

2018 ASSESSMENT OF FERAL HOG ACTIVITY IN ARKANSAS



TECHNICAL REPORT

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Any opinions, findings, conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the University, project partners or collaborators.

Executive Summary

Feral hogs (*Sus scrofa*) are a non-native invasive species prevalent in much of the southeastern United States and California. While small herds have lived in Arkansas for generations, their population has increased dramatically in the past 30 years. This assessment provides baseline information of feral hog activity as reported by Arkansas landowners. A disproportional, random sample of landowners of 20+ acres land parcels were interviewed by telephone to collect information pertaining to the amount of feral hog activity their property experiences, their feral hog removal practices and monetary estimates of damage and expenditures directly attributable to feral hogs.

Most respondents indicated feral hogs are currently active on their land (70 percent, n=476) and most have a negative view of feral hogs (87 percent), irrespective of the land type where activity was reported. Land types were crop, forest, pasture, combined land types and other. Respondents were asked if they had lost time or money, or spent money on repairs, due to feral hogs and then to estimate those losses per land type. Respondents with pastures who experienced feral hog damages (33 percent, n = 155) reported the highest total losses among land types (\$4.744 million in repair expenses and \$790 thousand in money lost). Respondents with a combination of land types who experienced feral hog damages (58 percent, n = 275) reported \$710 thousand in repair expenses and \$2,200 million in money lost from feral hog damages. Respondents with crop land who experienced feral hog damages (14 percent, n = 69) reported \$1,019 million in repair expenses and \$1,477 million in money lost from feral hog damages.

Thirty percent of respondents who reported no hog activity (n = 543) were very confident in their ability to protect lands from risks associated with feral hogs. Comparatively, only 7 percent of respondents with feral hog activity (n = 416) were very confident in their ability to protect their land from risks associated with feral hogs.

When asked to estimate the highest number of hogs present on their land at any one time over the last five years, respondents (n=410) indicated an average of 43 hogs with the highest report being 1,000 hogs (median = 250, mode = 20). When totaled, the maximum number of feral hogs reported by respondents to be seen at one time over the last five years was 17,763. When asked how many feral hogs were removed over the past five years, responses ranged from 0 to 2,000 with an average of 79 (median = 20, mode = 20). The total number of hogs removed by respondents over the past five years was 37,782.

In terms of feral hog management on private lands, most respondents reported taking lethal action (77 percent). The majority reported shooting feral hogs during daylight hours (84 percent) and trapping hogs (70 percent). Only 9 percent of respondents reported taking non-lethal actions, of which the majority used fences (66 percent) or harassed feral hogs (41 percent).

An economic assessment of feral hog activity and damages is a difficult undertaking. A variety of stakeholders are affected by feral hogs in ways which challenge the ability of researchers to place a reasonable and defensible monetary value on economic impacts. Feral hogs are a mobile and adaptive species, and their damages can be significant but unevenly distributed spatially and temporally. It is anticipated this study will be conducted at regular intervals to assess feral hog impact trends in Arkansas.

Introduction

Situational Background

Feral hogs (*Sus scrofa*) are a non-native invasive species prevalent in much of the southeastern United States and in California. Although small herds have lived in Arkansas for generations, their population has increased dramatically in the past 30 years. Currently, feral hogs are present in every county in Arkansas, with sustainable populations reported in all but Lonoke and Clay counties (National Feral Swine Mapping System 2018). Contributing to their high reproductive rate (conservatively one litter of six piglets every eight months), hunters are believed to have released domestic hogs in uninhabited areas to bring their sport closer to home, which was legal on private lands until 2013.

Feral hogs primarily consume vegetation, tubers and nuts, including acorns, soil invertebrates and occasionally animal matter. Feral hogs compete directly with native wildlife species for limited food supplies, destroy wildlife cover and contaminate water supplies. They consume small mammals and reptiles, the young of larger mammals (e.g., fawns) and the eggs and young of ground-nesting birds (e.g., bobwhites, wild turkey). Their rooting behaviors and affinity to water have resulted in agriculture crop losses, wildlife habitat destruction and water pollution (e.g., sedimentation, transmission of *E. coli*) (Bevins et al. 2014). Feral hogs carry several diseases transmittable to livestock, pets and people (Southeastern Cooperative Wildlife Disease Study 2018.).

Controlling the prolific feral hog has proven difficult. Current state law prohibits possessing, transporting, releasing and selling live feral hogs. Trapped hogs are to be killed immediately, apart from those kept in a hog-proof pen on the same property where caught. Hogs are mobile and will range for miles in search of food or mates. Sounders, a group of related females and their young, are likely to stay in one location with good habitat. Bachelor groups and boars range widely in search of mates and therefore can be more difficult to trap because of their lack of site fidelity. Feral hogs become nocturnal with human pressure and therefore unseen. Often, landowners first

notice an extensive area of rooted-up soil which sometimes is attributed to causes other than feral hogs.

No control method is 100 percent effective. Having an open season for shooting feral hogs and hunting with dogs has not reduced their numbers in any state including Arkansas. Currently, state law allows feral hogs to be shot on private property (with the landowner's permission) any time of day or night without a hunting license, unless the hunter's license has been revoked. Bounties and buying stations have been ineffective in other states. Feral hog toxicants are currently illegal to use in the state. Box traps and similar small-capacity traps may capture single hogs or a few in a sounder, which then "educates" other non-trapped hogs to avoid traps. Feral hogs are very adaptive and can quickly learn to avoid both hunters and traps. Trap-shy hogs soon reproduce, and problems return with these now difficult-to-catch, experienced feral hogs.

Feral hog trappers recommend using the whole sounder approach, in which every pig in a group is caught and dispatched, as the best strategy for reducing hog populations. Remote-controlled trigger systems are more effective than hog-activated triggers to insure every pig is captured inside the trap. The whole sounder approach requires planning and surveillance via trail cameras to modify pig behaviors and insure trapping success. Ideally, hogs are trained to rush into the trap at one time at a spot farthest from the exit gates. Bait is slightly diminished through the course of several days once they become dependent on the food source and are acclimated to the trap. The whole sounder approach requires a significant investment of time and equipment, which landowners may find daunting when attempting to control feral hogs on their own property.

Feral Hog Economics

Several states have collected data about perceptions, opinions and damages associated with feral hogs by surveying specific stakeholder groups or land areas at risk from feral hog activities (e.g., Caplenor et al. 2017, Harper et al. 2016). In Arkansas,

reliable economic data from feral hog activities were collected regarding crop damage in 2014 (Anderson et al. 2016). USDA National Agricultural Statistical Service contacted a sample of farmers about economic estimates of feral swine damage and control in 11 states. Results from Arkansas were based on 202 responses from farmers. One-third (32 percent) reported feral swine were present on their land in the past year. One-fifth (21 percent) reported crop damage and 15 percent reported property damage by feral swine. Nineteen percent attempted to control feral swine, and 43 percent reported hunting feral swine. The estimated value of production lost to feral swine statewide was \$9,284,000 for corn (n = 44), \$5,305,000 for soybeans (n= 96), \$1,265,000 for wheat (n = 16), \$3,721,000 for rice (n = 53), for a sum of \$19,575,000. Control methods for feral hogs included shooting on site (18 percent), hunting with dogs (8 percent), hunting without dogs (13 percent), trapping (13 percent), repellents (1 percent) and electric fence (1 percent). The estimated cost of feral swine control reported by respondents was hunting (without dogs) at \$5,630 and trapping at \$29,350.

