

It must be conceded, I think, that the production of a heavy game stand on such a nearly coverless range as Lower Silesia probably requires a more radical predator control than is necessary or even desirable on well-covered moderately populated game ranges in America. This is merely one of a dozen basic points where we, by reason of our good luck in having more room, can improve on European conservation practice, *provided* our landowners can muster the persistence and enthusiasm which has made a sportsman's paradise of Lower Silesia.

### *Be Your Own Emperor*

*This delightful piece, subtitled "A Report on the Progress of Wild Life Cropping in Wisconsin," dates from around 1938 and is published here for the first time. Beneath its lighthearted narrative of hunting history, from ancient Rome to feudal Europe to the time of Theodore Roosevelt, it offers a sobering assessment of the challenges facing wildlife management on public and private lands. Leopold shows heartfelt concern for "rare or unprofitable species" and for migratory game that no owner can control and protect. And he bemoans the still-potent "pioneer tradition" of dominating nature, a tradition, he says, that "agricultural colleges have aided, abetted, and intensified." As he often did, he ends up calling for more practical research and for science-based practices tailored by landowners to the local land.*

IT IS NOW five years since this university first began to discuss wild life as a possible land crop. It should be time, therefore, to take stock of the successes, failures, and trends of the enterprise to date, and its needs and possibilities for the future.

To do this, we should first understand something of the history

of game cropping and how the present Wisconsin enterprise differs from that of other states, and from its historical counterparts in Europe and Asia.

### History

Game cropping was first practiced in the Holy Roman Empire in the 12th century. Frederic II, who has been called the first scientist in Europe, had an elaborate game-cropping system in Sicily. He hunted entirely with hawks, and his "kind of game birds" was the crane. The descriptions of his operations are all in Latin and are widely scattered through a large literature, hence no one has dug them out. I wish I could be the graduate student who exhumes and reconstructs the Sicilian picture.

In the 13th century an equally elaborate system was practiced by the Mongol emperors in eastern Asia. Marco Polo has left us a brief but convincing account of its methods and results. The methods included food patches, feeding stations, closed seasons, wardens, and all the paraphernalia of a modern conservation department. The results were an annual hunt by the whole imperial court, plus "camel-lods of birds" for the imperial table throughout the winter season.

In the 15th century Edward of York records the beginnings of the present European technology. His "little simple book," "Master of Game," dedicated to the heir of his sovereign, Henry IV, is a delightfully naive exposition of that oldest of all mutual admiration societies—the sporting fraternity. Harken to Edward:

This book treateth of what is to every gentle heart the most disportful of all games, that is to say hunting—which is so noble a game, and lasts through all the year of divers beasts that grow according to the season for the gladdening of man. —Hunting causeth a man to eschew the seven deadly sins. —When a man is idle, he abides in his bed or in his chamber, a thing which draweth men to imaginations of fleshly lust and pleasure. Such

. . . men think in pride, or in avarice, or in wrath, or in sloth, or in gluttoning, or in lechery, or in envy.

(But) when the hunter riseth in the morning, he heareth the song of the small birds, the which sing so sweetly with great melody and full of love . . . and when the sun is risen, he shall see fresh dew upon the small twigs and grasses, and the sun by his virtue shall make them shine. After when he shall go to his quest—he shall meet anon with the hart without great seeking, (which) is great joy and liking to the hunter.

And when he cometh home he cometh joyfully. — He shall doff his clothes and his shoes and his hose, and he shall wash his thighs and his legs, and peradventure all his body. And in the meanwhile he shall order well his supper, with roots, and of the neck of the hart, and of other good meats, and good wine or ale. And when he hath well eaten and drunk he shall be glad . . . and at ease. — And then he shall lie in his bed in fair fresh clothes, and shall sleep well and steadfastly all the night without any evil thoughts.

—To be idle and to have no pleasure in either hounds or hawks is no good token.

I could prove from this many things irrelevant to game cropping. In fact, I could prove almost anything, from the fact that hunters originated the bath, to the fact that only woodsmen are virtuous. But this has been done annually in every address to sportsmen from the days of Xenophon, through Teddy Roosevelt, to the last national convention of the Izaak Walton League. So let us return to our knitting.

