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How many cranes make a skyful?

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How many cranes make a skyful?

Lesser sandhill cranes at sunset in the Platte Valley, Nebraska. The dusk and dawn flights of these birds to and from their spring roosts provide one of the most incredible wildlife spectacles in North America — while there are still enough cranes....
Every year thousands of lesser sandhills congregate along the Platte River in Nebraska on their spring migration northwards. Mainly because of local damage caused by the birds during their fall migration, they have been legally hunted since 1961. Can the population survive such persistent destruction?

Of the four generally accepted subspecies of the sandhill crane, the “little brown” or lesser sandhill crane (Grus canadensis canadensis) is the most widespread as well as the most abundant. Indeed, of the other three both the Florida and Cuba races are listed as rare in the IUCN’s Red Data Book, and the greater sandhill crane is included on the list of Rare and Endangered Fish and Wildlife published by the US Fish and Wildlife Service.

The far more secure status of the lesser sandhill crane can only be attributed to its vast breeding range, largely arctic to subarctic, which at least until recent years had hardly been affected at all by civilization. But, partly because of this enormous breeding area and rather diffuse wintering grounds, there is even to the present day no convincing data on the actual total continental population of the subspecies.

Late March is perhaps the best time of the year to count accurately most, or nearly all, of the lesser
sandhill crane population. For it is then that the birds congregate along the Platte River in Nebraska, on their most important spring staging area north of the primary wintering grounds of Texas and New Mexico. Spring aerial counts made between 1959 and 1971 indicated that an average of nearly 150,000 birds were present annually.

Improved counting methods in recent years and concentration on roosting site counts have given more reliable figures: during the three springs between 1971 and 1973 the totals have averaged 194,000 birds, with a high figure of 203,000 in 1971. During this period the birds are concentrated in a number of roosting sites between the upper end of Lake McConaughy on the North Platte River and the Grand Island area. Loren Bonde, the federal game agent who made the counts, believes that these roosts comprise the entire Nebraska spring crane population, and probably include nearly all of the birds of the entire Great Plains region. He thus estimates that the total continental population of lesser sandhills is no more than 250,000 birds. Both this and an estimate of 200,000 made by Glen Sherwood are considerably below the generally accepted figure of 300,000, which was given by R. J. Buller of the Fish and Wildlife Service.

Unfortunately for the cranes, these birds also have a tendency to concentrate in certain traditional staging areas during their fall migration. These areas extend from the southern parts of Saskatchewan and Manitoba southward, through the plains states, to the wintering grounds of Texas and New Mexico. In unusually wet years when harvests are delayed, the birds sometimes do localized but substantial damage to grain crops. A Canadian study by W.J.D. Stephen indicated that during the early 1960s the average reported monetary damage to crops was nearly $185 per farm on those farms reporting losses, with a 10 per cent survey of farmers revealing a total of 168 farms suffering damage.

In contrast, there have been fewer reports of serious crop damage south of Canada. In a summary of the first “experimental” crane season held in New Mexico, it was noted that the crop depredation incidence there varies considerably in different years. Reports of sorghum grain damage are most frequent, but there are also records of damage to corn, alfalfa, wheat and barley. Additionally, cranes sometimes truncate small irrigation ditches causing soil puddling, soil compacting, or misdirection of water.

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for the vast majority of cranes legally shot since that time.

In the dozen or so years during which cranes have been hunted in the United States and Canada, there has been an astonishing lack of federal monitoring of the crane harvest, or analysis of the kill in terms of crippling losses or differential sex and age vulnerability to hunting. Hunter-success reports on the first season in Texas and New Mexico were prepared, and the first few seasons in Saskatchewan and Manitoba were evaluated for total estimated kill, individual hunter success, and percentage of juveniles in the kill. In these studies the estimated incidence of juvenile birds in the harvest has varied from a seven-year pooled average of 17 per cent in Saskatchewan to single-year samples of 22 per cent in New Mexico and 23 per cent in Texas.

If these figures accurately reflect the yearly recruitment of juveniles in the total crane population, biologists might rest assured that the annual crane harvests could scarcely be cutting into an apparently well-reproducing population. Yet estimates of juvenile-adult ratios, based on ground counts of wild birds during fall, indicate that the actual juvenile ratios are much lower, which can only suggest that the young birds are far more vulnerable to hunting mortality than are adults.

Dr. Richard Miller of Yale University and John Hatfield of the Canadian Wildlife Service have recently estimated that the actual proportion of juveniles during fall (and thus the annual recruitment rate) probably lies between three and six per cent for central Flyway birds. So it would seem that the juveniles are between four and seven times more vulnerable to hunting than are adults, and the recent years of heavy hunting pressure may be making serious inroads on the younger cranes, which probably require at least four years to become reproductively mature.

