

History of Sharp-tailed Grouse (*Tympanuchus phasianellus*) at Seney National Wildlife Refuge and Surrounding Areas, Schoolcraft County, Michigan

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A posthumous contribution, submitted by:

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Elizabeth B. Losey served as the first female Wildlife Biologist for the U. S. Fish and Wildlife Service. She was a dedicated and well-loved addition to Seney National Wildlife Refuge for much of her adult life, authoring a book dedicated solely to the history of the Refuge and contributing significantly to a variety of research topics. Her legacy lives on in the many memories of those whose lives she touched and in her many endeavors that advocate so clearly for the protection and conservation of the natural world. This manuscript was composed by Mrs. Losey prior to her death in 2005 at 92 years young and represents one of the last projects she conducted on the Refuge. Only minor edits have been made to prepare the document for publication and to clarify points—whenever possible her words have been preserved in her own voice.

ABSTRACT

*The Sharp-tailed Grouse (*Tympanuchus phasianellus*) is a bird species of early successional forest-shrubland-grassland habitats throughout the northern portions of the Upper Great Lakes region. In Michigan, the earliest record of Sharp-tailed Grouse was in 1904 from Isle Royale. Over the next 40 years Sharp-tailed Grouse populations increased in the*

Upper Peninsula as openland habitat increased in extent and area following the Great Cutover. This paper compiles Annual Narrative Reports from Seney National Wildlife Refuge and the author's personal observations of Sharp-tailed Grouse in and around Schoolcraft County, Michigan. The observed rise and fall of the Sharp-tailed Grouse population is placed in historical context and linked with the amount of open land in the area and past

habitat management actions. Appropriate habitat management on both state and federal lands is called for if Sharp-tailed Grouse are to be maintained in the future in and around Seney National Wildlife Refuge.

INTRODUCTION

The Sharp-tailed Grouse (*Tympanuchus phasianellus*, hereafter referred to as sharptail) is a species that occupies a quite limited niche in the early stages of natural vegetative succession. Sharptails require a relatively large open expanse of land with a minimum of scattered shrubs and trees. Unless interrupted by mowing, cutting, and/or prescribed burning, brush and trees continuing the next stages in natural secondary succession soon encroach upon open areas in Michigan, eventually closing them in and causing birds to abandon an area. In the words of Wallace Grange (1949), "Sharptail abundance must occur, according to plant succession law, also in a brief interval of forest succession. Only where recurring fire [passes] . . . or where the forest succession is otherwise held back, can sharptail be abundant. There can be no successful sharptail management in strictly agricultural territory devoid of substantial brushlands."

The presence of sharptail in abundance in the Seney-Bullock Ranch area of Michigan's Upper Peninsula during the late 1940s and early 1950s, while of a relatively short duration, was of great importance to those of us fortunate enough to witness it. An account of this phenomenon may be of interest to those working on the conservation of this species. This paper is,

therefore, a brief account of the rise and decline of the sharptail population in the Seney—Bullock Ranch area from 1946 until the present.

HISTORICAL BACKGROUND

The earliest known records of sharptail occurring in the Upper Peninsula date to 1904 when the bird was found to be, "resident and breeding in some numbers" on Isle Royale (Barrows 1912). Ammann (1957) states that, "It is possible that sharptails were always occasional visitors to the Upper Peninsula, and they may have nested there even in the days of early settlement." He adds, "It may be assumed that long before the arrival of white man there were burns and marshy openings in the forest capable of supporting a limited number of the birds."

According to Loope (1991), before settlement by Europeans, "The pine dominated patches of very well drained soil in the Upper Peninsula exhibited a fire frequency (often induced by native peoples) as high as 1 every 21.8 years in some sites in the region." Niemi and Probst (1990) wrote that, "these fires created a mix of burned and unburned patches of habitat depending on local fire intensity and weather patterns. The result was the maintenance of early successional habitat likely inhabited by sharptail and other upland biota." However, the rise in numbers of sharptail in the Upper Peninsula was undoubtedly accelerated by the effects of intensive logging of the area's forests in the late 19th and early 20th centuries. This widespread activity produced a landscape of large open-