Legislation

Feral hogs are an invasive species and a public nuisance according to the Arkansas State Legislature

and the Arkansas Game and Fish Commission. Laws were enacted to reduce expansion of feral hogs in the state including penalties for possession or transporting live feral hogs and requiring that feral hogs be killed upon capture (McPeake 2017). The state legislature also passed legislation in 2017 forming The Arkansas Feral Hog Eradication Task Force. Though the legislative act expired in June 2018, stakeholder organizations agreed to continue working cooperatively towards the common goal of reducing feral hogs in the state. The task force consists of multiple agencies and organizations (Table 1) dedicated to developing and implementing a plan for their eradication in Arkansas.

Study Purpose

The purpose of this assessment of feral hog activity on private lands over 20 acres is to provide baseline information about landowner reports of feral hog activities and removal, damage estimates and expenditures. Funded by the Arkansas Forest Resources Center, this report is written for the general public, farmers, landowners, hunters, researchers, task force members, state and local government officials and any others interested in feral hogs in Arkansas.

Table I. Agencies and organizations serving as members or partners on the Arkansas Feral Hog Eradication Task Force, 2017-2018.

Members	Partners
Arkansas Agriculture Department	USDA APHIS Wildlife Services
Arkansas Cattlemen's Association	USDA Natural Resources Conservation Service
Arkansas Department of Health	USFS, Ouachita National Forest
Arkansas Association of Counties	USFS, Ozark/St. Francis National Forest
Arkansas Association of Conservation Districts	USFWS, White River Refuge
Arkansas Department of Parks and Tourism	
Arkansas Dog Hunters Association	
Arkansas Farm Bureau	
Arkansas Forestry Association	
Arkansas Game and Fish Commission	
Arkansas Livestock and Poultry Commission	
Arkansas Natural Resources Commission	
Arkansas Pork Producers Association	
Department of Arkansas Heritage Rural Services	
Division of Arkansas Economic Development Commission	
The Nature Conservancy	
University of Arkansas System Division of Agriculture	

Methods

Study and Sampling Design

The research team for this study consisted of personnel from the Arkansas Forest Resources Center and the UA Little Rock Survey Research Center. Researchers defined the target population to be landowners of 20+ acres of land in Arkansas who had ever had any feral hogs or signs of hog activity on any lands they owned or rented in Arkansas. The Arkansas Geographic Information Systems Office provided land and ownership data for all Arkansas land parcels of 20 or more acres. A total of 281,879 land parcels was provided by the Arkansas GIS Office. Evidence from previous studies about feral hog damage and control methods implied that a simple random sample of land parcels would result in few landowners reporting damage from feral hogs. Potentially as few as 3 percent of landowners, drawn from a simple random sample of land parcels, would be expected to report economic expenditures associated with feral hogs (e.g., Harper et al. 2014). Therefore, a stratified sampling method was used. State wildlife biologists experienced with monitoring feral hog activity, assisted the study team in grouping the Arkansas counties into five separate activity strata.

In order to increase the probability of reaching landowners with feral hog activity, a disproportional random selection of land parcels was drawn from the activity strata using a sampling ratio of 20:10:5:3:1 corresponding to very high activity, high activity, medium activity, low activity, and very low activity, respectively (Figure 1).

Data Collection

The questionnaire used in the study was developed by the research team with many questions adapted from previous feral hog studies (i.e., Anderson et al. 2016, Harper et al. 2016, Caplenor et al. 2017). Questions focused on five topics: (1) attitudes towards feral hogs, (2) perceptions of risk and damage concerns, (3) estimation of numbers of feral hogs, (4) economic losses by land type and (5) control methods employed (Appendix A).

Landowners were screened to determine their eligibility for inclusion in the study. Eligibility was determined by a qualifying screening question: “Thinking about all of the land you own or lease in Arkansas, have there EVER been feral hogs or signs of feral hog activity on ANY of your land?” Of the 1,020 landowners screened, 46 percent indicated feral hog activity on

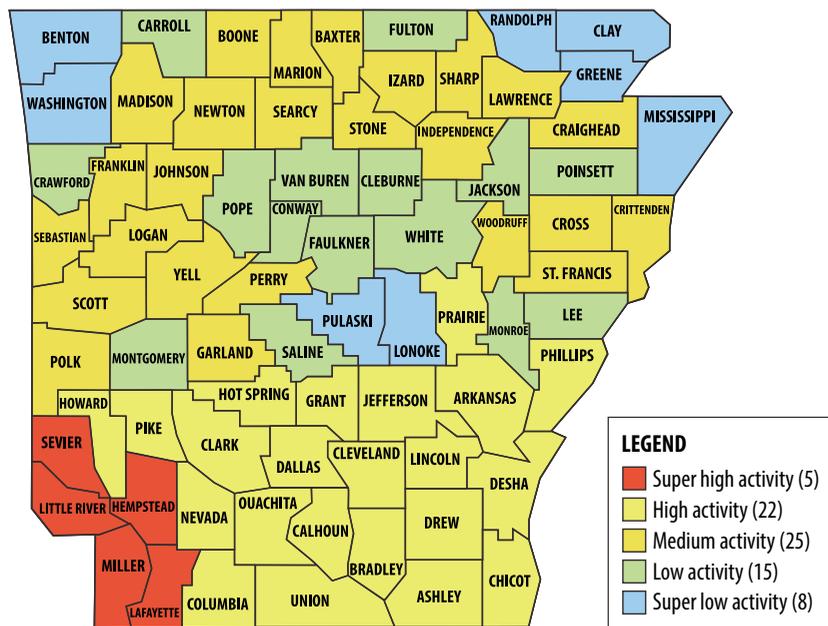


Figure 1. Map of Arkansas counties grouped by level of feral hog activity according to feral hog experts.

their land (n=467). Absentee landowners, or owners who lacked direct knowledge of feral hog activity on their land, were asked for contact information of someone who had such knowledge, for example, a lessee or relative. If the selected parcel was a privately-owned company, an attempt was made to interview an employee who had knowledge of feral hog activity on their company's property in Arkansas.

For landowners who reported no feral hog activity on any of their lands, one question was asked to assess their level of confidence in protecting their lands from feral hog risks: *"How confident are you that you can protect your lands from the risks from feral hogs?"*

All data were collected via telephone interviews with selected landowners by the UA Little Rock Survey Research Center. For landowner records included that lacked a contact phone number, vendor services provided by Scientific Telephone Samples were used to cross-match the listed address with a contact phone number. Only landowner records with a contact phone number were included in the final sample.

A pilot telephone survey was initiated from July 30 to August 1, 2018. A total of 77 landowners were interviewed. Consequently, adjustments were made to the wording of some questions to improve the quality of data collected. A total of 42 respondents (55 percent) in the pilot study reported hog activity, giving confidence in drawing a measurable sample of those with feral hog activity and associated costs.

Data collection for the study was conducted between August 2 and August 31, 2018. The survey was conducted in English only. Up to 10 contact attempts were made on different days and times to increase the likelihood of participation. A total of 467 interviews were completed. With this level of completed interviews, one can say with 95 percent confidence that the margin of sampling error was approximately ± 4.5 percent. The sampling unit was land parcels rather than landowners or Arkansas residents. Landowners owning multiple land parcels had a greater chance of selection for the telephone interview than those owning one parcel of land.