Optimistically assuming that the continental population of lesser sandhill cranes does actually number as many as 250,000 birds, and that the juvenile recruitment rate is as high as five per cent, it is obvious that no more than about 12,000 young cranes are likely to fly southward each fall. This figure is slightly more than twice the estimated annual crane kill for those states and provinces reporting crane harvests in recent years, but does not take into account crippling losses or unreported kills.

More seriously, if the total crane population is only some 200,000 birds, with a recruitment of perhaps as low as three per cent, then no more than 6,000 young birds would fly southward each fall, or substantially less than the present rate of crane harvests. Taking the average proportion of juveniles in the hunters’ kill as about 20 per cent, then an annual kill of 6,000 birds would include some 1,200 juveniles killed yearly. It is therefore possible that a quarter of each year’s young are being killed during their first fall and winter, and an unknown additional number are being crippled.

The extent of crippling losses in cranes is still not well known, but it has recently been judged to add perhaps as much as 30 per cent mortality to the direct hunter kill figures. This estimate is based on comparable crippling losses in geese and may be somewhat high (a limited study in Texas indicated a 14.3 per cent cripple loss during the 1961 season). But if 6,100 cranes are killed by hunters and even another 15 per cent are lost by crippling, it means that more than 7,000 birds may be removed from the population each year. Based on the best available information, this closely approaches or possibly exceeds the annual recruitment rate, and does not take into account any mortality factors apart from hunting.

One may ask the question “How many cranes are enough?” This is perhaps analogous to the rhetorical question as to how many redwood trees are needed to make a viable forest; for a remnant crane population is not only unimpressive but also seemingly does not survive or reproduce well, judging from population trends in the three other sandhill crane subspecies, which are all rare or endangered.

Unless one has witnessed the incredibly large flocks on their wintering grounds or one of the major staging areas, it is impossible to comprehend the excitement and beauty conveyed by a group of several thousand cranes in the air or on a field. Most of the 200,000 or so cranes that use the Platte Valley each spring are found in the vicinity of 11 major roosting sites. These are generally stretches of the

The grey neck together with the position of the bare red patch on the head — from base of bill to middle of crown — help to distinguish the sandhills from other crane species.
Platte or North Platte rivers that are relatively isolated from roads or bridges, and which have an abundance of shallow sandy bars or low islands to which the birds return each evening. Some of these roosts may support nearly 30,000 birds each night, and the dusk and dawn flights to and from the roosts provide one of the most impressive wildlife spectacles in all of North America.

By day the birds feed in wet meadows, pastures and grainfields which range from less than a mile to more than ten miles from the river. But by late afternoon they begin to move towards ‘marshalling areas’ that are usually within a mile or less of the roosts. Here they continue to forage and mill about as their numbers gradually increase. On a cloudy day the birds may begin their flight to the roosting sites as early as half-an-hour before sunset, but on cloudless evenings the flight is generally getting well under way just as the sun is about to touch the western horizon. Then, seemingly endless flocks of cranes begin wending their way towards the river, etching the reddening sky for as far as the eyes can see, and causing the entire river valley to reverberate with the bugling calls.

It is an unforgettable combination of sight and sound that is likely to leave the observer breathless with awe, and unable to comprehend how such magnificent creatures could ever have been converted into legal gamebirds by federal and state authorities. And yet evidence of their having just survived the recent hunting season is highly visible; missing primary or secondary feathers are more frequent, but less poignant, reminders of this fact than are the occasional birds that fly with a broken leg dangling uselessly below them.

The crane flight usually persists until it is too dark to distinguish colors, and only shadowy figures continue to pour into the midst of the Platters many channels. Often landing on sand bars, the cranes soon wade out into shallow water, where they eventually go to sleep for the night. By dawn the first birds will have already begun to leave their roosts, and by sunrise the majority will again be foraging in nearby fields.

This routine is a daily occurrence from late January, or early February, when the first birds arrive on the Platte, through to the last week of March, when peak concentrations are normally present. By the end of the first week in April the numbers are clearly declining and by the middle of the month the river is usually devoid of cranes. With their departure the Platte loses nearly all of its majesty and mystery, and once again becomes a sluggish, meandering plains waterway, “too thin to plow and too thick to drink.” This condition persists through the summer, when the river may virtually dry up. The river is usually flowing freely again in October, when the first waterfowl migrants return.

Although the Platte is almost completely ignored by sandhill cranes during autumn, it is a frequent stop-over point for migrating whooping cranes. Additionally, it receives very heavy spring and fall use by white-fronted and Canada geese, as well as by pintails, mallards, and other dabbling ducks. The recent establishment of plans for a 460-acre Audubon Society refuge on the river near Gibbon, Nebraska, is the first step in the national recognition of the Platte’s unique biological value, and hopefully will provide a basis for the prevention of its destruction or degradation.
Lesser sandhills in the Platte Valley. By day the birds feed in meadows, pastures, and grain fields (above). Towards sunset they return to the river (below), and wade out into the shallow water where they will spend the night.