DOI 10.24412/2076-8176-2021-2-82-101

The American Society of Mammalogists, The Ecological Society of America, and the Politics of Preservation

James A. Pritchard

Montana State University, Bozeman, Montana, USA; james.pritchard@montana.edu

From the 1920s to the early1940s, the American Society of Mammalogists and the Ecological Society of America became involved in efforts to preserve natural conditions on protected land areas, and to conserve predatory and other wildlife. Members vigorously disputed how active a scientific society should be in advocating for conservation. Charles C. Adams and Victor E. Shelford served as leaders in two major efforts aiming to shape federal policy, notably the preservation of natural landscapes and the protection of predatory animals. Their unique argument for conservation highlighted preserved landscapes with their original compliments of wildlife, emphasizing the outstanding scientific value and potential for future scientific study of protected places. Through their work on committees of their professional societies and the National Research Council, Adams, Shelford, and many of their colleagues illustrate the various avenues utilized by scientists in efforts to preserve the very essence of their research. Scientific societies took risks as members and the organizations themselves played critical roles in conservation advocacy, while the politics of science became intermixed with the politics of nature preservation.

Keywords: American Society of Mammalogists, Ecological Society of America, Charles C. Adams, Victor E. Shelford, protected areas, nature preservation, wildlife conservation.

One of the more famous episodes of wildlife conservation history in North America was the fight against federal predator control programs on public lands, which peaked in disputes during the late 1920s and 1930s, resurging again in the 1960s. While the campaign has been interpreted properly as an outcome of the growing influence of ecology, it also demonstrates the integral roles of scientific societies in petitioning governmental agencies to shift policies towards the conservation of wildlife. At the same time, members of the societies engaged in an ongoing conversation regarding the appropriateness of scientists actively participating in public policy issues.

Two movements for conservation of habitat and wildlife from the 1920s into the early 1940s reveal a wide base of support that emerged from notable scientific societies of the day. First, ecologists' interests, centered in the Ecological Society of America (ESA), proved instrumental in a long campaign to preserve "natural conditions" in protected places or landscapes. A second related movement, the battle of the American Society of Mammalogists (ASM) against predator control, developed an early Western focus within the Museum of Vertebrate Zoology (MVZ) in Berkeley, California (Dunlap, 1988, p. 49). However, opposition to federal predator control also emerged nationally, and from a wide matrix of professional involvement. The careers of Charles Christopher Adams and Victor Ernest Shelford, two early animal ecologists who played leadership roles in scientific societies, help us to see the connections between preserving places and preserving species during this formative era in North American ecology and wildlife conservation.

Beginning in the late 1910s and continuing to the Second World War, early animal ecologists advocated for the preservation of natural conditions. Also using the terms "original", "primitive" or "primeval" conditions, these scientists shared a concern that civilization was rapidly eliminating habitats where nature proceeded by its own devices, unmodified by the manipulations of human hand. By 1931, ecologists argued for special reserves to be set aside within the national parks and other appropriate places as "nature sanctuaries to which only persons conducting scientific, artistic or literary work of a serious nature are to be admitted"[1]. This movement originated in the Ecological Society of America and intensified in the mid-1920s when concerns about regional extirpations and possible extinctions of the larger mammalian predators arose. The twin concerns about vanishing predators and swiftly disappearing natural places invigorated one another during the 1930s and up until WWII. Networks of communication among mammalogists, ecologists, field biologists, and institutional administrators reveal the interconnected nature of these two movements, and the role of scientific societies. The politics of science became engaged with the politics of conservation, as scientists' efforts to conserve the natural world (the raw material for their studies) took divergent forms within a heterogeneous and much larger conservation movement[2].

Preserving Natural Conditions

Committee members organizing the Ecological Society of America in late 1914 felt themselves to be riding a new and important wave in science. Some of them also hoped that this organization of scientists would serve the practical ends of conservation. Among the twenty-two founders of the society sat Charles C. Adams, a progressive ecologist on the faculty of the New York State College in Syracuse, as well as zoologist and animal ecologist Victor E. Shelford of the University of Illinois. By 1917, Shelford organized a Committee on the Preservation of Natural Conditions, one of the first four committees created to

[1] Shelford V.E. (1931). *Report on a Proposed Policy for the Ecological Society of America Regarding Preservation and Study of Natural Biotic Communities*, (pp. 2), Charles C. Adams Papers, Regional History Collections, Western Michigan University, hereafter cited as CCAP-WMU.

[2] For episodes in Russian conservation history showing some parallels with the American case discussed here see: Weiner, 1988, 1999. On environmental worldviews and how they are sometimes tied to political views see: Weiner, 1992.

carry out the business of the ESA (Burgess, 1977; Tobey, 1981, p. 127). He chaired this committee through 1923, and again from 1931 to 1936, remaining in close contact with committee members throughout the 1930s. Original members of the committee included W. S. Cooper, Charles C. Adams, Robert F. Griggs, and Barrington Moore (Croker, 1991, p. 121; Committee on the Preservation of Natural Conditions, 1937).

Scientists on this committee shared a wider concern among ecologists that the nature they enthusiastically studied was in danger of disappearing for all time. Extensive alteration of native ecosystems was readily apparent on the Great Plains, certain species of birds and mammals had been extirpated from vast sections of America (or become extinct), and forests of the West seemed to fall rapidly to the ax and saw. Thus some of the same objective conditions that drove the wider conservation movement inspired the scientists on Shelford's committee. Yet their reasoning also embraced their professional interests; they were worried that future scientists would be unable to find places to study that had not been significantly altered by human hand. When all pristine areas had been modified into farms, towns, and second-growth forests, how could science know how nature functioned on its own? What standard might scientists use to compare the effects of human alteration of landscapes? To American ecologists of the early twentieth century, the very fabric and essence of what they hoped to study and understand seemed fast disappearing, lending a sense of urgency to the work of the Committee on the Preservation of Natural Conditions.

With growing effectiveness around 1920, Shelford and his associates began gathering a catalog of natural areas typical of each region, sought to identify an ESA representative in each state, and prepared a list of people as well as local and national organizations interested in preservation. The finished product might be described as monumental. Published in 1926, *The Naturalist's Guide to the Americas* ran to well over 700 pages, describing physiographic provinces from Alaska to the Amazon River, assessments of the plant and animal life, the location of unpolluted waters, and remarkable natural features. The volume included a natural history bibliography for each region, country, state or province. Although Shelford served as the general editor, he was assisted by Forrest Shreve of the Carnegie Institution's Desert Laboratory as well as seven other subject editors in compiling the work of numerous other authors. *The Naturalist's Guide* listed all the natural areas the authors could locate on the North American Continent. This remarkable enumeration of natural places not only listed the obvious federal forests and parks, but also small private and state-owned wildlife preserves. Scientists of the 1920s generally thought of "pristine" landscapes as untouched by human hand, because their cultural blinders caused them to underestimate the effects Native Americans had on natural systems. The authors of *The Naturalist's Guide* may have shared this prejudice, yet the areas they thought worthy of noting for natural features included arboretums and parts of forested metropolitan parks within the limits of cities such as Cleveland and Cincinnati. In short, they attempted to compile a list, including areas as small as 50 acres, where human intrusions seemed negligible, a protected status would be desirable, and research might be conducted (Shelford, 1926).

