

The Urbanization of the Eastern Gray Squirrel in the United States

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If they had tuned in to radio station WRC on July 12, 1934, residents of Washington, D.C., could have heard a talk by Vernon Bailey, the recently retired chief field naturalist of the U.S. Bureau of Biological Survey. Bailey was best known for his involvement in controversies over wolf eradication in the West, but his radio talk that day was on a subject closer to home and less politically charged, at least on the surface: “Animals Worth Knowing around the Capitol.” While he touched on a number of Washington-area animals that were “worth knowing,” he singled out one type for special attention: gray squirrels, which he described as “probably our best-known and most loved native wild animals, as they are not very wild and, being very intelligent, accept and appreciate our hospitality and friendship.”¹

Compared to most of his listeners, Bailey was unusually well informed about the biology and ecology of urban squirrels, which he had been feeding in the backyard of his townhouse in the Kalorama Triangle neighborhood for decades. Even so, his interest in the species and his belief in its virtues would probably not have surprised many of his fellow Washingtonians. By the early twentieth century, eastern gray squirrels (*Sciurus carolinensis*), once limited to rural areas, had become the most visible nondomesticated mammals in American cities. Like Bailey, numerous naturalists, zoo directors, educators, park designers, and poets had attempted to convince the public of gray squirrels’ contribution to the urban landscape and their value as members of the urban community. The arboreal rodents were protected, sheltered, and fed by the humans who treated them as public pets, even as they aroused the resentment and distaste of those who viewed them as pests.²

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¹ Vernon Bailey, “Animals Worth Knowing around the Capitol,” 1934, unpublished manuscript, p.1, folder 5: “Animals Worth Knowing around the National Capitol. Text of a Radio Talk over WRC, July 12, 1934,” box 7, record unit 7267, Vernon Orlando Bailey Papers 1889–1941 and undated (Smithsonian Institution Archives, Washington, D.C.). Vernon Bailey had given a similar radio address in 1926. See Vernon Bailey, “Mammals of the Vicinity of Washington,” *Journal of the Washington Academy of Sciences*, 16 (no. 16, 1926), 441–45. On Bailey’s socialization as a naturalist, see Robert E. Kohler, “From Farm and Family to Career Naturalist: The Apprenticeship of Vernon Bailey,” *Isis*, 99 (March 2008), 28–56.

² For overviews of squirrel biology, see Frederick S. Barkalow Jr. and Monica Shorten, *The World of the Gray Squirrel* (Philadelphia, 1973); Michael A. Steele and John L. Koprowski, *North American Tree Squirrels* (Washington, 2001); and Richard W. Thorington Jr. and Katie Ferrell, *Squirrels: The Animal Answer Guide* (Baltimore, 2006).

The urbanization of the gray squirrel in the United States between the mid-nineteenth century and the early twentieth century was an ecological and cultural process that changed the squirrels' ways of life, altered the urban landscape, and adjusted human understandings of nature, the city, and the boundaries of community. Squirrels were part of the new complex of human-animal relationships that emerged in the American city at the turn of the twentieth century as laboring animals were replaced by machines, and as dairy, meat, and egg production and processing were shifted to the urban margins. Accounts of urban squirrels in newspapers, magazines, scientific journals, diaries, and other sources provide evidence of these changes and of the development of a new understanding of community that crossed species borders to include some types of animals and exclude some types of humans. These sources help explain why Bailey and many others saw the eastern gray squirrel not merely as an interesting object of nature study but also as a morally significant member of the urban community.³

Arriving

Given the present ubiquity of gray squirrels, it may be difficult to believe that they have not always been common in American cities. In fact, they seem to have been entirely absent during the first half of the nineteenth century. The lack of systematic surveys before the twentieth century hinders estimates of the size of historical squirrel populations, which can fluctuate dramatically from year to year depending on food supplies, weather conditions, and other factors. Even indirect measurements can be elusive. Information that would allow the mapping of urban vegetation, including nut- and acorn-bearing trees, is exceedingly sparse for periods as recent as the turn of the twentieth century. Nonetheless, using biological findings as a source of bounds on plausibility, it is possible to draw some rough conclusions about population and presence on the basis of newspaper reports, scientific studies, historical photographs, diaries, and other sources. On the whole, these sources suggest a dramatic expansion of the number and range of urban squirrels in the second half of the nineteenth century due to three interacting factors: human efforts to foster urban squirrel populations, changes in the urban landscape, and the squirrels' efforts to adapt and thrive.⁴

³ On the history of animals in American cities, see William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York, 1991), 207–61; Matthew Klinge, *Emerald City: An Environmental History of Seattle* (New Haven, 2007); Clay McShane and Joel A. Tarr, *The Horse in the City: Living Machines in the Nineteenth Century* (Baltimore, 2007); Ted Steinberg, *Down to Earth: Nature's Role in American History* (Oxford, 2002), 157–63; and Ann Norton Greene, *Horses at Work: Harnessing Power in Industrial America* (Cambridge, Mass., 2008). On animals as historical agents, see Virginia DeJohn Anderson, *Creatures of Empire: How Domestic Animals Transformed Early America* (Oxford, 2004); Jon T. Coleman, *Vicious: Wolves and Men in America* (New Haven, 2004); Erica Fudge, "A Left-Handed Blow: Writing the History of Animals," in *Representing Animals*, ed. Nigel Rothfels (Bloomington, 2002), 3–18; S. Eben Kirksey and Stefan Helmreich, "The Emergence of Multispecies Ethnography," *Cultural Anthropology*, 25 (Nov. 2010), 545–76; and Susan Pearson and Mary Weismantel, "Does 'the Animal' Exist? Toward a Theory of Social Life with Animals," in *Beastly Natures: Animals at the Intersection of Cultural and Environmental History*, ed. Dorothee Brantz (Charlottesville, 2010), 17–37. On the city as a distinctive environment for human-animal relations and ethics, see Chris Philo, "Animals, Geography, and the City: Notes on Inclusions and Exclusions," *Environment and Planning D: Society and Space*, 13 (no. 6, 1995), 655–81; Clare Palmer, *Animal Ethics in Context* (New York, 2010); and Nicholas Holm, "Consider the Squirrel: Freaks, Vermin, and Value in the Ruin(s) of Nature," *Cultural Critique*, 80 (Winter 2012), 56–95.

⁴ On the challenges of reconstructing past animal population numbers, see Yolanda F. Wiersma and John Sandlos, "Once There Were So Many: Animals as Ecological Baselines," *Environmental History*, 16 (July 2011), 400–407. For model examples of such reconstructions for historical purposes, see Elinor G. K. Melville, *A Plague of Sheep: Environmental Consequences of the Conquest of Mexico* (New York, 1994); and Adam R. Hodge, "'In Want of Nourishment for to Keep Them Alive': Climate Fluctuations, Bison Scarcity, and the Smallpox Epidemic of 1780–82 on the Northern Great Plains," *Environmental History*, 17 (April 2012), 365–403.

The dominant image of the eastern gray squirrel in early nineteenth-century American culture was as a shy woodland creature that supplied meat for frontiersmen and Indians and game for the recreational hunter but could also become a pest in agricultural areas. Although some other members of the squirrel family, such as the American red squirrel (*Tamiasciurus hudsonicus*, also known as the pine squirrel), were present in eighteenth- and nineteenth-century American cities, and although small numbers of gray squirrels could be found in woodlands on urban fringes, the gray squirrel was effectively absent from densely settled areas. Sometimes called the “migratory” squirrel, the species was known for unpredictable mass movements by the thousands or even millions across the rural landscape. In *The Winning of the West* Theodore Roosevelt wrote of the eighteenth-century American backwoodsman’s fight against “black and gray squirrels [that] swarmed, devastating the cornfields, and at times gathering in immense companies and migrating across mountain and river.” Crop depredation by gray squirrels—Roosevelt’s “black squirrels” were merely a color variant of the species—led residents to set bounties and carry out large-scale squirrel hunts well into the nineteenth century.⁵

The only gray squirrels found in urban areas during this period were pets, such as Mungo, memorialized by Benjamin Franklin in a 1772 epitaph, who escaped from captivity and was killed by a dog after surviving a transatlantic journey to England. In most cases such pets had been taken from nests while young, and many were probably abandoned, killed, or had managed to escape after they matured. Nonetheless, they provided opportunities for urban Americans to form opinions about the habits and character of squirrels that complemented and sometimes contradicted those opinions formed in the context of hunting and farming. Pet squirrels, for example, which were widely available from live-animal dealers, were not shy like the wild squirrels in areas where hunting was common, and they often became importunate in their search for food in pockets and pantries. Familiar within the home, these pets appeared exotic and out of place when they escaped into the urban environment. In 1856 the *New-York Daily Times* reported that the appearance of an “unusual visitor” in a tree in the park near city hall had attracted a crowd of hundreds; until they were scattered by a policeman, the onlookers cheered the efforts to recapture the pet squirrel.⁶

The first introductions of free-living squirrels to urban centers took place in cities along the Eastern Seaboard between the 1840s and the 1860s. Philadelphia seems to have been the pioneering city, with Boston and New Haven, Connecticut, following soon after. In 1847 three squirrels were released in Philadelphia’s Franklin Square and were provided with food and boxes for nesting. Additional squirrels were introduced in the following years, and by 1853 gray squirrels were reported to be present in Independence, Walnut Street, and Logan Squares, where the city supplied nest boxes and food, and where visiting children often provided supplementary nuts and cakes. In 1857 a recent visitor to Philadelphia noted

⁵ Theodore Roosevelt, *The Winning of the West*, vol. 4: *Louisiana and the Northwest, 1791–1807* (New York, 1896), 224; Ernest Thompson Seton, “Migrations of the Graysquirrel (*Sciurus carolinensis*),” *Journal of Mammalogy*, 1 (Feb. 1920), 53–58; Barkalow and Shorten, *World of the Gray Squirrel*, 113.

