

Distribution and Relative Abundance of Ruffed Grouse (*Bonasa umbellus*) in Ohio in 1998¹

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ABSTRACT. This paper updates the distribution and relative abundance of ruffed grouse (*Bonasa umbellus*) in Ohio. In 1998, ruffed grouse were reported in 40 counties covering approximately 31,450 km² in glaciated northeastern and unglaciated eastern and southeastern Ohio. The relative abundance of ruffed grouse was rated as "best-good" in about 64% of this range and as "fair-marginal" in 34%. The occupied range of ruffed grouse in Ohio decreased 24% between 1982 and 1998 and the amount of that range with a relative abundance rating of "best-good" declined from 74 to 64%.

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INTRODUCTION

Ruffed grouse occupy the earliest stages of forest succession (i.e., forests <20 years old). Prior to settlement, ruffed grouse probably occurred throughout Ohio, but populations were relatively sparse in the unbroken, closed-canopy, climax forest (Davis 1969). With settlement in the early 1800s, grouse populations apparently exploded in response to the opening up of the climax forest. Between 1814 and 1860, almost half of Ohio's virgin forest had been removed (Laub and others 1979). Grouse disappeared from western Ohio by about 1860, from central Ohio around 1900, and from north-central and north-western Ohio around 1908 (Davis 1969). Grouse were never eliminated from Ohio's eastern Allegheny Plateau region, although their status was listed as uncommon to rare during the early 1900s (Davis 1969).

From 1900 to 1940, Ohio's forest land base continued to decline, but at a much slower rate. During the early 1900s, abandonment of farms in the Allegheny Plateau region resulted in an increase in areas reverting to brush and forest. Between 1952 and 1991, forested area in Ohio increased 36%, from 2.2 to 3.0 million ha (Griffith and others 1993).

The first map showing the modern distribution of ruffed grouse in Ohio was provided by Chapman and others (1948). Since then, Davis (1969) and Stoll and McClain (1986) have updated grouse distribution and provided some idea of relative abundance. This paper reports on the distribution and relative abundance of ruffed grouse in Ohio in 1998.

MATERIALS AND METHODS

We used the same procedures as Davis (1969) and Stoll and McClain (1986) to construct a map showing the present distribution and relative abundance of ruffed grouse in Ohio. Wildlife officers (Ohio Department of Natural Resources, Division of Wildlife) in all 88 counties were asked to identify the occupied range of ruffed grouse in their assigned county during spring 1998. Criteria used to determine occupied range included

information on grouse heard and seen during roadside drumming count surveys conducted annually in mid-April, observations of adults and young during the summer months, hunter interviews, and reliable reports from interested publics. The occupied range was delineated on county maps. Square km of occupied range were then determined using a compensating polar planimeter.

Wildlife officers rated each township within their county according to the relative abundance of ruffed grouse. We used 5 ratings: 1) Best—most sections in townships had good grouse habitat, some had excellent habitat and hunting, grouse common; 2) Good—most sections had grouse, habitat quality good to fair, grouse fairly common; 3) Fair—grouse habitat fragmented, grouse scattered with huntable populations in some sections, others devoid of grouse, grouse uncommon; 4) Marginal—some sections with habitat that could support birds, little or no hunting, grouse unusual to rare; and 5) Absent—grouse absent. On the range map (Fig. 1), these 5 categories were combined into 3: best-good, fair-marginal, and absent.

RESULTS

In 1998, ruffed grouse were reported in 40 of the 88 counties in Ohio (Fig. 1). The relative abundance of ruffed grouse was rated only as fair-marginal in 10 of these counties (Clermont, Fairfield, Geauga, Highland, Holmes, Knox, Lake, Licking, Portage, and Richland). In the remaining counties, relative abundance was rated as best-good in >1 township. About 31,450 km² of the 106,553 km² land area of Ohio can be considered occupied grouse range. The relative abundance of ruffed grouse was rated as best-good in about 64% of this occupied range.

DISCUSSION

The occupied ruffed grouse range reported in 1982 (41,561 km² in 44 counties; Stoll and McClain 1986) was considered relatively unchanged from that reported in 1969 (Davis 1969). The only apparent change in grouse distribution reported in 1982 compared to earlier reports was shrinkage of the northeastern range resulting from urban encroachment in eastern Cuyahoga and

