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Removal of Brushy and Wooded Quail Habitat in Three Southern Iowa Counties in Recent Years

M. E. STEMPEL¹

Abstract. In southern Iowa there are still remnants of once extensive brushy upland game cover. Cost-share and privately financed brush removal programs, however, are further reducing the amount of remaining game cover. Three counties are considered here. Davis, Monroe and Wapello counties had some federally assisted clearing on 490 farms in the past 4 years. On 14 farms (1,820 acres) in Wapello County, since 1956, 82 acres of woody cover were removed by all methods. This included 25% of the choice quality upland game cover.

Iowa's quail range lies in southern Iowa. The best areas consist of brush and timber adjacent to grain fields; woody cover is rapidly being removed to increase tillable acres, pastures and for other reasons. Most cutting is done to increase income because expenses are high and crop prices are low; income can only be increased by boosting production. Further, 1968 was the seventh consecutive year of land value increase and the 1968 annual tax increase was about 10%.

Quail numbers will diminish eventually due to loss of cover. Examples of previous losses of this type are as follows: Pheasant numbers have declined because of lack of cover when winters were severe; turkeys disappeared when farming became too intensive; prairie chickens vanished when usable habitat decreased to less than one-third of their territory.

Quail need high quality cover as is shown in results of Baker (1940). Stempel (1960) in a report on censusing 40-acre fields indicated quail are most numerous in A-grade land with brushy cover near grain fields.

PROGRAMS FOR REMOVAL OF BRUSH AND TIMBER

Four agencies or units are concerned with removal of brush and timber: the Agricultural Stabilization Conservation Service (ASCS); the Soil Conservation Service (SCS); the Farm Home Administration; the fourth is farmers removing brush at their own expense.

The ASCS administers the Agricultural Conservation Practices (ACP) program. An important practice is grassland management (Practice B3). Pond and terrace building along with land shaping may be associated and all involve brush or tree removal. The agency approves plans for cost-share improvements.

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Farmers are encouraged to become cooperators with the SCS which is staffed with experienced field personnel.

FHA programs for grazing associations are limited to farmers with insufficient income. This includes low interest loans and long time financing. ASCS projects are set up to eradicate woody plants to make way for increased forage production.

At their own expense, farmers cut or "blade out" shrubs and trees; this is done to facilitate fence building, to level land and to increase tillable acres. Sometimes farmers remove brush to "improve" appearance. Such work cannot be cost-shared.

COVER REMOVED IN THREE-COUNTY AREA

Federal Programs. Cost-share land renovation comes under ACSC Practice B3 and is titled "Controlling Competitive Shrubs." Approved work must be done by bulldozers. Maximum federal payment is \$12 per acre. Land can qualify whether owned by an individual, a partnership or association. Three counties, Davis, Monroe and Wapello, are considered here. Results for the years 1965 through 1968 show 6,334 acres cleared on 490 farms for an average of 1,584 acres per year (Table 1).

An example of how the program works on a smaller scale is the case of Davis County where in 1968 there were 1212 farms. SCS county personnel estimated the amount of renovation done recently. This was done in that manner because most records are sent to

Table 1

Land Cleared Under ASCS Cost-share Programs in Three Southern Iowa Counties, 1965-66-67-68

Year	Number of Farms Involved			Total
	Davis Co.	Monroe Co.	Wapello Co.	
1968	22	51	42	115
1967	20	67	40	127
1966	0	59	38	97
1965	0	112	39	151
Totals	42	289	159	490

Year	Number of Acres Cleared			Total
	Davis Co.	Monroe Co.	Wapello Co.	
1968	199	683	522	1,404
1967	173	1,102	544	1,819
1966	0	850	326	1,176
1965	0	1,597	338	1,935
Totals	372	4,232	1,730	6,334

Des Moines where they are not readily available at local offices. About 500 farms had some land clearing in recent years, with the peak year of clearing occurring in about 1957.

At the Farmer's Expense. Some clearing work is due solely to farmer effort. The most wide-spread and noticeable land clearing by farmers at their own expense has occurred in association with intensive pasturing by cattle (1966 figures — 25,000 head in Wapello County). Woody plant removal is accelerated by death of most elm trees. This encourages cutting of any nearby brush. Woody vegetation is also being removed as a result of land leveling, sloping and contouring to prepare land for improved pastures. In addition, there is removal as a result of leveling or sloping at sites of old homesteads, schools, churches, roads and railways. Both pond and building construction result in further cover loss.