ings, favorable for migration of sharptail from Wisconsin into the western part of the Upper Peninsula. As Ammann (1957) states, "Large portions of Michigan were originally covered with relatively pure stands of white, red, or jack pine. Repeated forest fires in these lands during the pine logging era created extensive open areas throughout the northern part of the state, many of which have persisted until the present day." Also, the numerous fires that raged across the Upper Peninsula between 1920 and 1927 resulted in the creation of many openings in the cut-over areas. These large and numerous fire-created openings were an added impetus for the eastward spread of sharptail. By 1942 they were distributed across the entire Upper Peninsula (Ammann 1957).

STUDY AREA

The focus of this study is the Seney-Bullock Ranch area of Schoolcraft County. This was, in fact, once the heart of sharptail country for the entire state of Michigan (Ammann 1957). At present the greatest numbers of birds are likely to be found further east in the Upper Peninsula. However, birds are still found in all counties of the eastern Upper Peninsula, i.e. Alger, Luce, Chippewa, Mackinac, and Schoolcraft Counties (G. Corace, pers. comm.).

Originally the area around Seney was part of the "Great Manistique Swamp." In 1908 the Western Land Surety Company acquired this area as an investment. In order to obtain land suitable for agricultural purposes an extensive series of drainage ditches

was dug to lower the water table. The resulting drained area is characterized by extensive open grassland interspersed with sandy knolls and pine-covered ridges (Fig. 1). A number of semi-wet sedge marshes are also present. The dominant soil is drained hydric and consists of a layer of dried peat over sand. In some areas, regeneration of trees is retarded.

To the north of Highway M-28 just west of the small village of Seney is the Bullock Ranch. This ranch occupies approximately 8000 acres located in 15 sections in Schoolcraft County. Originally owned by Henry Bullock Tractor, this ranch was once one of the largest in the Midwest. From 1916 to 1933 cattle, sheep, and hogs as well as crops of rye, oats, and wheat were grown on this land. When Bullock died in 1933, his tractor company failed and the Great Depression depreciated the value of his ranch land so drastically that most of his holdings reverted to the state of Michigan for non-payment of taxes (Carter 2004). The Bullock Ranch also includes a relatively large parcel of land south of M-28 located between the Clark and Holland Ditches and extending to the northern boundary of Seney National Wildlife Refuge. This area, too, is state-owned. After the ranch reverted to the state in 1933 and all farming activities ceased, the ranch land quickly reverted to patches of grassland, sandy knolls, and scattered pines and aspen. Buildings were either torn down or fell down and soon all traces of man's occupancy disappeared.

METHODS

In order to follow fluctuations in



Figure 1. Sharp-tailed Grouse lek at Diversion Farm, Seney National Wildlife Refuge (3 October 2002 by Elizabeth B. Losey). Dusting areas are located in the foreground and the main hill from which birds display is in the background.

the sharptail population in the Seney-Bullock Ranch area, Seney National Wildlife Refuge's Annual Narrative Reports were examined. These reports and the author's personal observations were the source for most of the information in this report. These Annual Narrative Reports contain various sorts of information regarding sharptail—especially bird count numbers, number of leks used, number of birds on each lek, and the location and establishment of new leks. However, because of so much inconsistency in the acquisition of these data, they must be viewed with considerable caution. While estimates of population numbers are based largely on counts made of the birds on leks, there were many years in the overall period from 1949 to 2004 when lek checks were either not made at all or

at very infrequent intervals. Also the condition of the weather when the leks were checked, the ability of the observer, and the number of times each lek was observed influenced the reliability of the results. Because of this, it must be emphasized that the population conclusions are suggestive of general trends only.

RESULTS

Sharptail were first mentioned in the Refuge's 1939 Annual Narrative Report. It noted that sharptail were, "becoming quite common along the western boundary of Schoolcraft County (i.e. close to the western boundary of the Refuge)." The observation was also made that during those early years eastward movement

of the birds was estimated at 20 miles (32 km) per year. Overall, within the Refuge sharptail were still rated as “uncommon” with a few reported in the northwest part of the Refuge (Annual Narrative Report 1940). However, by 1941 the Refuge population of approximately 350 sharptail appeared to be increasing in spite of substantial loss from hunting (Annual Narrative Report 1941). By 1942, sharptail were more abundant than Greater Prairie-Chicken (*T. cupido*) for the first time on record (Annual Narrative Report 1942).