All three of the historic expansions of the art of game cropping—the Sicilian, the Mongolian, and the European—are alike in that their techniques were empirical, not scientific. Hence no matter how well they worked, the techniques could not be translated to other countries. This may answer the persistent question: “Why don’t you get your game management from Europe?”

All three were also alike in that game was produced for private pleasure. The objective in each case contained not even a trace of the present idea of public recreation. The one-gallus hunter dates from the days of Robin Hood, but the notion of giving him any political recognition is very modern indeed.

All three were also alike in that the farmer had no place on game lands—he was either expropriated or overridden.

Lastly, wild life other than game did not enter the picture.

Hence the present attempt to crop game, while superficially similar, is really radically unlike what Frederic, or Kublai Khan, or feudal Europe did in centuries past. It is an attempt to graft together five historically separate and hitherto antagonistic elements: the Edwardian idea of wholesome sport, the democratic idea of public recreation, the esthetic idea of nature-study, the economic idea of diversified and mutually supporting crops, and the scientific idea of cropping techniques based on biological science. It is, in short, an attempt to encourage the American farmer to be his own emperor.

So much for the pipedream. What progress is it making?

Between the time of Robin Hood and the American Revolution, there germinated, grew, and flowered a deep-seated revulsion against special privileges, including hunting privileges. In our pioneer days of abundant game, this idea threw out its roots like a green bay tree. When the game played out, the American hunter concluded that hunting must vanish from civilized countries. Even up to the time of Roosevelt it clearly was assumed that the game must eventually go. But pretty soon he had a new idea, wholly original and wholly indigenous to this dark and bloody ground we live in. Government, he found, could do anything. Why not pass a law to let government perpetuate his game supply? We have spent fifty years finding out that game cropping is one of the things government cannot do, except on its own lands.

The idea of free public game dies hard. The average conservationist still believes that government can, by some waving of leg-

islative wands, spontaneously generate a game crop, to be harvested by all comers, on lands not owned by them, and on lands increasingly devoid of food and cover fit for wild life. As long as the public believes in and supports this legend of an official Santa Claus, our public officers are not likely to suddenly disclaim the role. Let us try to reappraise the fable to see what degree of truth it may contain.

### Wild Lands

The salient new fact bearing on this question is the universal admission that our low-grade lands not only are wild, but will remain so, and that they are *coming into public ownership* by the automatic process of reversion for taxes. To this extent the fable of free public game is no longer a fable, but a very real opportunity. We have or are getting the land—all that remains to be done is to prepare it for game cropping and to regulate the harvest to its productive capacity. Are we ready to do this?

In Wisconsin there are two main owners of this wild domain, and we shall have to consider them separately.

The first is the county. The average county obviously is not prepared to itself engage in a technical land-cropping enterprise. It has two ways out: Lease the land to private enterprise, or entrust it to the Conservation Commission. The latter seems to be favored. There are now evolving two vehicles for state cropping of reverted county holdings: the "county forest" and the "state conservation district." Both are promising. On a trial area of some 120,000 acres in central Wisconsin, we have the somewhat unusual spectacle of active federal participation in an enterprise to be run by the state. The AAA is buying out the scattered farms, while the FERA and the CCC are building the needed dams to crop game.

The second modern land-baron is the Forest Service. Unlike the county, the Forest Service has a field force and hence can crop its own holdings. Until this year, however, it has entirely neglected

its opportunity, resting upon the antiquated assumption that game automatically grows wherever silviculture is practiced. It is now making a very spirited effort to build up a game personnel and a cropping technique.

In my opinion there are five weak points which are most likely to retard progress toward the successful cropping of wild public lands:

1. *The lop-sided and inadequate research program.* Neither the state nor the Forest Service are spending one cent for laying a scientific foundation for this huge venture. The only game research now under way in Wisconsin is carried by the university, and deals only with grouse. None of the other wild-land species, such as deer, trout, or wild furs, have been studied, here or elsewhere.

2. *Conflicting techniques.* There is still a sad lack of coordination between engineers, foresters, and game men, due not to any lack of mutual good will, but simply to lack of mutual understanding. For example, after having completed a gridiron of fire lanes opening nearly every wild spot in the north woods to motor travel, it was suddenly realized that these roads threaten to deplete our deer. An effort is now being made to put locked gates on them. I hope it will work, but I doubt it. A breachy cow has nothing on an excited hunter with a car.

