Articles

The Sharp-tailed Grouse in Thunder Bay District

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The Sharp-tailed Grouse (*Tympanuchus phasianellus*) is known to be a permanent resident in three widely separated areas of Ontario: the Hudson Bay Lowland; the Rainy River/Fort Frances and Dryden areas in the northwest; and Sault Ste. Marie and Manitoulin Island (Lumsden 1987). Even though the species is thought probably to range all across northern Ontario (Peck and James 1983, Lumsden 1987), there are large gaps in the distribution of records of this species there. Since 1993, however, we have found evidence of breeding populations of this grouse in this gap, north of Lake Superior. In this paper, I review the historical occurrence of the Sharp-tailed Grouse, and the current status of this species, in Thunder Bay District.

Subspecies of the Sharp-tailed Grouse

Two subspecies have been identified in the province of Ontario (James 1991): the Prairie Sharp-tailed Grouse (*T. p. campestris*), and the Northern Sharp-tailed Grouse (*T. p. phasianellus*).

The Prairie Sharp-tailed Grouse is a bird of the brushy plains and aspen parklands of the centre of the North American continent. This subspecies expanded its range eastward and northward toward the end of the 19th century, as it disappeared from its original range due to intensive agricultural practices that destroyed its native habitat (Roberts 1936). It entered northwestern Ontario in the wake of settlement and land clearing, aided by construction of two railroads: the CPR line, north of Lake of the Woods; and the Canadian Northern Railway, south of Lake of the Woods. The latter was completed in 1902, and both brought Canadian prairie wheat to the Lakehead. The grain cars of the time were leaky wooden boxcars that left a trail of grain across the forested wilderness (Miller 1963).

The other Sharp-tailed Grouse subspecies that has been recorded in Ontario is the Northern Sharp-tailed Grouse. It breeds across northern Canada and Alaska, and is darker than *campestris*, with more dark markings ventrally, and less tawny on the back (Roberts 1936). It inhabits open bogs and fens (Lumsden 1987). This race is known for its occasional southward irruptions, which are detailed in a subsequent section of this paper.

Lake Superior and northwestern Ontario are located between the historical ranges of the two subspecies, but due to the northward range expansion of the one and the southward irruptions of the other, it is an area where they have come into contact with each other. It is difficult to categorize all specimens as to race, and there have been contradictory identifications made (for example, see Isle Royale, below), so it is not entirely clear which subspecies has been seen, or is being presently recorded, in this area. The Royal Ontario Museum (ROM) has about 40 specimens from northwestern Ontario (Glenn Murphy, pers. comm.). All but one of the specimens from Kenora District have been identified as *phasianellus*; these are from more northerly locations in the Patricia portion. The exception is a bird from Melgund Township, near Dryden, taken in the fall of 1958 (the Dryden population is discussed below). All of the Rainy River District specimens are *campestris*, except for two from Fort Frances taken in the fall of 1934. All 14 Thunder Bay District specimens, most of which are from the Lake Nipigon area, are *phasianellus*, except for three *campestris* from Port Arthur (Port Arthur and Fort William are now known as the city of Thunder Bay) which are described below.

Campestris is the subspecies that presently occurs on Manitoulin Island and the north shore of Lake Huron (Lumsden 1987). South of Lake Superior, *campestris* is found in scattered locations from Minnesota through northern Wisconsin and the Upper Peninsula of Michigan, linking to some extent the two Ontario populations. It has disappeared from many U.S. states due to habitat loss and hunting pressure, and many populations still may be declining (Connelly et al. 1998). Several states have active management programs to try to preserve the Prairie Sharp-tailed Grouse's habitat and population.

An isolated population of Sharp-tailed Grouse was discovered on Isle Royale in 1904, the first to be confirmed in the state of Michigan (Barrows 1912). They were found in clearings around old mines and townsites. Specimens taken from there in 1905 were initially identified as *phasianellus* by H. C. Oberholser, but specimens from there now are considered to be *campestris* (Wood 1951). A small population is still present there (Brewer et al. 1991).

