

# Regina TV Tower Bird Mortalities—1961

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Two major bird mortalities involving 94 and 113 collision casualties recently occurred at the CKCK tower on No. 1 Highway, two miles east of Regina. These numbers are by no means large in comparison with TV tower mortalities which have been reported in other areas (e.g., 20,000 at a tower in Wisconsin; Kemper, 1958), but these are the largest kills reported for the Northern Plains region. Lahrman (1959) reported 33 birds of 13 species killed at a tower near Caron, Saskatchewan, about 38 miles west of Regina, about September 22, 1959, and this was considered an unusual occurrence. The CKCK tower, which is 670 feet high, had been checked several times in the past five years during migration waves and although occasionally a few dead birds had been found, no notable numbers of casualties had been observed. However, because of the number of migrants in Regina coincident with bad weather on September 2, 1961, a check seemed worthwhile.

Accordingly, in mid-morning of September 3, I drove with my family to the tower. As soon as we stopped the car in the parking lot it was evident that there had been a substantial mortality, for several birds were lying right in sight on the pavement.

In about an hour and a half, with all members of the family assisting, 94 birds of 22 species were picked up in the vicinity of the tower (see table 1). Of the 22 species, 13 different kinds of warblers and three kinds of vireos were represented. Red-eyed Vireos made up 51 per cent of the total. There were 18 males and 24 females; 12 of the males and 14 of the females were immatures (as indicated by skull ossification), yielding a ratio of 38 per cent adult to 62 per cent immature. These figures indicate a fairly well-balanced population with possibly fewer adult males than normal, suggesting that some males in the population may have migrated earlier. At any rate, it seems that all members of the migrating population were equally affected by the mortality at the tower and that the total species sample was random. The preponderance of immatures in the sample (55 per cent) is of interest in view of the observations of Brewer and Ellis (1958) that adults predominate in fall kills.

Kemper (1958), in discussing a kill of 1525 birds involving 82 Red-eyed Vireos and 25 Philadelphia Vireos, notes the absence of the Warbling Vireo in his sample and raises the question of whether some species are less prone to accidents. It is curious

TABLE 1  
Birds recovered at TV tower, September 3, 1961

Species	Number	Age and Sex
Sora, <i>Porzana carolina</i> .....	4	3 imm., 1 ad.
Least Flycatcher, <i>Empidonax minimus</i> .....	1	imm.
Solitary Vireo, <i>Vireo solitarius</i> .....	2	2 imm.
Red-eyed Vireo, <i>Vireo olivaceus</i> .....	48	26 imm., 16 ad.
Philadelphia Vireo, <i>Vireo philadelphicus</i> .....	1	?
Black-and-white Warbler, <i>Mniotilta varia</i> .....	3	3 ad.
Tennessee Warbler, <i>Vermivora peregrina</i> .....	2	1 imm., 1 ad.
Yellow Warbler, <i>Dendroica petechia</i> .....	10	2 imm., 8 ad.
Magnolia Warbler, <i>Dendroica magnolia</i> .....	1	imm, male
Myrtle Warbler, <i>Dendroica coronata</i> .....	1	1 imm., male
Bay-breasted Warbler, <i>Dendroica castanea</i> .....	3	3 imm.
Blackpoll Warbler, <i>Dendroica striata</i> .....	4	4 imm.
Ovenbird, <i>Seiurus aurocapillus</i> .....	3	1 ad., 2?
Connecticut Warbler, <i>Oporornis agilis</i> .....	1	1 imm., female?
Mourning Warbler, <i>Oporornis philadelphia</i> .....	1	imm., female
MacGillivray's Warbler, <i>Oporornis tolmiei</i> .....	1	1 ad., male
Yellowthroat, <i>Geothlypis trichas</i> .....	1	ad., female
American Redstart, <i>Setophaga ruticilla</i> .....	1	ad., male
Savannah Sparrow, <i>Passerculus sandwichensis</i> .....	1	ad.
Clay-colored Sparrow, <i>Spizella pallida</i> .....	2	2 ad.
Lincoln's Sparrow, <i>Melospiza lincolni</i> .....	2	1 ad., 1?
Chestnut-collared Longspur, <i>Calcarius ornatus</i> .....	1	1 ad., male
<b>Total</b> .....	<b>94</b>	