The response rate for the survey was 45 percent (RR3, according to the AAPOR 2015 Standard Definitions). This rate represents the number of completed interviews expressed as a percentage of all eligible participants with a viable phone number regardless of whether a survey interviewer was able to make direct contact or not. The cooperation rate was 91 percent. This rate represents the number of all completed and partially completed interviews expressed as a percentage of all eligible persons ever contacted (COOP3). The research was conducted in accordance with protocols and procedures approved by

the UA Little Rock Institutional Review Board for Human Subjects Research (Protocol # 18-110).

A news release about the telephone survey titled "Arkansas Forest Resources Center to Survey Landowners About Feral Hogs" was issued August 3, 2018, to alert the public and potential landowner-respondents about the survey and to increase public awareness about feral hogs. The news release was sent via the University of Arkansas Division of Agriculture to media outlets and members of the Arkansas Feral Hog Eradication Task Force for distribution.

Measures

Respondents' perceptions of feral hogs were assessed via measures of attitude towards feral hogs on their land, concerns about the economic costs and environmental damaged related to feral hog presence, risks feral hogs pose to people and other animals and landowners' ability to protect themselves and their land from feral hogs. Measures of feral hog activity were segmented by land type, i.e., pasture, forest (timber or woodlands), crop land and other land types. The same land type segmentation scheme was used to assess the economic impact (expenditures and damages) of feral hogs across the state via self-report estimates made by respondents.

Respondents were presented a series of questions related to the financial expenditures and control methods over the past five years. A five-year interval was selected for several reasons. First, feral hog damage can be temporal and intermittent in certain locations, and such events are thought to be memorable enough for recall by respondents. Second, during the previous five years, feral hog issues received growing attention in the state. In 2013, five years prior to the survey, Arkansas Game and Fish Commission developed a job position and hired a wildlife biologist dedicated to coordinating feral hog removal on agency properties. Lastly, legislative initiatives in which laws and regulations were restructured about feral hog control began in 2012 and 2013.

An estimation of the number of feral hogs by respondents was developed asking them the highest number of hogs seen at one time on their land in the past five years. This question was worded to reduce the possibility of respondents overestimating the number of hogs present, i.e., *"Over the last five years, what is the highest number of hogs that have been on any piece of land at one time?"* Respondents were asked what control measures were practiced on their property, e.g., hunting, trapping, etc., and their willingness to voluntarily report the number of hogs dispatched on their property via those control practices. At the conclusion of the survey, any unsolicited comments from respondents were recorded.

Results

Data were entered into Microsoft Excel (Microsoft Office Professional Plus, 2016). Frequencies of response, mean, median and mode were calculated. Further statistical analyses which assume normality were not appropriate for application to these data. Majority of the respondents (70 percent, n=476) indicated feral hogs currently were present on their land (Table 2). Most respondents (95 percent, n=450) indicated they owned or leased land for five years or longer. The numbers of years since a respondent first noticed feral hogs on their property averaged 13 years (n=447), with a range of 1 month to 75 years and a median and mode of 10 years. When asked to estimate the highest number of hogs present on their land at any one time over the last five years, respondents

(n=410) indicated an average of 43 hogs with the highest report being 1,000 hogs (median = 250, mode = 20). When totaled, the maximum number of feral hogs respondents saw at one time over the last five years was 17,763.

Respondents were asked to classify their land with feral hog activity as pasture, forest/timber land, crop, a combination of land types or other (Tables 2 and 3). The category “combination of land types” was created after conducting the pilot test in which some respondents had difficulty deciding between classifications, such as land that was both pasture and forest. The category for “other” land types included respondents who owned or leased (a) wetlands, lake

Table 2. Respondents (n=476) indicating feral hogs were currently present on their land, by land type.

Land types	Respondents currently with feral hogs present (% , #)			
	Yes	No	Don't know/Refuse	Total
All respondents	70% (334)	23% (109)	7% (33)	100% (476)
Cropland	71% (87)	22% (27)	7% (8)	26% (122)
Forest or timber land	71% (310)	22% (96)	7% (31)	92% (437)
Pastureland	68% (205)	23% (70)	9% (26)	63% (301)
Combination	59% (73)	32% (39)	9% (11)	26% (123)
Other land types	83% (25)	10% (3)	7% (2)	6% (30)

Table 3. Respondents (n=476) reporting number of acres with feral hog activity over the past 5 years by land type.

Land type	Number of acres			
	Min	Max	Mean (Average)	Total
Forest or timber	< 1	8,000	358	58,753
Pasture	< 1	3,000	246	38,071
Crop	< 1	20,000	678	46,797
Combination	< 1	250,000	1,743	479,273
Other types	< 1	6,000	403	10,484
Total				633,378

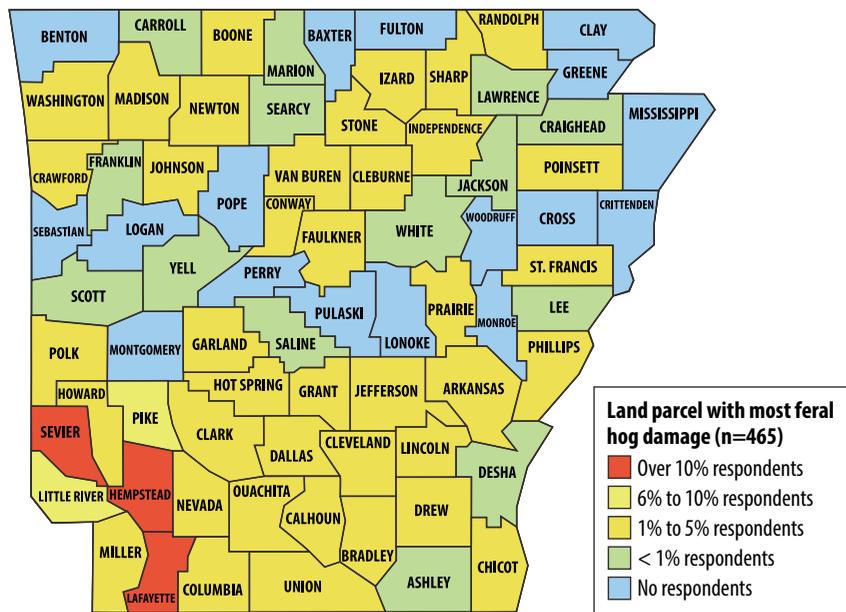


Figure 2. County location of land parcel with the most feral hog damage or activity as reported by respondents (n=465).

Table 4. Percent and number of respondents (n=465) indicating land parcel with the most feral hog damage or activity by county (n=57).

County	Percent	#	County	Percent	#	County	Percent	#
Arkansas	1	5	Grant	2	7	Ouachita	3	12
Ashley	< 1	1	Hempstead	15	69	Phillips	1	4
Boone	1	5	Hot Spring	1	4	Pike	1	6
Bradley	1	6	Howard	2	11	Poinsett	1	3
Calhoun	1	4	Independence	1	6	Polk	1	4
Carroll	< 1	1	Izard	3	13	Prairie	2	7
Chicot	1	4	Jackson	< 1	1	Randolph	1	3
Clark	2	7	Jefferson	1	5	Saline	< 1	1
Cleburne	1	3	Johnson	1	3	Scott	< 1	2
Cleveland	1	3	Lafayette	8	38	Searcy	< 1	1
Columbia	2	9	Lawrence	< 1	1	Sevier	12	58
Conway	1	4	Lee	< 1	1	Sharp	2	7
Craighead	< 1	1	Lincoln	1	4	St. Francis	1	3
Crawford	1	4	Little River	6	29	Stone	3	15
Dallas	2	9	Madison	2	10	Union	2	8
Desha	< 1	1	Marion	< 1	2	Van Buren	2	9
Drew	1	4	Miller	5	22	Washington	1	3
Faulkner	1	3	Nevada	1	11	White	< 1	1
Franklin	< 1	2	Newton	1	3	Yell	< 1	2

shores and bottom lands (n=7), (b) commercial (n=6), (c) residential (n=5) and (d) mining (n=2). Most landowners in each land type currently had feral hog activity on their land (Table 2).

