Deer Management Phase II

(Estimating your Population and Harvest Requirements)

In this phase we are progressing into the Advanced Version of our software. I see high fence operations and private large acreage unfenced properties being able to utilize the following tools. The important thing is that you have some control over your deer population and you don't have a large percentage of deer coming on to and going off of your property. We are using these advanced tools for our 1100 acre unfenced property but I have to do some special analysis to estimate how many individual Bucks we have on our property at the beginning of hunting season. I will be writing a separate article explaining what I am doing so if you have an unfenced property and you are interested in what I am doing, in addition to this article please read the article "How we estimate our Deer Population and Harvest Requirements". I apologize for breaking all of this stuff down into so many articles but I'm trying to segregate the smaller unfenced properties because it is difficult for us to estimate our deer population because we do have deer moving off and onto our properties. Even if you are under a high fence you still don't know exactly how many deer you have on your property. You just have to come up with a good estimate which I believe the following steps will help you do that. Again, everyone's situation is different so you will need to decide if the following process can work for you or not.

Basically in this article I will be showing you how to **estimate** your deer population including how many Does, Fawns and Bucks you have. I will show you the tools that we have available in the Advanced Version of our software that will allow you to estimate how many Does and Bucks you need to harvest in order to meet your estimated desired population as well as your desired Doe to Buck ratio. One thing that I want to point out is that every property has its own **carrying capacity**. What this means is that there is a limit on how many deer can be on your property before the health of the deer diminishes. Most all areas have a limit on the food sources that are available, especially the food sources that provide the deer with the proper nutrition that they need to be healthy. We should all strive to keep our deer as healthy as possible which means that we should keep the deer population at or below its carrying capacity. Property "A" may have a carrying capacity of 10 deer per square mile while Property "B" may have a carrying capacity of 40 deer per square mile. If Property "A" suddenly allows their deer density to reach 20 deer per square mile there's a good chance their deer will become less healthy. This is all hypothetical of course because maybe a few of the deer will move 10 miles away where there is more nutrition available. I just want to make everyone aware that even though you might like to have 40 deer or more per square mile you must realize that there is a limit to how many deer you should have. They actually refer to this as the biological carrying capacity (BCC).

To estimate our Deer Population we need to know our estimated Doe to Buck ratio, our estimated fawn recruitment rate and the approximate number of individual (different) Bucks that we have. I will review how we come up with these three things.

If you keyed in your trail camera counts or sightings through my software then the report titled "Deer Sightings and Harvests by Year" will give you your approximate Doe to Buck ratio as well as the approximate recruitment rate. After a few seasons of doing this you will get a good feel for what your average factors are. I do recommend doing a trail camera survey so that you can get counts for the upcoming season since they could be different than what your history is showing. Like I said earlier I actually do both (because we are unfenced) and then I come up with the rates that I want to use in my formulas below. If you're under a high fence then you might decide to just do a camera count and then enter that data into the sightings. If you are using your actual sightings then make sure that you have a large enough sampling in order to come up with representative results. If you hunt two days and record your sightings this is not enough hunts to provide you with accurate rates and ratios. You need to use some common sense with this.

Let me first explain what a camera survey is. It is simply using the pictures from your trail cameras to count Does, Fawns and Bucks. There is nothing written in stone on exactly how to do your survey. I have heard people say that you just put your cameras out for two weeks and do your count but again I think this can be different for each property. One property may get a good sampling of pictures in 2 weeks while another property may take 4 weeks or more. The main thing is that you get a good sampling of your deer population. You will have to go through the pictures and count how many Does you see, how many Fawns you see and how many Bucks you see. You may count the same Doe 50 times and the same Buck 30 times but overall the sightings average out after you get your total counts. Because of the way we track our sightings throughout hunting season we have a history of our Doe to Buck ratio and our recruitment rate. As a precaution I actually do a four week camera count in September/October (two weeks at our feeders and two weeks on our food plots) to confirm that our Doe to Buck ratio and recruitment rate are close to what my sightings history is showing. They have been close so we are confident in the numbers that we are using. From the camera count I get a feel for our Doe to Buck ratio over the four weeks but I focus on the two weeks that our cameras are on our food plots to verify our recruitment rate. The reason for this is because we have a hog wire fence surrounding our feeders and some of the fawns are not able to jump the fence until October or November. **Once you start accumulating a history of this information you will gain confidence in the factors that you use.**

