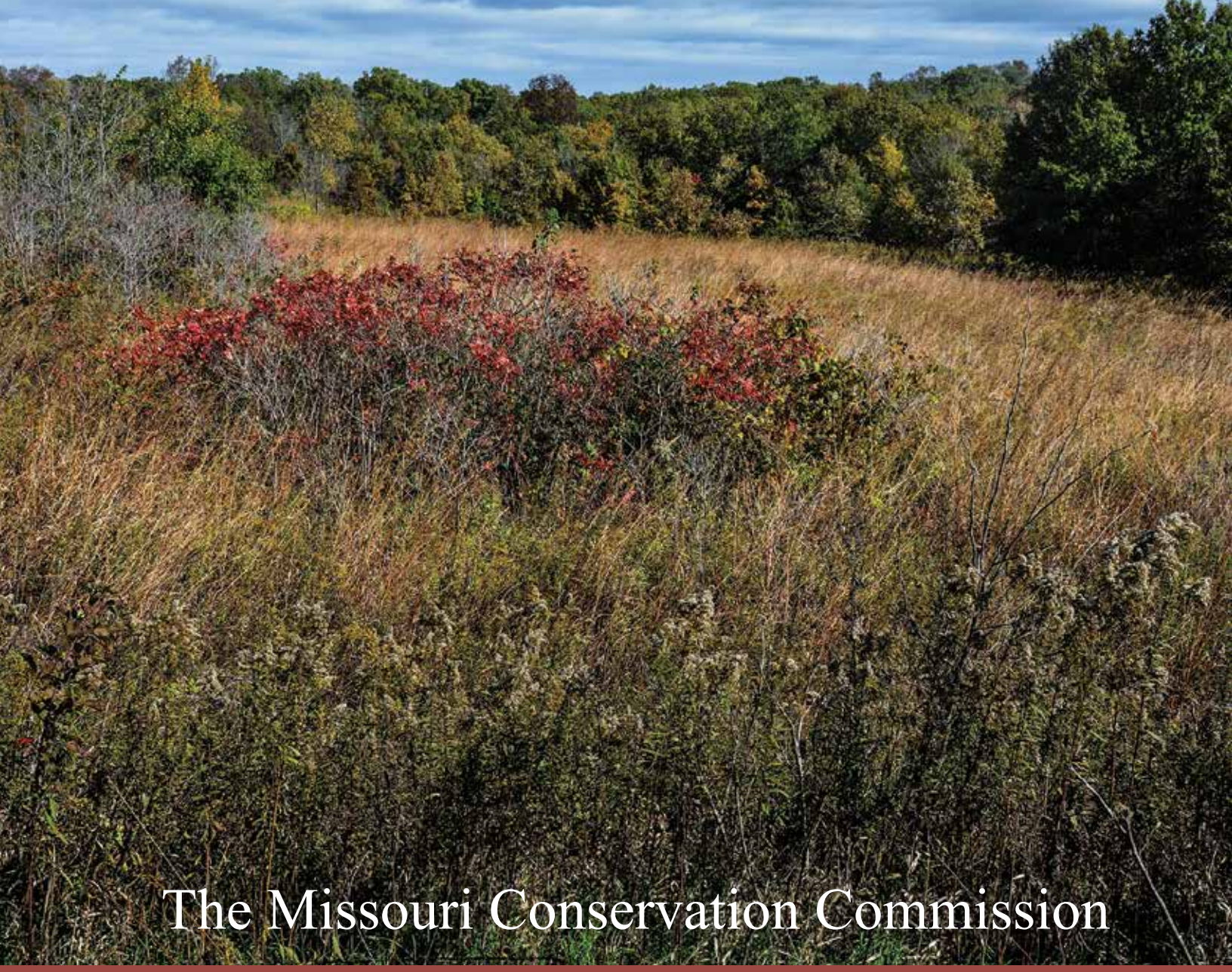


The Missouri Conservation Commission

Part I:
The need for it and the constitutional amendment that established it

BY QUINTA SCOTT

(Editor's Note: This is the first of two articles on the Missouri Conservation Commission. It details the state of conservation in Missouri before 1937, the role Nash Buckingham played in getting the amendment on the 1936 ballot, and how Aldo Leopold's work in the early 1930s influenced the writing of the amendment and the direction of the new commission and its early research. The second article will look at how biologists carried out their research for the new science-based Missouri Conservation Commission.)

