

826.6 15 black vultures in $\frac{7}{10}$ mi. to N sailing with updraft winds from E. ^{approx.} 1500 ducks in bay to E. and generally distributed, redtail. 827.3 3 white-tailed deer. Approx 3000 redwings flying S in one huge flight. 827.5 visitor center, killedeer and another flock of approx 800 redwings flying S. 828.0 Entrance gates, (5:16 P.M.) 831.3 Hoppers Landing. Camped here. Birds absent in bay to E and only one killedeer on beach which remained until late twilight.

In a comparison of numbers of sparrow hawks and redwings inside and outside Aransas Refuge;

.73 sparrow hawks per mile (^{24 sp. hawks in} 32.8 miles from Goose Island to Aransas Refuge)

0 sparrow hawks in refuge (16.4 miles in refuge)

.28 redtails per mile (^{9 redtails in} 32.8 miles from Goose Island to Aransas Refuge)

.06 redtails per mile (^{1 redtail in} 16.4 miles in refuge)

Hoppers Landing, Aransas Co., Texas

Jan 3, 1984

min temp approx 36°F. At 7:00 A.M. no birds in bay, 1 black-bellied plover, 1 killedeer, 2 sandering on beach. Other birds observed later were 2 turkey vultures, 1 great blue heron, ^{meadowlark} redtail, marsh hawk, ring-billed gull, and 2 pied-billed grebes.

at 7:22 A.M. a black mass of double-crested cormorant approached bay, flying a foot above the water from the SE. The flight was a series of from 40 to 200 birds in wave eschelons as far as 18x binoculars could see. They formed a surf of birds. This endless flight ended at 7:45 A.M. when all birds were in the bay SE of Hopper's Landing. The flight ended without stragglers.

Each line averaged 60 birds (40-150) and includes 1 to 4 pelicans per line, average 1 pelican per 40 cormorant. at 7:45 the flock was discrete in outline and birds evenly distributed 1 per every 3-4 feet. The pelicans arranged themselves on the periphery of the flock. There was no evidence of fishing nor organized movement. at 7:50 A.M.

they started to leave to the NE, passing outer rock pier by 200'. They left in single file or several single files combined (1'-4' above water and lasted for 10 minutes to 8:00 A.M. (sun 1/2 hr above horizon and among clouds). At this time it was possible to accurately count (sometimes estimating by 10's) all the cormorant as they passed by along the same route which was 4200 cormorant, 112 pelicans, 5 ring-billed gulls.