Respondents (n=469) indicated they first became aware of feral hog activity on their land from 1 month to 75 years ago, with an average (mean) response of 12 years (median = 10 years, mode = 10 years).

Respondents were asked of the land they owned or leased, which county had the most feral hog damage or activity (Table 4, Figure 2), resulting in 57 counties with reported feral hog activity.

Respondents reported feral hog activity over the past five years on over 600,000 acres of private land. The land type with the most acreage of hog activity was the combination category consisting of forest, pasture and/or cropland, followed by forest or

timber, crop, pasture and other land types (Table 3). The highest single report of 250,000 acres presumably was from a private land management company.

Perceptions of Feral Hogs

A portion of the interview asked respondents about perceptions of feral hogs and their activities. Respondents were asked if they viewed the presence of feral hog activity on their land as positive, negative or both (Table 5). The majority (87 percent) indicated a negative view of feral hogs, irrespective of the land type where feral hog activity was reported. Some (11 percent) indicated a positive view, or both a positive and negative view, of feral hogs on their property. Those who held negative views were not at all confident (50 percent) or only slightly confident (25 percent) in the ability to protect lands from risks associated with feral hogs (Table 6). Comparatively more of those who held positive, or both positive and negative

Table 5. Responses to the question of whether respondents viewed the presence of feral hog activity on their lands as positive, negative or both by land type.

Land types	Responses (% , #)				
	Positive	Negative	Both	Don't know/Refuse	Total*
All landowners	1% (7)	87% (416)	10% (47)	1% (6)	476
Cropland	1% (1)	91% (111)	7% (8)	2% (2)	122
Forest or timberland	2% (7)	87% (379)	10% (45)	1% (6)	437
Pastureland	3% (3)	89% (268)	9% (26)	1% (4)	301
Combination	1% (1)	86% (106)	13% (16)	0	123
Other land types	0	90% (27)	10% (3)	0	30

*Some respondents reported more than one land type, therefore the total for all land types exceeds number of respondents.

Table 6. Confidence of respondents in protecting land from risks associated with feral hogs, comparing those without and with feral hog activity on their land, and for those with feral hog activity, their perceptions of the presence of feral hogs being (a) positive or both positive and negative or (b) negative.

Feral hog activity on land	Responses (% , #)					Total #
	Very confident	Somewhat confident	Only slightly confident	Not at all confident	Don't know/Refuse	
Feral hogs present						
Positive, or both	30% (16)	28% (15)	20% (11)	22% (12)	0	54
Negative	7% (28)	18% (75)	25% (105)	50% (208)	1% (6)	416
Total	9% (44)	19% (90)	24% (116)	46% (220)	1% (6)	476
No feral hogs present						
Total	30% (161)	17% (93)	14% (76)	24% (129)	15% (84)	543

views, about feral hog activity on their land, were very confident (30 percent) in the ability to protect lands from risks associated with feral hogs. Most respondents reported being very concerned about feral hog damages to Arkansas streams, wildlife or woodlands (61 percent), costs to Arkansas's economy (58 percent) and risk to livestock, people and pets (49 percent) (Table 7).

Estimates of Damage Caused by Feral Hogs

Of those respondents reporting monetary damages over the past five years, the majority of respondents with a combination land type (58 percent), and about one-third on pastures (33 percent) and forest (34 percent) lands reported that feral hog activities resulted in damage (Table 8). Respondents with crop lands had the fewest reporting feral hog damages (14 percent). Those who responded affirmatively were asked whether

they or others on their land had lost time or money, or spent money on repairs due to feral hogs, and then to estimate their losses for each land type. Proportionately more respondents with pastures reported a loss of time or money (61 percent) compared to about half with croplands (49 percent) or a combination land type (47 percent). The majority of those owning "other" or forest lands reported no loss of time or money, with only about a quarter of "other" (27 percent) and forest (25 percent) land respondents indicating repair expenses and money lost. Repair expenses were highest for those with pasturelands (\$4,744,160) with one respondent reporting \$3 million in damages, followed by croplands (\$1,019,200). Those with damage to a combination land type and crops reported higher losses (\$2.220 million and \$1.476 million, respectively) compared to pastures (\$790 thousand), forest (\$880 thousand) and other land types (\$105 thousand). When combining repair costs and monetary losses, those with pastureland reported the highest losses (\$5,534,347) followed by combination of land

Table 7. Degree of concern by respondents (n=476) about costs to Arkansas economy, damages to wildlife or woodlands, and health risks associated with feral hogs.

Question	Responses (% , #)				
	Very concerned	Somewhat concerned	Only slightly concerned	Not at all concerned	Don't know/Refuse
How concerned are you about the costs to Arkansas' economy caused by feral hogs?	58% (277)	25% (120)	11% (52)	4% (20)	2% (7)
How concerned are you about damages to Arkansas streams, wildlife or woodlands caused by feral hogs?	61% (291)	23% (110)	10% (45)	4% (19)	2% (11)
How concerned are you about the risks to livestock, people and pets caused by feral hogs?	49% (233)	25% (121)	17% (83)	7% (32)	2% (7)

Table 8. Percent and number of respondents reporting feral hog damage and associated loss of time or money, and estimates of repair expenses and money lost over the last 5 years, by land type.

Land type	% (#) w/damage (n 476)	% (#) time/money loss	Repair expenses (in USD)			Money lost (in USD)		
			Min	Max	Total	Min	Max	Total
Crop	14% (69)	49% (34)	\$0	\$500,000	\$1,019,200	\$0	\$500,000	\$1,476,800
Forest	34% (164)	25% (42)	\$0	\$250,000	\$447,930	\$0	\$500,000	\$880,200
Pasture	33% (155)	61% (94)	\$0	\$3,000,000	\$4,744,160	\$100	\$100,000	\$790,187
Combination	58% (275)	47% (129)	\$0	\$100,000	\$709,850	\$0	\$1,000,000	\$2,220,500
Other	5% (26)	27% (7)	\$500	\$50,000	\$99,000	\$0	\$500,000	\$105,000
All types	-	-	\$500	\$3,900,000	\$7,020,140	\$100	\$2,600,000	\$5,472,687

types (\$2,930,350), cropland (\$2,496,000) and “other” (\$204,000). If the one landowner reporting \$3,000,000 in repair expenses is removed, pastureland losses were comparable to other land types (\$2,534,347).

Actions to Control Feral Hogs

Over the past five years, respondents were asked whether they or others took lethal or nonlethal actions against feral hogs (Table 9). Most reported taking lethal action (77 percent) with the majority shooting hogs during daylight hours (84 percent) and trapping hogs (70 percent). Few (9 percent) reported taking non-lethal actions, of which the majority used fences (66 percent) or harassed feral hogs (41 percent) (Table 9).

When asked how many feral hogs were removed over the past five years, responses ranged from 0 to 2,000 with an average of 79 (median = 20, mode = 20). When added together, the total number of hogs removed by respondents was 37,782 over the past five years. The majority (87 percent, n=415) were willing to voluntarily report the number of feral hogs removed to help track feral hog control efforts in the state.

