

North American Bluebird Society and Bluebird Recovery Program
1992 Progress Report
Reproductive success of Western and Mountain Bluebirds in
grasshopper control areas, and potential for reducing grasshopper
densities by increasing bluebird numbers.
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NERI Report 93-01

This study of bluebirds in central Oregon was begun in 1988, in order to examine effects of chemical spraying of rangelands for grasshopper control, and to assess the potential for reducing local grasshopper densities and the intensity of infestations by increasing numbers of bluebirds. Ten study sites, each with about 35 nest boxes, and 5 sites with no boxes, were established in 1988 and 1989. Bluebird nesting has been monitored for 5 seasons.

No spray projects were carried out in any year between 1988 and 1991. Early in 1992, it appeared that spraying would occur in Baker County. We established a study site with 30 nest boxes in the area proposed for spraying, and found some existing boxes that we were given permission to monitor. However, the grasshopper numbers were nowhere near as high as predicted, so no spray occurred. Adding insult to our disappointment at not being able to complete our study, a small spray project did occur in another part of eastern Oregon, but the infestation was not recognized in time for us to put up nest boxes or even search for natural nests before the area was sprayed.

During 1992, 7 visits were made during the nesting season to monitor bluebird nests at the study sites. Because of limited funding and the added time and distance involved in visiting the site in Baker County, only 3 sites were completely monitored on the early visits. Once we knew that spraying would not occur in Baker County, we only visited the Wheeler and Grant County sites, and were able to monitor 6 sites during the rest of the season. Complete or partial data were collected from 259 bluebird nests that received at least 1 egg. In order to determine the importance of grasshoppers as a food resource for nestlings, 69 observational samples of food items brought to nestlings were obtained, as well as 27 samples of unconsumed food items found in nests that had successfully fledged, for a total of 572 individual food items. No banding of nestlings was done in 1992. Censuses of adult bluebirds were taken at the study sites and at nearby no-box sites. During these censuses, counts of grasshoppers were made (U.S. Department of Agriculture procedure) to estimate the density on each site. In October, a last visit was made to repair and replace boxes split or otherwise damaged over the 5 years, and one more visit was made to Baker County to clean out and examine nests.

Particularly in comparison with the previous year, 1992 was a very successful one for bluebirds in eastern Oregon. Drought conditions meant none of the sudden periods of wet, cold weather which have been associated with numerous abandoned nests in other years. Crickets were plentiful early in the season, and grasshoppers hatched early and were abundant at most sites.

The results of the 1992 nest monitoring, diet sampling, and censusing are not available at this time, because I am entering all data from all years into a database that will enable more efficient processing and analysis.

Because it appears that drought conditions may persist in Oregon, there is a good chance that spraying for grasshopper control will occur in 1993. At this point, we are planning to spend only one more year at our full nest monitoring effort. After that, unless a grasshopper control program is carried out, we will only make one visit each breeding season, as well as cleaning out and examining boxes each fall. Whether grasshopper control is carried out and can be studied or not, we will complete our analysis of the relationship between bluebird and grasshopper numbers. In addition we will use the data collected to analyze the nestling diet during different weather years and different parts of the breeding season. We will also define the relationship between nest success and specific weather patterns.

All of the work on the project last year was carried out on a volunteer basis, and if necessary will be again this year. Grants received in 1992 were used to reimburse drivers of cars at the rate of about 17.4 cents per mile. We are applying to the U.S. Fish and Wildlife Service, the Bureau of Land Management, and the Bluebird Recovery Program for funding for 1993.

1992 EXPENDITURES

8,613 miles @ \$.17+ per mile	
North American Bluebird Society Grant	\$1,000
Bluebird Recovery Program Grant	\$ 500