Ways to evaluate your deer population

Census methods

The most important aspect of all of the survey methods is they allow you to observe the factors that affect deer numbers and movements, plus note changes in the landscape that alter deer patterns.

Census methods

1. Be realistic about what can be determined from survey data.
   - Population/density estimates need large areas to sample to be relevant. If under 1000 acres realize that these types of estimates are greatly influenced by outside areas. Consider working with neighbors or forming a co-op if you must have that data.
   - Time of year, type of habitat, presence of feeders (on or off your property), crop rotations, timing of crop harvest all affect the census method.
   - Doe/fawn and buck doe ratios are valuable data and can be collected by several methods.
   - Long term data sets are best in determining actual trends.
2. Types of surveys
   - Camera surveys – require lots of bait (corn), 9-14 days pre-baiting period, 9-14 days sampling, 1 camera/100-150 acres. (see handout). Good method of sampling doe/buck and fawn/doe. On a large enough area can provide data that over time will show trends in the population density.
   - Infra-red surveys. Summertime surveys can provide buck/doe due to blood in the antlers. Does require at least 3 sampling trips, take average, and compare to long term trends.
   - Spotlight surveys have been used a long time.

Camera surveys – Site selection (Otter Creek ORA).

- 2261 acres, including 160 acres that is occupied by Camp Piomingo.
- 18 potential locations selected that are the same distance apart, but based on sampling 100 acres.
- 8-10 sites used each year based on number of cameras available.
- Sites that fell in the campground, shooting range, or other highly disturbed areas were not used.

Individual site set up

- Camera should not be set so the setting or rising sun is directly in front of it.
- Camera should be placed waist high on the tree or post it is to be attached.
- Bait pile should be placed about 7 steps in front the camera in a semi-circle.
- Make sure branches, weeds, or grass that could wave in the wind are not in front of the camera.
- If needed place a marker, number, or some other item that will help identify the site.
- Set camera to take 1 picture every 10 minutes.
- Prior to beginning of survey, place cameras and operate to determine if placement is correct and to allow animals to get used to them, particularly using flash cameras.


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Site #	Bucks	Does	Fawns	Raccoons	Coyote	Turkey
2	44	105	11	18	0	0
9	15	177	98	17	0	0
10	0	431	87	48	0	4
11	3	327	76	478	0	12
12	0	58	40	62	0	15
13	350*	6	0	43	0	0
14	69	5	1	65	0	0
16	0	113	12	407	0	0
17	0	22	9	80	2	7
18	0	62	11	190	0	20
Total	481	1306	345	1408	2	58

Results

- 1968 usable photographs were obtained
- Eleven unique bucks in 481 photographs for a visitation rate of 0.023
- Assuming that the survey samples approximately 90% of the population, there are 12 bucks, 33 does, and 9 fawns on the 1000 acre block that was sampled
- Extrapolating this to the entire 2200 acres, there was estimated to be 54 deer/1000 acres, 1 deer/18.5 acres, 34.6 deer/square mile, and 119 deer on entire area (26 bucks, 72 does, 21 fawns)
- 1 buck : 3 does
- 0.27 fawns/doe

Results

- Number of different bucks: 11
- Number of buck pictures: 481
- Visitation rate (bucks/buck pictures): 0.023
- Number of does (Doe pictures * visitation rate): 1306*0.023 = 30.4 (30)
- Number of Fawns (Fawn pictures * visitation rate): 345*0.023 = 7.9 (8)
- Number of bucks * 1.1 = 12.1 (12) Buck/doe: 12/33 = 0.36 bucks/doe or 2.75 does/buck
- Number of does * 1.1 = 33 Fawn/doe: 0.27 fawns/doe
- Number of fawns * 1.1 = 8.8 (9)
- Total number = 12 + 33 + 9 = 54
- Number of cameras * 100 Acres = 11 cameras * 100 acres = 1100 acres surveyed.
- Number of acres surveyed/total estimated number of deer = 1100/54 = 20.37 acres/deer.
- Total acreage of farm/acres per deer = 2261 acres/20.37 = 110.99 deer on area or 31.44 deer/sq. mile.

Factors affecting visitation

- Presence of other species.
- Hunting seasons (squirrel, rabbit, etc.)