that although one of the three night-roosting birds which I captured by hand in the evening of September 2 was a Warbling Vireo, none was found at the tower. In a later report on other kills, Kemper (1959) notes that wood warblers and vireos "are the hardest hit." The present data certainly support this point.

It is of considerable interest to note the presence of five species on the list which have been considered "rare" (Solitary Vireo, Mourning Warbler) or "very rare" (Philadelphia Vireo, Connecticut Warbler, Bay-breasted Warbler) in the Regina district (Belcher, 1961). The number of Bay-breasted Warblers (nine per cent of the total of warblers) suggests that a revision of the status of this species as well as others may be necessary for the Regina area. No doubt the difficulty of identification of species has helped to account for the scarcity of Regina records. However, regional rarities have been recovered from other TV tower mortalities, e.g., Kemper (1958:6) states: "Almost astonishing is the large number of 64 Connecticut Warblers. These had always been considered among the rarest of transient warblers; I have practically no previous substantial sight records of these in five years." One species recorded at the TV tower, MacGillivray's Warbler, may now be added to the **Birds of Regina** list (Belcher, 1961); sight records of this species (backed by detailed notes) had previously been made by Frank Brazier at Regina on May 28, 1960 (male), August 25, 1960 (sex not determined), and August 26, 1961 (male). These birds were observed by Brazier in shrubbery near the Museum and in the Legislative Grounds (pers. commun., Sept. 3, 1961). MacGillivray's Warbler is the western counterpart of the Mourning Warbler (see Peterson, 1961), breeding in Saskatchewan in the Cypress Hills where it is regarded as "common" by Godfrey (1950). The specimens of the MacGillivray's Warbler, Connecticut Warbler and a Bay-Breasted Warbler were preserved, although they were in poor condition, slipping and badly chewed by crickets.

Apparently, a majority of the birds were killed sometime during the morning of September 2 when it was raining.

CKCK-TV employee, Harvey Gay, stated upon query that when he arrived at the station about 8:30 that morning he noticed a few birds lying dead on the parking lot and one live but dazed bird which he removed from the path of vehicles. Upon coming out at noon, however, he noticed that there were far more birds in sight. Mrs. Jean Harrison, another employee, said that when she arrived the same morning she hadn't noticed any birds, but she pointed out that she had been in a hurry to avoid the rain which was falling at that time. She, too, was impressed by the number of birds in sight when she came out at noon.

These observations were supported by our own observations of the following day: a few of the dead birds which we picked up on September 3 were stuck to the ground and had mud in their feathers; one bird even had large clods of mud on its toes. Several had been found beneath shrubbery, in a manner suggesting that they had, as crippled birds, attempted to seek shelter. The weather on the morning of September 2 was especially unfavorable for small birds. The Regina weather station reported for that day a massive cold front which moved from north to south with low temperatures, rain and wind at Regina. A light rain fell from 3:30 a.m. to 10:30 a.m.; the temperature dropped from 59 degrees at 2:00 a.m. to 36 degrees at noon. The wind, which had been S-SE at 15 mph, shifted suddenly to N at 30 mph, gusting to 40 mph, at 3:30 a.m., with a resultant wind-chill of about 0 degrees. The temperature rose gradually after noon, then dropped again to 36 degrees overnight and the wind continued overnight. Throughout the morning it had been very cloudy with a ceiling of 800 feet. About 10:00 a.m. on that day I had noticed an abundance of small birds about my home, where there are not usually many, and was especially struck by the sight of a Least Flycatcher sitting on bare ground as if very tired. If the birds were mainly killed in the early morning, and daytime collision of birds at a tower has been reported by Kemper (1959), it may be supposed that they flew into the TV tower and its guy wires while partly blinded by the rain and swept by the wind. These migrants may have been attempting to land during



