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The Extent and Impact of Wild Pig Damage to Landowners in Southwest Georgia, USA

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ABSTRACT: USDA APHIS Wildlife Services-Georgia formed a feral hog working group in June 2011, setting a goal of assessing pig damage through a mail survey. I developed, administered, and analyzed responses to a 6-page questionnaire using questions from surveys administered in other southern states and with input from the Georgia Feral Hog Working Group. I conducted the survey in January-March 2012 collecting data for the 2011 crop year. Based on survey results, free ranging wild pigs caused an estimated \$84 million in damage to crops and non-crop resources in the Southwest Cooperative Extension District in Georgia (USA). The Southwest Extension District of Georgia's Cooperative Extension Service includes 41 counties with headquarters in Tifton, GA. Landowners in this district casually report pig damage to county Extension personnel and USDA APHIS WS.

KEY WORDS: damage assessment, economics, Georgia, landowners, questionnaire, *Sus scrofa*, swine, wild pigs

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INTRODUCTION

By summer 2011, numerous comments (concerns, complaints, and expressed frustration for lack of information) had been conveyed to the University of Georgia Cooperative Extension Service (CES), USDA APHIS Wildlife Services (WS), Georgia Department of Natural Resources Wildlife Resources Division, and other land management agencies concerning free ranging wild pigs (*Sus scrofa*). In response, CES asked WS to form a "Feral Hog Working Group." This informal working group consisted of representatives from numerous agriculture and natural resource entities and was loosely modeled after working groups in surrounding states (e.g., South Carolina). At the initial meeting of the working group, one need identified by participants was the lack of sound information on the extent of the feral pig (hereafter, "wild pig") problem in Georgia. One goal of the working group was to conduct a mail survey of landowners to document the nature of the wild pig problem in a portion of the state. In the Southwest Extension District (SWD) of CES, where the study was conducted, there are 11,205 farms. Total land area in farms was >4.2 million ac (>1.7 million ha). Harvested cropland in 2007 was >1.9 million ac (>0.77 million ha).

METHODS

My objectives were 1) to assess the extent (number of counties and acreage impacted) of wild pig damage, 2) to assess the types of damage attributable to wild pigs, and, 3) to gather information on the opinions of landowners regarding the presence of wild pigs. Metrics to assess impact included financial damage, damage to crops, and impact on other wildlife.

Landowner names (n = 17,000+) were provided by the SWD of CES. Names were derived from 4 lists of people who had attended Cooperative Extension Service events in the SWD during previous years. The 4 lists were combined and parsed, removing duplicates and obvious company or business names. I randomly selected 1,337 names from a final list of >14,000 names and

mailed surveys in January 2012. Reminder postcards were sent in early February 2012, and a second complete survey package was sent at the end of February 2012. In August 2012, I called 59 randomly-chosen landowners from the original list in order to assess non-response bias. The survey consisted of 6 pages with questions in a variety of formats including multiple responses, yes/no, open ended, and Likert scale-type, as well as standard demographic questions.

RESULTS

A total of 1,200 surveys were delivered and 471 useable surveys were returned (39.3% return rate) and analyzed. All answers pertain to the 2011 crop year. Respondents in all 41 counties reported damage. Row crop production was the most frequently reported land use (63% of respondents); timber production was second (25%), followed by livestock production (21%) and hunting (15%). The most frequently grown crops were peanuts (28% of respondents), followed by cotton (26%), corn (17%), and wheat (8%). Other relevant findings include:

- 70% of respondents said wild pigs were present on their land. Of non-respondents, 51% said they were present.
- 96% of respondents with pigs reported having damage from pigs. Of non-respondents, 63% reported damage.
- Respondents reported pig populations to be increasing (Table 1). Most non-respondents reported wild pig abundance to be greater than 1 and 3 years ago but about the same as 5 years ago.
- Major problems were rooting (reported by 85% of respondents), damage to non-timber crops (64%), wallowing (61%), and damage to food plots (46%).

When asked, "Which control measures do not work?" 94 of 209 total respondents (45%) reported "all," 33 (16%) reported "hunting," and 28 (13%) reported "trapping," likely reflecting deep frustration at controlling

Table 1. Perceptions of the status of wild pig populations in southwest Georgia, based on mail survey responses between 23 January 2012 and 15 March 2012 in the Southwest Cooperative Extension District, Georgia.

Current Wild Pig Population Compared to	Percent of Responses (%)				Response Count (n)
	Lower	Same	Higher	Unsure	
Last year (2010)	11.3	30.5	50.0	7.3	302
3 years ago (2008)	10.4	15.8	67.7	6.1	297
5 years ago (2006)	13.9	10.1	67.9	8.4	296

Figure 1. Percent of mail questionnaire respondents (n = 310) and non-respondents (phone survey follow-up; n = 40) who felt that presence of wild pigs resulted in a decline in other game species.