Additional Comments

After the conclusion of the structured interview, 85 respondents offered additional comments. A qualitative assessment of comments was conducted by reading each comment and assigning a theme. Themes were developed while reading and interpreting comments. No themes or categories were prepared for the qualitative analysis prior to reading comments. The major themes that emerged from the analysis were: origins of feral hogs (n=4), population growth/expansion (n=22), control strategies (n=24),

attitudes (n=3), concerns (n=14), economics (n=11), other issues (n=3) and survey results (n=4) (Appendix B).

Of respondents who provided additional comments, most statements regarding feral hogs were negatively framed while others were increasingly concerned about their growing numbers (26 percent). For example, “Arkansas will have to do something about this problem, because it is getting out of hand,” and “Feral hogs are the #1 problem in south Arkansas.” Others expressed frustration, such as the comment, “The hogs are bad as they rob the turkey nests all the time. We kill them and set out traps, which seems to do no good.”

Although most perceived hogs as a problem, there were a few who expressed alternate views. One respondent indicated, “It is cruel to go out and kill the animals. People are taking over their territory so why kill the hogs?” Another respondent indicated, “I have erosion problems, more than the feral hog problem.” And another stated, “Over the last 20 years there has been a decrease of wolf and coyote populations and an influx of deer and other prey animals.”

Over one-quarter (28 percent) expressed ideas and comments about optional control methods. Some commented about restrictions to shooting hogs, specifically the need to allow hog hunting on public lands and hunting club properties, and that shooting is not allowed inside city limits. Other comments focused on removal methods and their effectiveness. For example, one respondent indicated “harassing and scaring the hogs was more effective than trying to kill the hogs.” Another respondent said, “Hunting hogs with dogs was one of the worst methods, because it scatters them out and they end up coming back.”

Table 9. Percent and number of respondents reporting lethal and non-lethal actions for feral hog removal (n = 476).

Type of Action	Percentage	Number
Lethal action taken (77%, n = 366)		
Shoot hogs during daylight hours	84%	309
Trap hogs	70%	257
Hunt with dogs	36%	132
Shoot hogs at night	33%	121
Hunt hogs for recreation and enjoyment	26%	96
Non-lethal action taken (9%, n = 41)		
Put up fences	66%	27
Harass feral hogs, such as with noise or with dogs	41%	17
Use repellents, such as scents or pepper spray	5%	2

Discussion

Wildlife biologists often describe two types of Arkansas landowners: those who have feral hogs and those who are going to have feral hogs. The feral hog population continues to grow and expand across Southeast. This survey of Arkansans who own or lease land over 20 acres with feral hog activity indicates that the majority had concerns about feral hogs, while a minority indicated little to no issues with feral hog activity on their owned or leased property.

Economic Loss From Feral Hog Damages

Only a portion of those with feral hog activity reported spending money on repairs or losing income, though these expenditures were arguably significant for each land type.

- **Cropland:** Feral hog activity and damage were reported by fewer respondents with cropland, though their monetary losses were higher than those with forest or pasture lands. Compared to the 2014 study of crop damage in which one-fifth (21 percent, n=202) reported crop damage (Anderson et al. 2016), only 14 percent (n=122) of those owning cropland reported crop damage in this telephone interview.
- **Forest land:** Respondents with forest land reported the lowest amount in repairs, though monetary losses were slightly more than those reported for pastures. Because feral hogs consume plants that compete with pines, timber producers may consider feral hogs a benefit at certain stages of forest growth. However, feral hogs are known to uproot freshly-planted tree seedlings, and replacement can be expensive. Depending on the extent of damage, some may decide not to replant if costs are projected to exceed profits.
- **Pastureland:** For most land classifications, monetary losses exceeded repair expenses. The exception was respondents with pastures, who reported spending more in repairs (\$4.7 million) than money lost (\$780 thousand). After removing one respondent indicating \$3 million in repairs,

the difference between repair expenditures and money lost was less (\$1.7 million, \$920 difference). A possible explanation is that a pasture with the primary function of grazing for livestock generates little income itself, except for pastures which produce hay crops. Though the cost of repair is high for pasturelands, repairs are necessary to maintain livestock and avoid purchasing expensive feed alternatives.

- **Combination:** Those owning or leasing a combination of land types reported lower repair expenses but were the highest of all land types in monetary losses. A possible explanation is that perhaps some of these lands were leased for other uses such as recreation, though further questioning would be required to make a determination.

For comparison purposes only, extrapolating estimates to total acreages of crops, pastures and forest lands (Table 10) reported for 2018 in Arkansas (National Agricultural Statistics Service, 2019) indicates feral hog damage to planted acres of cropland (wheat, sweet potatoes, soybeans, corn, sorghum, cotton, rice, peanuts and oats) would be \$0.167/acre in repair expense and \$0.243/acre in money lost, for a total \$0.41/acre. The Arkansas Forestry Association (2019) estimates total land area in forests in 2016 was 33.3 million acres, or an estimated \$0.013/acre in repair expense and \$0.026/acre in money lost, for a total \$0.039/acre loss due to feral hog damage. According to the University of Arkansas Cooperative Extension Service (2019), a rough estimate of pastureland in Arkansas is 6 million acres of forage, including about 1.5 million acres of hayland and 4.5 million acres of pasture. The repair expense was \$0.791/acre and \$0.132/acre in money lost, for an estimated \$0.922/acre loss from feral hog damage.

Non-economic Considerations

Monetary assessments are a tool for measuring and comparing impacts of feral hogs. Some consequences of feral hog activity are difficult to measure monetarily. These include loss of wildlife habitat, competition with native species, impact on threatened and endangered species and their habitat and

degradation of water quality. Therefore, other questions probed respondents' perspectives about feral hogs.

Responses support the notion that experiencing feral hogs plays a major role in perceptions regarding issues of concern. Those who lacked feral hog activity were asked a single question about their confidence in protecting their land from risks associated with feral hogs. The majority who reported no hog activity on their land (47 percent) were very to somewhat confident in their ability to protect land from risks associated with feral hogs. Only 25 percent of those who viewed negatively the presence of feral hogs on their property were very or somewhat confident in their ability to protect their landholdings from risks associated with feral hogs. This implies some who have no experience with feral hog activity may change perspectives once feral hogs are present.

Management Actions

The majority of respondents having feral hogs present on their property had taken some action for removal of feral hogs or prevention of damages. The majority reported shooting hogs during daylight hours (84 percent) or trapping hogs (70 percent).

Shooting hogs during daylight hours arguably requires less effort than trapping and other actions. Trapping, when conducted following a certain protocol, can successfully remove sounders and bachelor groups. Box traps which capture a single pig or portions of a sounder typically do little to reduce damages. Such efforts are believed to "educate" hogs which avoid capture, and such hogs subsequently learn to avoid traps and shooters. Feral hogs are known to become active at night to avoid encountering humans. Nonlethal methods, such as using fences to keep out feral hogs, may be effective but do little to reduce damages outside the fence.

Many respondents took lethal actions for controlling feral hogs and removed an average of 79 hogs over five years. However, the effectiveness of shooting hogs during daylight hours, trapping and other actions is unknown. One indicator could be that although upwards of 84 percent took some action, 75 percent of respondents were only slightly or not at all confident in their ability to protect their land from feral hogs. A future survey could question specific results of certain actions, such as perceived effectiveness of traps. Such insights could supply information about educational needs for improving successes at feral hog reduction on private property.

