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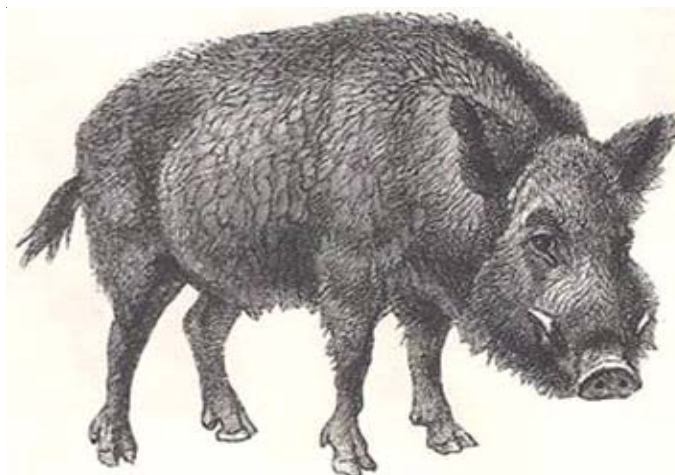
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Marc Miller, Director
Illinois Department of Natural
Resources

Paul Vehlow
Federal Aid Coordinator

John E. Buhnerkempe
Chief, Division of Wildlife
Resources

Landowner Attitudes and Perceived Risks Toward Wild Pigs on Private Lands in Illinois



Craig A. Miller, Ph.D.
Program Leader and Principal Investigator
Human Dimensions Research Program
Illinois Natural History Survey

Prepared by Erin E. Harper, Craig A. Miller,
Andrew L. Stephenson, Meghan E. McCleary,
and Linda K. Campbell



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LANDOWNER ATTITUDES AND PERCEIVED RISKS
TOWARD WILD PIGS ON PRIVATE LANDS IN ILLINOIS

JOB COMPLETION REPORT

WILDLIFE HARVEST AND
HUMAN DIMENSIONS RESEARCH PROGRAM

STATE OF ILLINOIS

PROJECT NUMBER: W-112-R-22
Study 102
Job 102.1

Prepared by
Erin E. Harper, Craig A. Miller, Andrew L. Stephenson,
Meghan E. McCleary, and Linda K. Campbell
Illinois Natural History Survey
Champaign, IL
February 27, 2014

Federal Aid in Wildlife Restoration
W-112-R-22

Illinois Department of Natural Resources

Marc Miller, Director

John Buhnerkempe, Chief

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Division of Wildlife Resources

Introduction

Wild pigs (*Sus scrofa*) have been present in the United States since Spanish explorers introduced them (USDA-APHIS 2013). Previously localized to the southern United States, wild pig, an invasive species, have established populations in 38 states though not all of them are extant (Bevins et al. 2014, Elsey et al. 2012). The largest populations are found in California, Florida, Oklahoma, and Texas and exist as far north as Michigan, Wisconsin, North Dakota, and into Canada (West et al. 2009, B. Wilson, APHIS, Personal Communication). Spread of wild pigs can be attributed to the escape or release of domesticated pigs, release by sport hunters, escape from private game reserves, natural movement, and a change in potential habitable land due to climate shifts (Hutton et al. 2006).

Wild pigs cause extensive ecological impacts by wallowing, rooting, and feeding that increases soil erosion, degrades water quality, and damages agricultural crops; wild pigs also carry diseases and parasites harmful to humans, pets, wildlife, and livestock (Beach 1993, Hutton et al. 2006, Schley et al. 2008). Further impact results from pig predation on nests and young of ground nesting birds (e.g., wild turkeys, quail, and waterfowl), ground mammals (mice, chipmunks, voles), and young mammals (white-tailed deer fawns, lambs, kids, and calves) (Beach 1993, Taylor and Hellgren 1997, Tolleson et al. 1993). Wild pigs are also sources of wildlife conflict in the form of food competition with white-tailed deer, turkeys, and squirrels (Beach 1993, Wood and Lynn 1977).