Aldo Leopold and Nash Buckingham, the first a pioneer in land management for wildlife from Wisconsin, the second a passionate and popular nature writer and avid duck hunter from Tennessee: both had a hand in pressing Missouri voters to pass the constitutional amendment that established an independent conservation commission. Both were well connected in the nascent field of conservation and land and game management. Leopold supplied the philosophical framework that guided the intent of the constitutional amendment that established the nonpolitical Missouri Conservation Commission as a science-based organization. Buckingham supplied the legwork. Buckingham loved ducks, he loved quail, and he loved shooting. He wrote for *Field and Stream*, *Sports Afield*, *Outdoors*, *American Field*, and others. He had a following among sport hunters and fishers, who were concerned about the decline in small game.

In April 1935, Roland Hoerr, a St. Louis industrialist and president of the Missouri Duck Hunter's Association, wrote Nash Buckingham asking him for "information as to how the sportsmen of Tennessee organized the State in order to put through the Commission bill." Buckingham responded that he and Matt Thomas of Knoxville had organized a statewide federation of sport hunters that helped push the game commission bill through the Tennessee legislature in 1935. Buckingham emphasized that "your bill must be right. The man you select for executive secretary is all important." He offered to help Hoerr organize a federation, but he would have to be replaced by a Missourian. Buckingham traveled statewide, interviewing possible candidates, including E. Sidney Stephens, to head the organization that became the Federation of Missouri Sportsmen. Stephens accepted the job at a meeting of the group in August 1935.[1]

Buckingham and Leopold—along with members of the American Legion, the Isaak Walton League, and dozens of Missouri sports hunters and fishers—gathered signatures for the initiative petition that put the constitutional amendment on the November 1936 ballot. The amendment passed, and the Missouri Conservation Commission opened for business in July 1937.

Whetstone Creek Conservation Area in Callaway County reflects the landscape early settlers found when they came west into central Missouri north of the Missouri River. Prairies, pockmarked with ephemeral wetlands, covered the flat landscape. Where clay underlay a thin layer of loess, it impeded drainage and flatwoods, treed in stumpy oaks anchored in shallow soil, took root. Along the creeks and ephemeral drainages, woodlands grew in loamy soils.

The settlers named the region Nine Mile Prairie. Nine Mile Prairie Township is 47,001 acres, of which 5,858 acres are in public use. Today, the Missouri Department of Conservation manages two refuges on the prairie, the Whetstone Creek Conservation Area, which is open to the public, and the Prairie Fork Conservation Area, which is set aside for research and not open to the public.

The Missouri Department of Conservation manages Whetstone Creek for Bobwhite quail and other small game. The decline of Bobwhite quail and other game in the early twentieth century prompted the establishment of the Federation of Missouri Sportsmen and the passage of the constitutional amendment that created the Missouri Conservation Commission. *(Image: Quinta Scott)*

In Missouri, deer, so plentiful in the twenty-first century that they verge on being pests, survived only in the southern Ozark Counties in the 1930s. *(Image: David Stoner, Missouri Department of Conservation)*

The State of Game in 1937: The Need for a Conservation Commission

For more than a century before Missouri passed its constitutional amendment, its citizens broke the prairie and cleared the land for row crops or pasture for livestock, cut the forests for railroad ties or simply let them burn, drained the swamps, and gave no thought to the maintenance of wildlife. By the end of the nineteenth century, hunters had killed or driven the last of the large mammals from the state. During the period of settlement, 1800–1850, large animals—antelope, buffalo, black bears, and panthers—disappeared, killed for their meat or pelts, leaving only a few individuals. Only deer survived, though in reduced numbers. Badgers were gone by 1870, and passenger pigeons were decimated and gone by 1890. Farm game–quail, rabbit, skunk, and dove–thrived, at least for a while, on the newly cleared agricultural lands, but as farmers instituted modern agricultural methods, small game lost habitat. Missourians had yet to take up hunting game for sport, but market hunters had, for cash, not for sport.[2]

Concern over the amount of game market hunters took from Missouri's fields and forests led to the passage of its first statewide game law in 1874. It was titled *An Act for the Preservation of Game, Animals, and Birds*. The law set open and closed seasons for game, including deer, wild turkey, and quail; forbad the netting of quail and prairie chicken, save on a person's own land or by permission of the landowner; forbad the possession, purchase, sale, or transportation of listed species during closed seasons; and charged constables, marshals, market-masters, and police to arrest all violators. The lawmakers made exceptions to the rules: Farmers had permission to shoot any critter they found eating their crops, fruit, or grapes. Any scientist who wished to study a bird's habits or history had permission to kill it and stuff it. Market hunters ignored the law.

