

The Historic and Present Distribution of Ruffed Grouse in Indiana

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Introduction

The ruffed grouse (*Bonasa umbellus* subsp.) is the most widely distributed gamebird in North America with a range extending from Georgia to Alaska (Aldrich and Duvall 1955). Ruffed grouse occur in a variety of habitats but are most abundant in early successional stages of hardwood forests. Its distribution in Indiana has been influenced by past and present land use, especially those affecting forested areas. This paper describes the past and present distribution of ruffed grouse in Indiana. Much of the work reported herein has been supported by funds under Federal Aid in Fish and Wildlife Restoration Act, Wildlife Research Project W-26-R, and Forest Wildlife Project W-27-D Indiana. Jennifer M. Eckensberger and Robert M. Platte are thanked for assistance in preparing this manuscript. John S. Castrale and Robert D. Feldt are thanked for their editorial comments.

Historic Distribution

Indiana was historically almost 90% forested with the tall grass prairie extending into several northwestern counties (Petty and Jackson 1966). Ruffed grouse reportedly inhabited all forested areas of the state (Barnes 1944) but historic records also included counties in the prairie region (Mumford 1957). Although historic records exist for only 58 counties, ruffed grouse probably occurred in all 92 counties of the state. Early records indicated two subspecies occurred, *B.u. mediana* in the northwestern third of the state and *B.u. monticola* in the lower two-thirds (Aldrich 1963).

Populations of ruffed grouse initially benefited from early settlement because scattered openings were created throughout the hardwood forest. Population densities of ruffed grouse in northern Indiana were considered similar to those of northern Ohio, Michigan, and Wisconsin (L.H. Haymond, in Butler 1897). As timberlands were over exploited and agricultural land use prevailed, grouse populations declined. Ruffed grouse occupied 58 counties by 1856 and were found in only 20 counties by 1897 (Butler 1897). In 1931, ruffed grouse occurred in only 12 counties (Leopold 1931).

During the 1930s and 1940s ruffed grouse were disappearing from the relatively flat and more fertile lands of northern Indiana because of increasing human impact on the land. Grouse populations in southern Indiana, however expanded during these "Great Depression" years as the hilly, nutrient-poor farmland was abandoned and allowed to revert to old field and early seral stages of forest succession. Ruffed grouse were given extra security as natural resource agencies began to purchase abandoned farmland for reforestation.

By the 1950s grouse had disappeared from northern Indiana but populations in southcentral Indiana had expanded to 18 counties with major concentrations occurring on publicly owned forests (Figure 1). Grouse densities were estimated to be 0.4-4.4 birds/40 ha (100 acres) (Mumford 1957).

As grouse began to repopulate their former range, restocking was initiated to accelerate recovery. From 1952-60, 180 wild-trapped birds purchased from the Sandhill Game Farm in Wisconsin were released in southcentral Indiana. These birds represented



FIGURE 1. *Distribution of ruffed grouse in 1951 (Mumford 1957).*

a different subspecies (*B.u. mediana*) than was native to the area (Aldrich 1963). This difference may have contributed to the limited success of these releases (Hamilton 1962a).

By 1961, ruffed grouse populations were again declining and their distribution was restricted to 14 counties (Figure 2) (Hamilton 1962b). However, isolated concen-



FIGURE 2. *Distribution of ruffed grouse in 1961 (Hamilton 1962b).*

trations of grouse were abundant enough to allow trapping and transplanting to other areas within the state. Between 1961 and 1982, 1,044 ruffed grouse were restocked at 25 release sites in 21 counties (Figure 3). Included were 126 grouse trapped in southern Michigan and released in northern Indiana. Beginning in 1965, grouse hunting was

