

The decrease in total birds over the three years appears to be due to less precipitation in the high country. Numbers of riparian obligate species such as MacGillivray's and Orange-crowned Warblers have not decreased significantly. Eight (8) of 20 individual MacGillivray Warblers captured during the three years have been recaptured in successive years, indicating that net avoidance may not be a significant factor. Five (5) of 141 individual Orange-crowned Warblers captured over the three years were recaptured in successive years.

While breeding of MacGillivray's Warblers has been documented, we have not been able to document breeding of Orange-crowned Warblers in the vicinity of the station. The hypothesis that Orange-crowned Warblers that breed in the foothills of California are migrating over the Sierra to molt on the eastern slopes (Steele, pers. comm.) cannot be discounted.

The establishment of the banding station and the handling of delicate and beautiful birds for an essential scientific purpose is a rewarding learning experience. Jim Eidel and Al Gubanich thank all the Audubon and UNR volunteers who have provided significant help on behalf of the Institute of Bird Populations. Dedicated banders are being trained on the site. Should you wish to get involved in this or a similar effort call Jim Eidel at 702 882-9172 or Al Gubanich at 702 784-6652. We present an evening introductory banding class each May at the University of Nevada-Reno.



## **The Effects of Brown-headed Cowbirds on Neotropical Migrants in the Great Basin National Park and Lake Mead National Recreation Area: An Overview Report for 1995-96**

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Point count surveys were used to determine the presence, abundance, and distribution of neotropical migrant birds in selected riparian areas during the bird breeding season. Point count surveys were also used to monitor cowbird populations. Additional monitoring of cowbirds was conducted at potential foraging areas. Monitoring was conducted throughout the neotropical migratory bird breeding period. Point counts were conducted every two weeks for a total of six to eight survey visits to each point during the season.

Nest monitoring was conducted to look for evidence of brood parasitism. Nest searches were conducted for host nests in riparian habitats at subsets of the survey areas. Nests were checked for parasitism by cowbirds. Nest success and reproductive output were monitored for both parasitized and non-parasitized nests. Emphasis was placed on the finding the nests of species that are known to be preferred hosts of cowbirds.

A combination of cowbird densities and parasitism rates were used to determine if cowbird parasitism was a significant factor in each unit. If parasitism exceeded 15% for any of our target species, control measures for cowbirds may be warranted. Data were analyzed on the basis of differences in frequency occurrence and mean area maximum numbers for host and cowbird populations. A combination of cowbird densities and parasitism rates was used to determine if cowbird control measures are needed at a given unit

### **Great Basin National Park**

The Great Basin National Park comprises significant riparian habitat and avifauna. The life zone is Upper Sonoran, and surrounding habitat is Great Basin sage. A total of 90 survey points was monitored in this park unit.

Brown-headed Cowbirds are present in all areas of the study. There were cattle grazing in all park areas included in the study. In the Strawberry Creek drainage there was grazing only in 1996. In both years cowbird numbers were highest along Baker and Lehman creeks. Frequency of occurrence for Brown-headed Cowbirds in 1995 was 31%, and in 1996 was 39%. Overall parasitism was 6% in 1995 (five out of 81 nests found) and 5% in 1996 (eight of 172 nests found).

Selected species that were hardest hit by parasitism included Warbling Vireos in both 1995 and 1996. In 1995 four of 31 nests found were parasitized 13% and in 1996 four of 63 nests found were parasitized 6%. Warbling Vireos is one of the most common species in the park, and they were encountered at more than 80% of the survey sites. In 1995, one of three Solitary Vireo nests found was also parasitized. In 1996 three-additional species were parasitized: Chipping Sparrows (14%); Dusky Flycatchers (22%); and Yellow-rumped Warblers (20%).

Parasitism rates by cowbirds were deemed not sufficiently high to warrant a trapping program. There were several factors which should be examined more closely in order to better assess the impact of Brown-headed Cowbirds in Great Basin National Park. In 1995 all parasitism occurred in Baker and Lehman drainages, both of which experienced the highest levels of cowbird activity. In 1996 livestock grazing, occurred in the Strawberry Creek drainage. We also found four parasitized nests there in 1996, and none in 1995. This possible direct connection between grazing activity and parasitism merits further attention.

## Lake Mead National Recreation Area

The Lake Mead National Recreation Area comprises significant riparian habitat and avifauna population. The life zone is Lower Sonoran, and surrounding habitat is Mojave Desert. A total of 90 survey points was monitored in this park unit.

Brown-headed Cowbirds were present in all areas. In both years cowbird numbers were highest along the Muddy River. This site has a small horse corral and is surrounded by agricultural land. All areas had high levels of feral burro activity, although the relationship between burros and cowbirds has not been well documented. Frequency of occurrence for Brown-headed Cowbirds in 1995 was 79%, and in 1996 was 77%. Overall parasitism was 8% in 1995 and 15% in 1996.

Selected species that were hardest hit by parasitism included Bell's Vireos in both 1995 and 1996. In 1995 five of 22 nests found were parasitized (23%) and in 1996 one of six nests found were parasitized (17%). In 1995 Song Sparrows (29%) and Blue-gray Gnatcatchers (10%) were also parasitized. In 1996 five species were parasitized: Yellow Warblers (17%); Blue-gray Gnatcatchers (33%); Black-tailed Gnatcatchers (33%); Abert's Towhee (25%); and Bell's Vireo. All of these species were very common, and were encountered at over half the survey sites.

Parasitism rates by cowbirds are sufficiently high to warrant either a trapping program or further investigation of the impact of Brown-headed cowbirds. A trapping effort should begin in mid-April and end in late July, the time of maximum concentration of cowbirds in the park. One trap should be placed at Roger's and Blue Point springs. Two traps should be placed along the Muddy River. The logistics of carrying out a cowbird trapping effort in this park are difficult due to the long distances between sites. Therefore although there was high parasitism at Virgin River, it does not seem feasible to trap there.

The park should continue monitoring and nest-searching to determine the current status of nesting neotropical migrant birds in the selected riparian areas in the park. Nest searching efforts should be focused on Yellow Warblers, Blue-gray Gnatcatchers, Black-tailed Gnatcatchers, Abert's Towhees, Song Sparrows, and the Bell's Vireo.

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