In the years following the passage of the 1874 act, market hunting reached its peak. Market hunters transported their kill to city markets on better roads. Their city customers had no idea that Missouri's wild game was disappearing. While Missouri sport hunters did not take up guns in great numbers until about 1920, when they did, they added to the carnage. Game wardens had few funds with which to carry out their duties. Market-masters had a commercial interest in the continued flow of game. Hence, the attitudes of constables, marshals, and police charged with arresting violators reflected that of the rest of the population.[3] As yet, there was no demand for the preservation of game.

Painted Rock Conservation Area, Osage County, Missouri *(Image: Quinta Scott)*

Private Game Preserves

As early as 1877, private citizens from Jefferson City leased land at Painted Rock on the Osage River. When the owner of the land wanted to subdivide and sell the land in 1907, a group of hunters organized the Painted Rock Country Club, purchased all 1,086 acres, and opened membership to dignitaries living in the state capitol.[4]

While everyday sport hunters may not have taken up sport hunting en masse until about 1920, wealthy city dwellers set up their own preserves for hunting and fishing. In 1891, alarmed at the decimation of Missouri's deer, Moses Wetmore, president of Liggett and Meyers Tobacco in St. Louis; George McCann, president of Old Coon Tobacco in Springfield; and others formed a corporation, the St. Louis Game Park and Agricultural Company. They bought land in Taney County for a private preserve, a game-park and resort, where they bred deer for sport hunting and food. They also planned to mill timber; grow grain, fruit, and farm produce; raise livestock; and create a zoological preserve. In 1893, they fenced off 500 acres with an eight- to nine-foot deer-proof fence. By 1896, they had amassed 5,000 acres on the west bank of the White River near the tiny village of Mincy, which they stocked with deer—native whitetails, reds, blacktails, and fallows—to which they added Angora goats, elk from Illinois, and dozens of Mongolian pheasants.

The St. Louis Game and Agricultural Company, Taney County. Steep ridges, deep hollows, moderately sloping uplands, cedar glades, oak-hickory-pine forests, creeks, a sinkhole, and three miles of bank on the White River characterized the game park. *(Image: Quinta Scott)*

The company built a hunting lodge on a bald overlooking the river, installed deer on another 2,500 acres behind a deer-proof fence, and opened for business in November 1896. At a time when people in the Ozarks used fire indiscriminately to clear pastureland and burn ticks and chiggers, gamekeepers at the park used controlled burns, one hillside at a time when weather conditions were right, to maintain a fire line around the deer enclosure. Both the Painted Rock Country Club and the St. Louis Agricultural Park would be incorporated into the Missouri Department of Conservation's system of refuges in the twentieth century.

Walmsley Law

The work of private sport hunters at Painted Rock and Mincy did nothing to quell the slaughter of wildlife by market hunters, who sold close to four million pounds of game, most of it illegal, in 1904. But by that year, sport hunters outnumbered market hunters and demanded changes in the laws governing hunting and fishing.[5]

In 1905, Missouri passed the Walmsley Law, which continued open and closed seasons to manage hunting, but enforced the law whimsically. At first the legislature gave title to all fish and game to the state, provided for the sale of hunting and fishing licenses, and allocated game wardens $50,000 for a "game protection fund." It looked like a sound, comprehensive law, but two years later the legislature gave title of fish and game back to land owners and cut the appropriation for enforcement to $8,000. Lawmakers gave title to game back to the state in 1909 and established the State Game and Fish Commission, but they took away the annual appropriation for enforcement. From henceforth, only the sale of hunting and fishing licenses would fund the enforcement of game laws.

