SOUTHEASTERN COOPERATIVE DOVE STUDY

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There has been much controversy over the dove hunting regulations set forth each year by the U. S. Fish and Wildlife Service. Arguments over opening dates, length of open season, zoning regulations and split seasons have occurred each year. These conflicting demands and dissatisfaction among the Southeastern states, where dove hunting is an important sport, led the Southeastern Association of Game and Fish Commissioners to pass a resolution requesting that a coordinated study be made to determine when and how the dove can be best hunted without diminishing the resource. The result of this resolution is the regionwide coordinated dove study.

Following this, a sample dove project was drawn up by the Federal Aid Branch of the Fish and Wildlife Service and submitted to each state in the Southeast for approval. Quick adoption of this standard project resulted. This study is now a little over one year old in most states, although it is almost two years old in several states. Until recently, we have been more or less feeling our way, trying to develop techniques adaptable to this study. During this same period, we have revised the work plan and drawn up a unified reporting form. This revised work plan and methods of reporting data will help considerably in keeping our attention directed toward the major objective. We now feel that we have reached the place where a clear picture of the objectives is before us.

Before we can manage a species, we must know the population; its yield or productivity; and those decimating factors that tend to cause a drag in the production. Thus, the major objective of this study is to determine the population and productivity of the mourning dove. With this in mind, we hope to develop methods of managing the dove so that, if they are applied, the stock and the kill will be increased.

It is essential that an annual census be undertaken to give a true index to populations; therefore, methods for making an annual inventory have been developed. Along with the annual inventory, we are trying to find out what is the yearly production of doves. Now, if we can establish these two things then, through other methods, determine movements, kill ratios, crippling loss, illegal kill and mortality, we are in a better position to recommend optimum seasons, bag limits, and other shooting regulations for the best interest of the bird as well as the hunter.

As pointed out above, we must know the total population and the total productivity. We must know what factors are responsible for limiting the annual increment and only then can we apply corrective measures.

I will try to picture what we already know and what we are up against. I will also briefly explain how we intend to answer these questions.

I want it understood before I go any farther that the values on Fig. 1 are not necessarily fool-proof insofar as the dove is concerned but, since we have nothing better, we have to assume they are basically sound. This approach is being used