Figure 2. Attitudes of landowners regarding selected questions or statements about wild pigs in Georgia. SA = strongly agree, A = agree, SD = strongly disagree, D = disagree.

pigs. Answers reflect need for future education programs to inform landowners of various control methods. When asked for an opinion on who should be controlling wild pigs, most respondents (n = 173; 57%) wanted some form of government assistance. Respondents felt that presence of wild pigs resulted in a decline of other wildlife (especially game) species (Figure 1). The difference from non-respondents could be attributed to the lack of experience (i.e., direct damage, exposure) with wild hogs. Anecdotally, this was the reason most often given for not completing the survey.

Attitudes toward wild pigs and control were consistent with other surveys (Wood and Lynch 1977, Rollins 1993, Adams et al. 2005) and generally not different from my *a priori* expectations of landowner attitudes (Figure 2). In addition, landowners seemed to express “frustration” at the lack of effective control methods available. This is due, in part, to conflicting information from private hog control outfitters, and landowners’ own inexperience with trapping and with wild pig ecology and behavior in general. Misinformation is abundant due to television shows, outdoor magazines, and personal contact. Some survey respondents believe hunting with dogs is effective, while others shared information about (illegal) toxicant use. Other notable findings from the survey were:

- Respondents felt that hogs are increasing due to illegal release (53%), natural causes (48%), and lack of hunting pressure (46%).
- Respondents felt that increased hog populations are negatively impacting white-tailed deer (*Odocoileus virginianus*; 78%), northern bobwhite (*Colinus virginianus*; 77%), and wild turkey (*Meleagris gallopavo*; 68%).
- Respondents reported that declines in wildlife do not decrease income (61% reported no change in income), likely because these landowners are not leasing their land. However, 72% of respondents reported that declines in wildlife reduced their enjoyment of wildlife on their property.

Responses to a section of the questionnaire designed to assess respondents’ attitudes and general knowledge about wild pigs (Figure 2) were collected using a 5-point Likert scale [Strongly Disagree (SD), Disagree (D), Unsure, Agree (A), and Strongly Agree (SA)]. Major findings were that wild pigs were:

- a nuisance (SA/A = 88%)
- important to the environment (SD/D = 81%)
- welcome as big game animals (SD/D = 78%)
- a source of disease (SA/A = 60%)
- detracting from deer hunting opportunities (SA/A = 68%).

Also, respondents were unsure about disease risk (32%), and only 56% knew that wild pigs were a non-native species.

By combining acreage figures from the affected counties and self-reported estimates of dollar loss to crops in 2011, I arrived at a damage estimate of \$57 million to crops and \$24 million for losses to other resources (timber, food plots). Total (2011) economic impact due to wild pigs in these 41 counties was estimated at \$81 million. The full report is available at <http://www.warnell.uga.edu/outreach/pubs/wildlife.php>.

DISCUSSION / CONCLUSIONS

Most survey respondents reported having wild hog damage to land they farm and that the damage was first noticed more than five years ago. The cumulative impact of multiple years of damage can take a substantial toll, financial and emotional, on the landowner or agricultural producer. The most common type of damage was from rooting and grubbing. Peanuts, corn, and cotton were the crops most frequently reported damaged. Respondents self-reported an average lost to crops and/or crop related damage (e.g., damage to equipment) due to wild pigs during 2011 of \$12,646 per respondent. Self-reported losses to non-crops (e.g., timber, fences, food plots) averaged \$5,381 per respondent. Together, losses due to wild pigs reportedly exceeded 81 million dollars (USD) in 2011. Respondents felt that most control measures were not highly effective and that state and federal agencies should provide more assistance with wild pig control. Many respondents perceived a decline in whitetail deer, wild turkey, and northern bobwhite populations and attributed this decline, at least partially, to the abundance and activity of wild pigs.

Estimates of damage in this survey refer only to the 41 counties in the Southwest Cooperative Extension District. Additional surveys in other regions of the state will be necessary to expand these numbers to the entire statewide population of wild pigs. The figures obtained in this survey were self-reported by survey respondents with no independent verification of accuracy. These figures may be conservative or excessive. Accuracy depends on the skill, ability, and honesty of the survey respondent to self-report losses. Damage may take many forms include direct crop loss or lost revenue due to not planting a crop or planting a crop of lower value. Other indirect losses come from wasted time, fuel, fertilizer, water, and pesticides expended on a portion of the crop that is subsequently lost to wild pigs. Such losses are subtle and not easy to measure. Damage is not equally shared by everyone. Damage reported here may be conservative.

An alternative argument could be that damage estimates are inflated. However, if damage estimates reported here are double the actual amount then the losses are still substantial; if triple the actual amount, the financial impact is still vast. There can be no doubt that the ecological impacts and financial losses attributable to wild pigs are significant.

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