Between the world wars, the ESA Committee on the Preservation of Natural Conditions took part in securing protection for some notable areas. Big Bend National Park in Texas, the Quetico-Superior wilderness in northern Minnesota, and Glacier Bay National Monument in Alaska provide examples of their contributions to preservation campaigns. Identified during the 1920s by the committee as deserving special protective status, by 1944 these areas had been designated a national monument, park, or a U.S. Forest Service primitive area.

Significantly, Shelford believed that scientists could and should lead the way in conservation. In the *Naturalist's Guide to the Americas* he included a piece by Henry S. Graves, from 1910 to 1920 chief forester of the U. S. Forest Service, on "The Duty of Scientific Men". Graves argued that conservation awaited organization, and there was "a duty for the great national organizations of scientific men to join hands in assuming this leadership". The goals of Shelford and Graves were rather ambitious and presaged terms like "sustainable development", but they reveal that many scientific people of the 1920s perceived environmental problems in a comprehensive manner. They saw the weakness of a piecemeal approach, arguing that these dilemmas required systematic approaches. They utilized the Progressive movement and its emphasis on the positive power of government. Graves suggested that scientists could assemble the necessary information and render an "interpretation of the problems of conservation from the broad viewpoint of the relation of all resources to our national development" (Graves, 1926). While Shelford and Adams agreed that scientists should lead the way in conservation, they later came to disagree over the role of professional societies in the preservation of natural places.

During the 1920s, ecologist Charles C. Adams shared Shelford's driving interest in preserving natural conditions. As president of the ESA in 1923, he was certainly aware of the activities of the ESA Committee on Natural Conditions and demonstrated his own interest by publishing several notes and articles on the subject. While some of his early work in biogeography focused on a genus of snails in the Tennessee River Valley, Adams claimed that he "became deeply impressed with the importance of the study of natural conditions", beginning with his 1905 ecological survey of Isle Royale on the north shore of Lake Superior (Adams, 1925, p. 561; Raup, 1959; Sprugel, 1985). In 1917, while Shelford was organizing the ESA Committee on the Preservation of Natural Conditions, Adams called himself a forest zoologist and taught at the New York State College of Forestry in Syracuse. Adams joined in Shelford's effort to preserve natural conditions, speaking and writing on the subject. In 1922, Adams presented a paper at the second National Conference of State Parks on "The Relation of Wild Life to the Public in National and State Parks." At this time, Adams did not specifically speak for the preservation of predators, but he did suggest that if the parks were to be permanently maintained, they "must remain primarily a wilderness", a vehicle for the larger purpose of "maintaining their native plants and animals in natural conditions". One of the primary concerns Adams shared with other scientists was the problem of exotic species in the parks. The American Association for the Advancement of Science in 1921 passed resolutions urging the National Park Service to prohibit the introduction of non-native plants or animals into the parks, and furthermore noted its strong opposition to "all other unessential interference with natural conditions" (Adams, 1923, p. 129, 130, 137).

In 1925, Adams wrote "Ecological Conditions in National Forests and in National Parks" for the June issue of *The Scientific Monthly,* in which he clearly advocated for the protection of original conditions within the parks (Adams, 1925). His article seemed to make some favorable impressions among foresters, yet Adams regretted that he did not strike up more enthusiasm among National Park Service personnel. His impressions may have been shaped by the fact that as a member of the American Forestry Association he had maintained close professional connections with foresters, yet it is clear that NPS leadership was not terribly enthusiastic about surveying the ecological complexity of its domain. Director Steven Mather and his assistant Horace Albright were essentially preoccupied with boosting tourism (Sellars, 1997, p. 281–284). Like Victor Shelford and many others of his generation, Charles Adams gave an enthusiastic push to the idea of preserving natural

conditions. The living creatures that embodied those primitive conditions, however, became a locus of dispute during the 1920s.

From Preserving Primitive Conditions to Preserving Predators

Adams's interest in preserving natural conditions for scientific study found expression and developed further during the 1920s in a growing movement to preserve native predators in North America. Recognition that predators formed a crucial element within natural conditions was the essential link between the two movements. Adams and others sought sanctuaries for predators specifically so that "primitive conditions" could carry on unimpeded.

Unusual events in Yellowstone National Park during the mid-1920s helped shape Adams's ideas on predators. In 1922, the U.S. Fish Commission secured the services of a reputable parasitologist, Henry B. Ward, to come to Yellowstone for the purpose of investigating a parasite that made the park's trout appear "wormy" and therefore unappetizing to anglers. He was also pressed, however, to render an opinion on the food habits of the pelicans. The U.S. Fish Commission demanded that the park control a population of American White Pelicans (*Pelecanus erythrorhynchos*) on Yellowstone Lake. Despite disclaimers about not making value judgments, Ward's information was employed to convince Horace Albright to conduct from 1924 through at least 1928 small "experiments" in controlling the pelican population by destroying eggs and chicks on Molly Island.

In 1925, Charles Adams was the first scientist to openly object to the common perception that pelicans feasting on the trout was a bad thing needing some corrective measure. Adams argued that the pelicans were hardly to blame for a noted decline in park sport fishing. Rather, the Fish Commission's collection of trout eggs, overzealous anglers and park hotels and camps that served trout were causing anglers' creels to go unfilled. Most importantly, Adams called on the purposes of the parks, noting the "real purpose of the National Parks is to preserve in them what can best be maintained there" (Adams, 1925). The American White Pelican needed isolated and undisturbed nesting grounds, and the parks provided such places where natural conditions played themselves out.

The pelican episode also introduced Charles Adams to the action agendas of well-known but not always well-liked conservationists. In the early summer of 1931, Rosalie Edge of New York published a small yet inflammatory pamphlet, "Last of the White Pelican", insinuating that the Park Service was destroying this rare native bird. In late 1931, W.L. McAtee also defended the pelican on the pages of *Bird Lore,* published by the Audubon Societies. National Park Service leaders Horace Albright and Stephen Mather had carefully created an image of the Park Service as an agency that protected wildlife, and they seemed very sensitive to negative publicity. The NPS resistance to protecting wolves (*Canis lupus*) and coyotes (*Canis latrans*) had been reinforced and supported by widespread cultural antipathy for predators, but the public viewed the pelicans not as predaceous but as beautiful, rare, and innocent victims of needless persecution. In the May 1931 number of the *Journal of Mammalogy,* Horace Albright declared protection for all animals in the national parks, yet curiously one year later Yellowstone Superintendent Roger W. Toll proclaimed full protection for the park's pelicans. For Adams, the Yellowstone episode made sense of the connections between preserving natural conditions on public lands and saving predators.

The Federal predator-control program

During the late 1800s, ranchers had sought to eradicate wolves and coyotes that took advantage of the great numbers of cattle that replaced the virtually extinct bison on the plains and in western states. Early encouragement and organization of this effort consisted of bounty systems that became known for rampant fraud. When the federal government began predator control work in 1915, much of the damage had been done to the wolf. Hence, the Biological Survey's work assisting stockmen turned its attention mainly to coyotes and later to rodents such as prairie dogs that were resented for their raids on grain supplies, disliked for eating the grass that cattle might otherwise receive, and for digging holes that some people thought caused injury to horses and stock (Dunlap, 1988, p. 48).