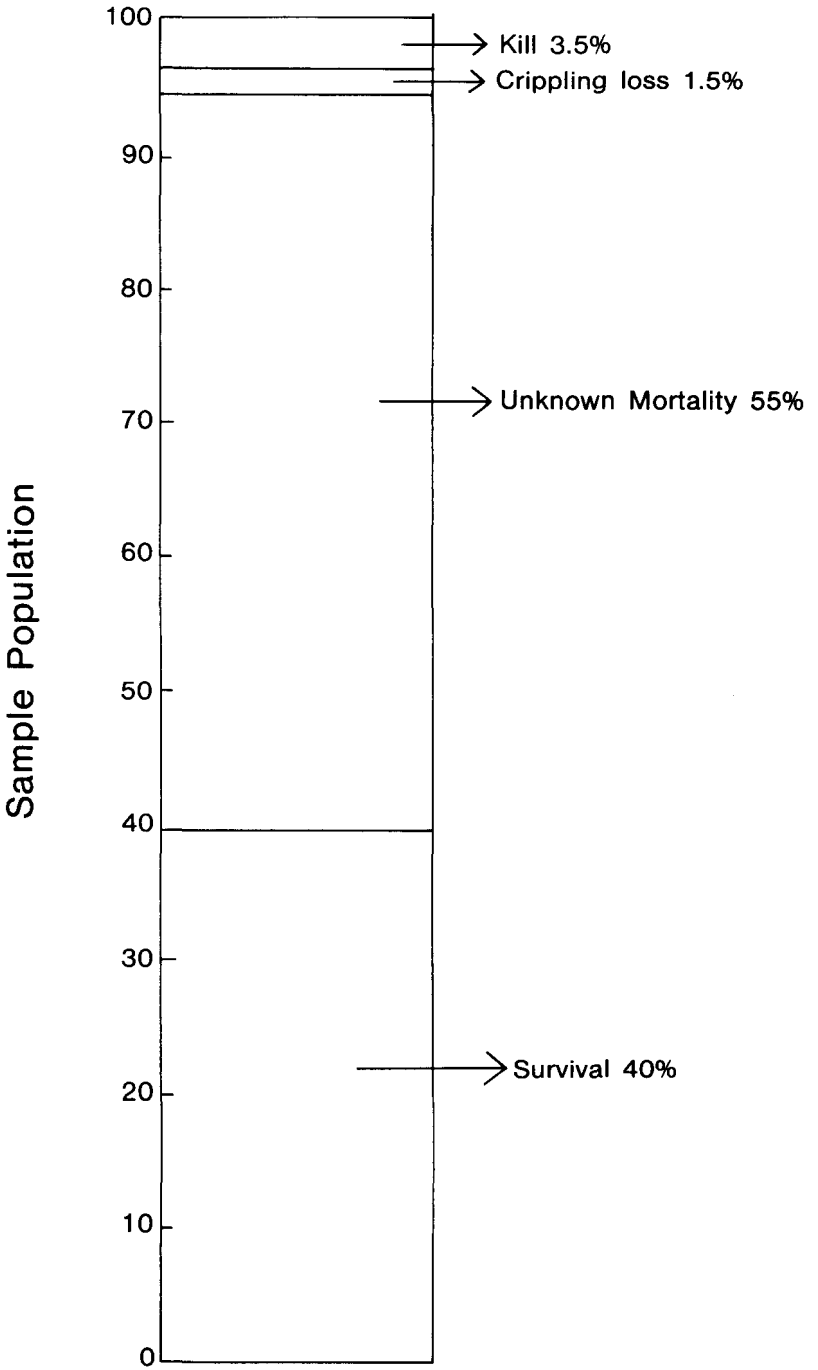

Fig. 1. Mourning dove mortality and survival based on band returns.

on other species and only time will tell how accurately it applies to the doves. At least this gives you a graphic pricture of what we are trying to learn.

Lincoln (1930) has shown that, from 1920 through 1926, approximately 12% of the ducks banded in North America each year have been killed during the first shooting season. Since the number of ducks killed with bands should be the same ratio as those killed without bands, he points out that this is undoubtedly a kill ratio for the duck population as a whole. Using this same theory and applying it to the dove (Peters 1949), we find approximately 3.5% of the total fall population is taken each year by the legal hunter. There is very little reliable data on crippling loss but the small amount of information available indicates that 30% of the bag is fairly accurate. Therefore, we have 5% of the population taken by the legal hunter (Fig. 1).

Using Peters' figures again and plotting the number of band returns each year, we find that 60% of the returns were made the first year after banding. A little less than 20% the second year, 4% the third year and a few as long as eight years later. This doubtless represents a mortality and survival curve and indicates that more than 80% of all doves live less than two years.

As can be seen by examining Fig. 1, we have approximately 5% of the fall population taken by the hunter, with a survival of 40%. Therefore, we have a 55% unknown mortality between September 1 and August 31 each year. This large unknown mortality is our problem. We need to know what causes it so that corrective measures may be applied.

Now, let us examine data collected by the regional dove study during the past twelve months and compare it with that described above (Fig. 2). It is based on a 100% fall population but, instead of 3.5% kill ratio, we found that we have a 16% legal kill and a crippling loss of 30%, or 5% of the fall population. Now to arrive at the survival, we must examine data collected by a number of individuals during previous studies. The breeding success, nesting mortality, and breeding potential of a pair of doves have been reliably established. Studies by McClure (1943) in Iowa, Moore (1940, 1941) in Alabama, Taylor (1941) in North Carolina, Nice (1922 - 23) in Oklahoma, and others, reveal that the survival must be approximately 30% of the fall population, to replenish the yearly loss. This is based on each pair of birds attempting to nest five times and a 53% nesting mortality. A breakdown of loss and gains is shown in Fig. 2.

We believe the data presented in Fig. 2 are more accurate than that based on band returns. In the first place, there are undoubtedly many bands that are not turned in, which would tend to give a false kill ratio. Secondly, if the survival of 40% is correct and it takes only 30% survival to replenish the population, we should have a noticeable increase in our overall dove picture. This is not the case, therefore, we must conclude that the survival is not 40%. Since our banding data do not indicate the age of birds at banding time, many birds may have been adults. If these data include large numbers of adults, they could increase the average survival of a one-year old population. In other words, the mortality during the first year of a dove's life is probably considerably more than 60%, as these banding data would indicate. Even though this data is far apart in kill it shows a close parallel between methods of arriving at the significant part, that is, the large unknown mortality.