The economic costs of wild pigs vary greatly depending on the region and the disease the pig may be spreading (Hutton et al. 2006). According to Elsey et al., 2012, wild pigs cause approximately \$800 million of damage annually. As mentioned above, wild pigs cause damage by rooting and wallowing; they also damage crop lands by consuming freshly planted seeds or consuming or trampling small shoots (Seward et al. 2004).

Since 2011 the Illinois Department of Natural Resources has been combining management and removal efforts with the USDA Animal and Plant Health Inspection Service (APHIS) (McFarland 2009, B. Wilson, Personal Communication). Currently, as of January 2014, “a technical assistance (TA) based management program” is in place (B. Wilson, Personal Communication). This includes a public outreach and education program coupled with ecological management in the form of trap and removal, ground based shooting, and aerial control on approved private land (B. Wilson, Personal Communication). Complete elimination of wild pig is very difficult and requires diligent management and monitoring. It is the goal of the Department of Natural Resources to determine what management actions are acceptable to the landowners of Illinois in order to fully remove wild pig from Illinois.

Problem Statement

The purpose of this study was to:

- Examine landowner beliefs and attitudes toward wild pig
- Determine acceptability of various management actions
- Evaluate the amount of damage and the spread of wild pig
- Establish a baseline study to be replicated over time

Methods

Data Collection

We conducted a mail survey of randomly sampled landowners who owned ≥ 1 acre of land from 45 Illinois counties in which wild pigs had previously been observed or counties adjacent to them. These counties were provided to us by biologists with the Illinois Department of Natural Resources. Thirty-four of these counties were located in southern Illinois (N=3,680)

and the remaining counties (10 from western Illinois and 1 from east central Illinois) were sampled proportionally (N=1,640) (map of counties: Appendix E). The survey questionnaire was eight pages in length and addressed questions regarding beliefs and attitudes toward wild pig, perceived risks from pig to their property, damage experienced, and preferences for management actions. We mailed a survey packet containing a cover letter explaining the study, a survey questionnaire, and a first-class stamped return envelope on 08 July 2013. The initial survey packet was followed by a reminder/thank you postcard 17 days later. We repeated mailings on 2-week intervals for a total of two survey packets and two postcard mailings. Of the 5,320 questionnaires mailed, 45 were undeliverable due to incorrect address or deceased participant. We received 3,061 survey questionnaires, of which 3,035 (58%) were usable.

Data Analysis

Data were entered into SPSS v.21.0 by staff of the INHS Human Dimensions Research Program. Analysis consisted of frequencies, Pearson's Chi-square, and One-way Analysis of Variance (ANOVA) models.

Results

Land Owner Observation of Wild Pigs

When land owners were asked if they had ever had wild pigs on their land, 2.7% of respondents reported "Yes" (Figure 1).