Fourteen Farms in Wapello County. A description of practices on 14 Wapello County farms provides evidence on habitat loss. Quail and other small game are counted each season on the farms which are a part of a research area.

Over the past 12 years, considerable clearing was done entirely at farmer expense. About 50% of all clearing was cost-shared. Estimates of size of sites are used since most are irregular in outline and thus difficult to measure; a few areas were measured by pacing ("stepping off") distances. Small patches along ditches, fences and near ponds were removed. Large pastures were cleared of scattered scrub trees and bushes (Table 2).

Table 2

Amount of Brush Clearing, 1956 to 1968, on 14 Farms in Wapello County

Acreage of 14 Farms	All Types of Woody Cover			
	Acreage of Woody Cover in 1968	Acreage Cleared in 12 years	Acreage Cleared in 1968	Percent Cleared in 12 years
1,820	203	82	4	29
	Good Grade Woody Upland Cover			
1,820	101	33.5	3	25

Total acreage of the farms studied is 1,820 acres. In 12 years previous to 1969, 29% of all types of brushy habitat was removed; 203 acres remained. The best type of quail habitat is the A-grade brushy environment near grain fields. Twenty-five percent of this has been eradicated, leaving 101 acres.

DISCUSSION

The removal of good quality quail habitat will continue as farms grow larger and farming efficiency increases.

Increase in farm size is national in trend. With increasing operating expense, increased intensity of use will follow. For example, in Wapello County, in quail range, 522 acres were cleared of brush in 1968. In one area near Ottumwa, on 14 farms, 25% of the A-grade quail habitat has been removed since 1956. It is thus assumed that throughout the quail area of Iowa, about the same percentage of quail environment was removed. This opinion is bolstered by noting the amount of "renovation" as one drives along roadways.

Quail numbers are highest in suitable woody habitat. In such an area, in 16 southern Iowa counties in 1968, there was an average of 3.7 calling bobwhites per stop on quail census routes of 10 listening stops each. In the eastern part of the state, it was 1.8 and in north-central Iowa 0.01. Southern Iowa has the best quail territory, the east has less, and the north central has a minimum. Even in the same latitude in the east and north central areas, the latter has the lowest counts. Thus, where there is little cover, quail are few.

In another census, of amount of occupancy of 40-acre fields, in A-grade cover (Fig. 1) 63% of the 40's were occupied after the drastic 1960 winter; of C-grade (Fig. 2) or poor areas only 5% were occupied.

Quail research work on 18 farms in the spring of 1969 in Wapello County showed populations as follows: 13 of 14 farms with A-grade habitat were occupied by quail; whereas only 1 of 4 with C-grade environment was used.

In most unfavorable winters, quail do well in A-grade or well-established woody coverts; in less severe winters quail still prefer A-grade range. Thus it is concluded that while quail numbers remain high through several years, as recently they have in spite of removal of 25% of woody plants, the next harsh winter can be expected to deplete populations existing in C-grade environment. Populations will remain highest in the well-established woody habitat.

Habitat conditions certainly deteriorated when over 6,000 acres of woody plants were removed through federally assisted programs. Some ASCS programs, however, do provide for cover restoration. These are numbered A7, A8, C2 and G1; in sequence they are titled, Trees for Forestry; Planting Trees and Shrubs; Cover on Dams, and Other Areas. Ten acres of woody plants were established in 1968 through such efforts. Another restoration practice is termed ACP-A2 (Long Term Seeding); this was carried out



Figure 1. A-grade cover has food and cover adjoining. Here, food is waste corn in harvested field.



Figure 2. C-grade territory does not have food and cover adjoining. This grassy field offers neither.

on 2,340 acres in 1968. This, however, was for hay, pasture or erosion prevention and does not supply the needed woody plants for long-time quail survival.

In summary, quail flourish for long periods where suitable woody habitat exists. Winters deplete populations least in the A-grade or good cover consisting of brushy habitat near grain fields. While ACSC projects are primarily for clearing land for improved forage production, they may also provide for some habitat improvements. The latter type of programs have received little use to date, however.

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