the storm, seeking haven in the bushes and rows of trees which are located on the station grounds, and which stand out in an otherwise treeless plain. On September 3, while we were looking for dead birds, we noticed an abundance of live vireos, warblers and sparrows in this shrubbery. All of the birds which we picked up were found within 500 feet of the tower, mainly within 300 feet, with a predominant number being found in the southeast quadrant of the area surrounding the tower and over a dozen on the roof of the station. This suggests that many were killed while flying at very low altitude. Brewer and Ellis (1958) have observed an association between mortalities and the arrival of a cold front, due either to a front damming back and building up concentrations of birds or providing a flow of air aiding movement. No doubt the concentration of birds in the Regina area was brought about by the advancing cold front; the low cloud cover on the morning of the second of September, the low temperature and the wind velocity all combined to produce a situation perilous to small birds. Such a combination appears to be rare in this vicinity. Jack Unger, grounds superintendent at CKCK, stated that he had never before seen so many birds killed at the tower.

On September 10, 1961, impressed by the number of migrants in the Regina area, Doug and Dot Wade, Frank Brazier and I decided to check the tower again. We arrived at 9:30 a.m. and were immediately aware that a kill had occurred for dead birds were again lying on the driveway and parking lot. The four of us, in about an hour and a half, picked up 113 birds comprising 21 species (see table 2). Since Elmer Fox and Frank Brazier had checked the tower on the previous day (Saturday, September 9), it was clear that the mortality had occurred overnight or in the early morning. In contrast to the kill of the previous week there seemed to be little association with weather data. The wind on Saturday evening varied from 15 to 20 mph, 10 to 12 mph overnight and 17 mph Sunday morning with a direction of N in the evening and N-NE in the morning. Overnight, it was overcast with alto-cumulus clouds at 12,000 to 13,000 feet. Two cold fronts, however, moved through the area, one at

6:00 a.m. on Saturday, the second, before noon on Saturday; thereafter the temperature gradually fell from 71 degrees to 53 degrees at midnight.

Eight species additional to those found on September 3 were recovered (those species of table 2 listed with scientific names), but 10 species found on September 3 were not recorded in this casualty list. Again, a few species recorded as rare at Regina (Belcher, 1961) were recovered, notably Bay-breasted Warbler and Le Conte's Sparrow. Because nearly all of the birds were in perfect condition an assortment of specimens was submitted to the Saskatchewan Museum of Natural History, hence data on sex and age has not been tabulated for this series. However, in some cases significant data are available. The adult-immature ratio was nearly equal: of 76 birds that were checked, 36 were adults and 40 were immatures. Some species showed disproportionate ratios, for example, 10 out of 11 Blackpoll Warblers that were checked were immatures (four out of four on September 3). On the other hand, only one out of 15 Yellow Warblers was an immature (two out of 10 on September 3). These data suggest a differential migration in these species. Sex ratios, so far as this information is available, were normal, e.g., seven adult male to seven adult female Yellow Warblers, but the Ovenbird showed a

TABLE 2

**Birds recovered at TV tower,  
September 10, 1961**

Species	Number
Common Snipe, <i>Capella gallinago</i> .....	1
House Wren, <i>Troglodytes aedon</i> .....	1
Swainson's Thrush, <i>Hylocichla ustulata</i> ..	9
Gray-cheeked Thrush, <i>Hylocichla minima</i>	4
Red-eyed Vireo .....	2
Black-and-White Warbler .....	5
Tennessee Warbler .....	10
Orange-crowned Warbler, <i>Vermivora celata</i>	5
Yellow Warbler .....	18
Myrtle Warbler .....	7
Bay-breasted Warbler ..	2
Blackpoll Warbler .....	13
Palm Warbler, <i>Dendroica palmarum</i> .....	4
Ovenbird .....	14
Yellowthroat .....	1
American Redstart .....	2
Savannah Sparrow .....	3
Le Conte's Sparrow, <i>Passerherbulus</i> <i>caudactus</i> .....	1
Vesper Sparrow, <i>Pooecetes gramineus</i> .....	1
Lincoln's Sparrow .....	3
<b>TOTAL</b> ..	<b>113</b>