Originally established in 1885 as the Office of Economic Ornithology and Mammalogy, the federal Bureau of Biological Survey (BBS) had strong roots in natural history traditions. Under director Clinton Hart Merriam, the Bureau carried out scientific work in taxonomy and biogeography at a standard respected by academic museums. Bureau personnel, in fact, helped establish the American Society of Mammalogists. The Bureau's respected status did not last, however, as western livestock interests pressured congressmen for assistance, with the result that the Bureau became employed in assisting ranchers in killing "varmints". Merriam left the agency when it became apparent that his interests in natural history and scientific research would be subsumed under a new mission of practical control measures. In the mid-1920s, a new Division of Predator and Rodent Control (PARC) was created, and this section became the target of the ASM campaign (Cameron, 1929; Sterling 1974, 1989; Dunlap, 1988, p. 35–39). Nevertheless, the Bureau had important and lasting ties with academia, including the development of cooperative wildlife research projects with the states. The long debate over federal predator control policies might be understood partly as a family feud; mammalogists in the Bureau employed science to make the range safe for agriculture, while mammalogists in the academy utilized ecology to defend the predatory species. Ranchers' expectations for federal science clashed with the presumptions of scientists mostly outside the Bureau who wanted federal science to take a greater interest in the preservation of natural conditions and wildlife species.

The ASM Committees

Charles Adams's participation on committees of the American Society of Mammalogists reveal the connections between ecology, the movement for the preservation of natural conditions, and the ASM drive for the protection of native predators. Beginning in 1920, Adams chaired two out of three ASM committees that aimed to preserve mammalian predators. While there was some overlap in the life of the three committees, they arrived on the scene sequentially, the first two organized in significant measure thanks to the efforts of Adams. The Life History Committee was created first in the early 1920s and continued under W.P. Taylor at least through 1927; the Committee on Wildlife Sanctuaries was established by June of 1924; and, finally, the Special Committee on Problems of Predatory Animal Control initiated activities in 1930 under Harold E. Anthony. The mammalogists' fight against federal predator control was carried out through the work of these committees, but scientists and conservationists also organized opposition informally behind the scenes.

The American Society of Mammalogists had been organized in 1919, about four years after the Ecological Society of America (Sterling, 1974, p. 415–417; Hoffmeister, 1969)[3]. Adams participated actively in both organizations from their beginnings, helping to initiate the ASM Life History Committee and serving as its first chairman during the early 1920s. The activities of this committee can be understood best in the context of economic ornithology and economic mammalogy as practiced at the time. In justifying protection for wildlife during the early part of the twentieth century, conservationists found themselves using a variety of arguments. The rational and scientific side of these arguments often took economic forms. Farmers had waged war on chicken hawks, owls, and other species because they believed those creatures hurt their financial interests. The Bureau of Biological Survey was charged with assisting farmers in their battle against the elements. Within the Bureau's Division of Food Habits Research, economic ornithologists used techniques that naturalists such as S.A. Forbes had pioneered in the 1870s. They carefully observed birds in the wild, examined stomach contents, and employed scatological analysis to determine exactly what birds consumed. The ASM Life History Committee also can be seen as a product of nineteenth century natural history traditions, performing basic research on the life habits and distributions of species that were not yet well documented. This list of little-known species included significant species of the mountain west, such as grizzly bears (*Ursus arctos horribilis*). During the 1930s, research documenting the food habits of mammals began to play an important role in defending native predators from unfounded claims of excessive damages to stock. By the late 1930s, Adolph Murie came to Yellowstone Park, where he determined that coyotes roaming the northern areas of the park consumed mainly rodents, rather than the sheep on Forest Service allotments just north of the park. Park Service naturalists used Murie's research to fend off ranchers' demands that Yellowstone poison coyotes within the park.

In 1924, opposition in the ASM to the Bureau of Biological Survey's policies coalesced and became public. Naturalist Joseph Scattergood Dixon and Charles C. Adams initiated a dialog in the early summer of 1924, discussing predators in their correspondence. Dixon was a practiced naturalist and curator of mammals at the Museum of Vertebrate Zoology in Berkeley. He was a veteran of many field expeditions, widely known and respected not only for his judgments on matters of systematics, but also for his opinions on practical matters affecting wildlife (Sterling et al., 1997, p. 210–212). Rumor had it that the ASM would appoint a committee to look into the predator problem. Both Adams and Dixon worried that the Biological Survey did not take mammalogists' concerns seriously. How could they remedy this situation?

Adams began the task of reforming the Bureau through his work on committees of the American Society of Mammalogists. At the 1924 ASM meeting, members openly debated federal policy with two Bureau biologists, E.A. Goldman and W.B. Bell. In August 1924, ASM president Wilfred H. Osgood appointed Adams to head a new committee to look into the predator control issue. Dixon had met Osgood, and thought him "perfectly fair-minded"[4] Walter P. Taylor of the Museum of Vertebrate Zoology filled Adams's place as

[3] Hoffmeister D.F. (1969). A History of the American Society of Mammalogists, *Program of ASM Meeting*, (pp. 8–11). Box 3. E 230. RG 22. (Records of the U.S. Fish and Wildlife Service), National Archives at College Park, Maryland.

[4] Dixon to Adams, June 10, 1924, Adams correspondence, Museum of Vertebrate Zoology, University of California-Berkeley (hereafter cited as MVZ-UCB).

chairman of the Life History Committee. Shortly thereafter, Adams accepted the director's position at the New York State Museum in Albany. From his new office, he chaired the ASM Committee on Wildlife Sanctuaries until 1928. Other members of the committee included Vernon Bailey and E. A. Goldman (Bureau of Biological Survey), Joseph Dixon (Museum of Vertebrate Zoology), and Edmund Heller (from 1926–1928, curator of mammals at Chicago's Field Museum). The composition of the committee was intended to provide a balance of viewpoints. Adams initially had resisted Osgood's request to serve on the committee because he had made his general position on the predator issue clear at the ASM meeting, and he worried that others would view his leadership as less than impartial. Adams voiced firm opinions on the predator issue, yet Edward William Nelson, the Bureau of Biological Survey Chief from 1916–1927, also urged Adams to chair the committee. Adams clarified the mission of the committee, which became identifying "localities particularly suited for the preservation of the larger predators"[5].

This committee was due to submit its report in 1927, yet Dixon was concerned that the draft report Adams sent him would be rejected out of hand by Heller and Goldman. Additionally, Dixon was hoping that he would be appointed to carry out an investigation of the relationship between widespread poisoning and the welfare of furbearing species pursued by trappers. He worried that a report condemning poisoning would disqualify him for the job. In deference to Dixon's reservations, Adams delayed the report for one year, claiming the pause necessary to gather more data and to get naturalist Milton Skinner's Yellowstone data into print. The negotiations within the committee over the content of the report provided perhaps the most compelling reason for the delay. Indeed, it proved impossible to reach a consensus, even within a small committee. In March 1928, Adams sent Dixon a "dehydrated" committee report that had been revised by Bailey and Goldman. "This is about all we can expect from them", wrote Adams. Dixon did not think the report went far enough, endorsing Adams's suggestion that the chairman's introductory note might be submitted as a minority report. The final report thus included the uncompromising views of Adams and Dixon, submitted as the minority opinion[6].