During the 1940s and 1950s the number of sharptail increased dramatically. By 1946 they had replaced the Greater Prairie-Chicken as the primary game bird in the Seney area (Annual Narrative Report 1946). It was during this time that a Refuge employee wrote in the 1949 Annual Narrative Report: “Parts of the Refuge are literally swarming with sharptail, especially the country around the Walsh Ditch.” Indeed, during this period—1948 through early 1952—the Michigan Department of Natural Resources considered the Seney area to have the highest concentration of sharptail in the entire state. Ammann (1957) commented that, “It is probably the state’s most heavily hunted sharptail area.”

Many of the old-timers still living in the small Upper Peninsula village of Seney remember the good old days of the mid-1940s and mid-1950s as the boom years of sharptail abundance. Each fall bird season was a time of great excitement as men—and even a few women—poured into the small villages of Seney and nearby Germfask. Bars, restaurants, the one sporting goods store, and gas stations were crowded. Business was brisk.

Opening morning of bird season, cars from all over the Midwest were parked on both sides of Highway M-28 about 4 miles (6.4 km) west of Seney. The fame of this “hot spot” for sharptail hunting had spread rapidly. Of the 230 cars tallied during the first 3 days of the 1950 season, 76% were from the Lower Peninsula of Michigan and 8% were from out-of-state (MDNR unpublished data). A small army of hunters lined up along the highway waiting for legal opening time so they could begin their invasion into the open grasslands that stretched before them. Sometimes a dense blanket of low-lying fog covered the entire area, forcing the impatient hunters and their equally impatient dogs to wait until the fog and mist lifted sufficiently to permit the hunters to spread out and begin their hunt. Birds in small flocks were usually flushed, providing satisfactory shooting opportunities. A few savvy hunters slept out under the trees just north of the Refuge boundary the night before opening morning and reaped the benefits of the birds being pushed down by the advancing hunters toward the sanctuary of the Refuge to experience some excellent pass shooting (Losey 2003).

Unfortunately, as is the case with most booms, the sharptail one did not last. With nothing to arrest the steady progress of natural vegetative succession, the open lands were inevitably and steadily diminishing. So after 11 years of permitting hunting, in 1946 the Refuge prohibited all hunting within its boundaries (except for the state’s regular 2 week deer season in November). By the early 1960s a downward trend in numbers of sharptail set in as sharptail habitat contin-

ued to disappear. Occasionally there were temporary population spikes. In 1975, because of the continuing decrease in sharptail numbers, Schoolcraft County was closed to sharptail hunting. The slight increase in 1977 was probably the result of the beneficial effects of the 1976 fire, which had spread into part of traditional sharptail country.

In the 1980s and 1990s steps were taken to reverse this continuing downward trend—to eliminate the woody vegetation and restore the open grassland areas essential for sharptail. Back 25 years ago Ammann (1957) summed it up with great prescience when he wrote, “Undoubtedly the greatest factor in the prairie grouse population decline in Michigan has been the deterioration and loss of habitat through natural plant succession and tree planting.”

A cooperative habitat management project was initiated in 1981 with the Michigan Department of Natural Resources and Seney National Wildlife Refuge in an effort to establish and maintain upland openings for the sharptail. It involved the use of a hydromower, prescribed burning, and a program to discourage tree regeneration. That same year there was a significant increase in sharptail numbers, so much so that certain parts of the Refuge were reopened to bird hunting in 1982 (Annual Narrative Reports 1981 and 1982). Unfortunately, this cooperative program did not continue and the upward trend was of short duration. The Annual Narrative Reports for the 1980s all recorded the same dismal picture: increasing brush encroachment in sharptail habitat and a steady decline in the number of birds. Several positive programs within the

Refuge were initiated in the 1990s to benefit open grassland species including sharptail. Timber sales were held in the Diversion Farm area to create both temporary and permanent openings, promote age class and species diversity of the forest, regenerate aspen (*Populus spp.*), and provide food and cover for upland wildlife. The year following the completed harvest a marked increase in the number of sharptail in the cut-over areas was observed. In 1995 grouse numbers were relatively high in the large openings in the Diversion Farm. These large openings, especially the open meadow already in the area, as well as the adjacent burned area continued to be favored sites for the sharptail (Annual Narrative Report 1996).