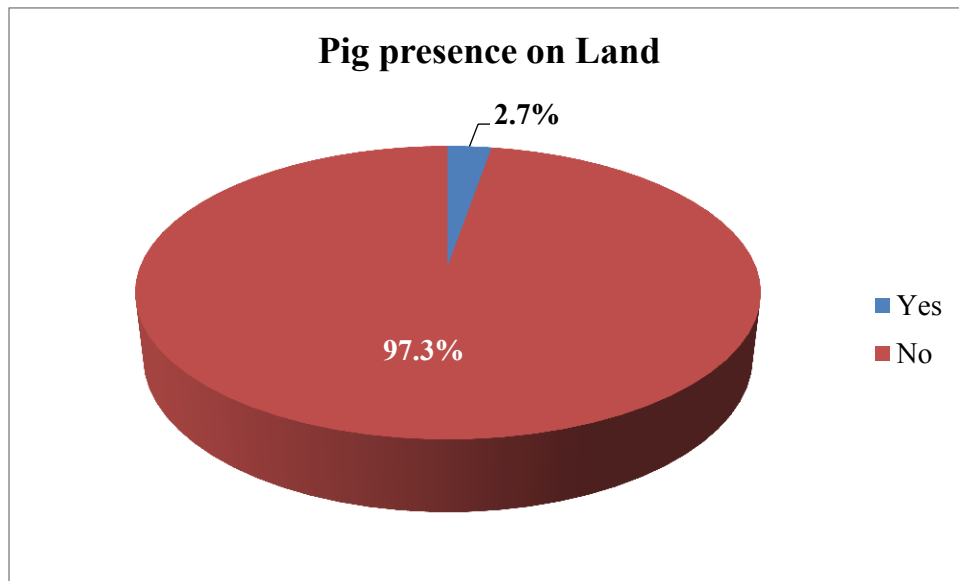


Figure 1. Percentage of survey participants who had wild pig on their land.

Of those individuals who reported they had pigs on their land, 55.6% indicated they “...have personally observed wild pigs on [their] land,” 51.9% indicated “others have observed wild pigs on [their] land,” 39.5% “have [personally] experienced crop damage from wild pigs on [their] land,” and 54.3% “have seen evidence of pigs on [their own] land (rooting sites, tracks, etc.)” (Figure 2).

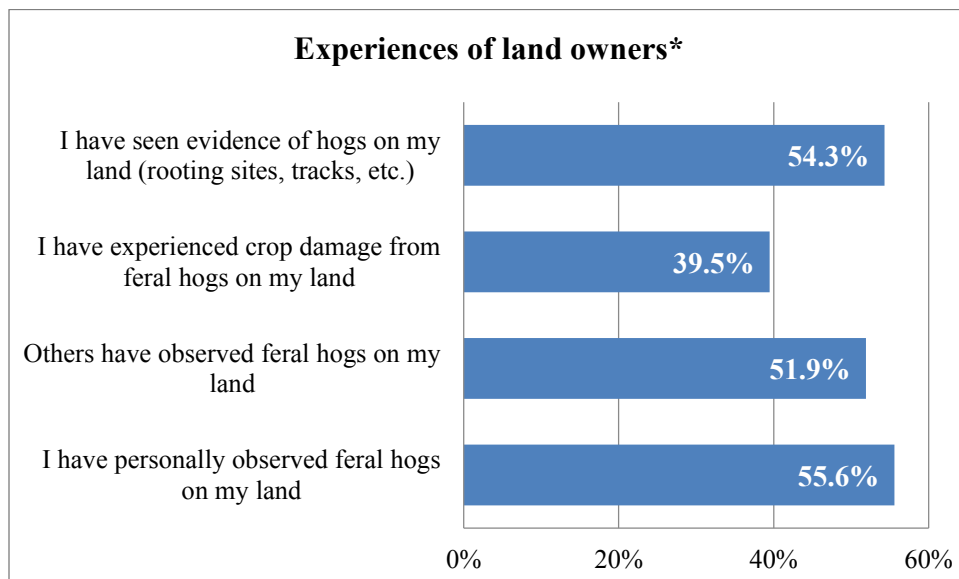


Figure 2. Experiences of land owners who had pigs on their land.

*Respondents who had wild pigs on their land in Illinois. Respondents were asked to select all that applied.

Participants were asked during which years they observed pigs on their land (individual years 2009 through 2013, before 2009, or all years provided). A total of 32.1% of respondents had observed pigs on their land prior to 2009 (Figure 3). A comparison of individual years (2009-2012) suggested an increase in percentage of landowners observing pigs from 16.0% and 18.5% during 2009 and 2010 respectively, to 29.6% and 27.2% in 2011 and 2012 respectively. Sightings from 2013 (9.9%) reflect partial annual data as this study was conducted during summer. Counties in which participants observed pigs on their land can be found in Table 1; Warren County in western Illinois was the only county in which pigs had not been previously reported.