⁶ Benjamin Franklin to Georgina Shipley, Sept. 26, 1772, in *The Two-Hundredth Anniversary of the Birth of Benjamin Franklin*, ed. Franklin Business Association (Franklin, 1906), 106; “New-York City: An Unusual Visitor,” *New-York Daily Times*, July 4, 1856, p. 6. On keeping squirrels as pets in the United States and Europe, see Katherine C. Grier, *Pets in America: A History* (Chapel Hill, 2006), 235; Louise E. Robbins, *Elephant Slaves and Pampered Parrots: Exotic Animals in Eighteenth-Century Paris* (Baltimore, 2002), 27, 118, 128; Harriet Ritvo, *The Animal Estate: The English and Other Creatures in the Victorian Age* (Cambridge, Mass., 1987), 18; Harriet Ritvo, “Learning from Animals: Natural History for Children in the Eighteenth and Nineteenth Centuries,” *Children’s Literature*, 13 (Spring 1985), 72–93, esp. 86; and Paul Staiti, “Character and Class: The Portraits of John Singleton Copley,” in *Reading American Art*, ed. Marianne Doezema and Elizabeth Milroy (New Haven, 1998), 12–37, esp. 24–25.

that the city's squirrels were "so tame that they will come and take nuts out of one's hand" and added so much to the liveliness of the parks that "it was a wonder that they are not in the public parks of all great cities." Boston followed Philadelphia's example by introducing a handful of gray squirrels to Boston Common in 1855, and New Haven had a population of squirrels on its town green by the early 1860s.⁷

The people who introduced squirrels and other animals to public squares and commons in Philadelphia, Boston, and New Haven sought to beautify and enliven the urban landscape at a time when American cities were growing in geographic extent, population density, and cultural diversity. A typical expression of the motivation behind this effort can be found in an 1853 article in the Philadelphia press describing the introduction of squirrels, deer, and peacocks as steps toward making public squares into "truly delightful resorts, affording the means of increasing enjoyment to the increasing multitudes that throng this metropolis." In Boston the release of squirrels on the Common was the project of Jerome V. C. Smith, a physician, natural historian, member of the short-lived Native American party, and Boston's mayor from 1854 to 1856. Smith's decision to have Vermont squirrels released on Boston Common was interpreted even by his critics as an attempt to "augment the attractions" of an increasingly leisure-oriented public space. For George Perkins Marsh, the author of *Man and Nature*, the tameness of the squirrels of the Common was a foretaste of the rewards to be expected when man moderated his destructive behavior toward nature. Like the planting of elms and other shade trees in cities and towns across the United States, the conversion of town commons and greens from pastures and spaces of labor into leisure grounds, and the creation of quasi-rural retreats such as Mount Auburn Cemetery (established outside Boston in the 1830s), the fostering of semitame squirrels in urban spaces aimed to create oases of restful nature in the industrializing city.⁸

As habitats for squirrels, Philadelphia's public squares, Boston Common, and New Haven Green were indeed oases: isolated refuges offering water, shelter, and food in the middle of an urban desert. The fifty-acre Boston Common was the largest of these areas, but even it, comprising mostly open fields and bordered on one side by the marshy tidal flats of the Charles River and on the other by dense commercial and residential settlement, was capable of supporting only a limited number of squirrels. By the summer of 1856, a year after they

⁷ On Philadelphia's squirrels, see "The Public Squares," *Philadelphia Public Ledger*, May 11, 1847, p. 2; "Philadelphia: Public Squares and Promenades," *New-York Daily Times*, June 21, 1853, p. 2; "Our Public Squares," *Philadelphia North American*, Aug. 9, 1853, p. 2; Ledyard Lincklaen, "Rural Objects in England and America," *Putnam's Monthly Magazine of American Literature, Science, and Art*, July 1855, p. 36; and S. S. Rathvon, "Birds vs. Squirrels for Public Squares: Report of Committee on Entomology of Pennsylvania Horticultural Society, Submitted June 21, '64," *Gardener's Monthly and Horticultural Advertiser*, 6 (Aug. 1864), 228–32. For the quotation on the tameness of squirrels in Philadelphia, see A. W. C., "Things in Boston—Theodore Parker—Notabilities, &c.," *Massachusetts Circular*, Dec. 3, 1857, p. 184. On Boston squirrels, see "Mere Mention," *Home Journal*, July 7, 1855, p. 3; "The Surviving Squirrel," *Boston Evening Transcript*, July 10, 1855, p. 2; "Editorial Ink Drops," *Flag of Our Union*, June 7, 1856, p. 181; and Boston City Council, *Documents of the City of Boston for the Year 1857* (2 vols., Boston, 1858), II, 34. On squirrels in New Haven, see "Variety," *Providence Evening Press*, Nov. 3, 1865, p. 3; H. W. R., "Yale College," *New York Times*, Dec. 17, 1865, p. 2; and Ernest Ingersoll, *Wild Neighbors* (New York, 1897), 23.

⁸ On Philadelphia, see "Our Public Squares," 2. On Jerome V. C. Smith's release of squirrels in Boston, see "The Squirrels on the Common," *Boston Daily Advertiser*, June 22, 1855, p. 1. George Perkins Marsh, *Man and Nature: Or, Physical Geography as Modified by Human Action* (New York, 1864), 121. On shade trees, see Thomas J. Campanella, *Republic of Shade: New England and the American Elm* (New Haven, 2003). On the development of Boston Common as a space of leisure, see Michael Rawson, *Eden on the Charles: The Making of Boston* (Cambridge, Mass., 2010), 22–74. On Mount Auburn Cemetery, see Aaron Sachs, "American Arcadia: Mount Auburn Cemetery and the Nineteenth-Century Landscape Tradition," *Environmental History*, 15 (April 2010), 206–35; and Blanche M. G. Linden, *Silent City on a Hill: Picturesque Landscapes of Memory and Boston's Mount Auburn Cemetery* (Amherst, Mass., 2007).

were first introduced, the squirrels of the Common appeared to be thriving and even expanding into the neighboring Granary Burying Yard, but there is no evidence that they were able to range beyond these public spaces into nearby residential or commercial areas. In the winter, the squirrels left their summer nests in the Granary Burying Yard and retreated to the Boston Common nest boxes, tree holes, and city-provided food (which cost Boston \$33.27 during the years 1856–1857). An 1863 proposal to plant nut-bearing trees to relieve the burden on the city's coffers may have been made in jest, but it suggests that food sources besides those directly provided by humans were scarce. The English elms could have provided edible seeds and buds for a brief time in the spring, but on the whole the vegetation in the Common provided sparse squirrel food and virtually nothing that could be stored for the winter months.⁹

Whether the Boston squirrels actually faced a shortage of food, or of sufficiently nourishing food, is unclear. In New Haven, at least, this seems not to have been the case, judging by an 1865 report that the squirrels of New Haven Green had “become so obese from good living that they are continually missing their hold and falling from the tree tops.” Nonetheless, any undernourishment or malnourishment might have led the squirrels to adopt otherwise-unusual food habits, such as eating birds and their eggs or stripping bark from trees. Some of Boston's and Philadelphia's residents opposed the introduction of squirrels, fearing that they would prey on songbirds and their eggs, and indirectly cause an increase in insect populations. In 1855 a pseudonymous writer for the *Boston Evening Transcript* denounced the introduction of squirrels as an “absurd and reprehensible experiment” likely to lead to damage to trees and other plantings once the squirrels had exhausted birds as a food source. In Philadelphia such concerns led the city to request the advice of the Committee on Entomology of the Pennsylvania Horticultural Society, which concluded in 1864 that even though there was no evidence of squirrels eating birds or disturbing nests, the likelihood of squirrels having some negative effect on birds was high, since both species resided in trees.¹⁰

Following the issuance of the entomological committee's report, Philadelphia's squirrels were captured or killed, their nest boxes were removed, and the city made an attempt to establish insectivorous European and American songbirds in their place. Boston's experiment with squirrels also came to an end around 1864 or 1865, though it is unclear whether the cause was concern about birds and insects, plain neglect, or the use of Boston Common as a military exercise and mustering ground during the Civil War. According to the former Boston mayor Nathaniel Bradstreet Shurtleff, writing in 1871, the squirrels simply died out. Even on New Haven Green, where a small squirrel population seems to have survived, by 1865 dogs were reported to have killed all but eight squirrels out of a population that had at one point reached as many as fifty.¹¹

⁹ A. C. W., “Trees for Shade, Ornament, and Profit,” *New England Farmer*, 15 (May 1863), 145.

¹⁰ “Variety,” 3. On complaints about Boston's squirrels, see “Squirrels on the Common”; Arbores [pseud.], “Squirrels vs. Trees,” *Boston Evening Transcript*, June 21, 1855, p. 2; “The Mayor and the Chipmunks,” *Boston Courier*, June 21, 1855, p. 2; and “Squirrels vs. Birds,” *Boston Evening Transcript*, June 20, 1855, p. 2. On Philadelphia's squirrels, see Rathvon, “Birds vs. Squirrels for Public Squares”; and Joseph Leidy, “Insects upon Shade Trees,” *Friends' Intelligencer*, 29 (no. 23, 1862), 366–68. On the food habits of squirrels, see Thorington and Ferrell, *Squirrels*, 102–13; and Steele and Koprowski, *North American Tree Squirrels*, 37–50.