The Dryden population also is isolated, inhabiting a large agricultural area along the CPR rail line and Highway 17 from Dyment west to Vermilion Bay. They moved into the Dryden area in the early part of the century as the settlers cleared the land, reaching their peak abundance in the 1920s (Olsen 1960). Their numbers diminished thereafter, and by 1959, only occasional single birds or small flocks were seen, usually in the late fall or winter. A concerted search that year, however, found sev-

eral resident flocks (Olsen 1960), and repeat surveys in 1962 (McGillivray 1963) and 1963 (McGillivray 1965) found birds at 26 locations, including eight dancing grounds. Four specimens taken during the hunting season were identified as *campestris* by H. Lumsden. The dancing grounds were all in cultivated fields: seven stubble fields and one ploughed field. Interestingly, some of the flocks in 1962 were observed in cutover areas adjacent to large "muskegs", and helicopter surveys in 1963 flushed several flocks in "muskegs" (*phasianellus* habitat). Sharptails still are present in the Dryden area, but we are not aware of any recent comprehensive surveys.

Historical Occurrence of the Sharp-tailed Grouse in Thunder Bay District

The Prairie Sharp-tailed Grouse appeared in the southwestern part of Thunder Bay District about the turn of the 20th century (Fleming 1906). Its preferred habitat of brushy clearings, and fields with scattered shrubs and trees, was a common landscape south and west of the Lakehead in the first part of the century, as settlers cleared the forest for pastureland and farming. The first known record of the Sharp-tailed Grouse in Thunder Bay District is a specimen, now at the ROM, that was collected by George Atkinson at Port Arthur in November 1893; it has been identified as the Prairie subspecies. Other specimens of *campestris* from the Thunder Bay area at the ROM include two adult males collected on 12 April 1933, 60 miles southwest of Port Arthur. The only nest record was of a clutch of nine infertile eggs found by J. Jacob in July 1930, 60 miles southwest of Port Arthur (Dear 1940).

Sharp-tailed Grouse apparently were common in clearings and cutovers on the Sibley Peninsula until about 1940. This information is based on an interview with James Cross, a long-time resident of the area, recorded in the Sleeping Giant Provincial Park files (A. Wormington, pers. comm.). If the observations of Mr. Cross are correct, these birds were most likely of the prairie subspecies.

It is not clear whether the Prairie Sharp-tailed Grouse was ever numerous at the Lakehead, but by 1940 they were "uncommon and very local" (Dear 1940) around Port Arthur and Fort William (now Thunder Bay). They persisted in low numbers through the 1940s and 1950s, with occasional sightings of one or a few birds in the farmlands surrounding the Lakehead. Dr. A. E. Allin, in his annual summary of Lakehead birds for 1950, described the species as being "very scarce" (Allin 1951). Reports ceased altogether about 1958. Since there have been no reliable sightings from the populated agricultural areas around Thunder Bay for over 40 years, it is assumed that the Prairie Sharp-tailed Grouse now is extirpated from Thunder Bay District.

The historical distribution of the Northern Sharp-tailed Grouse in Thunder Bay District is not well documented. Thomas McIlwraith (1886) listed its range as "from the northern shore of Lake Superior...to Hudson's Bay territory and Alaska". John Macoun (1900) indicated a similar distribution, but went into more detail: "Since the building of the Canadian Pacific railway this bird has been seen frequently on the line between Mattawa, on the Ottawa River, and Fort William, west of Lake Superior. It has been supposed to be the prairie species working east, but its dark colour shows that it is the northern bird."

Where exactly these birds were seen, and during which years, is not clear, but by the 1930s, it was evident that the normal range did not extend as far south as Lake Superior. P.A.Taverner (1934) indicated the range in Ontario to be "from the vicinity of the Canadian National Railway tracks northward to James Bay". In Thunder Bay District, the CNR tracks run west along the southern edge of the Hudson Bay Lowland and north of Lake Nipigon. Snyder (1935) corroborated this railway line as the normal southern limit of the Northern Sharp-tailed Grouse. Albert Allen's 1949 address to the Minnesota Ornithological Union reiterated that the Northern Sharp-tailed Grouse is found at the upper end of Lake Nipigon (Allen 1949).

More recently, Lumsden (1987) stated in *Atlas of the Breeding Birds of Ontario* that this subspecies occurs as far south as Upsala and the north shore of Lake Superior, although the accompanying map showed a lack of Atlas records in this area.

Southward Irruptions of the Northern Sharp-tailed Grouse

Periodically, the northern subspecies appears in large numbers south of its normal range in Ontario. An irruption occurred in the fall of 1896, with birds being seen as far south as Parry Sound and Muskoka Districts (Fleming 1906).