Table 10. A comparison of repair expenses and money lost per acre over the previous five years reported by a disproportional random sample of landowners based on estimates of land use acreages in Arkansas, 2018

Land type	Estimates per acre		
	Repair expense (in USD)	Money lost (in USD)	Total (in USD)
Cropland	\$0.167	\$0.243	\$0.410
Forest or timberland	\$0.013	\$0.026	\$0.039
Pastureland	\$0.791	\$0.132	\$0.923
Total	\$0.971	\$0.401	\$1.372

Concluding Remarks

An economic assessment of feral hog activity and damages is a difficult undertaking. A variety of stakeholders are affected by feral hogs in ways which challenge the ability of researchers to place a reasonable and defensible numerical value on economic impacts. In this study, a disproportionate sample of respondents were contacted by telephone about damage to private lands, though feral hogs also cause significant damage in residential areas and on public lands, including parks and cemeteries. Additional non-monetary losses, such as destruction of wildlife habitat or water pollution, were not addressed. Assessing the cost of repairs and monetary losses of those who own and lease 20 or more acres of land in the state is an effort at reporting some, but not all, consequences associated with feral hog damage.

When assessing feral hog damage to private landowners, damages to pasturelands is one of the more difficult land types for which to obtain monetary estimates which reflect actual costs. Results from this study suggest landowners with pastures were as, if not more, affected economically by feral hog damages when compared to other land types. In a 2013 survey of county Extension agents, 23 percent reported feral hogs caused “a lot” of damage to pasturelands, the highest of any land category (McPeake 2014). By assessing both monetary losses and repair costs, additional expenses associated with feral hog damages were captured and reported. This is believed to be reflected in respondents’

estimated repairs to pastures, which exceeded monetary losses.

Measures of repair costs and monetary losses do not measure the indirect consequences of feral hog activity on private lands. In a discussion with the primary author, a Desha County row crop farmer reported rooting feral hogs had caused additional work to fix the terrain where an irrigation polypropylene pipe was to be laid. There was no monetary loss associated with crop failure or repair expense – only a minimal expense for labor and tractor usage. However, feral hogs had managed to disrupt his farming operation at a critical time in the production process when labor and equipment was needed elsewhere. Such interruptions and loss of time affect other priorities and pursuits. These and other unmeasurable losses associated with feral hogs highlight the difficulty of placing a monetary value on frustration or aggravation that occurs when feral hogs disrupt normalcy, although these are impacts that affect economic consideration and individual well-being.

Given the limitations of this study, it is anticipated a statewide survey will be conducted at regular intervals to assess trends in feral hogs’ impact on the state. It is expected as the feral hog population changes, reports of repair costs and monetary damages will follow likewise, when new and coordinated efforts approaches are implemented for their control.

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Appendix A

Telephone Interview

Hello, I'm _____ with the Arkansas Forest Resources Center at UA Monticello. We are doing a survey with landowners about their experiences with feral hogs, sometimes called wild pigs or wild boars. County land records show that you, or someone else at this phone number, own or lease acreage in Arkansas. Is this correct?

(IF NEEDED: The land information we have came from the County Assessor's Office.)

VOICEMAIL: Hi. I'm _____ calling for the Arkansas Forest Resources Center. We are doing a research study about feral hog ACTIVITY. We'll call back later.

IDENTIFICATION PROCESS FOR MOST KNOWLEDGEABLE PERSON: For this survey, we would like to interview the person with the most knowledge of any possible feral hog activity on your land. Would that be you? [If not, further script for gathering alternate contact information.]

1. Thinking about ALL OF THE LAND you own or lease in Arkansas, have there EVER been feral hogs or SIGNS of feral hog ACTIVITY on ANY of your land?
Yes - Go to #3
No - Go to #2
Don't Know
Refused
2. Thank you. We are only interviewing landowners who have had feral hog activity. But before we go, I have one question about YOUR view of the risks from feral hogs.
 - 2A. How confident are you that you can protect your lands from the risks from feral hogs? Would you say you are very confident, somewhat confident, only slightly confident, or not at all confident? - END INTERVIEW
3. Are any of the lands in Arkansas that you own or lease PASTURE lands?
(IF NEEDED: land used for livestock grazing)
4. Are any of the lands in Arkansas that you own or lease FOREST, TIMBER, or WOOD lands?
(IF NEEDED: land covered mainly with trees)
5. Are any of the lands in Arkansas that you own or lease CROP lands?
(IF NEEDED: land used for growing crops)
6. If none of the above - Let me make sure I understand correctly, is the [PASTURE/FOREST/CROP] land all on one continuous piece of property in one location or are they separate pieces of land in separate locations?
7. Do you own or lease any other types of land that is not pasture, forest, timber, woodlands or crop land?

The next few questions are about your attitudes towards feral hogs.

8. In general, do you view the presence of feral hogs on your land as positive, negative or both?

-
9. In general, how concerned are you about the costs to Arkansas' economy caused by feral hogs? Would you say you are very concerned, somewhat concerned, only slightly concerned, or not at all concerned?
 10. How concerned are you about damages to Arkansas streams, wildlife or woodlands caused by feral hogs? [Would you say you are very concerned, somewhat concerned, only slightly concerned, or not at all concerned?]
 11. How concerned are you about the risks to livestock, people and pets caused by feral hogs? [Would you say you are very concerned, somewhat concerned, only slightly concerned, or not at all concerned?]
 12. And, thinking about your land, how confident are you that you can protect your land from the risks from feral hogs? Would you say you are very confident, somewhat confident, only slightly confident, or not at all confident?
 13. Now we have a few questions about your land. How long have you owned or leased the land that has had feral hog activity? [Interviewer response categories: 1 year or less, 2 years or less, 3 years or less, 4 years or less, less than 5 years, 5 or more years]
 14. About how long ago did you first become aware of feral hog activity on your land (or lands)?
 15. At this present time, are feral hogs on ANY of your land?
 16. Over the last five years, what is the highest number of hogs that have been on any piece of land at one time? (IF NEEDED: Your best guess is fine.)
 17. Previously, you stated you own PASTURE lands. Approximately how many acres of your PASTURE lands have had ANY FERAL HOG ACTIVITY over the last five years [or since you owned or leased your land]?

I have a question about actual money you SPENT on repairs as a result of hog damages. And another question about how much money you LOST as a result of hog damages. Losses could include a loss of income, or other losses which weren't actual money that you spent.

- 17A. Did you, or others, have any damages to your PASTURE land that resulted in money spent on repairs or losses of time or money?
- 17B. Thinking about all the hog damages on your PASTURE lands over the last five years [or since you owned or leased your land], how much money would you estimate was spent on REPAIRS due to hog damage? For example: replanting, purchasing hog traps, or damages to equipment? (IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)
- 17C. How much money would you estimate was LOST due to hog damages over the last five years [or since you owned or leased your land]? For example: loss of income from selling hay, livestock depredation, additional tractor time, decreased land value, erosion or other losses? (IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)
18. Previously, you stated you own FOREST, TIMBER or WOOD lands. Approximately how many acres of your FOREST lands have had ANY FERAL HOG ACTIVITY over the last five years [or since you owned or leased your land]?

I have a question about actual money you SPENT on repairs as a result of hog damages. And another question about how much money you LOST as a result of hog damages. Losses could include a loss of income or other losses which weren't actual money that you spent.