¹¹ On the elimination of squirrels in Philadelphia, see “American Forests,” *Friend*, 42 (no. 18, 1868), 107–10. On military exercises on Boston Common during the Civil War, see Friends of the Public Garden, *Boston Common* (Charleston, 2005), 52. On the disappearance of squirrels in Boston, see Nathaniel Bradstreet Shurtleff, *Topographical and Historical Description of Boston* (Boston, 1871), 339, 373; and Winifred Alden Stearns, “The Utility of Birds in Agriculture and in Migration,” in *Annual Report of the Secretary of the Connecticut Board of Agriculture, 1882–83* (Hartford, 1883), 75–109. On dogs and squirrels in New Haven, see H. W. R., “Yale College,” 2.

The gray squirrel populations of Philadelphia, Boston, and New Haven were vulnerable to intentional or accidental eradication in the 1860s because their small populations were almost entirely dependent on human provision of food and were unable to expand beyond the confines of the public spaces to which they had originally been introduced. Female eastern gray squirrels usually begin breeding in their second year of life and under exceptional circumstances can give birth to two litters per year, with each litter averaging about 2.5 young. The species' high reproductive potential means that under favorable conditions an initial population of one or two dozen squirrels can explode into hundreds or even thousands within a few years. Once grown, young squirrels, especially males, can disperse a mile or more from their natal sites in search of new nesting areas, food resources, and mates. Thus, squirrels could rapidly move into newly available urban habitats, although actual rates of colonization were slowed by various factors, and some introductions failed entirely. In American cities in the 1850s and 1860s squirrels had little chance of surviving outside of parks and public squares.¹²

The conditions of existence for squirrels in American cities improved significantly from the 1870s onward, in large part due to the landscape park movement led by Frederick Law Olmsted. Compared with public squares, commons, and town greens, Olmstedian landscape parks provided much larger and more suitable habitats for squirrels, while also bolstering the justification for introducing and maintaining them. For urban reformers of the time, squirrels and other animals helped enliven urban green spaces and contributed to a bucolic atmosphere that was entertaining, enlightening, and salubrious. The gray squirrel was seen as a particularly desirable park resident, since it was understood to be, as the naturalist John Burroughs would later write, an "elegant creature, so cleanly in its habits, so graceful in its carriage, so nimble and daring in its movements," and one that "excites feelings of admiration akin to those awakened by the birds and the fairer forms of nature." Urbanites who encountered such admirable creatures living in the middle of the metropolis would, reformers hoped, be projected into a more wholesome and natural world, if only for a moment. Once landscape parks had been constructed in New York, Boston, the District of Columbia, Chicago, and other cities, it was only natural to populate them with squirrels. These populations ultimately served as the foundation for the dissemination of squirrels throughout the urban landscape.¹³

New York City was at the forefront of this development, inaugurating a second and ultimately much more consequential phase of squirrel introductions to urban areas, including, eventually, to cities such as Seattle and London, which were well outside the native range of the gray squirrel. (In some North American cities a behaviorally similar species, the fox squirrel [*Sciurus niger*], was introduced alongside or instead of the eastern gray squirrel.) In 1877, just a few years after the official completion of Central Park in accordance with Olmsted and Calvert Vaux's 1858

¹² Squirrel nests with young squirrels are described in "Philadelphia," 2. On squirrel reproduction, see Thorington and Ferrell, *Squirrels*, 92–101; Barkalow and Shorten, *World of the Gray Squirrel*, 94–97; and John L. Koprowski, "Sciurus carolinensis," *Mammalian Species*, 26 (no. 480, 1994), 1–9, esp. 3. On the likelihood that introduced squirrel populations of various sizes would survive, see David J. A. Wood, John L. Koprowski, and Peter W. W. Lurz, "Tree Squirrel Introduction: A Theoretical Approach with Population Viability Analysis," *Journal of Mammalogy*, 88 (no. 5, 2007), 1271–79. On the dispersal of young male squirrels, see Steele and Koprowski, *North American Tree Squirrels*, 137.

¹³ John Burroughs, *Squirrels and Other Fur-Bearers* (Boston, 1900), 7. On urban reform during the late nineteenth and early twentieth centuries, see Thomas Bender, *Toward an Urban Vision: Ideas and Institutions in Nineteenth-Century America* (Baltimore, 1982); James L. Machor, *Pastoral Cities: Urban Ideals and the Symbolic Landscape of America* (Madison, 1987); William H. Wilson, *The City Beautiful Movement* (Baltimore, 1989); Paul S. Boyer, *Urban Masses and Moral Order in America, 1820–1920* (Cambridge, Mass., 1992); and David Schuyler, *The New Urban Landscape: The Redefinition of City Form in Nineteenth-Century America* (Baltimore, 1998).

Greensward Plan, the staff of the Central Park Menagerie released a handful of gray squirrels, flying squirrels, and chipmunks in the Ramble, a wooded “wild garden” of about thirty-eight acres located roughly near the center of the park. The population of gray squirrels was supplemented the following year by an additional thirty pairs. By 1883, just six years after the first release, the park’s gray squirrels had expanded in number and range to the point that the menagerie’s director, William Conklin, told the press that he was considering a cull to reduce their impact on the park’s trees, which the squirrels had stripped of leaves and small branches to make their nests.¹⁴

Several estimates of the squirrel population in Central Park are available for this period. At the time of the proposed cull, Conklin estimated the total population at 1,500 squirrels. A few years later, despite opposition from Henry Bergh of the American Society for the Prevention of Cruelty to Animals, a series of early-morning hunts for squirrels and rabbits was carried out under Conklin’s direction, the last of which resulted in a take of “fully a hundred fine fat squirrels.” Nonetheless, the park squirrels were still estimated to number no fewer than five hundred. In 1902, about fifteen years after the cull, a writer for the *New York Times* reported that he had counted two hundred squirrels in the course of a walking tour through Central Park. Just five years after that, another *New York Times* reporter who had consulted with the staff of the Central Park Menagerie gave an estimate of five thousand squirrels, some of which had begun to “invade” the Upper East Side as far east as Third Avenue, nearly a mile from the park. Finally, in 1920 the naturalist and nature writer Ernest Thompson Seton estimated that there had at one point been “over 1,000” squirrels in Central Park, although the period he was referencing is not clear. None of these estimates were based on systematic surveys or rigorous statistical methods, as those tools for estimating animal populations were then in their infancy. All of the estimates taken together, however, suggest that Central Park’s squirrel population from the 1880s to the early 1900s ranged somewhere between a few hundred and a few thousand.¹⁵

Regardless of the exact number of squirrels in Central Park and in other city parks at the turn of the twentieth century, it is clear that intentional introduction of the species and the squirrels’ own reproductive and dispersal efforts led to a dramatic geographical expansion of their range. In New York City in 1902, for example, in addition to the population in Central Park, there were small populations of introduced squirrels in Riverside Park, on the Columbia University campus, in Washington Park, and across the Harlem River in Bronx Park and Van Cortlandt Park, where Bronx Zoo director William T. Hornaday had supervised their release two or three years earlier. In Washington, D.C., squirrels were released on the National Mall and in Rock Creek Park, the site of the recently established National Zoological Park. Numerous smaller cities such as Olney, Illinois, which still bills itself as the “home of the white squirrels” (that is, albino gray squirrels), introduced them to their town greens and parks during

¹⁴ On the introduction of squirrels to Central Park, see *Report of the Director of the Central Park Menagerie, Department of Public Parks, City of New York, for Year Ending December 31, 1878* (New York, 1879), 10; and *Report of the Director of the Central Park Menagerie, Department of Public Parks, City of New York, for Year Ending December 31, 1879* (New York, 1880), 10. On William Conklin’s culling proposal, see “A Day of Genial Sunshine,” *New York Herald-Tribune*, March 19, 1883, p. 8; and “The Balance of Animals,” *New York Times*, March 23, 1883, p. 4. On the construction of Central Park, see Roy Rosenzweig and Elizabeth Blackmar, *The Park and the People: A History of Central Park* (Ithaca, 1992), 95–210; and Morrison H. Heckscher, *Creating Central Park* (New York, 2008).

¹⁵ “Day of Genial Sunshine,” 8; “Birds and Bears in Central Park,” *New York Herald-Tribune*, Jan. 19, 1884, p. 8; “A Big Hunt in Central Park,” *ibid.*, Feb. 20, 1886, p. 1; “Squirrels in the City Parks,” *New York Times*, April 6, 1902, p. SM4; “Squirrels Invade East Side,” *ibid.*, Oct. 3, 1907, p. 4; Seton, “Migrations of the Graysquirrel (*Sciurus carolinensis*),” 57.

the early twentieth century. Once squirrels were introduced and given sufficient food, shelter, and protection from hunting and other forms of predation, they were capable of establishing self-sustaining populations.¹⁶

The urban parks movement provided a set of protected enclaves large enough to harbor substantial squirrel populations and capable of serving as sources of surplus squirrels that could expand into neighboring residential areas, which were becoming increasingly amenable to squirrels. After Boston reclaimed marshy land along the Charles River to create the Back Bay neighborhood in the late nineteenth century, for example, numerous trees were planted along the Charles River Esplanade and Commonwealth Boulevard, creating new habitats that squirrels from the Common could colonize with the help of food boxes stocked by neighborhood children. The tree-lined streets of New York City's Upper East Side and the northwest quadrant of Washington, D.C., similarly provided habitats into which squirrels could extend their range from core populations in parks, at first only seasonally but eventually year-round.¹⁷

On the outskirts of the city, the growth of streetcar suburbs during the late nineteenth century often involved the conversion of farmland into small lots with single-family homes surrounded by gardens and trees and in close proximity to new suburban parks. On farmland, squirrels had been seen as pests or game and had been trapped or shot on sight, but in residential suburbs they were often protected and fed and sometimes provided with nest boxes. The resulting geographical expansion began to weave the squirrel populations of parks, common areas, and public squares into connected metapopulations that were resilient to local extirpations of the kind that had eliminated Boston's and Philadelphia's squirrel populations in the 1860s.¹⁸

Two other examples may make clear how the expansion of squirrel populations throughout the urban landscape resulted from the interaction of human introduction and protection, changes in the urban landscape, and squirrels' reproductive and dispersal efforts. The first comes from Cambridge, Massachusetts, where the ornithologist and lifelong Cambridge resident William Brewster closely observed the growth of gray squirrel populations from the 1890s to the 1910s. According to Brewster, who published "Squirrels in Cambridge" in *Harvard Graduates' Magazine* in 1912, it took about a decade, starting in the early 1890s, for gray squirrels to make their way from Mount Auburn Cemetery at the western edge of the city to the densely settled area around Harvard Square, a distance of a little more than a mile. This advance, he noted, had been facilitated by the change in the landscape of West Cambridge

¹⁶ "Squirrels in the City Parks." On squirrels in Washington, D.C., see Janet Burkitt, "Critter City," *Washington Post*, Oct. 5, 2008, <http://www.washingtonpost.com/wp-dyn/content/article/2008/10/02/AR2008100203233.html>. On the white squirrels in Olney, Illinois, see *City of Olney*, <http://www.ci.olney.il.us/>.

