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## POPULATION ESTIMATES

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## POPULATION ESTIMATES

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In dealing with population estimates, we need to determine first the reason for estimating the population. If we are dealing with a local situation, are we concerned with a local estimate? If we are dealing with a regional problem, are we concerned with a regional estimate? The blackbird problem is chiefly a regional problem, but we need to look at broader horizons than just local or regional situations. Are we dealing with a national problem? Is this problem a year-round one or is it a seasonal problem? We may want to know just purely the number of birds we are dealing with. Another reason for doing population estimates might be to determine the effectiveness of some lethal control method that has been employed.

Fortunately, those species with which we are most concerned are those not on the endangered species list at the present time. Many Ohio farmers would like to see the Red-winged Blackbird on the endangered species list, I think, but it is not there.

My particular interest in population estimates is to determine if we can develop an early warning system for the agriculturists, so that they can better anticipate the time they can expect damage from birds. A lot of methods have been tried in the past.

I am sure that most of you are familiar with the territorial male method, the Hewitt method or roadside census method of determining the population of Red-wings. Estimation of roost sizes has been tried as well. General conclusions are that the territorial male and the nesting survey type of population estimate are valid methods for determining the population size during the nesting season. However, the number of Red-wings that are nesting in a particular nesting season has very little, if any, bearing on the number of Red-wings that may be in a particular area during the time when the crop is vulnerable.

There are a great many variables in the whole area of population estimates. There are seasonal variables. Our own records in Ohio suggest that the time of arrival, for example, of nesting Red-wings has varied as much as five weeks over the 15-18 years that we have rather concrete records. Another variable is climatic conditions. An early or a late spring will affect the arrival time of many Red-winged Blackbirds. Another variable to be considered is your particular problem: is it one of determining the size of a population you expect during the time of milk-dough aged corn, which is different every time? Or is it a problem of sprout-pulling? Sprout-pulling occurs in relatively isolated instances over Ohio. However, three years ago I had occasion to study sprout-pulling in Vermont, rather than damage to maturing ears. I was surprised to find the time of emergence of their corn crop is about the peak of nesting for Red-winged Blackbirds. Their nesting is delayed from ours; their corn planting is delayed from ours; and their

problem is totally different from ours. So this represents another variable.

The principal tool that I have used, not primarily to determine an overall estimate of the population, but more as an indicator of local populations, periods of highs and lows, and the numbers of birds in a local area, has been the decoy trap. After six years of data gathering in the decoy trap we have arrived at a position that pretty accurately predicts both resident and transient highs and lows in the Red-wings, the Grackles, the Cowbirds, and the Blue-jay population.

At this point the questions should be asked, "Where are we today in the business of population estimates?" And the answer is very difficult. I would like to ask Dr. Richard Dolbeer to tell us something of his work with population estimates.

DOLBEER: Our studies in northern Ohio, southeastern Michigan, and southern Ontario show that our general population of Red-winged Blackbirds has remained at about the same level, fluctuating slightly from year to year. There seem to be no trends toward an increase or decrease in breeding populations in these areas. Our primary method of determination has been Hewitt's roadside index. There are problems with this index, but generally it presents a fairly accurate picture of the population in the area. We have also studied late summer and early fall population levels of blackbirds in Ottawa and Sandusky counties. Extensive censuses were made there in 1969 and again in 1973. The data from these studies have not yet been analyzed. These population estimates are quite important because they do provide important insight into the dynamics of the bird roost population, which habitats are most important for breeding in future years, and so on.

MEL DYER: I take exception very greatly to the fact that population estimates are useful in predicting what is going to go on in the future, because it is subjective. It is a subjective process, and you cannot predict the future events on the basis of subjective processes. What has gone on in the past does not mean a thing, because you do not have the guiding variables associated with that sort of information. You have to keep in mind what this sort of information is collected for and what its objectives are. They do not tell you at the end of the year what the future levels will be; they simply tell you what has happened in the past. I feel there is more variability than we have figured on, which is why we have not found a significant change in the population. You have first of all, a mathematical bias. We have found that different observers, sometimes in different areas, may have different ideas of what a territorial male is and what is not, which in some cases may be understandable. When an observer trained in Ontario is checking for males in central Ohio, we have to take into consideration the hybridization fact.

STOCKDALE: For those of you not familiar with blackbird problems it should be pointed out that situations vary widely. In the Lake Erie, Sandusky Bay region, we have problems with transient Red-wings -- Red-wings which congregate in large roosting flocks. But these flocks are very fluid, often not spending two nights in the same roosting location. In other areas, roosting Red-wings are the chief problem.

I tend to believe, that in the case of the Lake situation, we are dealing with more of a resident population. In other words, a roost is built up,

and some of the members of the roost stay in that area for a period of a month or six weeks. Also, the frequency in the population of non-territorial males, unmated females, and immature birds can vary tremendously.

It is best to remember, when planning a population estimate, to consider, or study as many variables as possible, in order that you might best serve the farmer by giving him the most accurate estimate that you can.