The relationship between officials and scientists of the Bureau of Biological Survey and some mammalogists in the ASM was characterized by mistrust and friction. In 1927, BBS Chief E.W. Nelson wrote a letter to Adams that ended by asking about a recent episode in western New York. Coyotes had suddenly reappeared in numbers sufficient to spark a farmers' protest and a bounty on the predators. Sarcastically, he enquired "If these animals are such desirable citizens, why was it that the naturalists of New York State did not arise in their might and demand that these interesting beasts be permitted to go on and enjoy their interesting lives without man's brutal interference?"[7]

Two major criticisms propelled the opposition to federal predator control. The issue of incidental take provided a clear focus for the scientists' movement against poisoning, a method that did not distinguish between the target species and other wildlife. Throughout the 1920s, the fur industry protested the use of poison and the indiscriminate destruction of

[5] Charles C. Adams to committee members, Feb. 11, 1925, Adams correspondence, MVZ-UCB.

[6] Adams to Dixon, May 14, 1927, Adams to Dixon March 24, 1928, and Dixon to Adams, March 30, 1928, Adams Correspondence, MVZ-UCB. Heller signed on to the minority report written by Adams and Dixon.

[7] E. W. Nelson to Adams, May 27, 1927, Adams Correspondence, MVZ-UCB.

fur resources. The fur trapping industry was still a significant economic enterprise during the 1920s, and industry leaders leaned on their political representatives and notified the chief of the BBS of their concerns. In the state of New York, the industry was important enough that the Roosevelt Wild Life Experiment Station (organized by Adams) carried out research particular to furbearing species in northeastern forests (Pritchard, 1999, p. 44–46).

Secondly, the Bureau's critics lambasted the agency's scientific methods and interpretation of statistics. In August 1925, Joseph Dixon wrote to E.W. Nelson concerning the issue of incidental take. While the Survey claimed that two thirds of the coyotes destroyed by poison were never found and thus their numbers had to be inferred, the Bureau also claimed that wildcats, skunks, raccoons, foxes, porcupines, and badgers died immediately upon taking the bait. Thus, nearly all could be counted, demonstrating that only a few furbearers were killed in coyote poisoning operations. Dixon rejected this logic, arguing that many poisoned furbearers were never found, and suggested that if the survey took greater care in determining the incidental take, they would enjoy more confidence from mammalogists.

In 1926, Dixon criticized the Bureau for not investigating the food habits of predators, as it did for birds. The criticism was deserved — no evidence supported the ranchers' demands for control, or the Bureau's claims regarding the numbers of predators killed. Reliable numbers were not available because the Bureau had not performed much, if any, scientific research. Lee R. Dice, curator of mammals at the University of Michigan, suggested the ASM was "fully within its province when it states that in its opinion the policies of the Survey are not founded on a sound body of fact". He further urged the ASM not to perform research for the Bureau, arguing the BBS had become "largely an administrative and control organization", when its primary role should have been investigative[8]. Ultimately, the reputation of the Bureau of Biological Survey as a scientific organization was pulverized by the predator controversy.

During the mid-1920s, several sources of inspiration motivated the mammalogists' movement against the Bureau of Biological Survey's predator control program. Historian Thomas Dunlap's excellent account of the ASM campaign against federal predator control portrays Joseph Grinnell as the leader of western mammalogists who were most actively involved in opposing predator control activities (Dunlap, 1988, p. 49; Worster, 1994, p. 274–282). There is no doubt that Grinnell and other individuals at the Museum of Vertebrate Zoology including Joseph Dixon and E. Raymond Hall did play crucial roles in the opposition to federal predator control. Yet in the movement's early days, from his desk in New York, Adams initiated formal contacts with the Bureau of Biological Survey and organized ASM committees. His partner was Dixon, who provided the field and technical expertise as well as a steady presence until the late 1920s when others became active in the ASM campaign. During those early stages, Adams and Dixon carried on the necessary paperwork of challenging the Bureau, while a wider network of discussion provided impetus to the growing concern among mammalogists about federal predator control efforts.

Throughout the 1920s and 1930s, Joseph Grinnell gave tacit permission to field naturalists under his employ to participate in the campaign against federal predator control (Miller, 1964; Gillispie, 1970, p. 545). He cautioned Dixon and Hall not to speak or write opinions on behalf of the MVZ, but they might say anything or serve actively on the ASM committee "just so you always insist that you are acting as an impartial man of science", but not

[8] Lee R. Dice to H. E. Anthony, April 28, 1931, Anthony Correspondence, MVZ-UCB.

representing the University of California[9]. While he favored Dixon publishing a paper on the predatory animal situation, he made it clear that "all personalities be left out"[10]. In short, he was a gentleman who did not wish to offend old acquaintances or violate professional working relationships. Grinnell reaffirmed this tacit support when he assured E. Raymond Hall that he had encouraged Dixon all along, and that Hall could expect similar support[11].

In 1929, Grinnell wrote to Adams, "Personally, although I have my own ideas(!), I have decided that I can have 'nothing to say'. To cook up an adequate rejoinder would mean very careful, and prolonged study, so as to make exceedingly sure of facts"[12]. Grinnell was reluctant to involve his institution in a messy conflict with a government agency and thus offend state legislators (Dunlap, 1988, p. 49)[13]. Surviving memos and letters indicate that Grinnell discussed the issues of predator control and the politics of conservation with his museum staff, particularly E. Raymond Hall. His letters to fellow professionals were generally quite brief on political issues, yet long and specific on the details of collecting, preserving, and cataloging specimens. For Grinnell, the politics of conservation were interesting and a source of concern, but they seemed to play second fiddle to the pressing business of systematic zoology.

The Problem of Predatory Mammals

During the 1920s, ranchers and the Bureau of Biological Survey carried out their campaigns against predators with efficiency, killing all but the last vestiges of wolf and mountain lion populations in the lower forty-eight states. Remnant populations existed only in the most remote areas, places far from ranches in the valleys and furthest from grazing leases on U.S. Forest Service lands. The national parks, despite years of eliminating predators that killed animals popular with the tourists, still retained limited populations of their native carnivores. Yet time was running out.

A common belief about predators was that they would always persist in the West. Coyotes in particular seemed resilient and ubiquitous. E. W. Nelson wrote Adams suggesting there was "no cause for nature lovers to fear extermination of these interesting animals". Like the red fox (*Vulpes vulpes*) in the eastern states, wolves and coyotes would simply endure. Yet almost in the same breath, Nelson suggested it would be "practicable, no doubt, to more or less completely eliminate both coyotes and mountain lions" (*Puma concolor*) in the Western states. In fact, only recently had the Bureau ceased using the word "exterminate" in its lexicon. The efforts of ranchers and the Bureau had been successful. By 1925 it seemed that the last populations of large mammalian predators were holed up in the national parks. Nelson had "not the slightest objection to the continued existence of a limited number of wolves and mountain lions within national parks", but he found it hard to imagine why the parks would want them considering they were "exceedingly destructive to game"[14]. And Nelson was hardly alone. In fact, the Park Service was actively shooting and trapping predators in Yellowstone National Park, offering

[9] Grinnell to Hall, August 19, 1930, Hall Correspondence, MVZ-UCB.