¹⁷ On the creation of the Back Bay neighborhood of Boston, see Nancy S. Seasholes, *Gaining Ground: A History of Landmaking in Boston* (Cambridge, Mass., 2003), 153–210; William A. Newman and Wilfred E. Holton, *Boston's Back Bay: The Story of America's Greatest Nineteenth-Century Landfill Project* (Lebanon, 2006); Karl Haglund, *Inventing the Charles River* (Cambridge, Mass., 2002); and Mona Domosh, *Invented Cities: The Creation of Landscape in Nineteenth-Century New York and Boston* (New Haven, 1996), 99–126. On providing nuts for squirrels on Boston's Commonwealth Avenue, see "Storehouse for Back Bay Squirrels," *Boston Daily Globe*, April 20, 1903, p. 5.

¹⁸ On the impact of suburbanization in the United States, see Sam Bass Warner Jr., *Streetcar Suburbs: The Progress of Growth in Boston, 1870–1900* (Cambridge, Mass., 1962); Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York, 1985); and James C. O'Connell, "How Metropolitan Parks Shaped Greater Boston, 1893–1945," in *Remaking Boston: An Environmental History of the City and Its Surroundings*, ed. Anthony N. Penna and Conrad Edick White (Pittsburgh, 2009), 168–97. On the resilience of connected populations of organisms, see James H. Brown and Astrid Kodric-Brown, "Turnover Rates in Insular Biogeography: Effect of Immigration on Extinction," *Ecology*, 58 (March 1977), 445–49.

from large estates and orchards, where squirrels had been shot as pests (by his own father, among others), to smaller residential lots, where they were tolerated and even welcomed. In 1900 an acquaintance of Brewster who had surveyed the city's trees as part of an effort to eliminate nonnative gypsy moths told him that gray squirrel populations were growing in all of Boston's suburbs, while populations of red squirrels were declining. These gray squirrels had not been intentionally introduced, at least not on any large scale. Instead, they had migrated from wooded areas at the fringes of the city into habitat that had recently become capable of supporting them and to which they were capable of adapting with the help of human residents. Among those who aided this colonization process was Brewster, who regularly fed the squirrels that began nesting in his yard in the mid-1890s.¹⁹

A second example comes from Washington, D.C., where the government naturalist Vernon Bailey had observed an increase in numbers and geographical range of the city's gray squirrel population from the 1890s to the 1930s. By the first decade of the twentieth century, gray squirrels were present in wooded areas in the undeveloped northwest part of the District of Columbia, where remnant populations had been protected from hunting, and on the National Mall, where squirrels had been intentionally released. These releases included a number of blackish gray squirrels imported from Ontario.²⁰

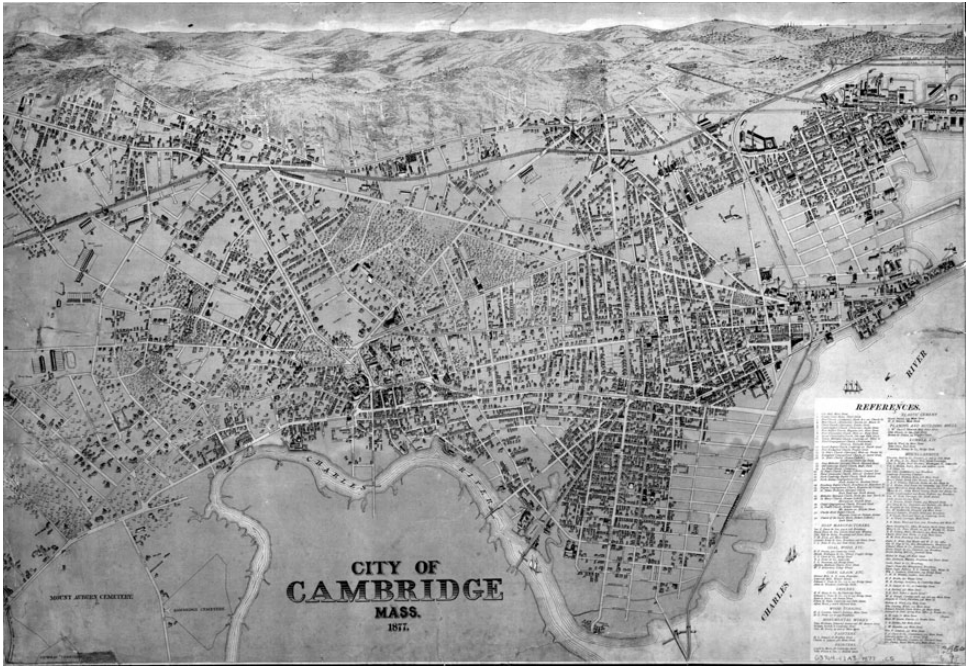
Over the next two decades, as the northwestern part of the District of Columbia was developed into middle-class residential neighborhoods, the gray-phase and black-phase gray squirrels expanded their ranges from the National Mall and Rock Creek Park into nearby areas, including the backyard of Bailey's townhouse in Kalorama Triangle and the grounds of the White House. This expansion was aided by the Smithsonian Institution's (and many Washington residents') provision of food and nest boxes.²¹

Gray squirrels also thrived in New York, Boston, Philadelphia, Chicago, and many other cities and towns from the late nineteenth century onward not only because they received food, shelter, and protection from the cities' human residents but also because they took advantage of the changing urban landscape and built environment in ways that their new human neighbors had neither planned nor necessarily desired. Attics and spaces within walls offered nesting sites that exceeded even the best tree holes for security against predators and the elements. Human food waste provided a year-round source of nourishment that partly made up for the paucity of nut-bearing trees in many locations. Telephone and electric power lines provided security from dogs and cats and facilitated transit across the increasingly

¹⁹ William Brewster, "Squirrels in Cambridge," *Harvard Graduates' Magazine*, 20 (March 1912), 442–48; William Brewster, *The Birds of the Cambridge Region of Massachusetts* (Cambridge, Mass., 1906), 20. For the observations of William Brewster's acquaintance, see Journals of William Brewster, March 24, 1900, vol. 17, William Brewster Papers (Special Collections and Archives, Ernst Mayr Library, Museum of Comparative Zoology, Harvard University, Cambridge, Mass.). On gypsy moths, see Robert J. Spear, *The Great Gypsy Moth War: The History of the First Campaign in Massachusetts to Eradicate the Gypsy Moth, 1890–1901* (Amherst, Mass., 2005).

²⁰ Vernon Bailey, "Mammals of the District of Columbia," May 1, 1923, *Proceedings of the Biological Society of Washington*, 1922 and 1923 (Washington, 1923), 103–38. On the effort to import "blackish gray" squirrels, see S. P. Langley to Frank Baker, Nov. 10, 1900, folder 11: "Animals Acquired: Squirrels, 1900," box 83, record unit 74, National Zoological Park (U.S.) Records 1887–1966 (Smithsonian Institution Archives); and Superintendent to Langley, Nov. 21, 1900, *ibid.*

²¹ On the expansion of imported black squirrels in Washington, D.C., see "Black Squirrels," letter excerpts, Vernon Bailey to Ned Hollister, March 1919, folder 14: "Animals Acquired: Squirrels, 1906–1928," box 83, record unit 74, National Zoological Park (U.S.) Records; and Thorington and Ferrell, *Squirrels*, 38–40. On the White House squirrels, see Theodore Roosevelt to Archie Roosevelt, Nov. 27, 1908, in *Theodore Roosevelt's Letters to His Children*, ed. Joseph Bucklin Bishop (New York, 1919), 34; and Theodore Roosevelt, "Nature at Home (1905)," in *The Green Roosevelt: Theodore Roosevelt in Appreciation of Wilderness, Wildlife, and Wild Places*, ed. Zachary Michael Jack (Amherst, N.Y., 2010), 35–44, esp. 40.