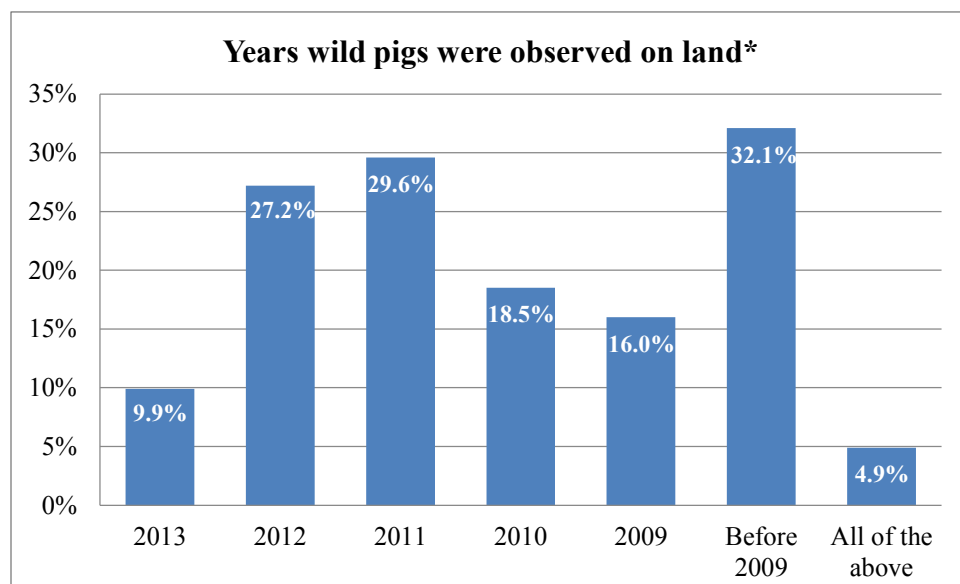


Figure 3. Years land owners observed wild pigs on their land.

*Respondents who had wild pigs on their land in Illinois. Respondents were asked to select all that applied.

Table 1. Counties where land owners **observed** wild pigs on **their own** land:*

County	<i>n</i>	County	<i>n</i>	County	<i>n</i>
Clark	1	Henderson	1	Pope	3
Clay	1	Jackson	1	Pulaski	3
Crawford	2	Johnson	7	Randolph	3
Effingham	7	Knox	2	Schuyler	4
Fayette	7	Marion	2	Union	4
Franklin	1	Monroe	1	Warren	1
Fulton	14	Perry	1	Wayne	2
Hardin	1	Pike	1		

*Respondents who indicated they had wild pigs on their land in Illinois.

When asked how wild pigs came to Illinois, 42.7% of respondents reported they “do not know” (Figure 4). “Came to Illinois naturally from a surrounding state” was the second-most frequent response (27.5%) and 24.7% of respondents indicated the pigs were “intentionally released.” The remainder of respondents selected “escaped from someone’s livestock” (15.4%) or “they have always been in Illinois” (1.3%).

