

## DISTRIBUTION AND ABUNDANCE OF BROWN-HEADED COWBIRDS IN THE WILDERNESS OF CENTRAL IDAHO

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*Abstract.* The value of wilderness as an ecological control area where anthropogenic factors are minimal and as a demographic source area for neotropical migrant birds is diminished by exotic species such as the Brown-headed Cowbird (*Molothrus ater*). I observed Brown-headed Cowbirds at 9 of 10 small, developed sites within the Selway-Bitterroot and Frank Church-River of No Return wildernesses of Idaho during 1993–1997. None were detected during 290 5-minute point counts at undeveloped sites in the Selway-Bitterroot Wilderness. During daily counts at a small ranch on the Selway River, where 6 or fewer horses or mules were kept year-round, the minimum number of adult cowbirds present was highest in mid-May and mid-July and low in June and after late July. Because Brown-headed Cowbirds are restricted spatially and are not numerous in the wilderness of central Idaho, current impacts are probably minor and effective control may be possible in local problem spots.

*Key Words:* abundance, Brown-headed Cowbird, distribution, Idaho, *Molothrus ater*, wilderness.

Brown-headed Cowbirds (*Molothrus ater*) are obligate brood parasites that may cause reductions in populations of vulnerable host species (Mayfield 1965, Brittingham and Temple 1983). Originally associated with American bison (*Bison bison*), they were probably absent from the wilderness of central Idaho before homesteading occurred in the early twentieth century (Laymon 1987). The earliest known historical reference, a crude bird list made for District 5 of the Nez Perce National Forest in 1922, suggests they arrived in the area between 1905 and 1922. In the northern Rockies region cowbirds are known to be common in agricultural/forest mosaics and fringes (Hejl and Young *this volume*, Tewksbury et al. *this volume*) and on urban fringes (Greene *this volume*), but their status in extensive wilderness is poorly known. In this paper I compare the numbers of cowbirds observed at developed and undeveloped sites within wilderness and document seasonal changes in abundance at one developed site over five years.

### METHODS

The central Idaho wilderness consists of 1.5 million ha of contiguous, federally-designated wilderness comprising the Selway-Bitterroot, Frank Church-River of No Return, and Gospel Hump wildernesses. The vegetation is a mosaic of conifer stands of various types and open areas including brush fields, wet meadows, and steep slopes of grasses and forbs. Elevations range from 670 to 3000 m. Developed areas, both public and private, are generally under 60 ha and are located along rivers or large creeks.

The focal point of this study was Running Creek Ranch on the Selway River, a 12-ha research station with irrigated lawns and hayfields, where horses and mules have been kept since the early 1900s. About five head were kept there

year-round during the study. These animals concentrated their activities near the ranch, wandering up to 1 km away into the grazing allotment 1 June–15 August but returning to the corral daily. Two similar ranches are located 2.5 and 13 km down river. A trailhead, U.S. Forest Service guard station, and an outfitter's camp, all located 13 km up river, received heavy stock use.

From 1993–1997 when I, or observers I had trained, visited developed sites in the Idaho backcountry, we recorded the numbers of adult male, adult female, and juvenile cowbirds present. Feeding habitat and associated grazing animals were noted. Five sites were visited on more than 10 different days, two sites on five different days, one site on three different days, and two sites only once.

I counted and classified by age and sex cowbirds seen during the course of nearly every day's activities at Running Creek Ranch. I considered the highest count achieved each day to be the minimum number present for an age/sex category. Because the chances of seeing cowbirds varied greatly from day to day depending on the day's activities, minimum numbers present were subsequently converted from a daily to a weekly figure. Also, I watched and listened for cowbirds during 290 5-minute point counts (Ralph et al. 1995) conducted from June 1 to July 10 in four vegetation types that dominate the study area: lower canyon (N = 120), mixed conifer (N = 60), lodgepole transition (N = 60), and whitebark pine-spruce/fir (N = 50). Points were located 200 m apart in patches at least 1900 m wide. Of these points, 72 were located  $\leq 1$  km from developed sites, 167 from 1 to 10 km from developed sites, and 51  $\geq 10$  km from developed sites. I watched and listened for cowbirds during 222 hr of travel on foot to and from point counts. During June and July of 1994–

