

22), Rock Dove, 16 (34, 14); Com. Crow, 12 (34, 14); Kestrel, 11 (24, 10); Loggerhead Shrike, 9 (19, 8); Red-tailed Hawk, 3 (6, 3); Anna's Hummingbird, 2 (4, 2); Com Flicker, 1 (2, 1); Brewer's Blackbird, 1; Savannah Sparrow, 1; Killdeer, +; Long-billed Curlew, +; Spotted Dove, +; Starling, +; Sage Sparrow, +. **Average Total:** 188 birds (404/km<sup>2</sup>, 163/100 acres). **Remarks:** All of the principal species were seen on each census with the following exceptions: Com. Flicker noted on seven trips;

Brewer's Blackbird and Savannah Sparrow on one trip. The Sage Sparrow was one found dead. This was the first Sage Sparrow recorded in the immediate vicinity. An uncharacteristic high of 102 House Finches and 65 crows on one census raised their averages appreciably. Very few birds utilized the newly cultivated areas. — *DAVID C ROELEN, Dept. of Biology, Calif. State Univ., Long Beach and 24211 Adolph Ave., Torrance, CA 90505*

## Notes on a Winter Bird-Population Study: Observations versus Netting

*Erma J. Fisk\**

To avoid duplication in counting Gray Catbirds during my Winter Bird-Population Study, my method of tabulation has been to survey my study area both at dawn and at dusk, listening to the calls that indicate locations of roosts. Since the entire study area cannot be covered in the rapidly changing light I have pin-pointed some roosts on one count day, others in the tract on other days, rechecking as possible. With Cardinals, which also appear to move about constantly during the daytime, the same method has been used in combination with recording the maximum numbers seen at one time at my feeders.

Early in the study period, 1975, ten nets were set up, with the somewhat surprising result that 20 catbirds were netted in three afternoon hours as against only five that had been aurally and visually counted. On four subsequent days both netting, aural and visual observation were used to determine numbers of the species present. Table 1 indicates the disparity. It lists only those species with stable winter populations, often retrapped, except for the Least Flycatcher and the warblers.

The results shown seem to indicate that there are usually more birds in the bush than the observer will normally record by eye or ear alone.

*[Inherent in any method of data gathering there is a degree of possible error. Therefore, in employing the results of surveys, censuses, and counts, careful consideration should be given to calculating or estimating the percentage of possible error and adjusting the conclusions accordingly — Ed.]*

**Table 1. Numbers of birds traditionally observed and netted in same area**

<i>Species</i>	<i>Observed</i>	<i>Netted same day</i>	<i>Netted Jan. 4-Feb 4</i>
Gray Catbird	5	20	90
	6	21	(81 new, 9
	8	18	returns
	8	5	from previous
	7	17	years)
Least Flycatcher	0	1	renetted
White-eyed Vireo	0	3	7
Bl. & w. Warbler	0	1	2
Yel.-r. Warbler	0	5	0
Ovenbird	0	1	2
Cardinal	1-5 daily		15
Painted Bunting	4-9 daily		21
Indigo Bunting	4-7 daily		10

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