[10] Dixon to Adams, June 10, 1924, Adams correspondence, MVZ-UCB.

[11] See also the E. Raymond Hall correspondence, MVZ-UCB.

[12] Grinnell to Adams, August 12, 1929, Adams Correspondence 1909-29, MVZ-UCB.

[13] See also Grinnell to Hall, August 19, 1930, Hall Correspondence, MVZ-UCB.

[14] E.W. Nelson to Charles Adams, August 7, 1925, Box 17, CCAP-WMU.

bounties to rangers bringing in proof of their kills. In 1926, the last Yellowstone wolf was shot during this campaign.

In 1925, when Adams publicly advocated for the preservation of natural conditions, he hoped that representative habitats or examples of successional processes might be preserved in many distinct places. He also believed that significant and remote areas outside of the parks still existed where predators might be protected. BBS Chief E.W. Nelson sought to disabuse Adams of this notion, advising him "I do not know of a single area left in this country which would fit into such a category"[15]. Adams started with the desire to protect natural conditions for scientific study, but by 1924 realized that the preserves had limited value to science if the full complement of animal life was not present.

In 1926, on the pages of the *Roosevelt Wild Life Bulletin*, Adams registered his opinion on the problem of predatory mammals. Adams urged foresters to "not endeavor to console ourselves with the idea that if we could exterminate predators in economic forests, our troubles would be over". "Control", he noted, "is a permanent problem". Measures taken against the larger predators would result in an increase in rodents and other small animals that would sooner or later present another problem, calling for additional control. In the national parks, he noted, another standard came into play, the ideal of passing on park resources unimpaired for future generations. While the balance of nature was an idea widely used, Adams and others noted that nature did not stand still. "The wise procedure in maintaining wild or wilderness conditions", Adams suggested, "is to interfere as little as possible with the course of Nature". Specifically, Adams derided the NPS for borrowing a policy of extermination from the Biological Survey (Adams, 1926).

The activities of the ASM Committee on Wild Life Sanctuaries stalled during 1927 and 1928, as Adams and others became increasingly frustrated with the Bureau's unyielding position. Although Adams and Dixon were able to open and develop the issues, and carry the fight along for a time, they eventually needed and received assistance. Beginning in 1928, E. Raymond Hall (curator of mammals at the Museum of Vertebrate Zoology in Berkeley), Harold E. Anthony (curator of mammals at the American Museum of Natural History in New York City), and A. Brazier Howell (Department of Anatomy at Johns Hopkins Medical School) began to participate in the ASM movement against federal predator control. The ASM Sanctuary Committee was reformulated in 1930 as the ASM Special Committee on Problems in Predatory Animal Control.

In 1930, the pressure peaked when Congress considered future appropriations for the Bureau. In April, not less than 148 scientists associated with nationally recognized institutions signed a formal protest orchestrated by A. Brazier Howell, which was widely circulated and distributed to congressional representatives. The Bureau had requested $1 million annually for a ten-year program against predators, and legislation for this purpose (S 3483) was introduced in Congress (Dunlap, 1988, p. 55–56). In April 1930, Congress held hearings where just as at the PARC conventions, the National Wool Growers Association showed up in force, cajoling and demanding the federal government take action. Although Adams later thought that the Bureau had been "hit pretty hard all along the line" by the testimony of Howell and Hall, the mammalogists' opposition ultimately did not greatly sway the results[16]. At the ASM spring meeting, Goldman and Henderson defended the Bureau's work, claiming that food-habits research showed that coyotes were great consumers of beef

[15] Ibid.

[16] Adams to Grinnell, February 24, 1931, Adams Correspondence, MVZ-UCB.

and lamb. Dixon and Hall criticized the Bureau's use of science, declaring that the analysis of stomach contents carried out by the Bureau was biased and faulty. The ASM and the Survey agreed on a joint field inspection to see if official guidelines for the use of poison were being followed by the rank and file on the ground, but the trip did not resolve any issue nor did it calm tempers (Dunlap, 1988, p. 58).

For all its efforts, by 1930 the ASM seemed to have made little headway in changing the Bureau's policies. A. Brazier Howell thought that the Survey:

> cares not in the least how much we pan it, if we do not make too much noise in doing so; and it was precisely for this reason that it has seemed to cooperate with the ASM investigation — because it knew that it would prevent the Society from taking any definite and vigorous action for at least a year[17].

Joseph Grinnell wrote one of his most direct and forceful letters to Barrington Moore, editor of *Ecology,* informing him that "I am not so sanguine as you are" about the benefits of any investigation carried out by the Bureau. Grinnell argued that "we know *enough* right now, to justify discontinuing all poisoning of predatory animals" except in extreme circumstances[18]. In 1930, Anthony expressed frustration after reading mammalogist Lee R. Dice's criticism of the Survey, writing Hall that "the Dice criticism is just the sort of thing that the Society of Mammalogists has been recording for ten years, and at the end of ten years they are just where they started"[19]. Adams had a similar sense that nothing had come of the Ecological Society's work, writing Grinnell that "It is a shame that so much time is given to cheap politics, rather than to science and to *constructive* programs"[20]. Historian Thomas Dunlap describes a "general collapse" after 1930 of the forces opposing federal control polices. In 1931, Congress passed the Animal Damage Control Act, approving the Bureau's ten-year plan (Dunlap, 1988, p. 59). While opposition to federal predator control in the scientific societies may not have been entirely effective, it did not lie inert. From 1930, Adams redirected his efforts to preserve predators and natural conditions in a new direction.

New Directions in the ESA and the NRC

In 1930, participants reorganized the ASM effort against federal predator control policies. Harold E. Anthony became chair of the new ASM Special Committee on Problems of Predatory Mammal Control. He held the post of curator of mammals at the American Museum of Natural History in New York City, one of the premier scientific institutions of the day, writing over fifty papers from 1913 to 1927. Anthony was active in a dozen scientific societies (in both ornithology and mammalogy) and was elected president of the American Society of Mammalogists in 1935 (Sterling et al., 1997, p. 29–31). Also serving on the committee were Lee Dice, curator of mammals at the University of Michigan, and C.T. Vorhies of the University of Arizona in Tucson. Finally, two committee members had connections with the Museum of Vertebrate Zoology in Berkeley — E. Raymond Hall served as curator of mammals at the museum, while Milton P. Skinner networked among

[17] Howell to Anthony, December 26, 1930, Howell Correspondence, MVZ-UCB.

[18] Grinnell to Moore, April 14, 1931, Moore correspondence, MVZ-UCB.

[19] Anthony to Hall, November 21, 1930, Anthony Correspondence, MVZ-UCB.

[20] Adams to Grinnell, February 24, 1931, Adams Correspondence, MVZ-UCB.

Cooper Club members along the West Coast, offering his services as field naturalist and lecturer. While Hall and Howell provided notable energy and diligence to the predator control debate over the next six years, Anthony provided necessary leadership, diplomacy and connections.