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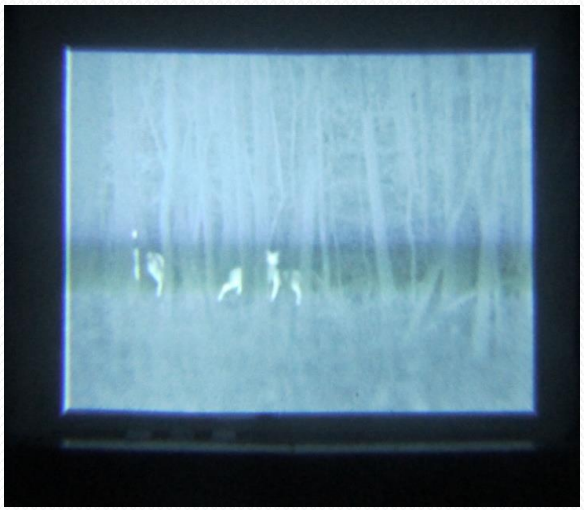
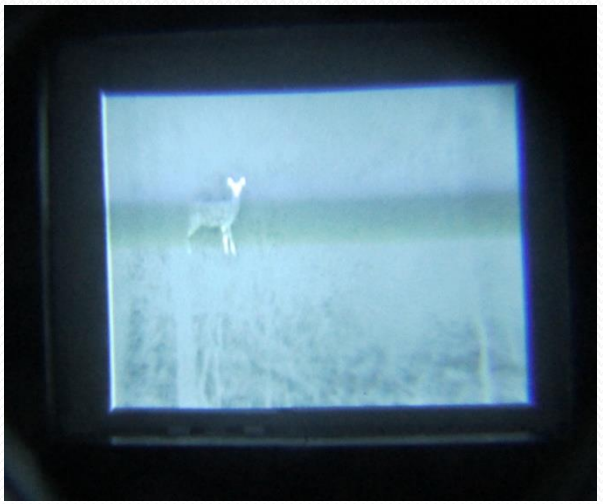
Thermal imager methods

- Very simple.
- Developed a standardized route.
- Drive route at a slow enough speed to allow scanning of both sides of road.
- Count all deer, noting location.
- Do three times and take average of 3.
- Use this to compare to other years to develop long term trends based on number of deer seen/mile driven.

Infra-red (thermal imager)survey





Spotlight survey methods

- One of the oldest techniques used to evaluate deer populations.
- Requires 1 driver, 1-2 spotters, 1 data recorder, 1-2 spotlights, and 1 range finder.
- Select route that will be done each year.
- Try to do at least twice, close together.
- On first time expect to last considerably longer as you have to take distance measurements with range finder.
- Can determine estimates of density, buck:doe, and fawn:doe.

Odometer Start: _____	Visibility L (yds)	Visibility R (yds)	Total	Mile	Visibility L (yds)	Visibility R (yds)	Total	Mile	Visibility L (yds)	Visibility R (yds)	Total
0.1				2.2				4.2			
0.2				2.3				4.3			
0.3				2.4				4.4			
0.4				2.5				4.5			
0.5				2.6				4.6			
0.6				2.7				4.7			
0.7				2.8				4.8			
0.8				2.9				4.9			
0.9				3.0				5.0			
1.0				3.1				5.1			
1.1				3.2				5.2			
1.2				3.3				5.3			
1.3				3.4				5.4			
1.4				3.5				5.5			
1.5				3.6				5.6			
1.6				3.7				5.7			
1.7				3.8				5.8			
1.8				3.9				5.9			
1.9				4.0				6.0			
2.0				4.1				6.1			
2.1				4.2				6.2			

Determining acres surveyed

- Take a distance measurement with range finder every 0.10 mile.
- Record distance measured in yards.
- Record number of miles driven.
- Example: 106, 158, 123, 123, 140, start.
- Miles driven: 0.41 or 722 yards.
- Average distance of range finder readings: 106+158+123+123+140=650, 650/5=130 yards.
- Acres surveyed: (130 x 722)/4840= 19.4 acres.

Roads in Survey Order

Order	Road/Route Name	Distance (Miles and tenths)
1		
2		
3		
4		
5		
6		
7		

Mile	Buck	Does	Fawns	Unknown	Total
1					
2					
3					
4					
5					
6					
Total					