

**PENNSYLVANIA GAME COMMISSION  
BUREAU OF WILDLIFE MANAGEMENT  
PROJECT ANNUAL JOB REPORT**

**PROJECT CODE NO.:** 06210

**TITLE:** White-tailed Deer Research/Management

**PROJECT JOB NO.:** 21014

**TITLE:** Effect of bait on deer harvests in Special Regulation Areas of Pennsylvania

**PERIOD COVERED:** 1 July 2007 through 30 June 2008

**COOPERATING AGENCIES:** None

**WORK LOCATION(S):** Private Lands in the Southeast Special Regulation Areas

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**ABSTRACT** In 2006, the Pennsylvania Game Commission approved the use of bait when deer hunting in southeastern Pennsylvania. Use of bait is limited to the special regulation areas of Bucks, Chester, Delaware, Montgomery, and Philadelphia counties. In order to evaluate effectiveness of baiting on hunter success and deer harvest before the 2010 sunset provision on the regulation, hunter surveys and field studies are being conducted. The first hunter survey was conducted in the spring of 2008. Eight hundred, thirty-one surveys were mailed to hunters in the special regulation areas with a response rate of 74%. The majority of survey respondents (86%) hunted deer in WMUs 5C and 5D during the 2007-08 hunting seasons. Most hunters (77%) knew baiting was legal in the special regulation counties. Sixty-two percent of hunters who hunted in WMUs 5C and 5D hunted in the special regulation counties. A pilot field study was conducted on one property in Chester County using automatic feeders and trail cameras. Eight hundred, ninety-nine pictures were taken by trail cameras from 2 locations. Eighty-four percent of the photos were of raccoons. Deer photos only made up 3% of all photos taken. Lessons learned from this initial field exercise will improve feeder use evaluations in future field seasons.

**OBJECTIVES**

1. Estimate and describe use of bait by hunters and its effect on harvest success in Special Regulations Areas.
2. Monitor hunter attitudes and opinions towards use of bait.
3. Evaluate use of automatic feeders as bait distributors.
4. Evaluate effect of automatic feeders on hunter harvest.

## **METHODS**

### **Hunter Survey**

We used a hunter survey to estimate and describe use of bait by Pennsylvania hunters, estimate effect of bait on hunter success, and to monitor hunter attitudes and opinions towards use of bait (Appendix 1). This survey will be repeated through the 2009-2010 hunting seasons. We selected survey participants from respondents of the 2005 and 2006 Game Take Surveys who indicated they hunted deer in Wildlife Management Units (WMUs) 5C and 5D. WMUs 5C and 5D contain the 5 special regulation counties. We conducted this survey using standard mail survey protocols (Dillman 1978) including an initial mailing followed by a postcard reminder. We did not conduct a second mailing because the response rate after the first mailing and reminder exceeded 70%.

### **Pilot Field Study**

During the 2007-08 hunting seasons, we conducted a pilot field study to evaluate the use of automatic feeders as bait distributors and their effect on hunter success. With the cooperation of the landowner and several hunters, 2 automatic feeders were set up paired with trail cameras to monitor activity. We used hunter diaries to collect detailed data on hunting activity at feeder sites. Hunter diaries included information on days hunted, whether or not hunter was hunting over bait, number and type (antlered or antlerless) of deer seen and when observed, deer shot at, deer harvested, and whether deer were disturbed by hunting activity.

## **RESULTS**

### **Hunter Survey**

We sent surveys to a total of 831 individual hunters. The mailings resulted in 16 non-deliverable surveys (i.e., moved with no forwarding address, death, etc.) and 601 usable responses, for a response rate of 74%. Results are presented as a single number (e.g., 55%). These estimates have an associated 95% confidence interval of approximately  $\pm 4\%$ . For example, if 55% of the respondents agreed with a statement and, the survey were repeated numerous times, the interval from 51% (55-4) to 59% (55+4) would include the actual percent of hunters who agreed with the statement 95% of the time.

The majority of survey respondents (86%) hunted deer in WMUs 5C and 5D during the 2007-08 hunting seasons. Most hunters (77%) knew baiting was legal in the special regulation counties. Sixty-two percent of hunters who hunted in WMUs 5C and 5D hunted in the special regulation counties. Results from annual surveys will be reported in the final report at the conclusion of this study in 2010.

### **Pilot Field Study**

A total of 899 pictures were taken by trail cameras at both feeder sites. Eighty-four percent of the photos were of raccoons. Deer photos only made up 3% of all photos taken. Lessons learned from this initial field exercise will improve feeder use evaluations in future field seasons.

## **RECOMMENDATIONS**

1. Continue hunter survey annually to track changes in hunter attitude and success through 2010.

2. Expand field study to multiple properties partnering with established hunter-landowner relationships

### **LITERATURE CITED**

Dillman, D. A. 1978. Mail and telephone surveys: the total design method. John Wiley & Sons, New York, New York, USA.

APPENDIX 1. Survey mailed to hunters in the Special Regulation Areas

## 2008 Deer Hunter Survey: Hunting with Bait

The purpose of this survey is to assess hunter success and use of bait during the 2007-08 deer-hunting seasons. Your response is very important. Please respond even if you did not hunt in 2007-08. Thank you in advance for your prompt response.