As if following the lead of the ASM, in 1930 the ESA reorganized its Committee on the Preservation of Natural Conditions, creating one for Canada and one for the United States. Shelford, under authority of the by-laws, created the ESA Committee on the Study of Plant and Animal Communities, which served as a fact gathering body, while the original group functioned as a "Public Contact Committee to urge governmental agencies to act in certain ways" (Shelford, 1943).[21] Shelford later thought the arrangement was quite effective. The two committees operated simultaneously from 1933 through 1945. A.O. Weese, Curtis Newcombe, and Charles Kendeigh joined Shelford in leading these committees.

While Shelford pushed preservation efforts in the ESA, others looked to the National Research Council (NRC) to preserve natural conditions and predators. This was a body within the National Academy of Sciences created in 1916 to mobilize science for public purposes. The work of the National Research Council's Committee on Wild Life Studies and its following incarnations until the beginning of WWII demonstrate not only links between the two preservation movements, but also some of the continuing tensions within the conservation movement. Late in 1931, just after John C. Merriam was appointed as chair of a new NRC wildlife committee, Harold Anthony went to Washington to try to convince him that the NRC might be able to help out in the Biological Survey controversy[22]. Other appointees to this NRC committee included Adams, Anthony, Harold C. Bryant, E. A. Goldman, Aldo Leopold, and Victor Shelford.

The NRC, after the Sporting Arms and Ammunition Manufacturing Institute (SAAMI) made approaches, charged the Committee on Wild Life Studies with carrying out a large-scale game study. By late December, Aldo Leopold had a proposal ready for the NRC game survey.[23] This episode revealed rifts within the conservation movement. Charles Adams was suspicious of SAAMI, and considered Leopold "too much of a tool", thinking that the gun manufacturers were using Leopold to "gain respectability" by funding fellowships at the universities[24]. The study was intended to provide an overview of game populations and evaluate conservation measures in midwestern states, including Ohio, Indiana, Michigan, Illinois, Wisconsin, Minnesota, Iowa, and Missouri.

In December 1928, Leopold had presented the initial results of his own, prior game survey at the meeting of the American Game Conference, where he suggested that saving isolated habitat as refuges would not be enough to preserve game populations from agricultural techniques that tidied up every last corner of the landscape. The American Game Protective Association thereupon appointed Leopold to a committee charged with recommending new national game policies (Meine, 1988, p. 259–268; Lorbiecki, 1996, p. 106–109). This committee sought to define and advance an American system of game

[21] See also Directory of the ESA, *Bulletin of the Ecological Society of America 18* (December 1937), 60–68.

[22] Anthony to Hall, December 2, 1931. Anthony Correspondence, MVZ-UCB.

[23] Wild Life Committee, National Research Council, "Proposed Game Survey," Dec. 30, 1931, Box 60, CCAP-WMU.

[24] Adams to Hornaday, January 13, 1932. See also Adams to Hall, July 24, 1935, Adams Correspondence, MVZ-UCB.

conservation that encouraged wild game populations, in contrast to the European system of game ranching and private ownership of game. Leopold's contribution to this American style of game management was significant. He continued the SAAMI game survey until the late winter of 1932, when depression-era cutbacks ended the institute's funding of his work (Meine, 1988, p. 275–278, 288). In December 1931, as NRC committee member Leopold planned a new multi-state survey of the Midwest, Charles Adams wondered what "hidden trade" might be involved[25].

In 1934, the NRC designated Aldo Leopold chair of the Committee on Wild Life to replace John C. Merriam. Two of the members did not want Leopold as chair, arguing that a "broader perspective" was necessary. This opinion reflected, says Leopold's biographer Curt Meine, "the general low esteem in which game management was held by 'pure' zoologists". The chair of NRC's Division of Biology and Agriculture, Ivy F. Lewis, remained unwavering in his choice, because the committee critics were also rather inactive. Under Leopold, the committee promoted wildlife research and gave advice in creating the Cooperative Research Units at colleges (Meine, 1988, p. 325).

In late 1937, because several members felt that "wild life" did not cover the group's concerns and activities, the NRC committee changed its name to the Committee on the Preservation of Natural Conditions[26]. By that time, the committee included Adams, H.E. Anthony of the American Museum of Natural History (chair), Henry I. Baldwin of the New Hampshire Forestry and Recreation Department, R.E. Coker of the University of North Carolina, William S. Cooper of the University of Minnesota, Herbert C. Hanson of the Alaska Rural Rehabilitation Corporation, Ellsworth Huntington of Yale University, G.E. Nichols, Edward A. Preble, independent wildlife expert, and Albert Hazen Wright, a respected herpetologist from Cornell University. The committee membership thus comprised some of the leaders of significant institutions of the day, as well as active participants in scientific associations. The group must have seemed capable of real progress. Cooper had been instrumental in the designation of Glacier Bay National Park, for example. In 1937, Grinnell had high hopes for the "reconstituted advisory committee which will be undoubtedly potent in Washington"[27].

Yet ultimately the NRC committee had little more visible effectiveness than the efforts of the ASM and ESA committees. By 1941, Cooper counted four organizations that had concerned themselves with the preservation of natural conditions: the NRC group, the ESA's committee, the Wilderness Society, and the Robert Marshall Foundation. Cooper worried that these groups would overlap efforts and waste energy, and so urged coordination with representatives of other committees and organizations, including Robert Sterling Yard and S. Charles Kendeigh. Following his recommendation, C.S. Newcombe and Kendeigh came to the March 1941 meeting of the NRC committee in New York.

As it turned out, Cooper's worries became subsumed under the conflagration of World War II, which redirected the vital energy of the National Research Council toward the pursuit of war-related problems. The NRC Committee on the Preservation of Natural Conditions apparently did not survive past 1945, and Victor Shelford's effort to preserve natural areas was limited in effect, at least within the ESA. During the war, Shelford's ESA

[25] Adams to Leopold, June 1, 1935, Box 60, CCAP-WMU.

[26] This name was, by coincidence or by intent, the same as the ESA committee.

[27] Grinnell to Adams, February 4, 1937, Adams Correspondence, MVZ-UCB.

Committee on the Study of Plant and Animal Communities ceased functioning, but the Committee on Natural Conditions did continue under Newcombe's direction.

Since 1937, Shelford had been pushing the Ecological Society's executive committee to become more active in preservation. In June 1944, he published two open letters to the membership, seeking support for his vision of the society's fundamental purpose over the prior twenty-seven years as "concerned with the preservation of research materials for its members". Shelford carried on the fight to continue active preservation efforts within the ESA, writing personal notes to members asking them to support the preservation committee. At the ESA business meeting in September 1944, the executive committee advised discontinuing the preservation committee. Past presidents and the executive committee of the ESA opposed direct action for nature preservation, thinking it unseemly for a scientific society to act as a pressure group. Adams wrote a letter to Shelford, expressing his worry that Shelford had "forced a decision" that threatened the balance of research, publishing, meetings and advocacy that had been built over the years in the society (Shelford, 1944)[28].

