

GENERAL NOTES

Survival of Fledgling Brown-headed Cowbirds.—Although the fledgling period (i.e., from the time a bird leaves the nest until it becomes independent) is a critical time in a bird's life, few records document survival rates during this period. We have found fledgling survival rates for only seven North American passerine species—Florida Scrub Jay (*Aphelocoma c. coerulescens*), Black-capped Chickadee (*Parus atricapillus*), Verdin (*Auriparus flaviceps*), Cactus Wren (*Campylorhynchus bruneicapillus*), Eastern Bluebird (*Sialia sialis*), Ovenbird (*Seiurus aurocapillus*), and Song Sparrow (*Melospiza melodia*). Table 1 summarizes these data.

TABLE 1.
Fledgling survival rates of some North American Passerines.

Species	Survival rate	Number	Nestling period (days)	Age at independence ¹	Reference
Florida Scrub Jay	50.9%	26	17–18	3 months	Woolfenden, 1978
Black-capped Chickadee	87.4%	95	16	21–28 days	Smith, 1967
Verdin	81.0%	21	18	ca. 32 days	Austin, 1977
Cactus Wren	89.5%	19	20	45–60 days	Ricklefs, 1968
	60.0%	55	20	ca. 50 days	Anderson & Anderson, 1963
Eastern Bluebird	81.5%	189	18–22	35–40 days	Pinkowski, 1977
Ovenbird	55.7%	70	8–10	30–40 days	Hann, 1937
Brown-headed Cowbird	47.6%	21	8–13	25–39 days	This study
Song Sparrow	70.0%	ca. 30–40	10	26–28 days	Nice, 1937

¹ Determined in each of these studies.

During a study of the behavior and ecology of fledgling Brown-headed Cowbirds (*Molothrus ater*) and their hosts in Fairfax County, VA, and Montgomery County, MD, in 1974 to 1976, we had an opportunity to determine a fledgling survival rate for this species up to the time of attaining independence (determined in this study to be at 25 to 39 days old). We located and banded 21 nestling cowbirds with U.S. Fish and Wildlife Service bands. From the day of fledging until independence, each bird was followed daily for 2 to 4 continuous hours. Data are insufficient to compare survival rates with different hosts' fledglings, but the overall rate for cowbirds was 47.6% (Table 2).

Most loss of fledglings occurred 1–2 days after leaving the nest (Table 2), when cowbirds cannot fly or walk well (Woodward, pers. obs.) and are therefore more susceptible to predation. Further support for this trend is provided by another eight fledgling cowbirds located 4 to 14 days after they had fledged. Only one of these birds did not reach independence.

Probable causes of death were predation (6 cases), drowning (1 case), and hit by car (1 case). Two cowbirds disappeared with no indication of how they died. Suspected predators were Black Racers (*Coluber constrictor*), Black Rat Snake (*Elaphe obsoleta*), Blue Jays (*Cyanocitta cristata*), and a mammal.

No actual predation was observed, but potential predators (see Table 2) were observed in the immediate vicinity of fledgling cowbirds during the observation period preceding their disappearance. Once, feathers of a fledgling were found (typical of a mammal kill) near the host's nest. Twice Black Racers were seen hunting fledglings. In one instance the snake repeatedly closed in quickly and alertly on a newly fledged cowbird from an Acadian

TABLE 2.
Survival of fledgling Brown-headed Cowbirds, 1974-1976.

Host species	n	Fledgling Brown-headed Cowbirds			Probable cause of death	Day after fledging when died ²
		Lived	Died			
Eastern Phoebe (<i>Sayornis phoebe</i>)	8	3	5	1—Drowned 1—Unknown predator 1—Mammal 1—Rat snake 1—Hit by car 1—Black Racer 1—Unknown	Day 1 Day 1 Day 2 Day 2 Day 4 Day 1 Day 12	
Acadian Flycatcher (<i>Empidonax virens</i>)	2	0	2			
Carolina Wren (<i>Thryothorus ludovicianus</i>)	4	4	0			
Eastern Bluebird (<i>Sialia sialis</i>)	3	1	2 ²	2—Blue Jays	Day 1 or 2	
White-eyed Vireo (<i>Vireo griseus</i>)	1	0	1	1—Black Racer	Day 2	
Indigo Bunting (<i>Passerina cyanea</i>)	1	0	1	1—Black Racer	Day 1	
Song Sparrow (<i>Melospiza melodia</i>)	2	2	0			
TOTALS	21	10 47.6%	11 52.4%			

¹ Day of fledging is considered Day 1.

² These two birds were nest mates.

Flycatcher nest, despite interference by the observers. Attempts to capture and relocate the snake failed, and the following morning the cowbird was missing. In the other case, a Black Racer was hunting two recently fledged Indigo Buntings, nest mates of a cowbird that had fledged and disappeared earlier that morning.

Based on available, but limited, information, Ricklefs (1972) noticed a general trend toward the highest fledgling survival rates being found in those species with the longest nestling period. Using the data in Table 1, a linear regression was calculated to test this trend. No significant correlation ($r^2 = 0.26, P > .05$) was found between fledgling survival and the nestling period. Neither did age of cowbirds at fledging appear to affect their chances of survival, although the sample size is too small to test the correlation of age at fledging and probability of survival. In this study, cowbirds fledged when 8 to 13 days old ($\bar{x} = 10.9, n = 14$). Two cowbirds that fledged when 8 and 9 days old survived; four that fledged when 10 or 11 days old survived and seven did not; and two that fledged when 12 or 13 days old survived while two did not survive.

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Over-water Flights of Barn Owls.—Bolen (*Bird-Banding*, **49**: 78-79, 1978) lists some long-distance recoveries of Barn Owls (*Tyto alba*). One bird was banded in Sinton, Texas and recovered near Veracruz, Mexico. Bolen assumes this bird did not travel the direct line between the localities because most of the distance is over water. We have published an account of an adult Barn Owl banded in the town of Mequon, Ozaukee County, Wisconsin, and captured on a ship 225 miles due east of Savannah, Georgia (Mueller and Berger, *Bird-Banding*, **30**: 182, 1959). It is interesting to note that this was an adult, and thus presumably not on its first migration, suggesting that this flight out over the ocean was not an isolated accident. Bent (*U.S. Natl. Mus. Bull.* 170, 1938) lists an account of a Barn Owl coming aboard a ship off the coast of North Carolina, and Karulus and Eckert ("The Owls of North America," Garden City, NY, Doubleday, 1974) state that Barn Owls occasionally wander far out to sea and land on ships to rest. The enormous breeding range of the Barn Owl, including many islands, further suggests that the species is capable of flying great distances over water.—HELMUT C. MUELLER, *Department of Zoology and Curriculum in Ecology, University of North Carolina, Chapel Hill NC 27514*, and D. D. BERGER, *Cedar Grove Ornithological Station, Route 1, Cedar Grove WI 53013*.