At the same time we are doing the above Deer counts we need to come up with an estimate of how many individual (different) Bucks we have. You may have to leave your trail cameras out for 4 to 6 weeks or longer if necessary and cover as much area as possible so you can get a count of how many different Bucks you have. You can stop doing your Total Deer Counts once you feel you have a good sampling and then just focus on identifying your individual Bucks. I can't tell you how many cameras you need or how long you need to leave them out because everyone's situation is different. You just need to put them out for as long as necessary and move them around until you feel you have gotten pictures of most of your Bucks. I use five trail cameras to cover 1100 acres. I move them between our feeders and our food plots with corn in front of them. (Legal in Georgia) I actually leave our cameras out for ten weeks because I enjoy seeing the pictures of most of the deer on our property plus we are also using the pictures to age the Bucks on the hoof. I have learned from experience that we are getting pictures of most of our Bucks if not all of them. If you are in a situation where you are dealing with thousands of acres you will probably have to do your survey for specific acreage and then calculate your number of Bucks using your survey results. For example let's say you have 10,000 acres. You could set up your cameras to cover 5000 acres and once you determine how many individual Bucks you count you can prorate your count for 10,000 acres. I'm not saying you would double your count but depending on your knowledge of your property you may decide that you could increase your count by 20% or 30% or whatever you felt would give you a good estimate. Again, your knowledge of your property will be instrumental in deciding what to do. What works on one property may not work on another. **Your ultimate goal is to come up with a close estimate of how many different Bucks you have.**

The next formula that I use gives us an **estimate** of how many deer we should harvest in order to reach our desired deer population and Doe to Buck ratio. When we first started hunting this property back in 1996 we had a Doe to Buck ratio that exceeded 3.5 to 1. (3 ½ Does for every one Buck) We knew that based on our previous experiences that we wanted to get the ratio down to be closer to 1.5 to 1. Again, this is our own specific situation. Well, I didn't have this formula back then so like most people we just guessed at how many Does we needed to shoot. Being able to monitor our sightings including the Doe to Buck Ratio was important so we knew if we were making progress lowering the ratio or if we were shooting too many Does. A few years ago it dawned on me that I should be able to come up with a formula that would actually give us an estimate of how many Does and Bucks we should shoot. That's when I came up with the formula below. Unfenced properties should not try to use the number of individual Bucks you count because you are counting some of your neighbors

Buck's. You need to try to estimate how many of these Bucks are resident Bucks. (Resident meaning they spend most of their time on your property) If you are interested in what I am doing please read my article "How we estimate our Deer Population and Harvest Requirements" to see the special analysis that I have to do!