In 1917, Missouri recognized the need for public recreation and passed the State Park Fund Act, which allocated 5 percent of the funds collected from the sales of licenses to the purchase and maintenance of state parks on land that was well-watered and suitable for wildlife. Big Spring State Park opened in 1924, and eight more followed within a year, bringing 23,244 acres into public ownership. At the end of World War I, the state purchased or leased game farms that would function as refuges. While lawmakers raised the allotment to 25 percent in 1925, the parks and game farms remained underfunded and undeveloped.[6]

Big Spring State Park, Carter County *(Image: Quinta Scott)*

Aldo Leopold's *Game Survey of the North Central States*

What happened in Missouri also happened in the surrounding states: game lost out to the "axe, plow, cow, fire, and gun," the tools used to clear the landscape for crops and pasture. Aldo Leopold used these words to describe the disappearance of game from Midwest fields and forests. A pioneer in wildlife conservation, Leopold developed the concept of "wildlife-from-the-land," or land management for game, that would direct the work of Missouri's young Conservation Commission. In 1929 and 1930, he conducted a survey of game in the central and northern Midwest for the Sporting Arms and Ammunition Manufacturer's Institute and published it in 1931 under the title *Game Survey of the North Central States*. By the late 1920s, sport hunters, the buyers of guns and ammunition, finally showed genuine alarm over the decimation of game and furbearing animals. Just as Nash Buckingham would enlist their help several years later in getting signatures on the ballot initiative for the Constitutional Amendment that established the Conservation Commission, Leopold enlisted their help with the survey. In Missouri 129 people–members of the Isaak Walton League, game wardens, foresters, sport hunters and anglers, and academics–aided the effort. After he finished his survey, he laid out his theory of land and game management in *Game Management*, published in 1933, in which Leopold proposed that wildlife could be restored through the creative use of the same tools used to destroy it: "axe, plow, cow, fire, and gun."

In his *Game Survey* and *Game Management,* Leopold recommended that nonpartisan conservation commissions be established in the states he studied; that they have members with staggered terms and free of political influence; and that hunters and nonhunters alike—the general public—share in the cost of wildlife, both game and nongame, conservation.[7]

In the midst of the Great Depression, with income to Missouri's Game and Fish Commission declining, with its personnel in constant flux, and with game depleted and little money going into its replenishment, E. Sydney Stephens and the Federation of Missouri Sportsmen wanted to do just that: take conservation out of the hands of politicians. They wrote a constitutional amendment to create a conservation commission to protect and restore the state's fish, wildlife, and forests. Up until then, political appointees had directed Missouri's Game and Fish Commission, the predecessor to the Conservation Commission. Hence, policy and personnel could shift as often as a new administration came into office, every four years. As Leopold noted in his *Game Survey*, Missouri employed the "'game warden' type" of conservation department that relied "on an unstable executive appointed by the governor." Missouri's Game and Fish Commissioner managed six hatcheries and 36 wardens, all reporting to three division chiefs; fourteen state parks, which served as workable game refuges; and fourteen wildlife refuges, which the state leased from farmers. Game and Fish did not coordinate with the state's other conservation activities and exercised no regulatory power. That was the province of the governor.

"The survey is financed by the sporting arms and ammunition industry. The motive hardly requires explanation: success in game restoration means continuance of the industry; failure in game restoration means its shrinkage and ultimate liquidation."

—Aldo Leopold, 1931

Stephens and his group wanted to put conservation and restoration in the hands of professional game managers who would operate under the direction of a nonpartisan commission, in which each of its four members would serve staggered six-year terms. His desire to remove the conservation of Missouri's game from politics extended to the writing of the amendment. Allowing the legislature to write such a law would leave it in the political arena and open to future changes. Allowing the legislature to write the amendment would take its wording out of Stephens' hands. To that end, he established a committee of thirteen directors, one from each congressional district, which drafted the wording of the amendment. Because each member of the new commission would serve a six-year term, appointments would be staggered administration to administration. The amendment would create a science-based agency with authority over Missouri's wildlife, fish, and forests.[8] But few people understood the concept of science-based management of wildlife. Here again, Aldo Leopold fleshed out the idea that landscape could be managed for the benefit of wildlife.

How the state handled wildlife conservation before and after passage of the Walmsley Law hadn't worked. When Leopold performed his December 1929–January 1930 survey of wildlife in Missouri, he found rabbits abundant, even though the rabbit meat industry in Missouri was the largest in the region, but he found quail and prairie chickens declining. He attributed their declines to the plowing of the prairies for wheat and corn.

Bobwhite Quail Covey in Snow *(Image: Missouri Department of Conservation)*

Leopold did not develop his theories in a vacuum. Shortly before he started his survey, Herbert L. Stoddard published his seminal study of Bobwhite quail in the longleaf pine and wiregrass ecosystem of Georgia's Red Hills, recognized as the first field study on land management for wildlife.[9] Stoddard documented the quail's food preferences: weed seeds, grain, and ground cover that farmers despise; fruits, mast, and nuts from trees; legumes; cultivated grains after harvest; and crickets, grasshoppers, beetles, spiders, ants, or whatever insects could be found on the ground or were within jumping distance. Young quail eat mostly insects until they are about three weeks old. During those three weeks they gradually add seeds and grains to their diets until at three weeks they are eating the same foods as their parents. Much of their diet can be found in the cover they depend on, thickets and vine tangles along fences and roadsides.