The left side of this 1877 map of Cambridge, Massachusetts, shows Mount Auburn Cemetery and the orchards and estates of West Cambridge before they were divided into smaller residential lots in the last quarter of the nineteenth century. Harvard Square, where gray squirrels were first observed around 1900, is near the middle of the map. *Courtesy Norman B. Leventhal Map Center, Boston Public Library, G3764.C2A3 1877.C5.*

crowded, busy, and dangerous city streets. As early as 1902 Harvard University's squirrels were described as running "along the telephone cables, high in air, at lightning speed, something like tightrope walkers, when pursued by barking dogs." The offspring of squirrels that had learned to exploit a new food source, route, or nesting site often incorporated those discoveries into their own behavioral repertoires. The nuts and nest boxes offered by squirrel lovers were crucial to the establishment of squirrel populations in American cities, but the persistence and growth of those resilient populations depended on the squirrels' adaptation to an environment that had little in common with the woodlands where they had evolved.²²

Settling In

As gray squirrels spread throughout the American urban landscape in the late nineteenth and early twentieth centuries and as opportunities for human-squirrel interactions increased, urban reformers and humane activists articulated a vision of community that extended beyond humans. Because gray squirrels were nondomesticated but appeared to be responsive

²² "Gray Squirrels in College Yard," *Cambridge (MA) Chronicle*, May 17, 1902, p. 17. On infrastructures of waste, power, and transit in the American city (though not from a squirrel's perspective), see Martin V. Melosi, *The Sanitary City: Urban Infrastructure in America from Colonial Times to the Present* (Baltimore, 2000); David E. Nye, *Electrifying America: Social Meanings of a New Technology, 1880–1940* (Cambridge, Mass., 1990); McShane and Tarr, *Horse in the City*; and Jackson, *Crabgrass Frontier*.

to and solicitous of human charity, they held a special place in this vision of a more-than-human community. The most enthusiastic proposals for introducing squirrels to American cities came from a small number of naturalists, conservationists, activists, and educators, but their arguments were widely disseminated and accompanied the actual spread of squirrels throughout American cities. For these advocates, the squirrels' readiness to trust humans and their ability to flourish in the heart of the city seemed to make them living proof of the rewards of extending charity and community beyond the bounds of humanity. At the same time, the vision of community that these reformers advocated excluded from moral consideration some humans and animals, including gray squirrels when they failed to meet certain standards. Borders were drawn and redrawn around a community to strengthen the bonds of trust among diverse residents and to exclude those who threatened to break those bonds.²³

The provision of food and nest boxes for squirrels became a way for institutions and individuals to demonstrate publicly their commitment to an expanded vision of urban community, even if they did not share all of the convictions of the most enthusiastic urban-squirrel advocates. The administrators of many city parks and college campuses, who had sometimes been responsible for introducing squirrel populations, placed nest boxes in trees and provided squirrels with peanuts and other food sources, particularly during especially harsh or snowy winters. In the first years of the twentieth century, Harvard University built nest boxes for squirrels in the elms of the college yard and distributed bags of peanuts over the winter, as did the authorities in Central Park, Boston Common, and many other city parks and squares. In 1902 the superintendent of Mount Auburn Cemetery assured one concerned lot owner that her unsolicited donation of \$6 for winter squirrel feed was appreciated but unnecessary, since "not only the squirrels but the pigeons, crows, and sparrows as well, are all regularly fed and cared for." With relatively little effort or financial outlay these institutions were able to demonstrate a commitment to pleasant, civil, and lively public spaces.²⁴

The large institutions and municipal agencies that administered public and semipublic spaces such as college campuses were, however, only one component of a broader network of support for urban squirrels. Other individuals and institutions also provided squirrels with food and thereby helped consolidate their presence in the urban landscape. In the winter of 1907–1908, for example, when thick snow buried the stores of Cambridge's squirrels, Harvard professor Charles Eliot Norton offered children near his estate in western Massachusetts fifty cents for each bushel of acorns they gathered, which he then distributed to squirrels throughout Cambridge. In 1905 the Evanston, Illinois, resident William C. McGill donated hickory nuts to the municipal police force, which then distributed them to the city's squirrels. Humane organizations also engaged in large-scale, regular feeding of urban squirrels in public spaces. In 1914 both the Animal Rescue League of Boston and the Massachusetts Society for the Prevention of Cruelty to Animals distributed food to the squirrels and birds of Boston Common during the winter months. Through such feeding efforts, a wide variety of institutions

²³ On the history of the animal rights and humane movements in the United States, see Grier, *Pets in America*, 127–81; Susan J. Pearson, *The Rights of the Defenseless: Protecting Animals and Children in Gilded-Age America* (Chicago, 2011); Diane L. Beers, *For the Prevention of Cruelty: The History and Legacy of Animal Rights Activism in the United States* (Athens, Ohio, 2006); and Jennifer Mason, *Civilized Creatures: Urban Animals, Sentimental Culture, and American Literature, 1850–1900* (Baltimore, 2005).

²⁴ On squirrels at Harvard University, see "The Gray Squirrels in Harvard Yard," *Boston Daily Globe*, Oct. 25, 1903, p. 45. On squirrels in Central Park, see "Gleanings and Gossip," *Springfield (MA) Republican*, Jan. 24, 1902, p. 11. On squirrels at Mount Auburn Cemetery, see Annie C. M. Kimball to Mr. Attwood, Dec. 12, 1902, lot 1894 file, p. 3218, Superintendent's Copying Book 27 (Mount Auburn Cemetery Archives, Watertown, Mass.); and J. C. Scorgie to Mr. and Mrs. Thomas R. Kimball, Dec. 26, 1902, *ibid.*

and individuals—not just those with nominal control over the sites inhabited by squirrels—shaped the moral-ecological character of urban public spaces.²⁵

Less organized feeding efforts could also have a significant impact on squirrel populations. In the late twentieth century, biologists would determine that a handful of devoted squirrel feeders in Lafayette Square in Washington, D.C., were collectively distributing over seventy-five pounds of peanuts each week, thereby helping maintain one of the densest gray squirrel populations ever recorded. In the 1880s the press had already begun noting the appearance of such devoted feeders in city parks. Often these feeders were described as elderly, solitary men. In 1891 the *New York Times* described an “elderly gentleman—a member of a noted dry-goods firm in this city,” who distributed bags of peanuts to park squirrels during his daily walk; many of the squirrels jumped on his arms and shoulders in anticipation. In 1893 the *New York Herald* reported that a “tall, gray-haired man of military bearing” fed a dozen squirrels near the Central Park Menagerie every morning; a second man had taught one “bright-eyed animal friend” to take peanuts out of his mouth.²⁶

Reports of such committed squirrel feeders in New York and other cities continued to appear in the following decades. While older men continued to receive the most attention, women and working men whose jobs placed them in close proximity to squirrels were also mentioned. In 1912 the *New-York Tribune* reported that Mrs. Smith, the mother-in-law of a troubled lawyer who had just committed suicide, was known as “the squirrel woman” to children who observed her distributing nuts in Central Park. In 1927 the *Washington Star* reported that the squirrel population of Dupont Circle had tripled from two to six in the four years since the arrival of a “beneficent deity,” a pushcart vendor named William Mandas, who fed them daily. Although devoted feeders sometimes established individual relationships with park squirrels, they never acquired ownership over them, with the occasional exception of injured or orphaned squirrels. Even the tamest of park squirrels remained public pets rather than private property.²⁷

Many other urban parkgoers also played a role in maintaining the squirrel populations on a more casual basis, purchasing nuts from park vendors to feed to the squirrels or sharing scraps of bread or other food. Children and women were often singled out by the press as the most common among casual feeders, as opposed to the devoted, mostly male feeders described above. When New York City built new nest boxes for Central Park’s squirrels in 1906, the expense was justified as a concession to the demands of such young and female feeders,

²⁵ On Charles Eliot Norton’s call for acorns, see “The Chronicler,” *Cambridge (MA) Chronicle*, Dec. 28, 1907, p. 2; “Death Claims Prof. Norton,” *Boston Daily Globe*, Oct. 21, 1908, p. 1. On William C. McGill’s donation, see “Hickory Nuts for Squirrels,” *Our Dumb Animals*, 37 (no. 8, 1905), 105. On humane organizations’ distribution of food for animals, see “Pigeons and Squirrels Public’s Pets,” *Christian Science Monitor*, May 16, 1914, p. 7. On the distribution of authority between municipal government and civil society regarding dog control, see Jessica Wang, “Dogs and the Making of the American State: Voluntary Association, State Power, and the Politics of Animal Control in New York City, 1850–1920,” *Journal of American History*, 98 (March 2012), 998–1024.

²⁶ On the squirrel feeders in Lafayette Park, see J. Hadidian et al., “Urban Gray Squirrel Damage and Population Management: A Case History,” paper delivered at the Third Eastern Wildlife Damage Control Conference, Lincoln, Neb., Oct. 18, 1987, <http://digitalcommons.unl.edu/ewdcc3/19>. On the feeders in Central Park, see “Phases of City Life,” *New York Times*, Jan. 4, 1891, p. 13; and “These Squirrels Get Rich Treats,” *New York Herald*, Oct. 18, 1893, p. 9.