surprisingly high proportion of females, only one adult being found in the sample together with six adult and six immature females.

Most of the birds were found in the southwest quadrant of a circle centering on the tower. Twenty-eight were found on the roof of the station, 79 were found in the area directly west and south of the building, mainly within about 300 feet. The entire north half of the area yielded only five birds. This distribution is probably the result of colliding birds being blown some distance in the direction of the wind. This fits with the wind direction for the night of the kill (N and N-NE). It may be presumed that these migrants had been flying in a southerly direction, but this was not established. It is surprising that so many were found close to the base of the tower. If birds were actually striking the upper end of the tower one would suppose that many of them would be carried by the wind for a considerable distance. Perhaps, as suggested for the first kill, most collisions occurred at rather low levels.

The total number of species in these two mortalities (September 3 and 10) is 30 (see table 3). Warblers comprise 50 per cent of all the species; the 15 kinds which were found represent more than half of the warblers known to have occurred at Regina (Belcher, 1961). Note also that warblers comprised 34 per cent of the total numbers found on September 3, and a surprising 71 per cent of the total on September 10.

Late in the afternoon of September 10 I had an opportunity to make a brief check at the TV tower at Caron, but found only one Red-eyed Vireo and two Savannah Sparrows, apparently killed the night before.

The evening and night of September 18 seemed particularly hazardous to small birds, a cold wave moving in from the northwest bringing strong winds and a dense fog of mist and smoke from forest fires. Accordingly, on September 19, at 8:30 a.m. I checked at the Regina station and found the following birds which were clearly overnight kills:

Pintail, <i>Anas acuta</i>	1	im.
Green-winged Teal <i>Anas carolinensis</i>	1	im.
Sora	1	im.
American Coot, <i>Fulica americana</i>	1	Ad.
Harris' Sparrow <i>Zonotrichia querula</i>	1	im.

TABLE 3  
Combined list of species

Sora*	Bay-breasted Warbler**
Common Snipe	Blackpoll Warbler**
Leas; Flycatcher*	Palm Warbler
House Wren	Ovenbird**
Swainson's Thrush	Connecticut Warbler*
Gray-cheeked Thrush	Mourning Warbler*
Solitary Vireo*	MacGillivray's Warbler*
Red-eyed Vireo**	Yellowthroat**
Philadelphia Vireo*	American Redstart**
Black-and-White Warbler**	Savannah Sparrow**
Tennessee Warbler**	Le Conte's Sparrow
Orange-crowned Warbler	Vesper Sparrow
Yellow Warbler**	Clay-colored Sparrow*
Magnolia Warbler*	Lincoln's Sparrow**
Myrtle Warbler**	Chestnut-collared Longspur*
Single asterisk—Sept. 3; no asterisk—Sept. 10; double asterisk—Sept. 3 and 10.	

Harris' Sparrows were quite common in the shrubbery at the station; since this was the first record of the species for the season it had clearly moved in overnight. In view of the weather conditions this seemed an unusually small kill and this suggests that weather alone is not sufficient to account for large casualties. Probably, the presence of large numbers of birds is an even more important factor.