The best documented invasion occurred 36 years later, in the fall and winter of 1932–33, at which time birds appeared as far south as Bracebridge, Gravenhurst, and Bancroft (Snyder 1935, 1951). The main flight was in northeastern Ontario, south of James Bay, but the western edge of the irruption reached Thunder Bay District at Rossport on Lake Superior.

Snyder (1935) refers to a Sharp-tailed Grouse that was shot at Sault Ste. Marie in the winter of 1865–66 as a possible indication of a southward irruption of the northern subspecies in that year, 31 years prior to the 1896 irruption, leading to speculation that there may be a cyclic pattern to their southward movement, with a periodicity of about 30 to 35 years.

Further support for such a theory came in the winter of 1967–68. In the fall of 1967, thousands of sharptails could be found in the Geraldton area (Zroback 1968, Elder 1979),

and small flocks were seen farther south to the north shore of Lake Superior, at such places as the mouth of the Pukaskwa River, Port Coldwell, and Hurkett (Denis 1968). Numerous birds were seen and shot in the vicinity of White River. The area of greatest abundance was around Kapuskasing and Cochrane; birds moved as far south as Swastika and Chapleau (Wolfe 1967). There were so many sharptails across northern Ontario that the hunting season was extended to the end of March. This irruption occurred 35 years after the previous one, fitting the pattern exactly.

If this is a repeating cycle, the next irruption should have occurred between 1998 and 2003. It has not happened (yet). However, there was a minor movement into the area north of Nipigon in the fall of 1994, with several reports of birds seen, and shot by hunters, in areas where they were not usually encountered. One year later, in the fall of 1995, none were reported.

Following the 1932–33 irruption, breeding colonies were established south of their usual range, but these colonies disappeared in a few years (Snyder 1935).

Recent Sightings of Sharp-tailed Grouse in Southern Thunder Bay District

After the 1932 irruption, Snyder sent questionnaires to observers throughout the province to obtain information on the flight, and concluded that reports of birds from Armstrong and Nakina (both on the CNR line in Thunder Bay District) were attributable to the irruption, which suggests that observers in those communities did not regularly see this species. However, Sharp-tailed Grouse are now seen every fall and early winter in the Geraldton and Longlac area, east to the District boundary. They vary in number from year to year, but are often plentiful, especially in the last five years. They are assumed to be migrants from farther north, and are not believed by local outfitters to nest in the area since they are seen only from September to February.

A few are reported in the fall, farther south, in clearcuts and upland areas, south to Orient Bay, Black Sturgeon Lake, and Dog Lake; and rarely to the shore of Lake Superior. These reports are sporadic and do not occur every year.

There have been very few sightings of sharptails in the breeding season in these areas, and usually only one or a few birds. Despite searching early in the morning, we have not been able to find any lek sites in these cutovers.

Breeding Populations of Sharptails in Southern Thunder Bay District

As outlined above, the least known and least documented aspect of the occurrence of the Sharp-tailed Grouse in Thunder Bay District has been the breeding status of *phasianellus* south of the CNR rail line. We have now confirmed that

this species does breed locally as far south as Lake Superior. Evidence for breeding includes the presence of a lek of dancing males, since the nests are usually located within 1.2 km of the lek site (Miller 1963).

The first record of a lek of dancing sharptails was on 6 May 1949, 10 miles west of Beardmore, at the southeast corner of Lake Nipigon. They were discovered by District Forester R. Boultbee while inspecting a tree plantation in Eva Township (Boultbee 1950). At least five males were dancing on a sandy knoll in an area that had been logged and twice burned. This location is only about 50 km south of the CNR rail line.

There has been one recent record of a lek in a clearcut south of Lake Nipigon: a group of 15 dancing Sharp-tailed Grouse was found on 10 May 1993 in a clearcut, 120 km north of Thunder Bay (Dennis Bonner, pers. comm.). This was a Jack Pine (*Pinus banksiana*) plantation site; the trees are now tall enough to make the site unsuitable and no grouse were found there on a subsequent visit.

West of Thunder Bay, from Raith to English River, the Canadian Pacific Railway traverses an area of bogs, fens, swamps and meandering rivers. Tom Perrons (pers. comm.), a CPR engineer and a naturalist, frequently saw sharptails while driving the train along this section of the track from 1956 through 1979. He noted them at all times of the year, including the breeding season. We have now found leks of sharptails in several "muskeg" fens in this area.