He documented their predators: Humans find them tasty. So do hawks, skunks, raccoons, and snakes. Stoddard was fifty years ahead of his time in his use of controlled burns to manage wildlife habitat. Foresters and public agencies in the 1920s and 1930s opposed their use. Stoddard recommended fire to enhance the growth of quail food and recognized that the quail could thrive at the edge of the longleaf pine-wiregrass forest. To maintain the edge, however, fire had to be used to control mid-story underbrush and preserve an understory of the quail's favorite foods, grasses and legumes; to eliminate habitat for quail predators; and to promote places for quail to escape predators.[10]

In his chapter on Bobwhite quail in *Game Survey*, Leopold described the four stages of landscape development that led to the quail's decline in the Midwest. He guessed that during presettlement times, quail lived at the edges of open woodlands that were maintained by frequent fire.

As farmers settled the landscape, they brought "crude agriculture," characterized by "grain fields, civilized seeds, and rail fences," along which weeds and vines grew up. They cut the woods, left "brushy stump lots," and added "Osage orange (*Maclura pomifera*) hedges to the quail environment." In short, they may have changed the environment, but quail could thrive as farmers extended their clearings to the edges of the woods.

Next, farmers replaced the weedy rail fences with wire, cleared the stumps from the brushy woods for pasture, and tore out the Osage orange hedges. Quail lost food and cover. And, hunters began shooting quail instead of trapping them. During the Great Depression of the 1930s, farmers allowed marginal fields to revert to brush, weeds,

Whetstone Creek Conservation Area: In Callaway County, where Nathan Boone, son of Daniel, surveyed Boone's Lick Trail in 1815, and his cousin, Samuel Boone, purchased land and settled on the southeastern edge of Nine Mile Prairie in 1818. They arrived as settlers and hunted and trapped the prairies, which they looked upon as wet, marshy, bug infested, and dangerous, worthless for any agricultural activity other than grazing. Instead, they settled in timber along the creeks, where they found wood and water, and they tilled only at the very edges of the prairies. *(Image: Quinta Scott)*