During 1945, the debate over the ESA's mission came to a head in the form of a referendum to the society. While Shelford had demanded permanence for the Committee on the Preservation of Natural Conditions and other committees supported by 10% of dues, the executive committee's resolution barred specifying the names of standing committees and did not stipulate financial support. Ballots were sent out on July 20, 1945, and the vote, by a margin of 213 to 115, approved an amendment to the ESA bylaws that for all practical purposes restricted the society from direct lobbying on legislation. In essence, the membership defined the ESA more as a scientific society than as an activist organization (Croker, 1991, p. 138–144)[29]. In 1946, as a result of the referendum vote put to the membership, the ESA Committee on the Preservation of Natural Conditions was disbanded, and Kendeigh resigned the chair of the Committee on the Study of Plant and Animal Communities. Adams, Robert Griggs and others had proposed a "Conservation Council" outside of the society that would consist of representatives from various agencies and societies to plan, coordinate, and to lobby for conservation activities and programs. The idea, originating in the National Conference on Outdoor Recreation and referred to as a "Conservation Department", had first come to Adams's attention in 1927. Shelford regrouped his forces and with Harold Hefley of Texas Technological College, establishing an organization aimed at preserving natural areas, the Ecologists' Union, with eighty-three charter members including several past presidents of the ESA. In 1950, the group reorganized as The Nature Conservancy (Croker, 1991, p. 144–146)[30]. This organization has grown ever since, to employ about 3,100 staff and 400 scientists worldwide, working with governments, corporations and local partners to build a "world where people and nature thrive". They have assisted landowners in writing conservation easements, and acted as a broker for conservation land purchases, with resulting protection of ecosystem functions on

[28] Charles C. Adams to Victor E. Shelford, October 23, 1944, CCAP-WMU. Adams to Dixon, October 7, 1927, Adams Correspondence, MVZ-UCB.

[29] Referendum, *Bulletin of the Ecological Society of America*, Vol. 46, No. 3/4 (Dec. 1945), 12. The vote, thought Kendeigh, had been swayed by the prestige of executive committee members. After all, Shelford's prior 1943 personal survey of the membership indicated considerable support (85 per cent) for ESA action on legislative issues. This was not the last time that issues of professional objectivity came before the ESA; see Nelkin (1976) and Nelkin (1977).

[30] See also Robert F. Griggs to Charles C. Adams, October 6, 1944, uncatalogued, CCAP-WMU. See also The Nature Conservancy website at www.tnc.org.

millions of acres of land. The success of the Nature Conservancy, at least in part, may be a consequence of the freedom that the organization gained by no longer having to represent the official and "neutral" face of science.

Scientists and the Politics of Preservation

Historians Robert Croker and Sara F. Tjossem convey a general sense that caution against active participation in public policy won out over activism for natural area protection in the societies. However, the 1930s argument over the proper role of the ESA in nature preservation involved larger issues. This was also a struggle over the "definition of acceptable work within the discipline of ecology" and a challenge to the "ESA's role as the unified national voice for the science of ecology" (Tjossem, 1994). The desire to maintain credibility by laying claim to scientific objectivity was (and remains to this day) a considerable concern among scientists. Yet the desire to make a difference in the world also persisted. In the 1980s, when scientists created the Society for Conservation Biology (SCB), this association of scientists consciously asserted that good science could rightfully involve activism for the conservation of biodiversity. Today, the ESA and the SCB include policy issues and position statements on their websites, and the SCB actively communicates their view regarding policy actions. The ESA also sponsors information sessions for congressional staff, helps arrange meetings for members with legislators, and is active in Washington, D.C. based coalitions that engage in policy activities in support of science[31].

When compared to Victor Shelford's enthusiastic push within the ESA for action to preserve natural areas, the NRC Committee on the Preservation of Natural Conditions may appear rather lackluster, even stodgy. Yet this image, conveyed by emphasizing Shelford's outstanding contributions to natural area preservation over thirty years, may not do justice to Adams and other scientists of the interwar era who also attempted to preserve natural areas and wildlife (Croker, 1991). In his own mind, Adams was engaged in the good fight, taking on the forces opposing intelligent conservation. Adams's records contain a long correspondence with the perceived troublemakers of the conservation world, notably William T. Hornaday and Rosalie Edge. In these letters, Adams sympathized with their outlook, wishing for more stringent protective measures, hoping that those in positions of authority would demonstrate more backbone. He began writing to Rosalie Edge after her battle to jar the National Association of Audubon Societies into more vigorous action, mailed his annual contributions, and was listed on the Emergency Conservation Committee's board of consulting scientists. Yet while he aligned himself with the provocative purposes of nature preservation, he labored away in the most bureaucratic of ways, serving on committees that Shelford thought ineffective.

If one counts Adams as a ponderous conservative, then what do we make of Joseph Grinnell? He was reluctant to engage the MVZ in the fight against federal predator control, and took special pains to avoid direct criticism of Bureau personnel such as E.W. Nelson. There is a problem with seeing conservationists as divided up into camps of conservation or preservation, or grouped as heroic fighters contrasted against cautious and ineffective penpushers. Using such a view, we might lump Grinnell and Adams together as the carefully treading bureaucrats, yet this doesn't begin to describe their attitudes, actions and influence.

[31] See also the websites of the ESA (esa.org) and the SCB (conbio.org).

Similarly, viewing Grinnell or Adams as significantly more active than the other does not ring true, because they wrote to each other quite a bit, and shared a sense that they were on the activist side of conservation's struggles.

Adams, Shelford, and the Societies

Charles C. Adams and Victor Shelford illustrate how the Ecological Society of America and the American Society of Mammalogists played critical roles in the politics of preservation. From the very beginning of the campaign by members of the American Society of Mammalogists against federal predator control policies, Adams played multiple roles. His ideas in ecology, his interest in preserving natural conditions for scientific study, and his experience with defending predator pelicans from an "experiment" in population control during the 1930s in Yellowstone National Park led him towards practical efforts to protect predatory species (Pritchard, 1999). The activities of Adams demonstrate the connections between preserving natural conditions for scientific study, and the movement for predator protection. Reassessing Adams's role in the 1920s and 1930s allows us to see the movement to protect natural conditions as a precursor to the movement against federal predator control policies, as well as the growing connections between the scientific societies concerned with wildlife preservation during the 1930s.

While his involvement with the NRC committees focusing on preserving natural conditions in some ways paralleled the ESA committee, Adams's efforts should not be interpreted as merely duplicating Shelford's activities. Rather, Adams might be seen as trying new approaches in attempts to shape federal policies affecting wildlife. When he perceived that efforts based in the scientific societies had failed to significantly shake up federal policy, he attempted in the early 1940s to influence policy through a federal-level advisory board. Victor Shelford similarly tested out other avenues toward achieving his goals. Shelford not only joined the independent Grasslands Research Federation, but also chaired the National Research Council's Committee on the Ecology of the Grasslands. Like Adams, Shelford saw possibilities in the NRC for support of ecological research as well as serving the cause of preserving nature (Tobey, 1981, p. 127).

Ultimately, it is debatable whether the NRC Committee on the Preservation of Natural Conditions was any more effective than the ESA and ASM committees. Additionally, the plan for a federal "Conservation Council" never got off the ground. Adams's actions should not be seen as over-cautious conservatism, nor as capitulation to greater powers. Rather, Adams and Shelford took different approaches to preserving natural conditions. While Shelford maintained his faith that the ESA should take action to preserve natural areas, Adams progressed toward influencing government policy outside of the auspices of the professional association. Both approaches comprised valid and significant methodologies within the conservation movement.

