

Ruffed Grouse Comeback At Buffalo National Forest

By Steve W. Chaney

The Arkansas Ozarks that surround Buffalo National River once echoed each spring with the drumming sound that is part of the mating ritual of the ruffed grouse (*Bonasa Umbellus*). Occurrence of ruffed grouse in Arkansas was noted by the earliest travelers of the region, mainly along streams and river bottoms which created edges or ecotones between disturbed areas and the climax forests.

The land-use practices of the earliest settlers of the Ozarks — clearing followed by desertion of small patches of land — created ideal habitat for the ruffed grouse, which prefers a habitat niche made up of forest species in the 5 to 40 year successional stage. During this time period, the species flourished in the Ozarks.

Around the turn of the century, the area's human population had substantially increased, and land-use practices changed drastically. Hills were denuded of their timber, cattle and hogs were stocked far beyond the capacity of the land, and extensive burning was done to remove logging debris and to try to improve grazing and eliminate vermin. This sealed the fate of the ruffed grouse in the Arkansas Ozarks, and the last drummer drummed around the turn of the century.

Trends began to reverse around the period of World War I. As rural populations migrated to urban areas and as large tracts of land were converted to federal ownership, the abused Ozark lands started to revert to habitat once again favorable to the grouse. Wildlife biologists recognizing this, attempted restoration projects in Missouri (where a small remnant population remained) and in Arkansas in the 1940's and 1950's. These attempts were disappointing. The pen-reared grouse obtained from Sand Hill Game Farm in Wisconsin lingered for several years but demonstrated poor reproductive and survival capabilities. The last birds in Arkansas from these stockings were observed in 1959.

The curtain for Ozarks grouse had not completely closed, however. Persistent biologists, convinced that habitat suitability was not the limiting factor of a reintroduction program, further researched the ruffed grouse's needs and habits and refined trapping techniques. The effort eventually paid off, and an approach of using wild grouse for restocking proved successful for the Missouri Department of Conservation. Ruffed grouse populations in Missouri have multiplied from these reintroductions to the point that in some areas a limited hunting season may be allowed in 1983. This success, along with that of other states, rekindled interest in



Keith Whisenant introduces a Shenandoah grouse to his new Arkansas home.

restoring ruffed grouse in Arkansas.

Although the state of Arkansas attempted in 1981 to negotiate agreements with other states to barter turkey, fish or similar wildlife commodities for grouse, the states either were not interested, were already obligated to other states for grouse trades, or felt that wild trapping ruffed grouse in quantity was not feasible in their state. These circumstances led to a plan formulated by National Park Service staff at Buffalo National River and funded by the Southwest Region Office of Natural Resources to wild-trap ruffed grouse from another NPS area and reintroduce them at Buffalo River.

The program was started rolling by initiating contacts with other NPS areas that might be potential grouse donors. Both state and federal wildlife biologists agreed that grouse from areas of similar habitat and climatological conditions would adjust and fare better to relocation



The author picks up a shipment of eight ruffed grouse delivered by Arkansas Game and Fish Commission aircraft. The grouse were transported in containers designed for shipment of live poultry.

Ruffed Grouse Comeback - Continued

than those races or subspecies that might have developed some sort of interrelationship with specific foods, habitats or physical conditions that might not be present in the Ozarks. These conditions limited the search to the southern edge of the ruffed grouse's range. At the same time, the grouse biologist for the Missouri Department of Conservation was invited to Buffalo National River to help identify and prioritize potential stocking sites.

In August, 1981, an agreement was made between Buffalo National River and Cumberland Gap National Historic Park to allow Buffalo National River staff, with the support of Arkansas Game and Fish Commission personnel, to trap wild ruffed grouse from the rugged backcountry of the historic area located on the boundary of Virginia, Kentucky and Tennessee. Outstanding cooperation, without which the entire program would have failed, was exhibited among numerous areas and agencies throughout the entire operation that followed. Thirty specialized grouse traps constructed of net and wire were loaned to Buffalo National River by the Missouri Department of Conservation. Arrangements were made with the Indiana Department of Natural Resources, which was engaged in a grouse trade agreement with the state of Missouri, to allow Buffalo National River and Arkansas Game and Fish Commission staff to accompany the Department's grouse trappers to learn specific trapping, holding and shipping procedures.