²⁷ On “the squirrel woman,” see “Lawyer Kills Himself,” *New-York Tribune*, Feb. 19, 1912, p. 9. On William Mandas in Dupont Circle, see “Dupont Birds and Squirrels Find Friend in Peanut Vender,” *Washington Star*, Aug. 14, 1927, p. 5. For an example of an adopted orphan squirrel, see “Tom, Our Squirrel,” *Our Four Footed Friends*, 7 (April 1908), 5–7. On public pets, see Grier, *Pets in America*, 219–26. On pets in general, see Yi-Fu Tuan, *Dominance and Affection: The Making of Pets* (New Haven, 1984); James Serpell, *In the Company of Animals: A Study of Human-Animal Relationships* (Oxford, 1986); and Ritvo, *Animal Estate*, 82–121.

who were seen as among the most desirable users of the park and who therefore helped legitimize efforts to maintain squirrel populations.²⁸

Nonetheless, the practice of feeding squirrels was not confined to children, women, and older men. It became popular among students on some college campuses, and newspaper features about beautiful days in the park mentioned the feeding of squirrels by all genders, classes, and ages. Feeding was undoubtedly entertaining to many, but it also allowed urban residents to demonstrate their generosity toward the needy. The headline of a *Boston Globe* article about Thanksgiving on Boston Common in 1908 put it this way: "Beggars, Squirrels, Birds—All Remembered." Because of the presence of urban squirrels, even the least powerful members of human society could demonstrate the virtue of charity and display their own moral worth. Gray squirrels helped reshape the American urban park into a site for the performance of charity and compassion for the weak, providing a nearly ideal opportunity for the extension into public spaces of what Katherine Grier has called the "domestic ethic of kindness to animals."²⁹

Squirrels were particularly well suited to the role of recipient of kindness because they not only accepted human charity but also seemed to actively seek it. Their habit of approaching a potential feeder and then sitting up on their hind legs with empty paws held in front of their chests, as if in supplication, was widely noted, as was the sense of obligation that such apparent begging created in susceptible park visitors. In 1893, some fifteen years after squirrels had first been introduced to Central Park, a visitor to the Ramble described encountering a squirrel that "literally begged for something to eat by sitting up and looking at him in an appealing manner." Begging was evidence of need and vulnerability, but it was not passive. On the contrary, squirrels seemed to hail parkgoers into the position of potential benefactors with such vigor that even those sympathetic to them sometimes hesitated before the animals' apparent audacity.³⁰

The active nature of squirrels' intervention into urban spaces complicated efforts to depict them as community members deserving of charity. This is evident even in such sentimental fare as "The Pensioner in Gray," a poem by Marian Longfellow that appeared in the family magazine *St. Nicholas* in 1908 and was later reprinted in *Our Dumb Animals*, the magazine of the Massachusetts Association for the Prevention of Cruelty to Animals. The speaker in the poem addresses a squirrel encountered at Harvard University's gates that "dost bar my way, / With tiny paws upon thy breast / And eyes that challenge and arrest." Although the speaker expresses admiration and pity for the squirrel and promises to return with more than a verse to offer, the poem's compassionate tone is undermined by the suggestion of the squirrel's relentless self-interest. Another Cambridge resident, writing about the feeding of urban squirrels in 1904, noted that the expectant look of his or her favorite squirrel was just as likely to mean "See, how hungry I am!" as "See, how much I love you!"³¹

²⁸ On children and women demanding nest boxes for squirrels in Central Park, see "To Build Real Homes for Park Squirrels," *New York Times*, Dec. 17, 1906, p. 11.

²⁹ On college students as feeders of squirrels, see "Gray Squirrels in College Yard," 17. On Thanksgiving feeding in 1908, see "Summer Crowd on the Common. Children Wade about in Frog Pond. Thanksgiving Cheer Evident among All Classes. Beggars, Squirrels, Birds—All Remembered," *Boston Daily Globe*, Nov. 27, 1908, p. 10. On the domestic ethic of kindness, see Grier, *Pets in America*, 127–81.

³⁰ On squirrels' upright stance, which frees their front paws to hold nuts for inspection or shelling, see Barkalow and Shorten, *World of the Gray Squirrel*, 27. "Squirrels and Wild Cats at War," *New York Herald-Tribune*, March 6, 1893, p. 4.

³¹ Marian Longfellow, "The Pensioner in Gray," *Our Dumb Animals*, 45 (Feb. 1913), 142, reprinted from *St. Nicholas*, 36 (Nov. 1908), 11; M. E., "A Serious Misunderstanding between My Squirrel and Me," *Ottawa Naturalist*, 43 (Dec. 1904), 176–78, folder 35: "Loose Items from Christine Farley Note Book, 1911–39," box 4, mc 419, Cambridge Plant and Garden Club Records 1889–1991 (Schlesinger Library, Radcliffe Institute, Harvard University).

For those with less affection for squirrels, the animals' demands put them in the same rank as shameless, albeit sometimes-entertaining, human beggars. A cartoon by a Harvard undergraduate published in the *Harvard Lampoon* in 1903 proposed an analogy between Harvard Yard's squirrels, depicted in acrobatic poses while begging a student to "scramble a nut," and the "muckers" of Harvard Square—poor street boys who were known for asking well-heeled students to "scramble a cent." The ambivalence toward begging is reflected in the poses of two of the squirrels on the left side of the image: one standing deferentially with a single paw outstretched and the other leaping as if to attack. Harvard's student newspaper, the *Crimson*, praised the cartoon as providing "something really new and refreshing on the squirrel question."³²

The squirrels' apparent dependence on human handouts led some observers to question whether their mendicant life in the city had led them into moral decay. In 1904 the *Springfield Republican* reported on the Central Park squirrels' supposed indolence under the headline "Squirrels Pauperized." It is possible to read such articles as thinly veiled allegories about the moral degeneracy of the city, just as readers can interpret the *Harvard Lampoon* cartoon as a reflection of Harvard students' views of the poor, and it is not unlikely that this explains much about these items' appeal. Even so, these sources can also be used as evidence of changing human-animal relationships. Attitudes toward begging by squirrels ran the gamut from compassion to contempt, just as they did with regard to begging by humans. Without knowing it, the "pensioner in gray" who approached a person strolling through a city park or a college quadrangle created a morally and ecologically significant situation that helped define the boundaries of a more-than-human community.³³

Those boundaries were sometimes redrawn to exclude certain human residents of the city, even as they were extended to include urban squirrels. Poor boys such as Harvard's "muckers" were among those who lived on the margins of community, capable of becoming full members if they treated squirrels with charity or of being identified as brutes if they did not. For social reformers, squirrels offered an opportunity to teach young boys the value of compassion and kindness in the public sphere, just as domestic pets did in the home. One of these reformers was the naturalist Ernest Thompson Seton, who had helped found the Boy Scouts of America in 1910 and briefly led the organization before splitting with it in 1915, partly in protest of its increasing embrace of nationalism and militarism. In a 1914 issue of *Boys' Life* Seton argued for introducing "missionary squirrels" to cities and towns to cure boys of their tendency toward cruelty: "Everyone who feeds squirrels will become their friend, and this means that before many months the young community will have been turned into squirrel protectors." Like Theodore Roosevelt, Seton believed that relationships with wild animals were crucial to the formation of manly character. Roosevelt, however, saw wild animals primarily as opportunities for boys and men to test their courage, and he had publicly accused Seton and other popular nature writers of deluding the public with sentimental accounts of animal behavior. In contrast, Seton, Vernon Bailey, William T. Hornaday, and other urban-squirrel advocates saw squirrels as opportunities for boys to establish trusting, sympathetic, and paternalistic relationships with animal others.³⁴

³² L. F. Peck, "Hi, Mister! Scramble a Nut?" *Harvard Lampoon*, Dec. 17, 1903, p. 121; "Lampoon Review," *Harvard Crimson*, Dec. 19, 1903, <http://www.thecrimson.com/article/1903/12/19/lampoon-review-pthe-last-number-off>. On "muckers," see H. M. S., "The Cambridge Mucker," *Harvard Illustrated*, 4 (Dec. 1903), 70–74. On "muckers" as a threat to squirrels, see "Gray Squirrels in College Yard," 17.

³³ "Squirrels Pauperized," *Springfield (MA) Republican*, May 13, 1904, p. 14.

³⁴ On Ernest Thompson Seton and the Boy Scouts of America, see Hugh Allen Anderson, *The Chief: Ernest Thompson Seton and the Changing West* (College Station, 2000); David L. Witt, *Ernest Thompson Seton: The Life and*

Boys who failed to learn the lesson of charity offered by urban squirrels were seen as having fallen outside the bounds of civilized community and as manifesting harmful tendencies that might eventually lead to even more serious consequences. Such concerns were often informed by class prejudices, but they were not focused solely on “muckers” and other children of the poor. In the early 1890s the *New York Herald* reported that some sons of well-to-do fathers had “infested” Central Park, damaging vegetation and injuring birds and squirrels with stones and slingshots despite the best preventative efforts of park police. Such vandalism undermined the park’s bucolic atmosphere and suggested a deeper moral disorder in the individual boy and in the community that had produced him. Concern about the mutilation and killing of squirrels in Central Park and elsewhere by young “hoodlums” and “urchins” continued through the 1890s and beyond in New York and other cities.³⁵

Killers of park squirrels who mimicked the gestures of charity to lure squirrels within striking distance were viewed as particularly abhorrent because they betrayed the trust that had been inculcated in urban squirrels by human benefactors. Wary woodland squirrels would never have fallen for such tricks; it was only the quasi-tame city squirrel that had been made vulnerable by human compassion. In 1901 the *Cambridge Chronicle* reported that a young man, sighted near the Harvard gates but “evidently not a student,” had killed a squirrel with a stone after tempting it with a fake offer of a nut. Under other circumstances, the killing of a squirrel might have been seen as sport. In the urban landscape, where such an act involved a betrayal of trust, it represented “the extremity of cruelty and brutality.” Precisely because of the habits and expectations that had been established in response to the kindness of the city’s human residents, the urban squirrel provided a test of boys’ worthiness to membership in the moral community.³⁶

Attitudes toward squirrels were also used to measure the level of civilization among immigrants and visitors to the United States from supposedly less civilized lands. In 1902 one member of a group of Puerto Rican teachers studying at Harvard was reported to have exclaimed, after witnessing the kindness toward animals on display in the city, “Everything is civilized here, even the squirrels!” For one Boston journalist, such observations served as evidence that the visit was achieving its “other great purpose” beyond education: inspiring the visitors with a sense of the grandeur and refinement of American civilization. In contrast, whereas the Puerto Rican visitors seemed to appreciate Cambridge’s love of animals, Italian immigrants were singled out as posing a particularly significant threat to squirrels and

Legacy of an Artist and Conservationist (Layton, 2010), 96–128; and Brian Morris, “Ernest Thompson Seton and the Origins of the Woodcraft Movement,” *Journal of Contemporary History*, 5 (April 1970), 183–94. Ernest Thompson Seton, “Around the Campfire,” *Boys’ Life*, 4 (April 1914), 23. On the nature-study movement, see Sally Gregory Kohlsted, *Teaching Children Science: Hands-On Nature Study in North America, 1890–1930* (Chicago, 2010). On Theodore Roosevelt’s attacks on Seton and others, see Ralph H. Lutts, *The Nature Fakers: Wildlife, Science, and Sentiment* (Golden, 1990). On gender roles in American conservation discourse during the early twentieth century, see Adam Rome, “‘Political Hermaphrodites’: Gender and Environmental Reform in Progressive America,” *Environmental History*, 11 (July 2006), 440–63.

