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INVESTIGATION OF BIRD MIGRATION AND MORTALITY  
AT THE OMEGA NAVIGATION STATION, LAMOURE, NORTH DAKOTA  
FALL 1972 AND SPRING 1973

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An investigation of bird migration and mortality at the U.S. Coast Guard's Omega Navigation Station, located in the flood plain of the James River near LaMoure, North Dakota, began in September 1971 following the completion there of the 1,200-foot transmitting tower. The objectives of the study are:

1. To determine the nature of bird migration through the tower area and adjacent regions.
2. To determine the magnitude of bird losses caused by the tower.
3. To determine the influence of weather patterns on bird migration and losses.
4. To develop and evaluate methods for reducing bird losses at towers.

This paper summarizes results from the two most recent migration periods—fall 1972 and spring 1973. The study, sponsored by the Northern Prairie Wildlife Research Center, is being conducted in cooperation with North Dakota State University.

In both seasons, observations by means of a spotting scope and a portable ceilometer lamp (spotlight) yielded consistent results which indicated that, on overcast nights, many more migrants were near the tower than 1,000 feet to the northeast. Conversely, on clear nights, more birds were observed away from the tower than near it, which suggests that migrants actively avoid the structure under such conditions. It is believed that the red tower lights are responsible for this observed behavior, but possible effects of the signal emitted by the tower cannot be dismissed completely.

Because the dense vegetation under the tower made it difficult to find dead and injured birds, randomly selected plots were used to sample losses. During daily, early morning visits to these sampling plots and to the gravel central area and roads at the tower site, 226 birds (66 species) and 105 birds (51 species) were found dead and injured in the fall and spring, respectively. Estimates of total mortality for the two seasons were calculated to be 1,037 in the fall and 1,417 in the spring. In the fall, Warblers accounted for 40 percent of the birds collected, and Fringillids, 26 percent; the percentages of these families in the spring were 19 and 29,

respectively. Because searches for tower-killed birds were made daily, the numbers lost to scavengers and predators did not greatly affect the estimate of total mortality.

Limited tests of a commercial sound device (Av Alarm, Model TAV-60) as a deterrent to nocturnal migrants were encouraging because the sound dispersed low-level birds milling near white lights on a building adjacent to the tower. However, the sound did not appear to greatly influence the behavior of birds at distances greater than 100 feet above and to the sides of the speaker. Further tests of the unit are needed before its effectiveness can be determined fully.

A more complete report on the details and findings of the study, which was presented at the annual meeting of the North Dakota Academy of Science in 1973, is being published in the Proceedings of the Academy.