Such seemed to be the case at Melfort where a large number of birds were reported killed, apparently on the same abominable night. A newspaper account on September 20 stated that 147 birds had been picked up in Melfort "apparently killed in flying against business buildings in the town, possibly because of the heavy smoke pall overlying the town." George T. Anderson, principal of the Melfort Collegiate, at my request kindly sent me a few specimens which had escaped the disposal system. These were Yellow-bellied Sapsucker (*Sphyrapicus varius*) Swainson's Thrush, **Connecticut Warbler**, Myrtle Warbler and Yellowthroat. The latter two were picked up on the morning of September 12, apparently the victims of large windows, and these species were thought by Mr. Anderson to represent the more common species in the kill.

No doubt casualties are occurring at other towers; Jack Livingston, Executive Director of the Canadian Audubon Society, George Ledingham, Doug Stephen, Canadian Wildlife Service, and I had occasion to check on September 24 the 455 feet tower of the CBK radio transmitting station



at Watrous. An old carcass of an Eared Grebe (*Podiceps caspicus*) and a recent Swamp Sparrow (*Melospiza georgiana*) were found. Station personnel informed us that in the past they had occasionally noticed dead birds under the tower. Bird watchers ought to be alert to the possibilities of fatalities at this and other towers and structures, especially during the fall and spring migration. Information obtained in this way, in addition to providing distribution records and specimens, may assist in further understanding the basis for these mortalities and thus in finding ways to help reduce this annual loss of songbirds.

### AMERICAN GOLDEN PLOVER IN FALL MIGRATION AT HORSESHOE LAKE

On September 17, 1961, I observed a flock of 17 American Golden Plover at Horseshoe Lake northwest of Yorkton. They were studied in detail while at rest and flushed twice to note flight markings. At rest they appeared generally brown above, three individuals having a distinct golden tinge to their upper parts. In flight, the lack of conspicuous markings was evident—there were no wing bars, rump and tail were evenly dark, and there were no black axillars as in the Black-bellied Plover.

Checking Stuart Houston's list of "The birds of the Yorkton district" (1949. *Can. Field-Nat.* 63: 215-241) and recent issues of the *Blue Jay*, I could find no record of this species in fall migration. However,

### LITERATURE CITED

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Audubon Field Notes lists numerous observations for interior regions within the last few years, the nearest being in South Dakota in the autumn of 1958 and 1960. In the general summary of the 1958 autumn migration reference is made to the continually increasing number of observations which indicate that more individuals are deserting their traditional ocean migration routes in favour of partial or complete overland flights.—**William Anaka**, Spirit Lake.

**EDITOR'S NOTE:** It is always difficult to assess how much migration patterns are actually changing, since a lack of good observers and good records may partly explain the apparent absence of a species. It is interesting to note, as a matter of comparison, that the American Golden Plover was once considered unknown in the Regina area in fall migration, although Margaret Belcher's *Birds of Regina* (1961) cites fall records for as early as 1913. We know of several observations of the Golden Plover again this fall in the Regina area—a group of 21 was seen October 8 by Frank Brazier and R. W. Nero, and a group of five, with one Black-bellied Plover, on October 21 by M. Belcher and L. Murray.

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he is willing to pay. Planning for lure crop planting must go ahead. If Crown land is not available in sufficient quantity to meet the need, suitable private land adjoining the present sanctuary must be acquired. The farming operations required to produce the lure crop could be carried out by local farmers after bids have been submitted on various contracts. These are some of the obstacles that will have to be overcome to alleviate the local crop depredation problem. Perhaps some solution to the problem may be forthcoming through the Agricultural Rehabilitation and Development Act.

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counted ten birds but one got out in the next few minutes. Another got tangled in the net and drowned. I got mired in the mud trying to untangle one bird and fell over with a Sandhill Crane in my arms, saying "I love you, Honey, and some day you will be in a beautiful zoo, admired by thousands of children."

I got six Sandhills for the zoo and Dr. Miller banded the two remaining birds. This adventure was almost as exciting as the time I lassoed a live buffalo in Brandon Park and transferred it to Moose Jaw Wild Animal Park for Mr. Paynter, Director of Wildlife.