-
- 18A. Did you, or others, have any damages to your FOREST TIMBER or WOODLANDS that resulted in money spent on repairs or losses of time or money?
- 18B. Thinking about all the hog damages on your FOREST lands over the last five years [or since you owned or leased your land], how much money would you estimate was spent on REPAIRS due to hog damage? For example: replanting, purchasing hog traps, or damages to equipment?
(IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)
- 18C. How much money would you estimate was LOST due to hog damages the last five years [or since you owned or leased your land]? For example: loss of income from reduced production, additional tractor time, decreased land value, erosion or other losses?
(IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)
19. Previously, you stated you own CROP lands. Approximately how many acres of your CROP lands have had ANY FERAL HOG ACTIVITY over the last five years [or since you owned or leased your land]?

I have a question about actual money you SPENT on repairs as a result of hog damages. And another question about how much money you LOST as a result of hog damages. Losses could include a loss of income or other losses which weren't actual money that you spent.

- 19A. Did you, or others, have any damages to your CROP LANDS that resulted in money spent on repairs or losses of time or money?
- 19B. Thinking about all the hog damages on your CROP lands over the last five years [or since you owned or leased your land], how much money would you estimate was spent on REPAIRS due to hog damage? For example: replanting, purchasing hog traps, or damages to equipment?
(IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)
- 19C. How much money would you estimate was LOST due to hog damages over the last five years [or since you owned or leased your land]? For example: loss of income from reduced crop yield, additional tractor time, decreased land value, erosion or other losses?
(IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)
20. Previously, you mentioned you own one piece of land that is [PASTURE/FOREST/CROP] land. Approximately how many acres of this land have had ANY FERAL HOG ACTIVITY over the last five years [or since you owned or leased your land]?

I have a question about actual money you SPENT on repairs as a result of hog damages. And another question about how much money you LOST as a result of hog damages. Losses could include a loss of income or other losses which weren't actual money that you spent.

- 20A. Did you, or others, have any damages to your [PASTURE/FOREST/CROP] land that resulted in money spent on repairs or losses of time or money?
- 20B. Thinking about all the hog damages on your [PASTURE/FOREST/CROP] land over the last five years [or since you owned or leased your land], how much money would you estimate was spent on REPAIRS due to hog damage? For example: replanting, purchasing hog traps, or damages to equipment?
(IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)

20C. How much money would you estimate was LOST due to hog damages over the last five years [or since you owned or leased your land]? For example: loss of income from reduced production, additional tractor time, decreased land value, erosion or other losses?
(IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)

21. Previously, you mentioned you own OTHER TYPES of lands described as [enter description]. Approximately how many acres of this OTHER TYPE of land have had ANY FERAL HOG ACTIVITY over the last five years [or since you owned or leased your land]?

I have a question about actual money you SPENT on repairs as a result of hog damages. And another question about how much money you LOST as a result of hog damages. Losses could include a loss of income or other losses which weren't actual money that you spent.

21A. Did you, or others, have any damages to your [enter description] LAND that resulted in money spent on repairs or losses of time or money?

21B. Thinking about the all hog damages on your OTHER TYPES of lands over the last five years [or since you owned or leased your land], how much money would you estimate was spent on REPAIRS due to hog damage? For example: replanting, purchasing hog traps, or damages to equipment?
(IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)

21C. How much money would you estimate was LOST due to hog damages over the last five years [or since you owned or leased your land]? For example: loss of income from reduced production, additional tractor time, decreased land value, erosion or other losses?
(IF NEEDED: It does not have to be perfect. If you need, you can take a moment to think about it, as it is important that we get your feedback on this matter.)

22. In what county is the piece of land that has had the most feral hog damage or activity?

23. Over the last five years [or since you owned or leased your land], did you, or others you allowed, take any LETHAL actions against feral hogs such as putting out traps, hunting, or attempting to shoot the feral hogs?

23A. Did you, or others . . . hunt the hogs for recreation and enjoyment?

23B. [Did you, or others . . .] hunt the feral hogs with dogs?

23C. [Did you, or others . . .] put out hog traps?

23D. Did you, or others . . .] shoot the hogs during daylight hours?

23E. [Did you, or others . . .] shoot the hogs at night?

24. [Thinking about all of your lands] Approximately how many feral hogs have you, or others, killed over the last five years [or since you owned or leased your land]?

25. Over the last five years [or since you owned or leased your land], did you, or others you allowed, take any non-lethal actions against feral hogs such as harassing, using repellents, or putting up fences on your properties?

25A. Did you, or others you allowed . . harass the hogs, such as with noise or with dogs?

25B. [Did you, or others you allowed . . .] use repellents, such as scents or pepper spray?

25C. [Did you, or others you allowed . . .] put up fences?

-
26. And lastly, if there were an easy system in place, would you be willing to report the number of hogs killed each year on your land [or lands] to help track hog control efforts?
IF ASKED: The exact method of reporting hasn't been decided, but reporting would be voluntary and there would be multiple ways to report efforts.

Thank you for participating in this survey and assisting the Arkansas Forest Resources Center in gathering important information about feral hog activity in Arkansas.

IF ASKED: The report from this study will be available to the public upon completion of this project at <http://www.afrc.uamont.edu/>.

Thank you for your time and cooperation.

CONTACT INFO:

Kenny Wallen
Arkansas Forest Resources Center
Phone: 870-460-1494

Appendix B

Comments

Origins of Feral Hogs

- I believe the feral hogs on my land were regular hogs that an owner cut loose because they could not afford to feed, and then come to me, want me to pay them to kill off my land.
- Respondent said she has only very negative things to say about feral hogs, even though she thinks they are better controlled now than before. She also said there's been people shooting each other over feral hogs which were turned loose by breeders who moved to the city, but got upset when the animals were killed by people on whose land they were tearing up.
- Some of the feral hogs have tags on them and were purposely released by people so they could hunt them. But whatever enjoyment they derive from it, it is not enough for the damages the hogs causes on their land, so something must be done to stop that practice and control the hogs in general.
- Respondent said feral hogs have been on her land since before she was born. Her parents told her they've been there since they acquired the land over 100 years ago. They do not hunt them because their family doesn't do that. It's not their thing. They don't bother her.

Population Growth/Expansion

- I hear farmers talking, and two or three years ago, I know farmers were getting them 40 at a time. It's a real problem in southern Arkansas.
- Respondent said all of her neighbors' land surrounding hers have had feral hog activity for a few years. It's a big problem there.
- My neighbor has had feral hog activity. They're bad. They destroy everything they come in contact with. We have a big feral hog problem in Stone County.
- Respondent said no feral hog activity, because no activity since more than 50 years ago.
- Respondent said she's seen feral hogs in her neighborhood, parks and by the roads, but never on her land.
- Respondent said there's no feral hog activity in her area - they're in the north.
- Respondent said that his properties in Crawford and Prairie Counties had no hog activity at all.
- Respondent said that over the last five years, there have been no hogs on their property.
- Respondent said that the hogs were in the area, but not yet on his property. Also said that there was hog activity in Elgin in Jackson County.
- Respondent said that he is a resident in Louisiana and the hog problem there is just as bad as it is in Arkansas.

