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Gary M. Vecellio
Pennsylvania State University

Gerald L. Storm
USFWS Pennsylvania Cooperative Fish and Wildlife Research Unit

Richard H. Yahner
Pennsylvania State University

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PERCEPTIONS ABOUT CROP YIELDS AND LOSSES TO WHITE-TAILED DEER ON FARMS SURROUNDING GETTYSBURG NATIONAL MILITARY PARK

GARY M. VECELLIO,¹ School of Forest Resources, The Pennsylvania State University, University Park, PA 16802
GERALD L. STORM, U. S. Fish and Wildlife Service, Pennsylvania Cooperative Fish and Wildlife Research Unit, University Park, PA 16802

RICHARD H. YAHNER, School of Forest Resources, The Pennsylvania State University, University Park, PA 16802

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A questionnaire was developed and mailed to 340 farm operators within 8 km of Gettysburg National Military Park and Eisenhower National Historic Site, southcentral Pennsylvania. Names and addresses were derived from a list of farm operators and large-parcel landowners provided by the Agricultural Stabilization and Conservation Service of Adams County. A cover letter and accompanying questionnaire were mailed on 11 November 1987. After 3 weeks, nonrespondents were mailed a postcard reminding them of the survey. Those still not responding were mailed another questionnaire on 17 December. Our objectives were to determine the perceptions of farm operators concerning crop yields, and effects of white-tailed deer (*Odocoileus virginianus*) on crop lands surrounding Gettysburg Park.

The survey consisted of 4 multiple-choice and 5 fill-in questions. Questions were developed to gauge land area planted and harvested by crop type, relative severity of impacts to crops by 8 wildlife species, and amount of crop production lost to deer. Questions were also included to quantify perceptions on the 5-year trend in deer numbers, respondent's wishes for future deer numbers, and the number and type of people permitted to hunt deer on the farms.

Two-hundred sixteen questionnaires were returned, for a usable response of 64%. Percent of respondents answering a given question ranged from 68% for a question on use of farms for deer hunting, to 100% for several other questions.

Grass hay (70%), field corn for grain (61%), and winter wheat (56%) were the crops most frequently planted by respondents. Mean hectares of each crop planted were highest for grass hay (26.9), soybeans (25.8), and field corn for grain (24.1). Grass hay (74%), field corn for grain (60%), and winter wheat (54%) were the crops most frequently harvested. Mean hectares harvested per respondent were slightly more than those planted for both grass hay (29.6) and field corn for grain (24.7), and slightly less for soybeans (22.4).

Sixty-one percent of respondents claimed they experienced some deer damage to their crops, while 39% rated deer

damage as either moderate or high (versus little or none). Responses of either moderate or high damage to crops were most frequently attributed to deer (39%), woodchucks (*Marmota monax*) (38%), and blackbirds (32%). Opinions pertaining to the presence and severity levels of damage caused by deer and woodchucks were not different ($X^2=0.98$, $df=3$, $P<0.05$). Less than half of respondents claimed any level of damage by doves (*Zenaidura macroura*), pheasants (*Phasianus colchicus*), mice, rabbits (*Sylvilagus* spp.), or raccoons (*Procyon lotor*).

Quantitative estimates of crop production lost to deer ranged from 1 bushel of sweet corn to 1,500 bushels of field corn for grain. Mean production lost to deer per respondent was greatest for milo at 241 bushels per respondent, followed by field corn for grain at 196 bushels per respondent. Perceived crop yield losses to deer were greatest for sweet corn (32.9 bu/ha) and milo (11.7 bu/ha).

A slight majority (52%) of respondents felt deer numbers increased on their farm during the past 5 years, 37% believed numbers remained stable, and 11% thought they decreased. However, a minority of respondents (36%) wished for deer numbers to decrease in the future. More respondents wanted to see future deer numbers remain stable (44%) rather than increase (20%).

Only 146 of survey respondents (68%) answered our question concerning people who hunted deer on their farm. An average of 8.9 people were reported to hunt per farm. Respondents and/or their immediate family hunted deer on the farm 84% of the time. Invited guests hunted 66% of respondents' farms, and the general public hunted 45% of the farms. No hunting of deer occurred on 18% of respondents' farms.

Perceptions of woodchuck and deer damage seemed surprisingly similar during this study. This finding, and desires of most respondent's for deer numbers to increase or at least remain stable, leads us to conclude that deer damage was probably not intolerable for most farmers surveyed. Additionally, perceived deer damage may be somewhat mitigated by the ability to hunt deer, as shown by the proportion of farms hunted and number of deer hunters per farm.

¹ Present address: Massachusetts Div. Fisheries and Wildlife, Field Headquarters, Westborough, MA 01581.