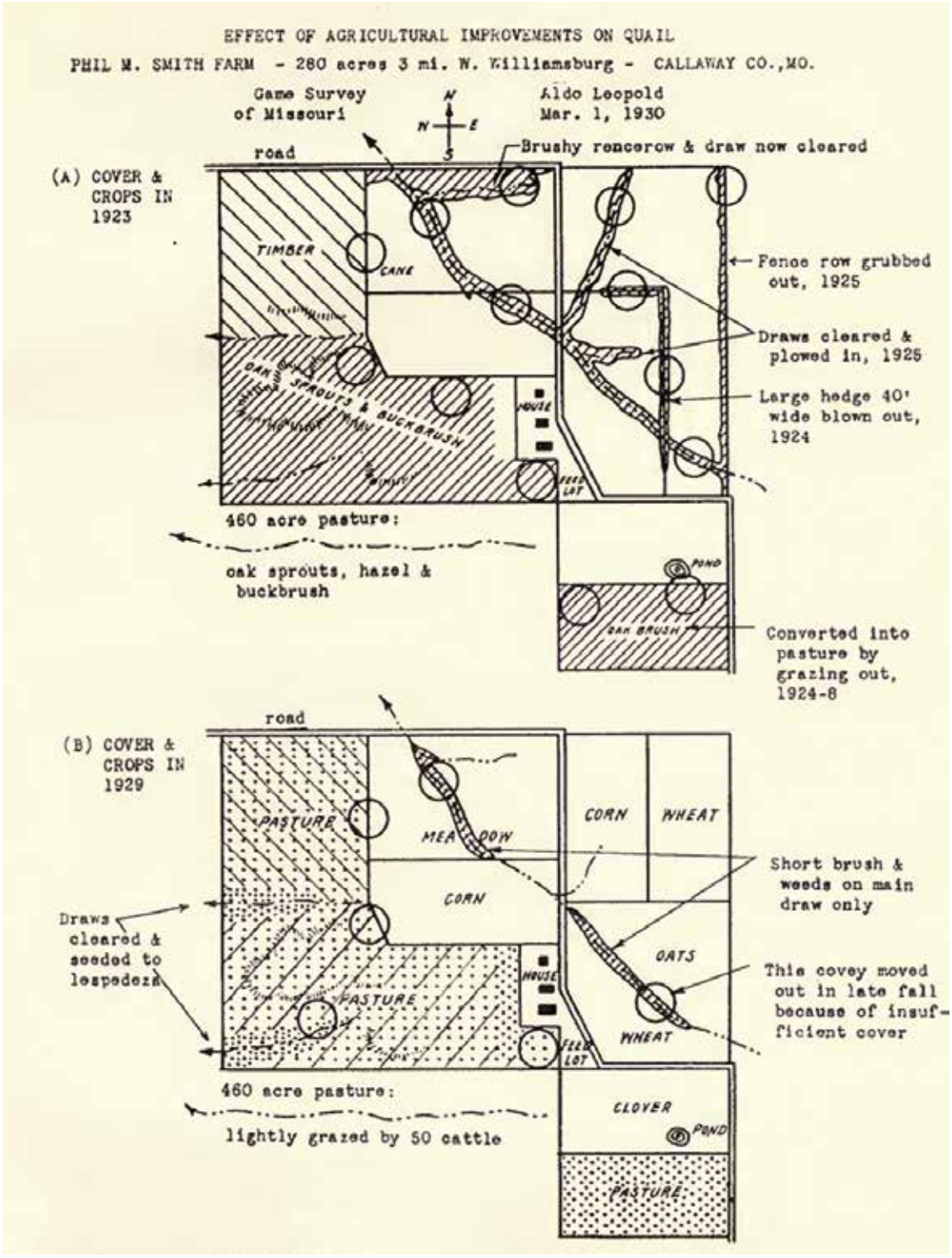
and vines. Quail found food and cover, but good roads increased population. Hunters with more leisure time and better guns and ammunition offset the reversion of marginal lands. Finally, hunters realized that quail had become a finite resource and demanded conservation measures and the introduction of pen-raised birds or birds imported from other countries.

In his study of the decline of quail in Missouri, Leopold offered as an example the history of a farm on Nine Mile Prairie, where Boone's Lick Trail marked the northern boundary of the farm. In 1923, the farmer Phil Smith restored a grain farm, using modern agricultural standards. The land was half in timber and had never been grazed. He cleared brush from the fence lines and out of the gullies, which he filled. He cut the Osage hedgerows and converted brushy woodland to pasture, where his livestock could graze. According to modern methods, he rotated his crops to conserve the fertility of the soil, and he loved quail and hunted them. He counted 210 quail on his property in 1923. Within seven years of clearing his land and introducing modern agricultural techniques, ninety quail remained. He thought he had shot too many. Leopold concluded that the very farm improvements had reduced the quail's numbers, because the bird lost food and cover.[11]

In developing his management plan for quail, Leopold focused on open and closed seasons, particularly in Missouri's fledgling system of refuges, located in ten Ozark counties. Even given a ten-mile zone surrounding each refuge, he concluded that none of Missouri's refuges would have enough acreage to sustain healthy populations of quail, particularly for hunting and trapping. Refuges would have to be restocked with quail raised in pens. In determining the allowable kill in refuges, whether public or private, Stoddard had noted that killing 33 percent of the population was safe. The kill rate, which seldom acknowledged the number of birds crippled, could be higher on well-managed lands, but 50 percent was too high. Finally, Leopold encouraged managers and hunters to think of population growth or the productivity of the crop and kill rates in terms of numbers per acre, be it quail, turkey, or deer.[12]

Nine Mile Prairie: Weeds, trees, and vines along a roadside and between cultivated fields, Callaway County, Missouri. *(Image: Quinta Scott)*

Nine Mile Prairie Farm cultivated to the edge of the road with little cover on the roadside or between fields. *(Image: Quinta Scott)*



Aldo Leopold's Sketch of Improvements to the Smith Farm, Callaway County, Missouri.

Prarie Fork Conservation Area, Callaway County, Missouri *(Image: Quinta Scott)*

The Prairie Fork Conservation Area is no more than a half-mile down the road from the Smith Farm. In 1997, Ted and Pat Jones donated 711 acres of farmland near their home in Williamsburg to the Missouri Department of Conservation. Most of the region around the refuge is devoted to row crops or livestock grazing. The MDC is restoring the fields to prairie, using a combination of applications of herbicides and controlled burns, followed by the planting of native grasses and forbs, food for quail and other small game. The area is not open to public use, but is reserved for education and research into the role of soils and water in conservation.