-
- I hope you all get them under control because they're getting rampant.
 - 400 hogs were killed in one day on land that's from a neighbor, close by. They come usually to my property fall/winter time.
 - Arkansas will have to do something about this problem, because it's getting out of hand.
 - Feral hogs are the #1 problem in south Arkansas.
 - Respondent said he's heard they're doing a lot of damage in Mississippi and they're going to do a lot here in ARKANSAS before it's all over with.
 - Someone said that someone that works for law enforcement told him that he's heard that feral hogs are coming his way.
 - Respondent said the problem is a really terrible one and he's not sure if anything can be done effectively to curb it.
 - They're bad and getting worst. They're spreading everywhere. I don't know if they can control them now.
 - Feral hogs are bad and multiply so quickly. We live on two acres which once had peach trees, and the feral hogs tore the trees up. Please contact the game warden in Sevier County, and I know they could add to what I have said about how bad the hog are.
 - There are plenty of feral hogs out there destroying land.
 - Respondent said he saw the first hog on his land exactly four days ago; hasn't turned into a serious problem yet.
 - Respondent said that the hogs come through his property mostly during the winter and fall.

Control Strategies

- It would help if you could kill them on WMA lands year round. Hunters see them but they don't let you shoot them on WMA lands.
- Respondent said the only damage to her land has been from the hunters that cut her fence to go in to hunt the hogs.
- Respondent said they have hog hunters in her family, so if they ever come around, they can shoot them.
- Respondent said they have never had feral hog activity, so they wouldn't know what to do to protect themselves from feral hogs.
- Respondent had not seen any hogs on his land yet, but his neighbor just across the street had recently trapped around 20 hogs, and they were a neighborhood problem.
- Respondent said that they thought harassing and scaring the hogs was more effective than trying to kill the hogs.
- Respondent said hunting hogs with dogs was one of the worst methods, because it scatters them out and they end up coming back.
- "Game and Fish" doesn't want us to shoot them. They are running the wildlife out. The deer won't come to the feeders.

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- Respondent said he would like some help with the hog problem, either USDA or someone, because it's costing a lot of money to deal with them. He's got pictures and videos of them.
 - Respondent thought hunters would probably be against any control. He would like to know if someone will help him with the hog problem.
 - Respondent said that he's having trouble because of the laws in Arkansas regarding feral hogs. His land borders land leased by "Game and Fish" near WMA Gum Flats wildlife area. They are not controlling hogs and they go in his property. He would like them to take care of them or allow hunters to go in there and get rid of them.
 - It's illegal to shoot the hogs within the city limits.
 - Respondent said that if they become a bigger problem and come on his land, he would like to be able to hunt them in the surrounding land that is leased by Game and Fish.
 - Respondent wanted to know if there's a chance for legislation to get rid of the hogs.
 - My complaint is not with the hogs but Wild Man Wilson getting people on horses and pit bulls scaring the hog onto my land.
 - It is cruel to go out and kill the animals. People are taking over their territory so why kill the hogs.
 - The hogs are bad as they rob the turkey nests all the time. We kill them and set out traps, which seems to do no good.
 - There is a tremendous problem with the population of hogs. The Game and Fish will not let us pursue the wildlife on our land. The hogs come all over and the "Game and Fish" incubate the hogs which populate all adjacent land. The biggest problem is with wildlife management.
 - Respondent said we need to buckle down and do something to control the feral hogs. He also said the Game and Fish Commission is making it hard for him and other land owners to hunt the hogs so they can make money or such.
 - You can shoot only so much till you give up; I don't think there's anything one can do if the feral hogs show up.
 - They are damaging everything and multiplying by the minutes. They are very smart. If you harass them they will go away, but return later.
 - We need access to the better traps and cameras that are very expensive.
 - We process 75 percent of the hogs we kill and give to the needy for food.
 - They're going to have to unlock timber hunting clubs, Weyerhaeuser lands and park refuge to hunt them down, because they've become breeding grounds. No one will do anything to help farmers until it starts affecting deer.

Attitudes

- Respondent was very negative about feral hogs: "I really hate them."
 - I hate the feral hogs; there's nothing positive or enjoyable about having/hunting them, and they cause terrible damages.
 - I wish they could get rid of all of them (hogs).
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Concerns

- Respondent said they have been on her land for as long as she can remember, all her life. The land has been in her family for four generations. They are concerned about diseases the hogs may have. Wanted to know if there's a number to call for help if you have hogs.
- From what I have seen and heard from them on TV, I hope I never see them. They're a menace.
- Respondent said hogs reproduce so fast, that unless the state does something, he's not very confident he can protect his land.
- Respondent said it's a losing battle with feral hogs. Land in Dallas County has had almost as much hog damage.
- Please take care of the hogs before [they] become a bigger problem.
- Respondent said hogs are a big problem, and even though he hasn't personally had a lot of problems with them, he would appreciate if something could be done to control them to stop the destruction they cause.
- I really hope you guys can help figure out a way to contain and control the feral hogs because they are a big nuisance, and have now started venturing into my yard as well.
- Respondent said it is really terrible and awful and she really hopes and would be willing to help if we can work out something to control and stop the damages caused by the hogs.
- Respondent said thanks for looking into the problem; hope we can solve it soon.
- Respondent said they are a huge problem.
- Feral hogs are destroying the Buffalo River banks.
- Respondent suggested we put in place something to handle the issue, because they are damaging land all around the state.
- Respondent said he'd be helpless should feral hogs start showing up on his land.
- Respondent said he has lost a few pets to the feral hogs so he is very concerned, and no matter how much he's killed they just seem to multiply each year.

Economics

- Over the last five years, the hydraulic cylinders on his tractors have worn down at a faster rate due to all the hog rooting.
- Respondent asked if there was something we could do because feral hogs were eating his turkey eggs and destroying hay for his cattle, thereby costing him a lot of money. Said he hopes we can figure something out to help stop the problem, which started as a result of people intentionally releasing the hogs into the wild for recreational hunting.
- Respondent said he would be really interested in finding a working solution to the feral hog problem on his lands. (He has three different lands but alternates between crops/pastures on all three with a little part used for timber.)
- Something needs to be done because the hogs causes a lot of damage.
- Respondent said the hogs are out of control and no matter how much he kills, it never changes. He loses so much money he can't keep up with it.

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- All of our land has been damaged by feral hogs, which we have tried and tried to control. We cannot bushhog. We've bought hog traps, repaired tractors from the damages. There needs to be some control because the hogs are growing in population and continuing to cause damage to the land.
 - Feral hogs are horrible; wish there was some way to curb the problems. And the damages can't be evaluated.
 - They're tearing the devil out of everything south of here.
 - Respondent said the feral hogs have torn up quite a few hay fields, ruining their land. They go where they want to go, uprooting big places on our land. We have put out traps but just does not seem to do any good.
 - Respondent said the hogs are a menace and cause endless damages. Nothing positive about them.
 - Respondent said the animals are terrible and she is really worried about the danger they pose to her pets. She also said it would be hard to report the numbers killed, because she gives permission to others to also hunt the feral hogs. But she'd be will to report if there was an easy system in place to do so.

Other Issues

- I am more concerned about the game and fish telling us what to do on the waterways. I have erosion problems, more than the feral hogs problem. They want to protect river but they don't care about the farmers.
- Over the last 20 years, there has been a decrease of wolf and coyote populations and an influx of deer and other prey animals.
- Prosecutors are my biggest expense; they closed off some of my land and hauled off one my bulls. They are no value to me.

Survey Results

- She's glad someone is doing this, and she would like to see the results of study in case hogs come back. Feral hogs have damaged her neighbor's property.
- Respondent said he's looking forward to the report of the research study because he's heard about the damage hogs can do. He would like to read about what can be done if you have a hog problem.
- Respondent said thank you for calling, because I know it is a problem. A lady from the forest research center came by and gave us information.
- Thank you; we appreciate what you all are doing.

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