³⁵ On attacks on Central Park squirrels, see “Three Boy Vandals Confess Their Raid,” *New York Herald*, Dec. 5, 1892, p. 5. On police protection of squirrels, see “Autumn Glories in the Park,” *ibid.*, Oct. 6, 1895, p. 3; and “Central Park’s Many Visitors,” *New York Times*, April 23, 1888, p. 8.

³⁶ On the characterization of attacks on squirrels as a betrayal of trust, see “Squirrels and Wild Cats at War,” p. 4; “Heard about Town,” *New York Times*, Sept. 25, 1900, p. 5; A. A. C., “Cruelty in Central Park,” *ibid.*, Oct. 28, 1897, p. 6; “The Chronicler,” *Cambridge (MA) Chronicle*, March 2, 1901, p. 2; Norburne Barnard, “The Maimed Squirrels,” *New York Times*, July 15, 1908, p. 4; and Henry Zinn Gould, “Central Park Squirrels,” *ibid.*, June 28, 1908, p. 8.

to the community that included them. In 1900 keepers of the Central Park Menagerie told the press that Italian laborers on their way home from work in the evenings were killing squirrels for food, an accusation that was echoed by Hornaday about the squirrels in and around the Bronx Zoo. A few months later a guard in Bronx Park was struck on the head with a shotgun and beaten senseless by the confederate of a squirrel poacher he had attempted to arrest. By 1903 the *New York Zoological Society Bulletin* was reporting that the squirrel population in Bronx Park had been decimated by “pot hunters.” In Cambridge in 1903 the killing by Joseph Baccheri, an Italian fruit peddler, of a free-living squirrel that had become a “favorite pet” of neighborhood children spurred the editor of the *Cambridge Chronicle* into a tirade against such “brutal work.”³⁷

Like boys and immigrants, nonhuman predators were also perceived as a threat to the bonds of trust that held humans, squirrels, and other members of the urban community together. In 1902 one observer of Harvard’s squirrels described cats as “the chief terror and enemy of the squirrel race”—an assessment shared by many observers of cats and squirrels in American cities. To turn-of-the-century observers it was clear that cats—and, less often, dogs, though not for want of trying—not only injured and killed squirrels but also made them fearful and less likely to place their trust in humans.³⁸

Recent ecological research has described this phenomenon as the creation of a “landscape of fear,” now often seen as having desirable ecological effects—preventing herbivores, for instance, from overgrazing in areas where they are vulnerable to predation. Around the turn of the twentieth century, however, the fear and suspicion created by the presence of predators was understood as one of the compelling reasons for eliminating them from the community. Whether they were human or nonhuman, predators poisoned the atmosphere of trust on which a harmonious community depended. The effect of predation on city squirrels was therefore understood as much in moral and psychological terms as in ecological ones. In 1893 one writer noted with regret that Central Park’s squirrels “might become much more numerous than they are and extremely tame if they were not hunted so vigorously by the wild cats.” On a smaller scale, Theodore Roosevelt noted in 1908 that the sadness caused his wife by the death of the family dog Scamp had been mitigated by the fact that the White House’s squirrels had since become trusting and fearless. Through such experiences, urban residents learned that the wariness of some wild animals was contingent upon circumstance and social norms rather than fixed by instinct.³⁹

³⁷ M. C. Ayres, “Porto Ricans at Harvard,” *Boston Evening Transcript*, July 16, 1904, p. 19. On the intersections of conservation and nativism during the early twentieth century, see Peter Coates, *American Perceptions of Immigrant and Invasive Species: Strangers on the Land* (Berkeley, 2006); Philip J. Pauly, “The Beauty and Menace of the Japanese Cherry Trees: Conflicting Visions of American Ecological Independence,” *Isis*, 87 (March 1996), 51–73. On Italians as poachers of squirrels in New York City’s parks, see [William T. Hornaday], “Notes,” *New York Zoological Society Bulletin*, 11 (Oct. 1903), 122–23; “Heard about Town,” 5; and “Struck Down by Poachers,” *New York Times*, Dec. 17, 1900, p. 10. For William T. Hornaday’s animus toward Italian poachers of songbirds and squirrels, see William T. Hornaday, *Our Vanishing Wildlife: Its Extermination and Preservation* (New York, 1913). On the image of the Italian as a poacher, see Louis S. Warren, *The Hunter’s Game: Poachers and Conservationists in Twentieth-Century America* (New Haven, 1999), 21–37. On the case of Joseph Baccheri, see “The Chronicer,” *Cambridge (MA) Chronicle*, Oct. 10, 1903, p. 2; “Cruelty Rewarded,” *ibid.*, Oct. 17, 1903, p. 5.

³⁸ George Allan England, “*Sciurus Carolinensis*, Esq.,” *Harvard Illustrated*, 4 (Nov. 1902), 48–51, esp. 49; “Gray Squirrels in College Yard,” 17.

³⁹ On the landscape of fear, see John W. Laundré, Lucina Hernández, and Kelly B. Altendorf, “Wolves, Elk, and Bison: Reestablishing the ‘Landscape of Fear’ in Yellowstone National Park, U.S.A.,” *Canadian Journal of Zoology*, 79 (Aug. 2001), 1401–9. On the effect of cats and dogs on the tameness of squirrels, see “Squirrels and Wild Cats at War,” p. 4; Theodore Roosevelt to Archie Roosevelt, Nov. 27, 1908, in *Theodore Roosevelt’s Letters to His Children*, ed. Bishop, 34.

Framed by ideals of charity and compassion toward the weak, the reports of brutality toward squirrels by boys, Italians, cats, and dogs helped establish boundaries of community that cut across the human-animal divide. When Hornaday wrote in 1909 that Bronx Park was the only place in northern New York City where squirrels and other desirable animals were protected from “stray dogs, cats, poachers and other vermin,” he was asserting the existence of a hierarchically organized multispecies community that included some nonhuman animals and excluded some humans. In effect, by extending the category of “vermin” to include human poachers, Hornaday was revealing the exclusionary side of the vision of community that grouped together “Beggars, Squirrels, [and] Birds” as recipients of charity. Those who treated squirrels and other valued and vulnerable creatures with compassion were helping strengthen the community; those who did not were placed beyond moral consideration.⁴⁰

Legal mechanisms for punishing cruelty to squirrels and other animals were few. In Joseph Baccheri’s case, for example, despite outrage from Cambridge’s animal lovers, the punishment for killing a favored neighborhood squirrel was limited to a \$15 fine for illegally discharging a firearm within the city limits. The *Cambridge Chronicle* glossed the sentence as “Cruelty Rewarded.” Even so, extralegal social pressure was not insignificant. Those who were unable or unwilling to abide by community standards of kindness toward squirrels and other valued animals—particularly individuals who were poor, immigrant, nonwhite, or otherwise on the social margins—received little sympathy or moral consideration from those at the social center. In the case of cats, dogs, and other nonhuman predators, the violators of such standards were quickly “made killable”—that is, placed in a category of living things whose killing did not have any moral significance. As the verbal and physical attacks on the assumed Italian hunters in New York’s urban parks suggest, even humans who violated these moral standards could become the subject of dehumanizing language and forceful retribution.⁴¹

The early twentieth-century culture of charitable feeding was a boon for urban squirrels but not an unmitigated one. Human benefactors expected gratitude, or at the very least entertainment, from the squirrels to whom they provided nuts and other food. When squirrels failed to evince such gratitude, or, even worse, bit the hands that fed them, they were sometimes subject to quick retribution, as in the case of a Cambridge squirrel that bit a girl attempting to feed it a nut; the animal was killed immediately by a blow from her father. Others who were bitten by squirrels, such as the day watchmen who distributed nuts to squirrels in Harvard Yard, were more tolerant, but the cumulative effect of such apparent ingratitude was to temper urban residents’ enthusiasm for feeding. At the same time, some feeders who were more interested in entertainment than in food provisioning forced squirrels to expend large amounts of energy in pursuit of apparently easy calories. An example is the Harvard student who was observed in 1901 repeatedly teasing a squirrel with a nut. Eventually, the *Cambridge Chronicle* reported, the squirrel gave up and began looking elsewhere.⁴²

⁴⁰ William T. Hornaday, “The Wild Animals of Hudson’s Day: Part II—The Mammals,” *New York Zoological Society Bulletin*, 17 (Sept. 1909), 533–42, esp. 541; “Summer Crowd on the Common.”

⁴¹ “Cruelty Rewarded,” 5. On the idea of “making killable,” see Jacques Derrida and Jean-Luc Nancy, “‘Eating Well,’ or the Calculation of the Subject: An Interview with Jacques Derrida,” in *Who Comes after the Subject?*, ed. Eduardo Cadava, Peter Connor, and Jean-Luc Nancy (New York, 1991), 96–119; and Donna J. Haraway, “Sharing Suffering: Instrumental Relations between Laboratory Animals and Their People,” in *When Species Meet*, by Donna J. Haraway (Minneapolis, 2008), 69–93.

⁴² On squirrel bites, see Brewster, “Squirrels in Cambridge,” 446; and “Gray Squirrels in College Yard,” 17. On the student teasing a squirrel, see “The Chronicker,” *Cambridge (MA) Chronicle*, March 2, 1901, p. 2.