Fall Turkeys *(Image: Missouri Department of Conservation)*

Management of Turkey and Deer

When Leopold finished examining quail and other small game birds—pheasant, Hungarian partridge, ruffed grouse, and prairie chickens—he turned to big game, including turkey and deer. Northern Missouri had seen its last turkey in 1895. Southern Missouri had the only remaining turkey range in the states he studied. First, he numbered the turkeys found in southern Missouri—4,024 in 1925 and 7,000 in 1927. Then, he outlined a turkey study: trap and band all turkeys found in refuges to determine the best cover for turkeys, the best food at every season, the diseases and parasites that affect turkeys, the predators that kill turkeys or rob their nests, how turkeys avoid predators, the ratio of males to females, and how many males must be around to maintain or increase the population.[13]

Finished with turkeys, Leopold turned to deer. While northern Missouri had seen its last deer in 1884, Missouri counted 564 deer spread out across 24 southern Missouri counties in 1926. Leopold noted that that was an underestimate because Missouri had planted 300 in five state parks since then. Because there were so many unanswered questions about deer management, such as how to gauge the age of a deer, he laid out a similar, if less specific, outline for the study of deer. He addressed many of his recommendations to the northern states around the Great Lakes, where deer were losing winter cover and food as logging companies cut cedar swamps for posts and pulpwood, but where deer formed herds in the winter and searched out cedar plantations for both food and cover. As for Missouri, he noted that the state had a series of game refuges, where hunting seasons could be set.[14]

Leopold's Recommendations for Land and Game Management

Leopold concluded his survey with a series of recommendations for land management: bring as much land as possible into public ownership as funds are available and with attention to game management, forestry, watershed protection, and recreation. (Here, he noted that Missourians offered the most resistance to public ownership of land, even though Missouri had a system of state parks and refuges.) Make game management a public/private effort. Protect private landowners from irresponsible hunters and compensate them for preserving game. Train foresters and game wardens in research, management, and the administration of conservation agencies. Do the research in land management that will make game abundant in the wild. Recognize that everyone, hunters and non-hunters alike, is responsible for conservation. Pay for conservation not only through licenses for sport hunters and fishers, but through taxes on all citizens. Beg for private funds, if necessary, to educate the public and to do the scientific research.[15]

Leopold fleshed out all these recommendations in *Game Management* two years later, in which he defined game management as "the art of producing sustained crops of game for recreational use," game administration as "the art of governing the practice of game management," and game policy as "the plan of administration adopted by government."

He outlined the tools for managing the land for game and game itself: control hunting, historically the first technique of game management, by setting bag limits. Echoing Stoddard's work on quail, managers had to be able to measure the breeding rates for individual species against its kill ratios: How many turkeys or deer could hunters kill or cripple while leaving enough animals in the wild to maintain and increase their populations? Recognize that landowners are also custodians of the state's game and let them be compensated for the game that hunters kill on their lands. Help them understand that game is a crop. Train them to employ the tools they use to raise row crops to cultivate food and cover for wildlife. Cover functions as shelter from the sun, as escape from predators, as nesting places, as material for nesting from the previous year, as a place to loaf, and as food. Modern agriculture destroys cover and food, but doesn't have to if plants that supply game with food and cover are left to grow along fences or between fields.

Smith Farm, 2015. A weed-filled gully runs through a soybean field edged with trees, vines, and grasses along the roadside, all food and cover for quail. This field is at the site of the farm Aldo Leopold used as an illustration in his 1930 *Game Survey*. *(Image: Quinta Scott)*

Whetstone Creek Conservation Area: Sunflower Winter Food Plot. *(Image: Quinta Scott)*

Beyond that, create refuges that are closed to hunting. Leopold saw the refuge as a sanctuary, a breeding ground, and a place that creates such an abundance of game that the excess population can flow out and restock its surrounding region. A refuge must be an integral part of its region, and its region must be suitable to individual species the refuge addresses. Leopold separated parks—dedicated to game, natural attractions, and recreation—from refuges, dedicated to restocking species in the surrounding area. In parks, excess population growth of game can lead to incidental restocking, an unintended plus.

Increase game by controlling predators, by providing game with cover, by improving food sources for prey, by understanding alternative food sources for predators, and by using predators to prey on other predators.