3. *Lack of technical personnel.* The Conservation Commission has virtually the same technical overhead as it had five years ago, to carry responsibilities easily ten times as great. These men literally have no time to think—a dangerous condition when history is being made daily.

4. *Lack of control of public use.* No one has yet devised a way to spread the public over public lands in such a way as not to ruin the land, as well as the recreation. The present intolerable concentration of deer-hunters, for example, will not be corrected by making the land a county or national forest. This problem remains a thorn in the rose of subsidized recreation.

Despite these delays and discouragements, it is a clear fact that

the idea of free public game has, in respect of wild lands, taken a new lease on life.

5. *Poor interspersion.* The reverse is true of farm game.

### Farm Lands

Contrary to usual belief, the farm lands of Wisconsin, by reason of their richer soil, are capable of producing more man-days of hunting recreation than the wild lands. A stand of 1 game bird per 4 acres and a kill of a bird per 12 acres is easily possible. This would yield, on 12,000,000 acres of farms, a kill of 1,000,000 birds per year. There are 200,000 licensed hunters, so our farms could produce 5 for each licensed hunter. The maximum stand of wild birds on farms would be only thrice as great, or 15 per hunter. The additional yield of wild-land birds might double this. Hence those who fear future overproduction may forget their worries. The problem is to get the crop grown. There is no bugaboo of too much.

Our farms as they now stand are operating at perhaps a tenth capacity. A tally of 600 farms made in the winter of 1932 showed only 1 out of 4 habitable for game. Half were devoid of both food and cover, a quarter had only the one or the other, and a quarter had some of both. But those which had both seldom had enough to realize the capacity of the land. Game cannot live in quarters provided only with beds, or only with dining rooms, or with neither. All animals, including ourselves, need both. When one or both are lacking, reproduction and survival decline. Population shrinks until it fits the habitable fraction of its environment. That fraction on Wisconsin farms is 10 per cent or less.

How to put food and cover on the other 90 per cent? This is the very heart of our problem. All the conservation laws and dollars and commissions and wardens and speeches in Christendom cannot put game, or any other wild life, on fields bare of food and cover in winter.

Many short-cuts to this end have been proposed. Most of them

are, I think, spurious. One faction would have the state cede private title to the game, and by giving the farmer a wide-open market for both shooting privileges and meat, make game so profitable that it could compete outright with other crops. But what would this game be? Mostly pheasants. What would become of rare or unprofitable species? They would likely disappear. With open markets for resident game, what would become of migratory? I will leave you to guess.

Nevertheless there is an intrinsic merit in the idea of creating an economic incentive for game cropping. The American Game Policy proposes to encourage the sale of shooting privileges, but not of meat. The state retains title, but the farmer is its custodian, and is encouraged to crop the resource, subject to control by the state. This, I think, is sound.

But there are serious obstacles to getting started. One of the most serious is the short seasons made necessary by the progressive failure of the public Santa Claus idea. Open seasons on upland species in the north central region averaged 60 days in 1905, 45 days in 1915, 29 days in 1925, and 14 days in 1934. The producing farmer cannot market his shooting in a week or two. Neither can the state relax its restrictions on unmanaged farms for the sake of encouraging the few managed ones. The way out seems to be a differential season, long for lands on which managed game crops can be shown, short for other lands.

The Wisconsin Shooting Preserve Law establishes such a differential. It is an opening wedge, so far applicable only to artificially raised pheasants. The state says: "For every 100 pheasants you turn out, we will let you shoot 75, and give you four months instead of four days to do it." We now have forty such preserves. There would be many more, but for the high cost of chicken-wire production. It costs \$1.50 to raise a chicken-wire pheasant, perhaps 15 cents to raise a wild one. The wild bird is superior in quality.