More significant for the squirrels' ability to thrive was the questionable nutritional value of much of what they received. While it is not always clear from the record what kinds of nuts squirrels were given, peanuts seemed to have been the most common handout. One letter writer to the *New York Times* in 1906 noted that peanuts did not provide all of the nutrients squirrels needed, as evidenced by the poor condition of the coats of many park squirrels; moreover, peanuts, even in the shell, did not help squirrels prevent their front teeth, which grew continuously, from exceeding the proper length. Hard-shelled hickory nuts, pecans, and hazelnuts, the writer suggested, were preferable to the soft-shelled peanuts and chestnuts that park squirrels usually received. Some of the foods that squirrels scavenged or were given by humans, such as bread and fresh fruits and vegetables, were not suitable for caching, which may partly explain why park squirrels were increasingly accused of becoming "lazy" or "pauperized" and dependent on human handouts during the winter.⁴³

Despite such limitations, public feeding of squirrels in parks and elsewhere in the city did provide an enormous amount of easily accessible food. Such abundance had its own mixed consequences. Unlike American red squirrels, which usually hoard nuts and seeds in single, large caches and defend them aggressively from conspecifics, gray squirrels are so-called scatter hoarders, which bury each food item separately and do not tend to defend territories. Gray squirrels' lack of territoriality helped them establish dense and rapidly expanding populations throughout the urban landscape. Nonetheless, even gray squirrels tend to become more aggressive toward other members of their species when population densities rise, and they spend more time and energy caching and re-caching nuts to reduce the chance of losing them to other squirrels. Squirrel populations, growing in response to abundant food and the relative absence of predators in parks, eventually reached densities that facilitated the spread of diseases and parasites and that increased intraspecific aggression and competition for food, nesting sites, and mates. This population density put the squirrels at heightened risk of starvation when human-provided food sources faltered for any reason. Population growth that was driven by relatively unlimited food supplies probably also placed pressure on more limited resources such as winter nesting holes and nest boxes, as biologists would later argue regarding the dense squirrel population of Lafayette Square. Human visions of cross-species community and charity therefore transformed not only human-squirrel relationships in the city but also the ecological and social structure of urban squirrel communities, which took on a distinctive character in comparison to gray squirrel communities in rural and woodland areas.⁴⁴

From Charity to Ecology

These patterns of urban human-squirrel relationships and the charity- and trust-centered understanding of multispecies community were well established by the 1910s and remained fairly stable through the middle of the twentieth century. The willingness to attribute human moral attributes to squirrels faded in the face of an increasingly mechanistic biology, which

⁴³ On the health disadvantages of peanuts, see Thomas C. Hall, "Hints as to Feeding the Park Squirrels," *New York Times*, Nov. 28, 1905, p. 8. On squirrels' nutritional needs, see Steele and Koprowski, *North American Tree Squirrels*, 37–50.

⁴⁴ On caching behavior, see Steele and Koprowski, *North American Tree Squirrels*, 65–82. On heightened intraspecific aggression in dense urban squirrel populations and diseases in stressed populations, see Tommy S. Parker and Charles H. Nilon, "Gray Squirrel Density, Habitat Suitability, and Behavior in Urban Parks," *Urban Ecosystems*, 11 (May 2008), 243–55; and Hadidian et al., "Urban Gray Squirrel Damage and Population Management."

attempted to explain animal behavior in terms of material causes rather than in terms of human-like intentions, emotions, or character traits. Nonetheless, naturalists, humane activists, and park designers continued to laud the moral advantages of having squirrels in the city, while park visitors and urban residents continued to see the feeding of squirrels as an entertaining pastime and a sign of compassion and community-mindedness. During this time squirrels were introduced to a number of new cities in the United Kingdom, Australia, Italy, and South Africa. Some of these locations, well outside of the species' native North American range, had ecological and cultural patterns similar but not identical to those of eastern North America. Squirrels continued to inspire the ire of their human neighbors when they nested in attics or destroyed flowerbeds, and they continued to be labeled "beggars" and "thieves" by those who did not appreciate their presence in the city. Nonetheless, few seriously proposed either eliminating urban squirrel populations or prohibiting their feeding.⁴⁵

That opinion began to change in the last three or four decades of the twentieth century with the emergence of the environmental movement and a new ecological vision of human-animal relationships. In the United States the roots of this ecological turn lie in the 1920s and 1930s, when ecologists and wildlife managers began to advance arguments for the preservation of wolves and other predators, although it took several decades before the turn impacted policy. In national parks, predator control came to a definitive end only in the 1950s, and although a campaign against roadside feeding by tourists was launched around the same time, bears were allowed to feed from open-pit dumps in Yellowstone National Park through the end of the 1960s, when the last dump was closed and a policy of "natural regulation" was put in place. It took even longer for this ecological vision of human-animal relationships to arrive in urban areas. Even those who vigorously opposed what they saw as the transformation of national park wildlife into "bums" and "beggars" typically excluded from consideration urban squirrels and other urbanized animals, which were thought to be so far removed from their natural habits and habitats that there was no hope of returning them to a state of true wildness. Urban squirrels, like the urban landscape, seemed to lie somewhere outside of nature.⁴⁶

By the 1980s, however, the ecological turn had also arrived in the city and had begun to reshape human relationships to squirrels and other urban wildlife. In public squares and parks, where the feeding of squirrels, pigeons, and other wild animals had been actively encouraged or at least tolerated for decades, municipalities began posting No Feeding signs and informing animal lovers that feeding, however compassionate it might seem on the surface, was ultimately harmful to the animals. Controversial proposals to cull the squirrel population of Lafayette Square and intensive efforts to prevent feeding signaled the transition

⁴⁵ On mechanistic interpretations of animal behavior in midcentury ethology, see Eileen Crist, *Images of Animals: Anthropomorphism and Animal Mind* (Philadelphia, 1999); and Richard W. Burkhardt Jr., *Patterns of Behavior: Konrad Lorenz, Niko Tinbergen, and the Founding of Ethology* (Chicago, 2005). On the spread of the gray squirrel outside of its native range, see Barkalow and Shorten, *World of the Gray Squirrel*, 116–19; and Thorington and Ferrell, *Squirrels*, 137–38. On the global exchange of species, see Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (Cambridge, Eng., 2004); and Harriet Ritvo, "Going Forth and Multiplying: Animal Acclimatization and Invasion," *Environmental History*, 17 (April 2012), 404–14. On squirrels as "beggars" and "thieves," see, for example, Joseph A. Haff, "Squirrels Turning Pugnacious at Brooklyn's Botanic Garden; Caution: Bright-Eyed Little Beggars May Take More than Peanuts," *New York Times*, May 23, 1967, p. 49; and Bill Adler Jr., *Outwitting Squirrels: 101 Cunning Stratagems to Reduce Dramatically the Egregious Misappropriation of Seed from Your Birdfeeder by Squirrels* (Chicago, 1996), xv.

⁴⁶ On predator control and the feeding of wildlife in U.S. national parks, see Richard West Sellars, *Preserving Nature in the National Parks: A History* (New Haven, 1997), 149–266; and Alice Wondrak Biel, *Do (Not) Feed the Bears: The Fitful History of Wildlife and Tourists in Yellowstone* (Lawrence, 2006).

toward an ecological rather than a charitable foundation for human-squirrel relationships in the city. In the beginning of the twentieth century the feeding of squirrels had been seen as a way to civilize the parks and rechannel the energies of young boys from aggression and vandalism toward compassion and charity. With the shift to an ecological perspective, feeding itself became the source of concern. The solitary old man with the bag of nuts or bread crumbs—rather than the gang of street urchins with slingshots—was now seen as a threat to the moral-ecological order.⁴⁷

The rise of an ecological vision also changed the place of predation in the city. Within its native range, the gray squirrel continued to be accepted as a permanent and welcome, or at least inoffensive, aspect of the urban and suburban landscape, as long as its populations did not reach excessive densities. At the same time, however, the human residents of cities also began celebrating the presence of certain kinds of predators that would have been ruthlessly eliminated a century earlier as threats to the physical survival of squirrels and to the bonds of trust that held the community together. Peregrine falcons and red-tailed hawks, in particular, were welcomed into American cities even though they preyed upon pigeons and squirrels—two species that had earlier been seen as deserving of protection and charity. Concern about animal welfare had not disappeared; if anything, it had grown stronger, but it was tempered by a sense that the killing of squirrels by hawks, while perhaps distasteful, was natural and a sign of the city's ecological revival. Where the gray squirrel could be identified as an "exotic," "invasive," or even "foreign" species, as in the United Kingdom, environmentalists supported campaigns of extermination and distributed recipes for squirrel pie. Together, the discouragement of feeding and the encouragement of certain kinds of predation marked the end of the vision of moral community that had initially brought squirrels into the city. The squirrels, however, remained.⁴⁸

⁴⁷ On changing attitudes toward the feeding of wild animals, see Biel, *Do (Not) Feed the Bears*; Andrew D. Blechman, *Pigeons: The Fascinating Saga of the World's Most Revered and Reviled Bird* (New York, 2007); and Colin Jerolmack, "How Pigeons Became Rats: The Cultural-Spatial Logic of Problem Animals," *Social Problems*, 55 (no. 1, 2008), 72–94.

⁴⁸ On attitudes toward gray squirrels in the United Kingdom, see Peter A. Coates, "Over Here: American Animals in Britain," in *Invasive and Introduced Plants and Animals: Human Perceptions, Attitudes, and Approaches to Management*, ed. Ian Rotherham and Robert Lambert (Washington, 2011), 39–54. On the American environmental and animal rights movements, see Samuel P. Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955–1985* (New York, 1987); Hal K. Rothman, *Saving the Planet: The American Response to the Environment in the Twentieth Century* (Chicago, 2000); Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement* (Washington, 2005); and Beers, *For the Prevention of Cruelty*.