In the example below which is not our actual data I have determined that I have approximately 40 different resident Bucks, an approximate Doe to Buck Ratio of 2.4 to 1 and an approximate Fawn Recruitment Rate of .700. That results in an Estimated Total Deer Population of 203 of which approximately 40 are Bucks, 96 are Does and 67 are Fawns. I allow you to enter a separate Mortality Rate for Does and for Bucks. Of all the factors that we come up with, by far this is the most difficult. How many of your deer are dying from non hunting related causes? We have a highway near the property which may cause some road kills, some may die from disease, fighting, weather related issues and some may die from predators such as bobcats, coyotes, wolves, bears etc. One property may have a mortality rate of 10% while another property may have a rate of 20%. I am using 10% for Does and 15% for Bucks in the example below. Let me point out that because we are determining our recruitment rate in the late summer or early fall this automatically takes into consideration fawns that died during their first few months of life so they don't need to be part of our mortality rate. They obviously weren't around to be counted. When I do my population estimate each September/October I compare it to what I thought it was going to be and it's interesting to see how close the estimate was. The next number that I enter is how many different Bucks do I want to have next summer. In my example I said that I wanted to still have 40 different Bucks. What I did change was that I wanted to have a ratio of 2 to 1 instead of 2.4 to 1. Because of this it calculated the additional number of Does that we need to harvest in order to get the ratio down to approximately 2 to 1. Also because of this the new deer population next summer will only be approximately 176 total deer. If I want the population to be higher then I need to increase my desired number of individual Bucks which in turn will increase the number of Does and the total population. The three percentages at the bottom show the approximate percentage of Fawns in our beginning population, the percentage of Fawns in the ending population next summer as well as the estimated number of yearlings in the ending population next summer. When I did this I realized that having a high recruitment rate (1.000 and higher) can make it difficult to keep many older age class deer on the property. I guess it makes sense when you think about it. If you have a whole bunch of Fawns and Yearlings then they are taking up spots in the carrying capacity of the property. Anyway I have those percentages there just for information purposes.

Deer Population & Harvest Estimate
(Starting with late summer counts)

			Bucks	Does	Fawns
Number of Individual Bucks Counted	40				
Doe to Buck Ratio (x.xx : 1)	2.40	to 1			
Fawn Recruitment Rate	0.700				
Estimated Total Deer Population	203		40	96	67
Mortality Rate for Does i.e. 10% = .10	0.10				
Mortality Rate for Bucks i.e. 15% = .15	0.15				
Desired # of individual Bucks next Summer	40				
Desired Ratio next Summer (x.xx : 1)	2.00	to 1	Bucks Wanted	Does Wanted	Fawns Wanted
Total Deer Population Desired next Summer	176		40	80	56

	Does	Bucks	Total
Beginning Population (Including Fawns)	130	73	203
Estimated Mortality	13	11	24
Harvest Estimate	37	22	59
Ending Population	80	40	120
Fawns added next year	28	28	56
Next Summer Population	108	68	176

The numbers shown above are an example only! You need to enter your own specific estimates. In order to use this formula you had to come up with an estimate of how many individual(different) Bucks you have. If you couldn't do that then do not use this formula. Unfenced Properties should not do this since they have Bucks coming on to and going off of their property. If you read my article "How we estimate our Deer Population and Harvest Requirements" I will explain what I do to try to come up with a reasonable estimate of our Individual Number of Bucks. Remember that we are getting pictures of some of our neighbors Bucks as well as ours. Use the numbers calculated as a guideline only. I always err on the side of caution and put a slightly lower ratio and rate than what I think they are. Mortality Rate is the most difficult factor to come up with. At best it is a guesstimate. If your herd experiences a Winter Kill this season then you will come up with a much lower population estimate when you do next seasons camera counts. Because of our monitoring history that we have as well as the camera surveys that I do I can keep an eye on the population and I will see if something is not looking right. When I estimate number of Fawns I assume that 50% will be Doe Fawns and 50% will be Buck Fawns.

The beginning population of	203	includes	33% Fawns	Approximately
Hypothetically if no Fawns are shot this coming season:				
The ending population next summer of	176	includes	32% Fawns	Approximately
The ending population next summer of	176	includes	34% Yearlings	Approximately

So at this point we have estimated our deer population and estimated how many Does and Bucks we should harvest to get to our desired population and Doe to Buck ratio. Even though we have estimated how many Bucks we should shoot we haven't said a thing about which Bucks to shoot or not shoot. Your own management plan may stop at this point because you don't care which Bucks are harvested. The next phase is where we will practice some Buck Management. By this I mean we will selectively harvest the Bucks so we can try and grow some older age Bucks and bigger antlered Bucks. If you are interested in going into the next phase of management please read my article "**Deer Management Phase III (Buck Management)**".