After this on-the-job training was completed and formal clearance was received from the Virginia Department of Game and Inland Fisheries, the trappers traveled to Cumberland Gap and began organizing a trapping program. With the assistance of Cumberland Gap personnel, potential trapping sites were identified and holding and shipping logistics were worked out.

The first four days of trapping were damp, overcast and rainy and proved totally unsuccessful. Morale and confidence in newly learned trapping skills began to wane, and the discouraging accounts and pessimistic predictions of researchers and state agencies that had been consulted regarding the potential for trapping ruffed grouse in the Appalachian Mountains were recalled all too clearly. On the fifth day of trapping the weather turned clear and sunny, grouse activity increased, and a large male ruffed grouse, destined to be the first of his species to be wild-trapped and relocated to Arkansas, was captured. This was the beginning of a trapping program that resulted in the relocation of 50 grouse to Buffalo National River.

After capture, each bird was sexed, aged, banded and weighed, then held in a specially constructed pen for one to four days before being shipped via commercial airlines, Arkansas Game and Fish Commission aircraft and four-wheel drive vehi-

cle to the release site. An optimum goal of 80 to 100 birds per release site had been set during the formulation of the reintroduction project based upon research from the successful projects of other states.



Trapper Mike Widner watches as Charles Chadwell of Cumberland Gap removes a grouse from the capture pen. Netting and leaves used on top of the trap serve to minimize avian predation.

In order to attain this goal, another trapping program was conducted in 1982 in the Virginia mountains of Shenandoah NP. With outstanding cooperation and help from the park's staff and Arkansas Game and Fish Commission personnel, Buffalo National River resource management technician Mike Widner coordinated the trapping and relocation of another 43 birds resulting in a total of 93 grouse released at the Buffalo National River site.

Although the trapping programs were successful, the agencies have been even more pleased with the apparent survivorship and adaptive abilities of the birds since their release. Survival, dispersal and

reproduction have been closely monitored by way of snow track and flushing census spring drumming counts and brood surveys. Initial indications show survival rates better than expected, substantial reproduction, and dispersal at a rate slow enough not to cause breeding problems through species' density levels. Additional intensive studies already are underway to attempt to more closely quantify reproductive rates. Habitat usage and dispersal research using telemetry equipment is also planned.

Pending a firmer verification of success at this first reintroduction site, an expanded program is in the planning to carry out such projects at similar habitat sites at Buffalo National River. The Arkansas Game and Fish Commission also has made progress, and in 1982 began a reintroduction program of its own in other parts of the Arkansas Ozarks.

All this is extremely good news for the grouse, the National Park Service, the people of the Ozarks, and the entire state of Arkansas. We at Buffalo National River are optimistic that one day soon we may be able to revise our park brochure, telling visitors that the drumming of "ole ruffie" is once again a common sound in the hills 'n hollers of the Arkansas Ozarks.

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Capture Success / Moon Phase Comparison

New Moon Periods

	Days	Captures
September 27 - October 1	5	0
October 24 - October 31	8	5
Total	13	5
Average	.38 Captures / Day	

First Quarter Periods

	Days	Captures
October 2 - October 9	8	8
November 1 - November 7	7	10
Total	15	18
Average	1.2 Captures / Day	

Full Moon Periods

	Days	Captures
October 10 - October 16	7	8
November 8 - November 18	7	7
Total	14	15
Average	1.07 Captures / Day	

Last Quarter Periods

	Days	Captures
October 17 - October 23	7	15
November 15 - November 18	4	3
Total	11	18
Average	1.64 Captures / Day	

Higher trapping success level during one quarter to full moon phases seemed to indicate increased activity levels during these periods.