060150307051625>
- GILBERT, Sandra M. and Susan Gubar. 1979. *The Madwoman in the Attic: The Woman Writer and the Nineteenth-Century Literary Imagination*. London: Yale UP.
- GRUEN, Lori. 2015. *Entangled Empathy: An Alternative Ethic for Our Relationships with Animals*. New York: Lantern Books.
- HADJICHAMBIS, Andreas and Pedro Reis. 2020. "Introduction to the Conceptualisation of Environmental Citizenship for Twenty-First-Century Education." In Hadjichambis et al, 2020, 1-17. https://doi.org/10.1007/978-3-030-20249-1_1
- HADJICHAMBIS, Andreas, Pedro Reis, Demetra Paraskeva-Hadjichambi, Jan Cincera, Jelle Boeve-de Pauw, Niklas Gericke, Marie-Christine Knippels, eds. 2020. *Conceptualizing Environmental Citizenship for 21st Century Education*. Springer Open. <https://doi.org/10.1007/978-3-030-20249-1>
- HENEGHAN, Liam. 2018. *Beasts at Bedtime: Revealing the Environmental Wisdom in Children's Literature*. Chicago: University of Chicago Press. <https://doi.org/10.7208/chicago/9780226431413.001.0001>
- HILTON, Mary. 2007. *Women and the Shaping of the Nation's Young: Education and Public Doctrine in Britain 1750-1850*. Aldershot: Ashgate.
- HINES, Maude. 2004. "'He Made Us Very Much Like the Flowers': Human/Nature in Nineteenth-Century Anglo-American Children's Literature." In Dobrin and Kidd 2004, 16-31.
- HORNE, Jackie C. and Joe Sutliff Sanders, eds. 2011. *Frances Hodgson Burnett's The Secret Garden: A Children's Classic at 100*. Toronto: Scarecrow Press.
- IRWIN, Alan. 1995. *Citizen Science: A Study of People, Expertise and Sustainability*. London: Routledge.
- JAX, Kurt, Melania Calestani, Kai Chan, Uta Eser, Hans Keune, Barbara Muraca, Liz O'Brien, Thomas Potthast, Lieske Voget-Kleschin, and Heidi Wittmer. 2018. "Caring for Nature Matters: A Relational Approach for Understanding Nature's Contributions to Human Well-Being." *Current Opinion in Environmental Sustainability* 35: 22-29. <https://doi.org/10.1016/j.cosust.2018.10.009>
- JENSEN, Clayne R. and Guthrie, Steven. 2006. *Outdoor Recreation in America*. Human Kinetics.

- JØRGENSEN, Finn Arne and Dolly Jørgensen. 2021. "Citizen Science for Environmental Citizenship." *Conservation Biology* 35 (4): 1344-1347.
- KAHN, Jr., Peter H. 2022. "Children's Affiliations with Nature: Structure, Development, and the Problem of Environmental Generational Amnesia." In Kahn and Kellert 2022, 93-116.
- KAHN, Jr., Peter H. and Stephen R. Kellert, eds. 2022. *Children and Nature: Psychological, Sociocultural, and Evolutionary Investigations*. Cambridge: MIT Press.
- KING, Ynestra. 2003. "The Ecology of Feminism and the Feminism of Ecology." In Pepper, Webster and Revill 2003, 328-358.
- KREILKAMP, Ivan. 2005. "Petted Things: *Wuthering Heights* and the Animal." *The Yale Journal of Criticism* 18 (1): 87-110. <https://doi.org/10.1353/yale.2005.0006>
- LANSBURY, Coral. *The Old Brown Dog: Women, Workers and Vivisection in Edwardian England*. New York: University of Wisconsin Press.
- LINCOLN PHELPS, Almira Hart. 1876. *The Educator; or, Hours with My Pupils*. New York: A. S. Barnes & Co.
- LUKE, Brian. 1995. "Taming Ourselves of Going Feral? Toward a Non-Patriarchal Metaethic of Animal Liberation." In Adams and Donovan 1995, 290-320. <https://doi.org/10.1215/9780822381952-013>
- MERCHANT, Carolyn. 1996. *Earthcare: Women and the Environment*. New York: Routledge.
- MICHELET, Jules. 1879. *The Bird*. W. H. Davenport Adams, trans. London: Thomas Nelson & Sons. <https://doi.org/10.5962/bhl.title.153152>
- MILLER, Olive Thorne. 1885. *Bird-Ways*. Boston and New York: Houghton, Mifflin & Co. <https://doi.org/10.5962/bhl.title.6987>
- MILLER, Olive Thorne. [1873] 1879. *Little Folks in Feathers and Fur and Others in Neither*. New York: E. P. Dutton & Co.
- MILLER, Olive Thorne. 1899. *The Children's Book of Birds*. Boston and New York: Houghton, Mifflin & Co.
- MILTON, Frederick. 2009. "Uncle Toby's Legacy: Children's Columns in the Provincial Newspaper Press, 1873–1914." *International Journal of Regional and Local Studies* 5 (1): 104-120. <https://doi.org/10.1179/jrl.2009.5.1.104>
- MOINE, Fabienne. 2015. *Women Poets in the Victorian Era: Cultural Practices and Nature Poetry*. London: Routledge. <https://doi.org/10.4324/9781315546698>
- MORGAN, Alun. 2011. "Places of Transformation in *The Secret Garden*." In Horne and Sutliff 2011, 81-99.
- MURPHY, Patricia. 2019. *Reconceiving Nature: Ecofeminism in Late Victorian Women's Poetry*. Columbia: University of Missouri Press.
- MUSIL, Robert K. 2014. *Rachel Carson and Her Sisters: Extraordinary Women Who Have Shaped America's Environment*. London: Rutgers UP. <https://doi.org/10.2307/j.ctt5vjxn1>

- PEPPER, David, Frank Webster and George Revill, eds. 2003. *Environmentalism: Critical Concepts*. London: Routledge.
- PINCHOT, Gifford. [1910] 1967. *The Fight for Conservation*. Seattle: University of Washington Press.
- ROWLAND, Ann Wierda. 2012. *Romanticism and Childhood: The Infantilization of British Literary Culture*. Cambridge: Cambridge UP. <https://doi.org/10.1017/CBO9781139024075>
- TALAIRACH-VIELMAS, Laurence. 2011. "Introduction." In Talairach-Vielmas 2011, 1-34. <https://doi.org/10.4000/miranda.389>
- TALAIRACH-VIELMAS, ed. 2011. *Science in the Nursery: The Popularisation of Science in Britain and France, 1761-1901*. Cambridge: Cambridge Scholars Publishing.
- TOLLEY, Kim. 2003. *The Science Education of American Girls: A Historical Perspective*. New York and London: Routledge Falmer.
- VAN DOOREN, Thom. 2014. *Flight Ways*. New York: Columbia University Press. <https://doi.org/10.7312/columbia/9780231166188.001.0001>
- WATTS, Susanna. 1831. *The Animals' Friend: A Collection of Observations and Facts Tending to Restrain Cruelty, and to Inculcate Kindness Towards Animals*. London: Stationer's Court & Co.
- WEIK VON MOSNER, Alexa. 2017. *Affective Ecologies: Empathy, Emotion, and Environmental Narrative*. Ohio State UP.
- WRIGHT, Mabel Osgood. 1902. "Back to First Principles." *Bird Lore* 4: 168-171.