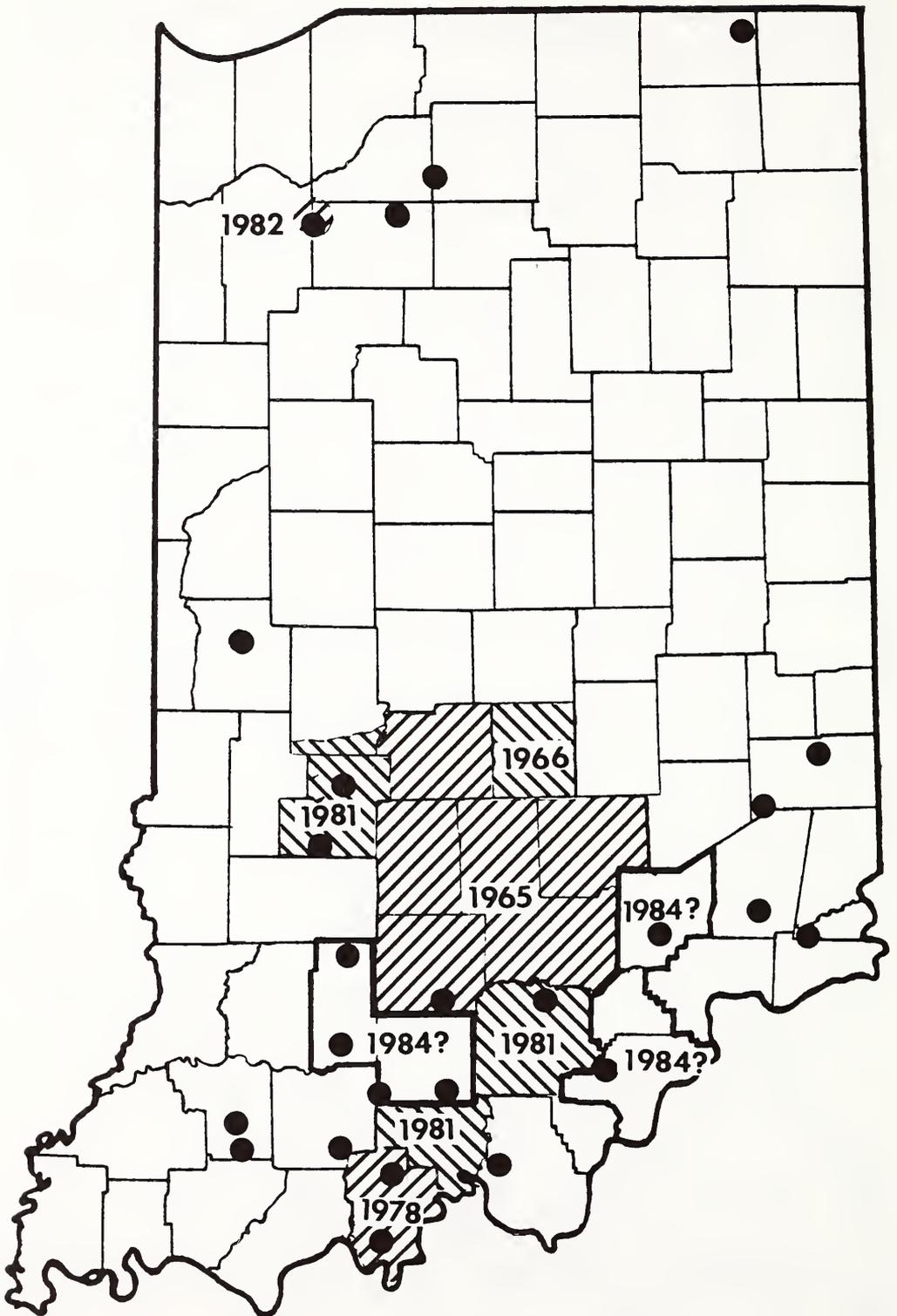


FIGURE 3. *Ruffed grouse* release sites (●) from 1961 to 1982, and chronology of areas open to hunting since 1965 (slashed)

legalized with a daily bag limit of 2 birds. Reports from 18 hunting seasons, indicate hunters averaged nearly 2 man-hours/bird flushed and 13 man-hours/bird bagged. Spring density estimates, based primarily on counts of drumming males (Gullion 1966), average about 4 birds/40 ha in main portions of the current hunting range.