The involvement of scientific societies in the movements for the preservation of natural places and for preservation of all wildlife species demonstrate the widespread nature of scientific contributions to conservation, and how diverse sorts of people with diverse interests and training, as well as various institutional affiliations, comprised a movement greater than the individual parts. The examples of the American Society of Mammalogists and the Ecological Society of America show that scientific societies will risk their "value-

free" public image to engage in activism to protect science itself — in this case the habitats and biota of North America, the open-air laboratories of zoology and ecology.

The author thanks Juan Ilerbaig, Paul Sutter, Doug Weiner, and Diane Debinski for their insightful comments. Archivists Dr. Sharon Carlson at Western Michigan University, Janis Leath at the University of Wyoming, Flora Nyland at the State University of New York, as well as archivists at the Museum of Vertebrate Zoology at the University of California-Berkeley, and at the University of North Carolina provided invaluable assistance. Research for this paper was made possible by a grant from the Iowa State University Graduate College's Program in Science, Technology, and Society.

References

Adams C.C. (1923). The Relation of Wild Life to the Public in National and State Parks, *Proceedings of the Second National Conference of State Parks,* 129–147.

Adams C.C. (June 1925). Ecological Conditions in National Forests and in National Parks, *The Scientific Monthly,* 20, 561–593.

Adams C.C. (October, 1926). The Predatory Mammal Problem, *Roosevelt Wild Life Bulletin,* 4, 283–284.

Burgess R.L. (1977). The Ecological Society of America: Historical Data and Some Preliminary Analyses. In Egerton F.N. (ed.). *History of American Ecology,* (pp. 1–24), New York: Arno Press.

Cameron J. (1929). *The Bureau of Biological Survey: Its History, Activities and Organization,* Baltimore: Johns Hopkins Press.

Committee on the Preservation of Natural Conditions. (April, 1937). Report to the ESA, *Ecology,* 18, 306–312.

Croker R.A. (1991). *Pioneer Ecologist: The Life and Work of Victor Ernest Shelford 1877–1968,* Washington, D.C., Smithsonian Institution Press.

Dunlap T.R. (1988). *Saving America's Wildlife,* Princeton: Princeton University Press.

Gillispie C.C., and American Council of Learned Societies, (1970–1990). *Dictionary of Scientific Biography,* (pp. 545), New York: Charles Scribner's Sons.

Graves H.S. (1926). The Duty of Scientific Men in Conservation. In Shelford V.E. (ed.). *Naturalist's Guide to the Americas,* (pp. 52–53), Baltimore: The Williams & Wilkins Co.

Hoffmeister D.F. (1969). The First Fifty Years of the American Society of Mammalogists, *Journal of Mammalogy,* 50(4), 794–802.

Lorbiecki M. (1996). *Aldo Leopold: A Fierce Green Fire,* Helena: Falcon Press.

Meine C. (1988). *Aldo Leopold: His Life and Work,* Madison: University of Wisconsin Press.

Miller A.H. (1964). Joseph Grinnell, *Systematic Zoology,* 13, 235–242.

Nelkin D. (February, 1976). Ecologists and the Public Interest, *Hastings Center Report,* 6, 38–44.

Nelkin D. (1977). Scientists and Professional Responsibility: The Experience of American Ecologists, *Social Studies of Science,* 7, 75–95.

Pritchard J.A. (1999). *Preserving Yellowstone's Natural Conditions: Science and the Perception of Nature,* Lincoln: University of Nebraska Press.

Raup H.M. (1959). Charles C. Adams 1873–1955, *Annals of the Association of American Geographers,* 49(2), 164–167.

Sellars R.W. (1997). *Preserving Nature in the National Parks: A History,* New Haven: Yale University Press.

Shelford V.E. (September 24, 1943). Twenty-Five-Year Effort at Saving Nature for Scientific Purposes, *Science,* 98, 280–281.

Shelford V.E. (June, 1944). Two Open Letters, *Bulletin of the Ecological Society of America,* 25(2), 12–15.

Shelford V.E. (ed.). (1926). Ecological Society of America, Committee on the Preservation of Natural Conditions, *Naturalist's Guide to the Americas,* Baltimore: Williams & Wilkins Co.

Sprugel G.Jr. (1985). Charles Christopher Adams. In Stroud R.H. (ed.). *National Leaders of American Conservation,* (pp. 23), Washington, D.C.: Smithsonian Institution Press.

Sterling K.B. (1974). *Last of the Naturalists: The Career of C. Hart Merriam,* New York: Arno Press.

Sterling K.B. (October, 1989). Builders of the U.S. Biological Survey, 1885–1930, *Journal of Forest History,* 180–187.

Sterling K., et al., (1997). *Biographical Dictionary of American and Canadian Naturalists and Environmentalists,* Westport, Connecticut: Greenwood Press.

Tjossem S.F. (1994). Preservation of Nature and Academic Respectability: Tensions in the Ecological Society of America, 1915–1979, Ph.D. dissertation, Ithaca, Cornell University.

Tobey R.C. (1981). *Saving the Prairies: The Life Cycle of the Founding School of American Plant Ecology, 1895–1955,* Berkeley: University of California Press.

Weiner D.R. (1988). *Models of Nature: Ecology, Conservation and Cultural Revolution in Soviet Russia,* Bloomington: Indiana University Press.

Weiner D.R. (1992). Demythologizing Environmentalism, *Journal of the History of Biology,* 25(3), 385–411.

Weiner D.R. (1999). *Freedom: Russian Nature Protection from Stalin to Gorbachev,* Berkeley: University of California Press.

Worster D. (1994). *Nature's Economy: A History of Ecological Ideas,* Second Edition, Cambridge: Cambridge University Press.

Американское общество терриологов, экологическое общество Америки и политика сохранения

Джеймс А. Причард

Государственный университет Монтаны, Бозман, Монтана, США;
james.pritchard@montana.edu

С 1920-х до начала 1940-х гг. Американское общество териологов и Экологическое общество Америки были вовлечены в предпринимаемые усилия по сохранению природных условий на охраняемых землях, а также по сохранению хищных и других диких животных. Члены яростно дискутировали, насколько активно научное сообщество должно выступать за сохранение природы. Чарльз С. Адамс и Виктор Э. Шелфорд были лидерами двух главных усилий, направленных на формирование федеральной политики, в частности, по сохранению природных ландшафтов и защите хищных животных. Их уникальный аргумент в пользу сохранения выдвинул на первый план сохранённые ландшафты с их оригинальным дополнением в качестве дикой природы, подчеркнув выдающуюся научную ценность и потенциал для будущего научного изучения охраняемых мест. Работая в комитетах профессиональных сообществ и в Национальном исследовательском совете, Адамс, Шелфорд и многие их коллеги демонстрируют различные способы, используемые учёными в попытках сохранить саму суть

своих исследований. Научные общества пошли на риск, поскольку сами члены и организации играли решающую роль в вопросах защиты окружающей среды, в то время как политика науки смешалась с политикой сохранения природы.

Ключевые слова: Американское общество териологов, экологическое общество Америки, Чарльз С. Адамс, Виктор Э. Шелфорд, охраняемые территории, охрана природы, сохранение дикой природы.