East of Thunder Bay, we have found a group of sharptails in a large open peatland near the shore of Lake Superior, at the base of the Black Bay Peninsula. We first found grouse dancing there in 1994, but a local trapper states that he has seen Sharp-tailed Grouse in the area as long as he can remember, and at least since the 1967 invasion. On 23 July 2001, a female with four young was seen in this fen (Robert Foster, pers. comm.).

Following is a list of the leks that we have found in fens, in chronological order of discovery. The locations are marked on the map of Thunder Bay District (Figure 1). Most of these observa-

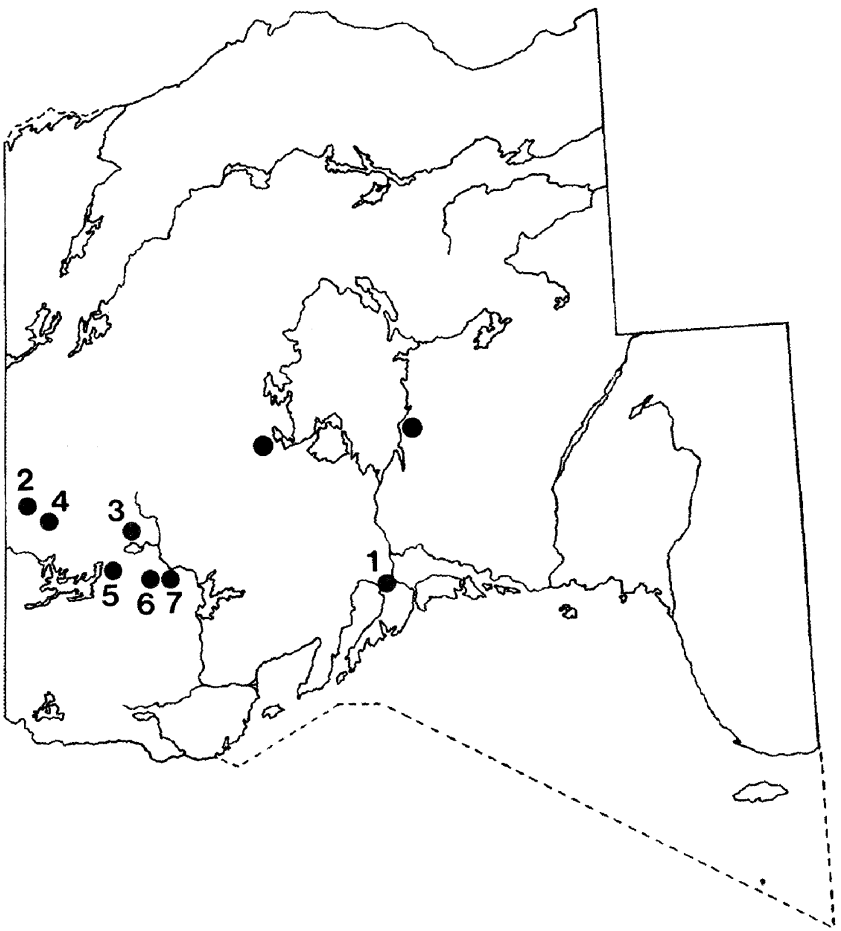

Figure 1: Map of Thunder Bay District showing Sharp-tailed Grouse lek sites in clearcuts (black dots) and fens (grey dots). See text.

tions are my own; where the sighting was made by another observer, I have acknowledged that person in brackets following the record. None of the sites has been visited every year, and as can be seen from the dates of the visits, some have been checked only once or twice.

(1) Lyon Township fen, base of Black Bay Peninsula (Figures 2 and 3)
1994: March 26 – at least 14 males dancing
1995: April 17 – 12 males dancing
1996: April 21 – 10 males dancing
1997: February 3 – 22 birds in fen
2000: March 19 – at least 30 birds at lek site

(2) Trewartha Township peatland, west of Upsala (Figure 4)
1994: April 10 – at least 15 birds at lek, males dancing, 2 probable females
1995: March 26 – 11 males dancing
1996: April 13 – 12 dancing males
1997: April 13 – 7 dancing males
2001: April 13 – 11 dancing males
2002: April 14 – 13 birds in lek (Allan Harris)

(3) Muskeg Lake fen, north side of Muskeg Lake (Figure 5)
1996: June 8 – flock of 6 seen
1997: April 12 – 17 birds dancing

(4) Meinzinger Township fen
1998: March 22 – 10 birds flushed from lek site

(5) Near Savanne River, small lake with wide floating bog mat in Black Spruce "muskeg"
1998: March 22 – 9 birds dancing
2001: April 15 – 6 birds at lek site, some dancing

(6) Small fen west of Raith
2001: April 1 – 6 males dancing

(7) Small fen north of Raith
2001: May 15 – a group of 5 birds in the fen, not dancing

We have been observing these colonies for up to eight years now, and it appears that these are permanent breeding grounds. The lek site is in approximately the same location in each fen every year.

