

4864
Deer Intern Report
OSMP Studies



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DEER INTERN REPORT
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INTRODUCTION:

This is my report of the spring 1989 deer survey, which was conducted from January 1989 to April 1989. I participated in the survey by collecting data about the deer and then plotting that data on topographic maps of the study area. The study area is split into four districts: North district, North central district, South central district, and South district. Each intern was able to spend time in at least three of the districts. I spent ten hours a week counting deer, marking them in my book and also noting deer behavior. This deer survey is done every year in order to get a better idea of the deer population in boulder, by using the Lincoln-Peterson equation and to also see if there is a certain migration pattern of the deer.

SPRING COUNT:

In the first week of April, mountain park rangers, openspace rangers and the four interns participated in the spring count. The four districts were split into certain routes and two people were assigned a route. This is done in order to get a very accurate count of the deer within that area. We spent about four hours in the morning counting all the deer within the area that we were assigned. This years deer population was estimated to be 1010 deer, with the 95% confidence interval falling between 1103 deer and 917 deer. This mean population is down 106 deer from last year's mean population.

We used the Lincoln-Peterson equation to derive the mean population:

$$N = \frac{(n_1+1)(n_2+1)}{(m_2+1)} - 1$$

N=Population Estimate

n_1 =Estimated total number of marked deer in the count area, here we used all the deer we saw in March. We presumed all of these deer were alive and well.

n_2 =Total number of deer we saw on a certain count day.

m_2 =Total number of marked deer seen on a certain count day.

POPULATION ESTIMATE SPRING 1989:

$$\text{Monday} = \frac{(88 + 1)(569 + 1)}{(45 + 1)} - 1 = 1102$$

*This is based on
a 3/1/89 - 4/6/89
counting period.*

$$\text{Tuesday} = \frac{(88 + 1)(533 + 1)}{(43 + 1)} - 1 = 1079$$

$$\text{Wednesday} = \frac{(88 + 1)(508 + 1)}{(47 + 1)} - 1 = 943$$

$$\text{Thursday} = \frac{(88 + 1)(534 + 1)}{(51 + 1)} - 1 = 915$$

MEAN 1010 DEER

Standard error of the mean:

$$\text{Monday} = (1102 - 1010)^2 = 8464$$

$$\text{Tuesday} = (1079 - 1010)^2 = 4761$$

$$\text{Wednesday} = (943 - 1010)^2 = 4489$$

$$\text{Thursday} = (915 - 1010)^2 = 9025$$

26739

$$\text{SE} = \text{square root of } (1/4(4-1) * 26739) = 47.20$$

$$\begin{aligned} 95\% \text{ CI} &= 1010 \pm 1.96(47.20) \\ &1010 \pm 92.51 \end{aligned}$$

We are 95% sure that the actual mean population fell in between (1103- 917) deer!

SOUTH DISTRICT DEER:

Here is a list of the deer we saw in the South district. There are 32 deer marked in this district but we only saw 17 of those deer(53%) during our deer survey.

The deer we did not see at all were: Y-30, Y-104, Y-105, Y-106, Y-107, Y-112, Y-114, Y-122, Y-123, Y-229, Y-230, Y-239, Y-240, Y-243, Y-288!

South District

#/color	Seen In Marc	Seen Jan-Feb	0% in city	50% in city	100% in city
Y-108	yes	no	yes	no	no
Y-111	yes	no	yes	no	no
Y-113	yes	yes	yes	no	no
Y-115	yes	yes	yes	no	no
Y-116	yes	yes	yes	no	no
Y-117	yes	yes	yes	no	no
Y-119	yes	no	yes	no	no
Y-231	yes	no	yes	no	no
Y-232	yes	no	yes	no	no
Y-238	yes	yes	yes	no	no
Y-241	yes	yes	yes	no	no
Y-242	yes	no	yes	no	no
Y-244	yes	yes	yes	no	no
Y-245	yes	no	yes	no	no
Y-246	yes	no	yes	no	no
Y-247	yes	yes	yes	no	no
Y-248	yes	no	yes	no	no

This table shows us that all of the deer in the south district spend 0% of their time in the city. The deer in the south district are a lot more spooked of humans than the deer in the other districts. The south district is the least populated of the four districts, therefore the deer have not been effected by human impact. They rely much more on the resources in the area rather than frontyards, saltlicks and other food people tend to put out.

PROBLEMS with the study:

1. The boundaries of the study area are not well marked *oh!* and could cause a major fluctation in the mean deer population.
2. Motivation of couters on the count days is completely variable. It is hard for some people to get excited about counting where as others can't wait. This could be a problem and may be the cause of such different numbers on each count day.
3. It should also be stressed in the beginning to count all deer not just the tags. Perhaps those deer could be used somehow in determining the population by using a different equation. Comparing the two equations could be very beneficial in determining the actual population.

4. I don't see any reason in tagging the deer anymore, it seems to be just an extra expense. Perhaps the money used for tagging could be used for the helicopter count instead.

CONCLUSION:

In conclusion, the deer survey has been helpful in determining the mean deer population in Boulder, but it can't be compared with other years. There have been too many changes made to the deer survey lately that it would be inaccurate to compare previous year mean populations. This is really too bad because we don't have any idea if the population is increasing or decreasing in size. According to this year's estimation, the deer population is down but it is hard to tell if it actually has gone down. Maybe in the near future there will be a way of determining if the population is changing.

If the deer population is down, I would say it is due to human impact. The deer are then forced to be city deer, depending more on humans for their food. Also the deer are driven into the city only to find themselves in the middle of the road. Perhaps if there was a stronger effort made to keep the deer out of the city then there would not be such a problem between the deer and the people.

OK?