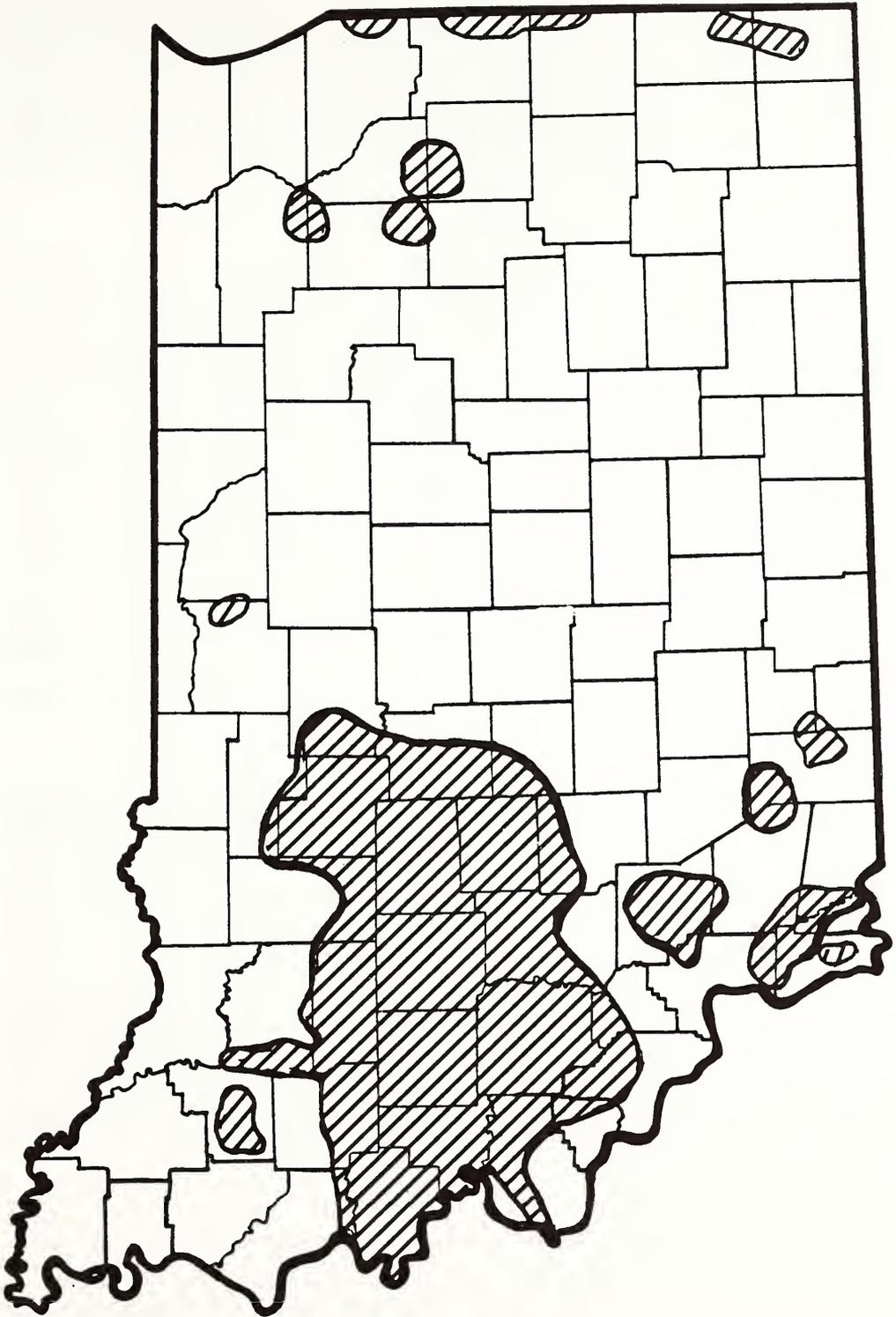


FIGURE 4. *Distribution of ruffed grouse in 1983.*

Present Distribution

In 1983, questionnaires sent to 168 Indiana Department of Natural Resources field personnel were examined to determine the current range of ruffed grouse. Respondents reported grouse observations made either personally or indirectly through

reliable public contacts within the last 5 years. Unique observations which may have represented grouse dispersing considerable distances in the fall (Godfrey and Marshall 1969) rather than actual populations were not included in mapping current occupied range. The present distribution includes 41 counties (Figure 4) and represents the largest distribution reported since 1856. The increased distribution is the result of restoration efforts and natural range expansion of grouse into areas of suitable habitat made possible by changes to more compatible land use.

Conclusions

The historic distribution of ruffed grouse has fluctuated with changes in land use, especially those affecting forest resources. The present distribution reflects the success of ruffed grouse restoration effort and natural range expansion into areas of suitable habitat. The future distribution of ruffed grouse in Indiana will depend, as it always has, on prevailing land use practices affecting habitats used by ruffed grouse.

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