In spite of some improvement in the sharptail population in the Seney-Bullock Ranch area, state-wide the numbers were so low that in 1997 all sharptail hunting was prohibited throughout the state (Minzey, pers. comm.). It appeared that the end of an era had been reached. From the very low numbers of the early 1990s, a modest increase began which continued into the 2000s. As of 2004 it appears that the population has leveled off, continuing the numbers of the late 1990s. However, the birds are now mostly concentrated in just 1 or possibly 2 leks within the Refuge and the same number in the state-owned area.

Overall, the steady decline in the number of leks over the period 1949 to 2004 is unmistakable. This is dramatically illustrated in the lek distribution maps. Figure 2 shows active leks well dispersed over a large portion of the study area for the period ca. 1959 and how reduced this area has become for the period ca. 2004.

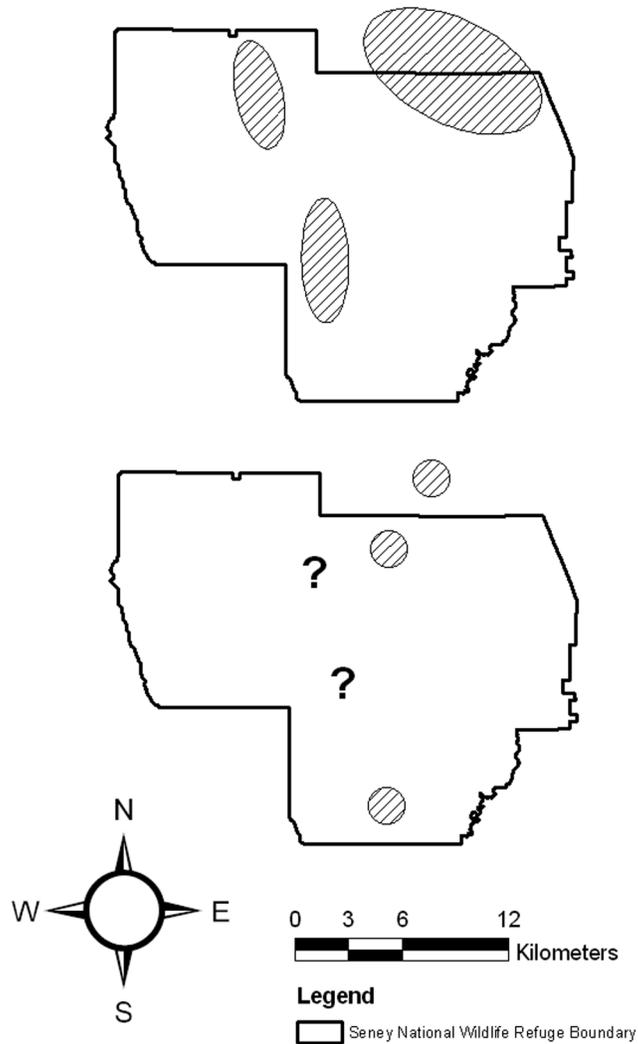


Figure 2. Seney National Wildlife Refuge-Bullock Ranch area. Hatch marks indicate the general distribution and abundance of sharptail leks around 1959 (top) and 2004 (bottom). Question marks indicate areas in which birds have been seen, but no leks have been verified.

DISCUSSION

Now, in 2004, the question to be answered is: What will be the future of the sharptail in the Seney-Bullock Ranch area? Can a viable population be sustained or will it follow the path

of the Greater Prairie-Chicken in Michigan into oblivion? Is the sharptail to be no longer a vibrant member of the open grassland community enriched by Bobolinks (*Dolichonyx oryzivorus*), Eastern Meadowlarks (*Sturnella magna*), and Upland Sand-

pipers (*Bartramia longicauda*)? Early spring mornings will be quiet, indeed, if the cooing and cacklings sounds of the sharptail are stilled and their well-worn leks no longer enlivened by their dramatic dancing.