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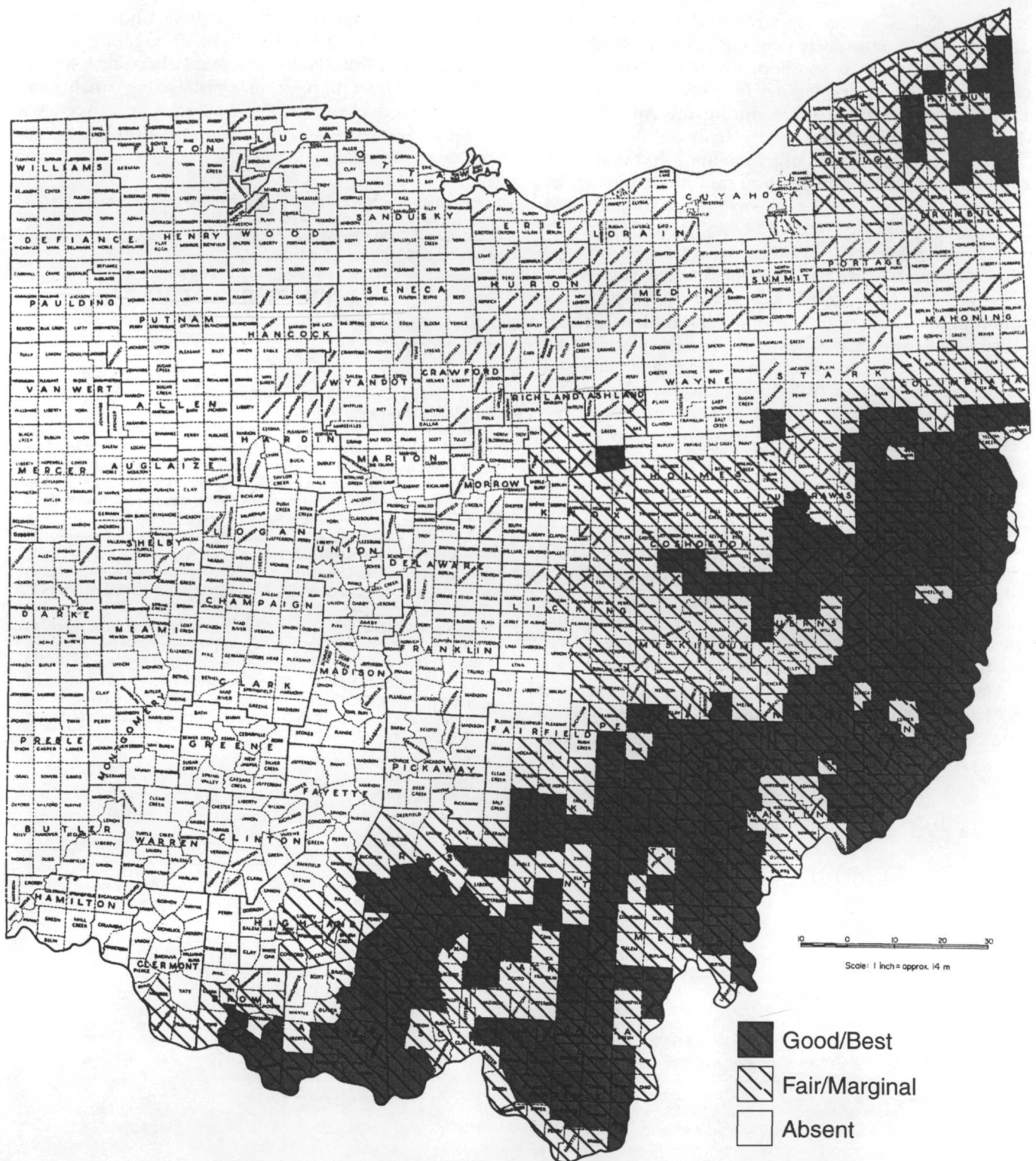


FIGURE 1. Distribution and relative abundance of ruffed grouse in Ohio, 1998.

southern Trumbull counties. The shrinkage of the north-eastern range continued between 1982 and 1998 as grouse disappeared from Cuyahoga, Medina, Summit, and Wayne counties and their relative abundance in Geauga and Lake counties was downgraded from best-good to fair-marginal.

During the Ohio Breeding Bird Atlas Project (1982-

1987), ruffed grouse were recorded in 46 eastern counties (Peterjohn and Rice 1991). The Atlas Project cited reports of ruffed grouse from 6 counties where wildlife officers considered them absent in 1998 (Cuyahoga, Mahoning, Medina, Pickaway, Summit, and Wayne). In 1982, Stoll and McClain (1986) recorded grouse as absent in Mahoning and Pickaway counties and fair-marginal in relative

abundance in Cuyahoga, Medina, Summit, and Wayne counties. Ruffed grouse apparently disappeared from the latter 4 counties between 1987 and 1998. Ruffed grouse abundance in southern Clermont County was considered to be fair-marginal in 1998; however, they were not encountered there during the Atlas Project (Peterjohn and Rice 1991).

Ruffed grouse require predominantly forested landscapes with patches of open tree canopy dominated by a dense growth of shrubs and small trees (Gullion 1970; Thompson and others 1987). In Ohio, grouse are absent from western farmland counties where forest cover is <20%, uncommon to rare in counties that border the Allegheny Plateau where forest cover is 20-40%, and common to abundant in the unglaciated Allegheny Plateau and extreme northeastern counties where forest cover is >50%. The increase in relative abundance of ruffed grouse between 1948 (Chapman and others 1948) and 1969 (Davis 1969) and the similar abundance between 1969 and 1982 (Stoll and McClain 1986) coincided with trends in commercial forest land area in the Allegheny Plateau. This region contains about 70% of the commercial forest land in Ohio (Dennis 1983). From 1948 to 1968, commercial forest land in the Allegheny Plateau increased almost 33%, whereas between 1969 and 1982, the increase was only 2% (Dennis 1983).

Between 1979 and 1991, acreage in the brushy seedling-sapling stage of forest succession (i.e., ruffed grouse habitat) decreased 30%, from 1.0 to 0.7 million ha, whereas acreage in sawtimber increased >33% from 1.2 to 1.6 million ha (Griffith and others 1993). Stoll and McClain (1986) predicted gradual declines in grouse abundance as the youthful forest successional stage

matured. The occupied range of ruffed grouse in Ohio decreased 24% between 1982 and 1998, and the amount of that range with a relative abundance rating of best-good declined from 74 to 64%. We believe that without increased timber harvesting emphasizing small (<8.0 ha), scattered clearcuts, Ohio's forest resources will continue to mature and ruffed grouse distribution and abundance will continue to decrease.

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