Now, this unknown mortality is the meat of this study. Take another look — 49% is almost one-half of the total dove population on September 1 each year. All

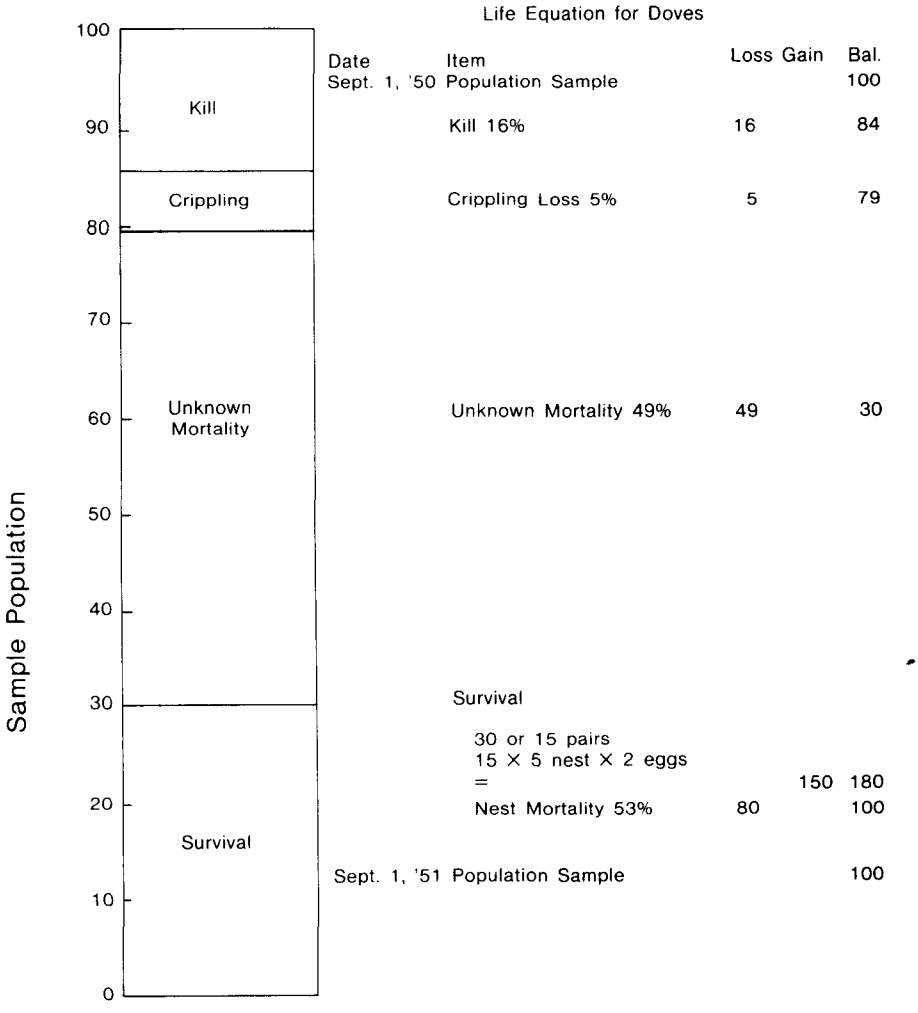

Fig. 2. Mourning doves mortality and survival based on data collected by the Cooperative Dove Study.

of you agree that we cannot cut into the 30% that represents survival or capitol stock. Therefore, we want to utilize this unknown 49% to better advantage. The object of this study is to determine, insofar as possible, the factors that are removing almost one-half of our doves, without benefiting the sportsmen. You can see that, if practical to apply management, we could increase the 30% capitol, which should increase the productivity, and thereby benefit the hunting by allowing an increase in the kill. In other words, we would like to reduce the distance between legal kill and survival percentages, as shown on Fig. 2. This can be done only by first determining the factors that cause this high unknown mortality.

How are we attempting to get the answers to these important questions? We have set up a job priority for this study, and each state will follow this priority rating. Most important jobs are annual population and production studies. These will show what we have to work with and help us determine whether or not annual production is normal. An annual inventory will be made during the winter and the production index will be determined from data collected during the peak of the nesting season.

Trapping and banding will give considerable data on kill ratio, survival, mortality factors, production, and much information regarding movements. Kill data will contribute much to our knowledge of kill ratio, survival, crippling loss, gun pressure, and other mortality factors. We should be able to determine the effects of illegal hunting, crippling loss, and shooting during the late breeding season on the overall population. We may find that some of these controllable factors contribute as much, or more, to the large unknown mortality than do the influences of disease, normal winter die-off, and old age. If this proves correct, then we can apply management to reduce unknown mortality. Doing this should improve survival and increase the huntable population.

This dove study is unique in that very few facts regarding the ecology of the dove are known; therefore, we have to start from the beginning to develop techniques and methods for gathering data. It is still further complicated by the migratory habits of the dove. We, in the South, will have to shoulder the brunt of the job because we are the ones who will derive the major benefits. We cannot expect too much help from states outside of the Southeast, for obvious reasons. Therefore, we should not become impatient and expect results too soon. It takes time to gather data of this nature, and we should be patient until we have the facts.

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