The fens are open grass/sedge peatlands with moss hummocks separated by small pools of water, which, at least early in the courtship season, are frozen, with or without some snow cover (Figure 5). There are few if any shrubs at the lek site, but there is a zone of stunted Black Spruce (*Picea mariana*)/Tamarack (*Larix laricina*)/ White Cedar (*Thuja occidentalis*) around the periphery of the fen, blending into Black Spruce bog behind that. When alarmed, the grouse fly back into the spruce woods.

The Sharp-tailed Grouse in these colonies seem to stay close to the fen year-round, and when the

snow is on the ground, their tracks indicate that they are feeding on the catkins of Dwarf Birch (*Betula glandulosa*), a common shrub in these wetlands. This is probably their main winter food source. The buds and catkins of Dwarf Birch were found to account for 90 percent of the food in the stomachs of Northern Sharp-tailed Grouse shot in the Winisk area in 1977 (Thomas 1984). When the grouse migrate to upland forested areas, they are often seen feeding on the buds and catkins of White Birch (*B. papyrifera*).

Conclusion

Sharp-tailed Grouse are a very local and uncommon breeder in the southern part of Thunder Bay District. They probably are of the northern subspecies *phasianellus*, and inhabit the "muskeg" fens that are found in widely scattered locations in this otherwise rocky Canadian Shield habitat. They tend to stay close to their home fen and surrounding Black Spruce bogs. Since these areas are relatively inaccessible, inhospitable, and lumber-poor, the grouse have been safe from human disturbance, and are seen infrequently. They have been in these fens since at least the invasion in 1967; more likely, they have been here for hundreds or thousands of years. Their numbers may be replenished by occasional irruptions from farther north.

Northern Sharp-tailed Grouse probably come south from the Hudson Bay Lowland in variable numbers every fall, and may stay as small breeding colonies in suitable habitat such as clearcuts or burns. These colonies seem to be very few in number, and temporary. Alternatively, some of the fall and winter birds seen by hunters may be from local, undiscovered breeding colonies in nearby fens.

The Prairie Sharp-tailed Grouse has disappeared from Thunder Bay District, but still survives in the Rainy River/Fort Frances and Dryden areas, and at Sault Ste. Marie/Manitoulin Island.

Little is known about the population or biology of the northern subspecies, since much of its range is in inaccessible parts of northern Canada. Numbers are thought to be stable, but there are no regular monitoring programs. The disjunct populations described in this paper may be vulnerable to human disturbance since they are closer to populated areas; their wetland habitat may be threatened by logging, road construction and peat extraction.

The Black Bay Peninsula colony is the most isolated, the most southeasterly, and consequently the most unique. The lek site in the fen is on a 65-hectare lot that is now a nature preserve owned by the Thunder Bay Field Naturalists. However, there is no protection in place for the surrounding fen and Black Spruce forest, and there is currently a proposal to put a permanent road through the edge of the wetland to open up the Black Bay Peninsula to year-round timber harvesting.

Figure 2: Sharp-tailed Grouse dancing at the Black Bay Peninsula lek site during snow flurries on 1 April 1994. Photo by *Nicholas G. Escott*.

Figure 3: Displaying Sharp-tailed Grouse at the Black Bay Peninsula lek site on 30 April 2000. Photo by *Nicholas G. Escott*.

Figure 4: Group of Sharp-tailed Grouse dancing at the Trewartha Township peatland on 10 April 1994. Photo by *Nicholas G. Escott*.

Figure 5: Sharp-tailed Grouse facing off on the ice at the Muskeg Lake fen on 12 April 1997. Photo by *Nicholas G. Escott*.

Northern Sharp-tailed Grouse are probably resident in all large fens in Thunder Bay District. Such fens are few and far between, but become more widespread farther north and east. As forestry roads extend farther north, more of these potential breeding sites will become accessible to be monitored.

It would be interesting to study in more detail the differences between the two subspecies. In addition to the subtle plumage differences, there are different habitat and winter food preferences. There may be genetic differences also. If so, the Dryden and Isle Royale populations would be the most likely to show evidence of intergradation.

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