Just as game managers had to learn the food preferences of predators, they had to learn food and water preferences of individual species of game. What do turkeys or quail eat at each stage in life? What would they find in each season of the year? What tastes good? What are they accustomed to and how do they find it? Do they need supplemental food in the winter? What kind? Managers had to have a similar understanding about water. Doves and turkeys drink water from running creeks or quiet ponds. So do deer. Quails, partridges, pheasants, and grouse depend on dew. Big game and rodents munch on plants for water, what Leopold called "succulence." Leopold concluded that refuge managers had to supply food plots and ponds to supplement food and water.[16]

Whetstone Creek Conservation Area: Wildlife Pond and Cover. *(Image: Quinta Scott)*

Pittman-Robertson Act of 1937

Even before he completed his *Game Survey*, Leopold attended the Seventeenth American Game Conference in December 1930, where he and others laid out the American Game Policy, an acknowledgment that current conservation efforts were not working anywhere. The policy declared that wildlife management be developed into a profession, that scientifically trained personnel direct wildlife restoration, and that a stable funding mechanism for restoration be developed. Carl Shoemaker, a special investigator for the U.S. Senate Special Committee on Conservation of Wildlife Resources, turned the conservationists' policy proposals into the Pittman-Robertson Wildlife Restoration Act of 1937, which granted funds to state fish and wildlife agencies for restoration projects through the Federal Aid to Wildlife Program. Funding came through user fees on the purchase of firearms, ammunition, and archery equipment. The newly independent Missouri Conservation Commission would use Pittman-Robertson funds to hire scientifically trained personnel—biologists—in its effort to build its wildlife restoration program.[17]

Missouri's Game Survey

The publication of Leopold's game survey in 1931 prompted the states to conduct surveys of their own. In 1934, Dr. Rudolf Bennitt, a biologist at the University of Missouri, and his student, Werner O. Nagel, followed with a more specific *Survey of Resident Game and Furbearers in Missouri.* They identified fewer than 100 ruffed grouse, not more than 2,000 deer, and about 3,500 wild turkeys. In addition, they noted that quail and rabbits were declining along with raccoons, muskrats, and mink. They took no census of fish, but severe drought and wild fires in abused forests, where eroded soils slipped down steep hillsides to muddy streams, led to the decline of the state's fisheries. Bennitt and Nagel's conclusions echoed Leopold's: game restoration and management depended on professional administration, scientific research, trained professional foresters and game managers, and an educated public that understood its role in conservation. This would be the job of a new Conservation Commission. Bennitt and Nagel published their survey in 1937.[18]

Caney Mountain Conservation Area, Ozark County *(Image: Quinta Scott)*

The Missouri Conservation Commission

To head the new Conservation Commission, E. Sydney Stephens tried to lure Aldo Leopold away from Wisconsin. Leopold turned him down and recommended that the state hire Irwin T. Bode, the former head of the Game and Fish Commission in Iowa.[19] When the commission opened its doors, its first employees came from the old Game and Fish Commission. Over the next two years, Bode hired scientifically trained biologists who specialized in game, fish, and forestry. They used Bennitt and Werner's survey as a reference point for their studies of individual species. Pittman-Robertson funds paid their salaries. Included among Bode's young biologists were David L. Spencer and A. Starker Leopold, Aldo's son. In 1939, Bode dispatched Spencer to the old St. Louis Game Park, now under management of the Conservation Commission, where he studied deer. In 1940, the Conservation Commission purchased 5,530 acres in Ozark County for the Caney Mountain Refuge in order to protect the wild turkey. Bode dispatched young Leopold to Caney Mountain to organize the refuge and study turkeys. In 1943 he completed his management plan for Caney Mountain that put into practice the recommendations his father had put forth in *Game Survey* and in *Game Management* a decade earlier.

A. Starker Leopold's study of wild turkey at Caney Mountain was one of ten Pittman-Robertson studies Bode's scientists had carried out by 1943. With Aldo Leopold's work in the 1930s serving as their model, they pursued their work on individual species with urgency. They had a lot to learn about who lived where in Missouri's diverse ecosystems and how to restore those ecosystems for the production of individual species. The second article in this series will cover their work, focusing on A. Starker Leopold's studies at Caney Mountain and David L. Spencer's studies at the St. Louis Game Park.

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[13] Leopold, *Survey*, 190–93.

[14] Ibid., 197–99.

[15] Ibid., 267–70.

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