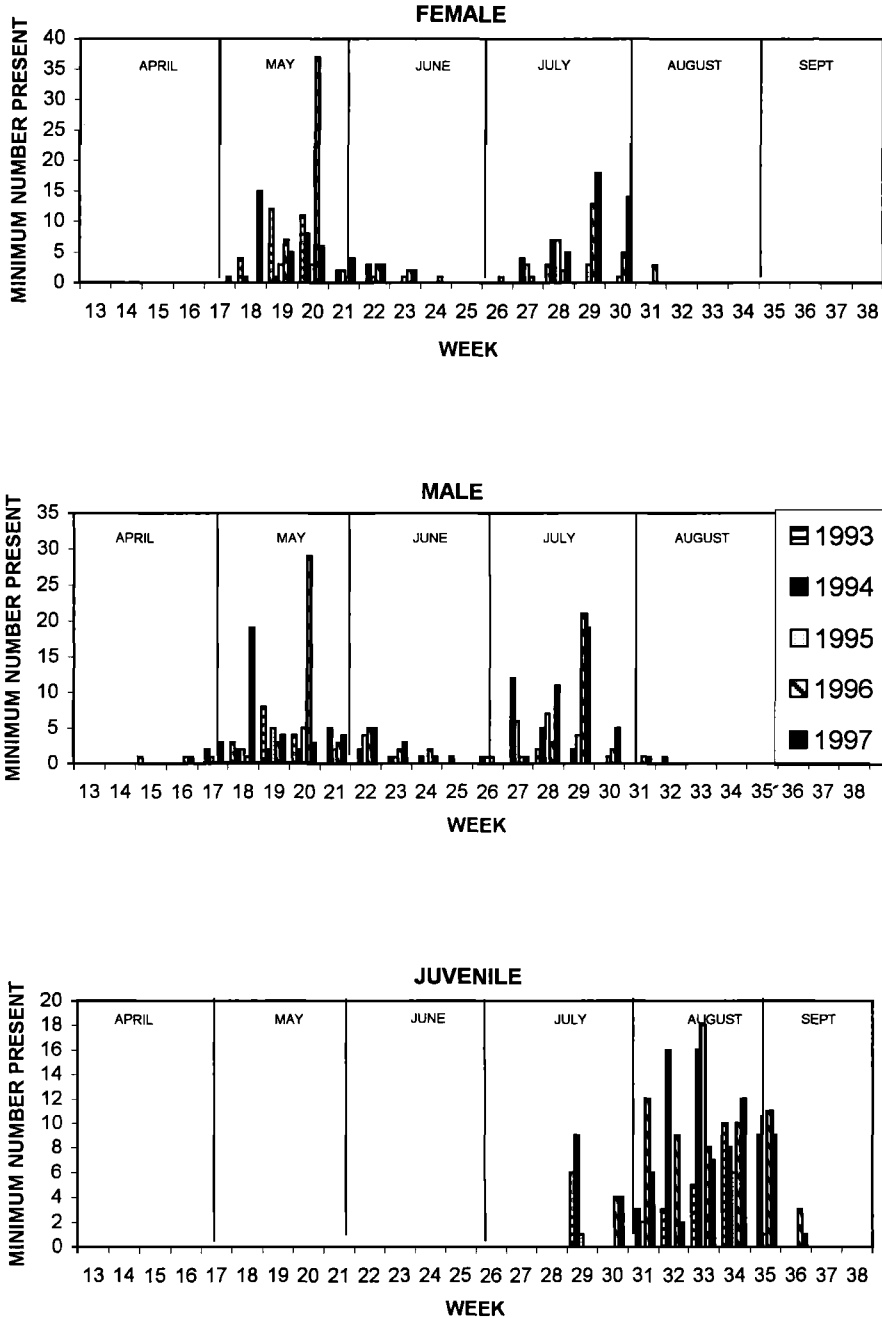


FIGURE 1. Minimum number of adult female, adult male, and independent juvenile Brown-headed Cowbirds present each week 1993–1997 at Running Creek Ranch in the Selway-Bitterroot Wilderness, Idaho.

1997, I also searched for cowbirds during repeated visits to three sites  $\leq 1$  km and four sites between 1 km and 10 km from developed areas as a volunteer contribution to a nation-wide research project (Rosenberg et al. 1996).

**RESULTS**

Cowbirds were seen at 9 of 10 backcountry, developed sites including the highest site (1900 m). They were observed feeding in short or

sparse vegetation of lawns, airstrips, or corrals at all sites. Cowbirds associated with horses at six sites and wild cervids, primarily moose (*Alces alces*) using a salt block, at one site. The single developed site where no cowbirds were detected was visited on only two different days.

At Running Creek Ranch the minimum number of adult cowbirds present followed a bimodal temporal pattern for both sexes in all years (Fig. 1). A first peak occurred 6–22 May, followed by a period of very low numbers from about 7 June–7 July, a second peak 10–20 July, and very low numbers again by the final days of July. Juvenile cowbirds first appeared 23–26 July, reached a peak 18–24 August, and disappeared by 6 September (Fig. 1).

No cowbirds were detected during point counts in the wilderness surrounding Running Creek Ranch. On five occasions I saw cowbirds with the horse herd in undeveloped areas less than 0.5 km from the ranch. These were the only cowbirds I detected during travel or other activities in undeveloped areas.

## DISCUSSION

Although Brown-headed Cowbirds were widespread in the Idaho backcountry, they were only detected in the vicinity of widely scattered developed sites. The types of areas used for feeding were similar to those reported by Rothstein et al. (1980) and Verner and Ritter (1983) in the Sierra Nevada. Most developed sites in the Idaho backcountry are located in riparian zones where potential host species nest; thus, food and host resources are in close proximity.

Both adults and independent juveniles used

Running Creek Ranch for brief time periods, about 10 and 8 weeks per year, respectively. The peaks in adult numbers that occurred each year in May probably included migrants. In some years peak counts were made when cowbirds traveled in transient, mixed flocks with other blackbird species. During the last 3 weeks of June and the first few days of July, cowbirds either left the ranch or became secretive and abandoned their usual feeding areas. Data from my study were not sufficient to explain patterns of cowbird abundance during the summer, but I did note a number of consistent environmental patterns that could have been related. The early summer period with few cowbird detections probably coincided with incubation and rearing of the first brood by common host species. Large numbers of female horseflies (*Tabanus* spp.) were present on horses and mules each year from mid-July through mid-August and cowbirds were often observed feeding on them. Adult cowbirds disappeared from the Ranch at about the time flocks of independent juveniles began to congregate at the corral.

The restricted spatial and temporal use of the Idaho backcountry by Brown-headed Cowbirds may indicate a host-rich/food-poor environment. Because Brown-headed Cowbirds are fairly restricted both temporally and spatially in the wilderness of central Idaho, current impacts are probably minor and effective control may be possible in local problem spots.

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