The answer is up to us. We know what sharptail require. We know they occupy a specific niche in the early stages of plant succession and that this niche can only be maintained by managing the natural progression of forest succession. The management methods used to produce and maintain habitat favorable for sharptail are well known and time-tested. They are a combination of periodic burning and cutting. The use of one or more of these practices acts to produce and maintain early seral stages of succession. When the openings disappear, sharptail abandon the area.

The aim of both the U. S. Fish and Wildlife Service and the Michigan Department of Natural Resources should be the same—to produce and maintain large opening complexes that would benefit sharptail and associated species in the Seney-Bullock Ranch area. However, the management practices each agency can use are controlled by differing policy mandates and restrictions. For example, in the case of the Department of Natural Resources, if land managers wish to produce a sharptail population that eventually will sustain a limited hunting season, they must engender new interest among the public, and this interest must result in increased enthusiasm for policies that support the bird and its habitat. What the Department can do in terms of land management to achieve this purpose is governed by fund availability and the need to jus-

tify each practice from a monetary standpoint. Furthermore, land managers who wish to maintain sharptail must be able to make trade-offs with timber management, so that some cut-over lands are exempt from tree planting, while others are reserved for timber production.

Seney National Wildlife Refuge, on the other hand, is dedicated to maintaining open grassland ecosystems with their wealth of wildlife inhabitants of which the sharptail is an important component. The U. S. Fish and Wildlife Service is not allowed to employ any of its management practices for the purpose of reaping monetary profit. Therefore, it can clearcut, burn, or employ any of the desired management tools if the benefits to openland wildlife outweigh the cost to forest wildlife.

The question regarding the future of the sharptail in the Seney-Bullock Ranch area still remains to be answered. Many years ago Aldo Leopold (1931) wrote, “The conservation movement has no right to discard these magnificent game birds when no real effort, other than ill-enforced closed seasons, has yet been made in their behalf.”

Fortunately we are beginning to harken to his plea. A Michigan Sharp-tailed Grouse Association was formed in 1990 and is dedicated to arousing public interest in the bird and encouraging public agencies to implement policies designed to promote its habitat. Also a three-year research program funded by the Michigan Department of Natural Resources and managed by a team comprised of individuals from Michigan Technological University, Seney National Wildlife Refuge, and Hiawatha National Forest

aims to determine a methodology that can be used to obtain an unbiased estimate of sharptail abundance. This information will be vital for formulating future management plans.

So, yes, we the people are listening to Leopold's words and, yes, we are trying to meet his challenge.

ACKNOWLEDGMENTS

My thanks are due to Tracy Casselman, Seney Refuge Manager, for permission to use Refuge files and Annual Narrative Reports. Without this material, this manuscript could not have been written. To Greg Corace, Forester, Seney Refuge, I express my deepest thanks and appreciation not only for his helpful and extremely constructive suggestions, but also for his careful and critical editing of this study. Also I extend my gratitude and appreciation to Lindsey Shartell, Applied Conservation Biology Intern, for her skill in preparing the maps, and to Damon McCormick, Researcher, and Carrie Crigier, Public Use Intern, for their skill and patience in transposing my hand-written draft into computer-perfect copy. Finally my many thanks go to Terry Minzey, Biologist, Michigan Department of Natural Resources, for his help in enabling me to secure photographs of sharptail leks on state-owned land.

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- Elizabeth B. Losey was truly one of the unsung pioneers in the field of wildlife management. Although she worked for only a few years professionally, she had many "firsts" to her credit. Among them, she was the first female field biologist hired to work for the National Wildlife Refuge System and the first to be elected to active professional membership in the Wildlife Society (1948). At Seney National Wildlife Refuge, Elizabeth was a tireless volunteer in her later days and served the Refuge in many capacities up to her death in 2005.*
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Sora by Gary Krogman.