- 1) Did you hunt deer in Wildlife Management Units (WMUs) 5C or 5D during the 2007-08 hunting seasons? (**Circle one number**)
1. YES
  2. NO
- 2) Prior to this survey, did you know that deer hunting over bait was legal in the 5-county area including Bucks, Chester, Delaware, Montgomery, and Philadelphia counties? (**Circle one number**)
1. YES
  2. NO
- 3) Did you hunt deer in any of the following 5 counties - Bucks, Chester, Delaware, Montgomery, or Philadelphia counties - during the 2007-08 hunting seasons? (**Circle one number**)
1. YES
  2. NO            If NO, go to **QUESTION 26**
- 4) How many different properties did you hunt in the 5-county area where baiting was legal? \_\_\_\_\_ (**# of individual properties hunted**)
- 5) Did you use bait during the 2007-08 deer hunting seasons? (**Circle one number**)
1. YES            If YES, go to **QUESTION 7**
  2. NO            If NO, go to **QUESTION 6**
- 6) Why did you not use bait? (**Circle all that apply**)
1. DID NOT KNOW BAITING WAS LEGAL
  2. BAITING REGULATION WAS TOO COMPLICATED
  3. BAIT OR FEEDERS WERE TOO EXPENSIVE
  4. BAITING NOT NEEDED FOR ME TO HARVEST DEER
  5. BAITING TOO TIME CONSUMING
  6. LANDOWNER DID NOT APPROVE USE OF BAIT
  7. BAITING IS NOT ETHICAL
  8. OTHER: \_\_\_\_\_
- When finished with **QUESTION 6**, go to **QUESTION 26**
- 7) Why did you use bait to hunt deer? (**Circle all that apply**)
1. TO SEE MORE DEER
  2. TO DRAW DEER FROM NEIGHBORING POSTED OR UNHUNTABLE AREAS
  3. TO SEE DEER DURING SHOOTING HOURS
  4. TO IMPROVE SHOOTING SAFETY
  5. OTHER: \_\_\_\_\_

8) Did you consult with landowners prior to using bait to hunt deer? (**Circle one number**)

1. YES If YES, how many landowners did you ask to use bait?  
\_\_\_\_\_ (# of landowners)
2. NO

9) Did any landowners deny use of bait to hunt deer? (**Circle one number**)

1. YES If YES, how many landowners denied use of bait?  
\_\_\_\_\_ (# of landowners)
2. NO

Please complete the following table with the number of DAYS HUNTED and DEER HARVESTED when hunting in baited and unbaited areas in Bucks, Chester, Delaware, Montgomery, and Philadelphia counties.

Season	BAITED AREA		UNBAITED AREA	
	DAYS	DEER HARVESTED	DAYS	DEER HARVESTED
10) EARLY ARCHERY (Sept 15 - 28)				
11) REGULAR ARCHERY (Sept 29 to Nov 24)				
12) OCT MUZZLELOADER (Oct 13-20)				
13) REGULAR FIREARMS (Nov 26 to Dec 8)				
14) EXTENDED FIREARMS (Dec 10 to Jan 26)				
15) LATE ARCHERY/FLINTLOCK (After Dec 25)				

16) Did you use an automatic feeder? (**Circle one number**)

1. YES If YES, at what time(s) was it set to release bait?  
\_\_\_\_\_
2. NO

17) What kind of bait did you use? (**Circle all that apply**)

1. CORN
2. APPLES
3. SALT OR MINERAL LICKS
4. COMMERCIAL DEER FOOD/PELLETS
5. OTHER:  
\_\_\_\_\_

18) On average, how long did you pre-bait a site before hunting at the site?  
\_\_\_\_\_ (# of days)

19) In what months did you use bait to hunt deer? (**Circle all that apply**)

1. SEPTEMBER
2. OCTOBER
3. NOVEMBER
4. DECEMBER
5. JANUARY

20) In what months did you consider baiting most successful? (**Circle all that apply**)

1. SEPTEMBER
2. OCTOBER
3. NOVEMBER
4. DECEMBER
5. JANUARY

21) Do you think baiting increased your chances of harvesting a deer? (**Circle one number**)

1. YES If YES, go to **QUESTION 23**
2. NO If NO, go to **QUESTION 22**

22) If you think hunting deer over bait was less successful than expected, what reasons caused it to be less successful? (**Circle all that apply**)

1. TYPE OF BAIT USED
  2. HUMAN DISTURBANCE
  3. DEER BEDDING TOO CLOSE TO BAIT
  4. DEER USING BAIT BEFORE OR AFTER SHOOTING HOURS
  5. OTHER:
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23) Will you use bait during the 2008-09 deer hunting seasons? (**Circle one number**)

1. YES If YES, continue to **QUESTION 24**
2. NO If NO, continue to **QUESTION 25**

24) Do you expect to maintain more, fewer, or the same number of bait sites next year? (**Circle one number**)

1. MORE
2. FEWER
3. SAME

25) Based on your experience using bait to hunt deer during the 2007-08 hunting seasons, what changes would you recommend to increase deer hunting success when using bait?

26) In WMUs 5C and 5D, the antler restriction should be: (**Circle one number**)

1. 3-POINTS TO AN ANTLER (The current antler restriction)
2. 4-POINTS TO AN ANTLER
3. ONE ANTLER AT LEAST 3 INCHES IN LENGTH OR ONE ANTLER WITH 2 OR MORE POINTS