Economic Estimate of Wild Pig Damage to Agriculture in Alabama

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Introduction

A 1988 survey of wild pigs in Alabama suggested significant populations occurred primarily in the southwest part of the state along the Tombigbee and Alabama rivers. However, the population is now springing up in new areas in south Alabama, and also some spots in northern counties. Wild pig populations are now overly abundant in several parts of Alabama, resulting in damage to agricultural crops, forest plantings, food plots, and native wildlife habitat, which raises concerns among landowners, agricultural producers, wildlife experts and natural resource professionals.

In Alabama, there are 48,500 farms that cover almost 9 million acres. Agriculture is one of most important industries with annual farm receipts of more than $5 billion. It has been well documented that many farmers suffer significant damage by wild pigs in Alabama and across the Southeast. However, the extent of this damage is largely unknown. Alabama does not have a defined feral swine program, nor does it have any published accounts presenting an economic analysis of wild pig damage and views of the public regarding wild pigs.

This study attempts to quantify damages and loss of agricultural crops due to wild pigs, and identify the distribution and characteristics of wild pig damage to agricultural crops in Alabama. Management strategies employed by farmers and control techniques designed to mitigate wild pig damage are also investigated. This poster provides a summary of the results of the survey, and provides suggestions to assist in mitigation of damages.

Methodology

A questionnaire survey was conducted at conferences organized by the Alabama Farmers Federation. The conferences were attended by a wide range of farmers from all agricultural counties in Alabama. Questions pertaining to farm ownership, crop types, pig damage, management and control efforts, and economic impact were asked. Survey responses were analyzed using a combination of descriptive and inferential statistical methods.

Damages

We received 251 participants from two conferences in 2010. The overall response rate was about 30%. Among the 251 returned surveys, 231 were considered valid. Over 60% of the respondents farmed their own land, while 35% farmed on land that they owned and on land that they leased. Only 3% farmed on land that was leased. Among the participating farm owners, 37% reported some wild pig damage. Alabama currently has 67 counties. The respondents came from 63 counties, in which 41 counties have farms reporting damages. The major costs are presented as follows:

- Acreage of crops receiving damage by wild pigs (expressed as a percentage of total acreage) from 2007 to 2009 are presented in Figure 1. The figure does not include damage to crops such as oats, vegetables, and melons.

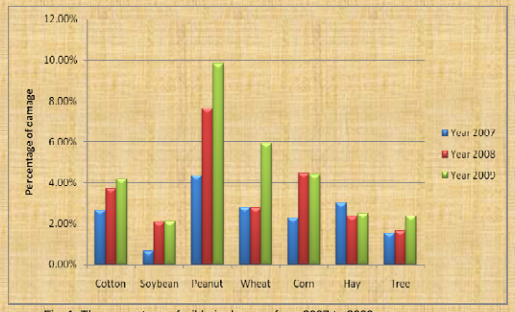

Fig. 1: The percentage of wild pig damage from 2007 to 2009.

- Using information on production value of each crop in Alabama in 2009, we estimated economic loss by crop type. The total damage to crops in Alabama was estimated to be approximately $75 million in 2009. The greatest economic losses were in corn and peanuts, respectively (Table 1).

Table 1: Estimated economic loss from wild pig damages in Alabama, 2009.

Crops	Estimated loss in 2009 (by $1000)
Cotton	4,663
Soybean	3,760
Peanut	10,308
Wheat	2,703
Corn	49,281
Hay	3,668
Total	74,383

- The total economic loss of crops across the states is illustrated in Fig. 2.

Fig. 2: The total crop damage by county in 2009.

- 2.37% of forest land reported having some damage by wild pigs. Alabama has 22.7 million acres of forests, meaning that over a half million acres suffered damage.
- Damages to roads and pastures were significant. The total economic cost to repair roads was estimated to be about $645,000 in the past three years. Damage to pastures, wildlife food plots, and fencing indirectly affected husbandry and habitat for other wildlife.
- Wild pigs not only cause direct damage to crops, but also force farmers to grow less profitable crops to avoid vulnerability to wild pigs. According to our results, among farmers who suffered some damage by wild pigs, 21.18% had changed or will change their crops to mitigate wild pig damage. The revenue loss affected by those changes could be as great as 20.56% on average.

Management and Control

11.32% of respondents stated that they had an insurance policy that covered losses associated with damage by wild pigs.

Respondents listed their three most effective measures for controlling wild pigs. Figure 3 shows the results: 1) shooting and hunting, 2) trapping, and 3) electronic fence.

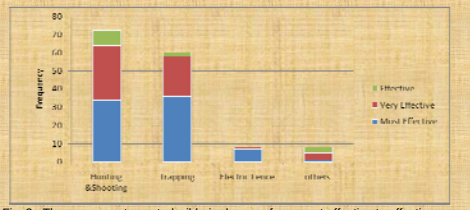

Fig. 3: The measures to control wild pig damage from most effective to effective.

A series of education programs on wild hog control have been organized for landowners/farmers in southern Alabama since 2008. Among our respondents, the workshop was the dominant forum for farmers to receive training on wild pig damage control (Fig. 4). But, experience was considered to be almost as important a factor as workshops for successfully controlling damage by wild pigs (Fig. 5).

Fig. 4. The sources of training or information about wild pig damage.

Fig. 5: Utility of information.

Conclusions

The loss of wild pig damage includes not only direct crop damage, but also road damage and indirect effects on farm activities like changing crops. Therefore the total economic loss is greater than what we estimated. From the respondents' comments in our survey, wild pig damage was widespread among farmers, and assistance was deemed beneficial. More importantly, damages were rising from 2007 to 2009. Considering farms were sampled from only two meetings of farm owners and sample size was relatively small, interpretation and conclusions need to be made with caution. Further investigation is needed.

Acknowledgments

We would like to thank the Alabama Farmers Federation (ALFA) and their respective commodity groups for their assistance in collecting survey data.