Why is the differential season limited to liberated pheasants? Because they can be counted out by the warden. Our wardens have

been too busy chasing poachers to learn how to census a wild game crop—a task often tedious and calling for skill, for favorable weather, and for dogs. Iowa, though, is doing it on quail. I predict the gradual spread of the differential season to all kinds of wild resident game. What it amounts to is that the state delegates its restrictive functions to the producing landowner, subject to cancellation for abuse. This is sound principle, and tends to relieve the wardens of the perfectly impossible job of policing game single-handed. Moreover, it opens to the farmer, or through him to his sportsman friends, a powerful incentive to *earn* additional shooting privileges by growing a crop capable of withstanding them. The old system, on the contrary, makes shooting easier to steal than to earn. It contains the seeds of its own death.

I would not, however, leave the impression that game laws or farmer-revenue are the only or even the principal means to wild life restoration. The problem is not so simple. An even more basic reason for the modern foodless, coverless, lifeless farm is the pioneer tradition that uncut or ungrazed brush, weeds, grass, or timber bespeak an incomplete victory over the wilderness, and that any vestige of them in gully, rockpile, bank, or fencerow brand the farmer as a sloven. It is an indisputable fact that the agricultural colleges have aided, abetted, and intensified this tradition, sometimes with sound scientific reason, but more often out of that same blind subservience to fashion which dictates the color of our hats, the height of our heels, or the length of our coattails.

I plead that the wild life cover, at least on waste corners and fencerows, now become an expression of localized scientific reasoning and the owner's personal taste, rather than a badge of compliance to social regimentation. I submit that the slick and clean countryside is neither more beautiful, nor—in the long run—more useful than that which retains at least some remnants of non-domesticated plant and animal life. The brushy fencerow and the wild-grown bank, the clean-boled woodlot and the undrained spot of marsh—I heartily agree that the presence of these things on the

farm portray the character of the owner, but in my view they portray him not as a sloven, but as one who, despite the stampede of his neighbors, has refused to trade his birthright as a husbandman of living things for the shoddy imitation of a factory.

It must be confessed, in all fairness, that our tax laws, and incidentally our highway engineers, have contributed their quota to the creation of the American steppe. The farmer who uses tillable or grazable land for conservation does so at his own cost, but the lumberman who sacrifices the immediate personal penny to the ultimate public good gets a handsome subsidy for public services performed. Is not a marsh, a prairie, a food patch, a grape tangle, a grove of veteran oaks, a patch of ladyslippers, or even a copse of flowering haws a public service in the same sense as a commercial forest? There must be some sound way in which the public that wants these things to exist can ease the economic pressure, which now tends to wipe them out of existence. The public is spending



millions to perpetuate such things in public parks and reservations, but what kind of "landscaping" is this? These things should not be crowded into distant reservations. They belong on farms, where they can be seen by everybody every day. The esthetic dietary implied in parks is too much like that of the starving prospector who ordered forty-dollars worth of ham and eggs. Strung out a bit now, they might do more good.

### Game Technology

We have in Wisconsin five species of farm game, four of wild-land game, half a dozen of fur-bearers, and a dozen of migratory birds; total about twenty-five species.

Most of these are as distinct in their cultural requirements as alfalfa is distinct from corn or oats. Each has its distinctive kinds of food and cover, in certain proportions, at various seasons. Each has its diseases and enemies. It takes a good research man four years to discover the rudiments of a technology for each. This adds up to a total liability of 100 man-years of research to get started in Wisconsin game cropping.

We have so far had about 10 man-years of research. Fortunately they have been effectively spent. We now know the rudiments about quail and prairie chickens. Michigan has done something on pheasants, Minnesota on ruffed grouse. Iowa has made a start on two ducks. We can borrow this information until we have better. But of deer, cottontail, all the fur-bearers, and most of the waterfowl, we know, biometrically speaking, nothing.

What little we do know has neatly upset many time-honored beliefs, among them the belief that one less hawk means several more game birds. I am beginning to believe that Errington's discoveries in predation, largely based on his Wisconsin quail data, are of general importance to science as well as to game management. He finds, in short, that predators trim down the quail population to the capacity of the food and cover, *but no further*, and that

this shrinkage *occurs anyhow*, regardless of whether predators are abundant or scarce, or of what kinds they are. In other words, the only effective predator control is food and cover improvement. "Vermin" baiting is, apparently, a needless waste. These indications, if substantiated, are a fundamental contribution, not only to conservation policy, but to ecological science.