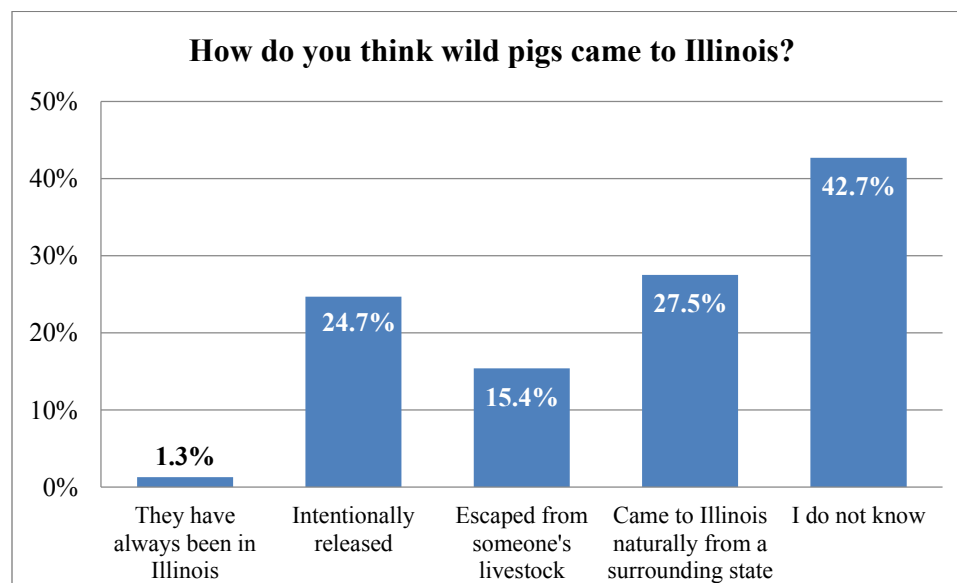


Figure 4. Participant perceptions of how wild pigs came to Illinois.

The majority (91.6%) of survey respondents selected “Strongly Disagree” or “Disagree” for the statement “I enjoy seeing wild pigs around my property”, followed by “people should learn to live with wild pigs near their homes or farms” (88.3%), “wild pigs are an important part

of the environment” (85.6%), “wild pigs are common where I live” (78.6%), and “wild pigs are not a threat to the safety of people” (70.4%) (Table 2). Respondents agreed or strongly agreed with the statements “wild pigs should be eliminated wherever possible” (78.6%), “I worry about problems wild pigs might cause to my property” (73.2%), “wild pigs destroy native wildlife” (73.3%), and “wild pigs are a source of disease” (66.4%). Additional analysis of these questions by the land use of the survey responder (“personally farm the land,” “someone else farms the land,” or “land is not farmed”) show significant differences (Table 3).

Table 2. Respondent beliefs regarding wild pigs.

	Strongly Disagree %	Disagree %	Slightly Disagree %	Unsure %	Slightly Agree %	Agree %	Strongly Agree %
I enjoy seeing wild pigs around my property.	82.4	9.2	1.2	4.6	0.5	0.3	1.8
I worry about problems wild pigs might cause to my property.	13.2	2.4	0.8	6.0	4.3	14.6	58.6
Wild pigs are an important part of the environment.	72.2	13.4	2.8	7.9	1.0	0.5	2.3
Wild pigs are not a threat to the safety of people.	52.4	18.0	6.2	11.2	2.8	2.6	6.8
Wild pigs are common where I live.	58.4	20.2	3.1	13.1	1.3	1.3	2.6
People should learn to live with wild pigs near their homes or farms.	74.0	14.3	2.7	3.9	0.9	0.5	3.7
Wild pigs destroy native wildlife.	6.9	1.2	1.0	12.2	5.4	19.2	54.1
Wild pigs are a source of disease.	5.8	1.0	0.7	19.6	6.5	19.6	46.8
Wild pigs should be eliminated wherever possible.	6.0	1.1	1.2	7.6	5.5	15.6	63.0

Table 3. Illinois landowner attitudes toward wild pigs, by land use.

Land use	Strongly Disagree %	Disagree %	Slightly Disagree %	Unsure %	Slightly Agree %	Agree %	Strongly Agree %
I worry about problems wild pigs might cause to my property. $\chi^2 = 55.359$ $p < 0.001$ $V = .101$							
Personally farm land	12.7	2.1	0.8	5.0	4.1	14.1	61.3
Someone else farms land	15.3	4.0	0.7	9.0	5.7	17.0	48.3
Land is not farmed	10.5	1.2	2.3	17.4	2.3	14.0	52.3
People should learn to live with pigs. $\chi^2 = 65.967$ $p < 0.001$ $V = .111$							
Personally farm land	75.8	13.8	2.5	3.3	0.7	0.3	3.6
Someone else farms land	69.0	16.6	3.6	5.9	1.2	0.5	3.3
Land is not farmed	62.4	12.9	0.0	9.4	3.5	4.7	7.1
Wild pigs are a source of disease. $\chi^2 = 51.001$ $p < 0.001$ $V = .098$							
Personally farm land	5.2	1.0	0.8	17.3	6.4	19.5	49.8
Someone else farms land	7.1	0.7	0.7	28.2	7.6	19.4	36.3
Land is not farmed	7.1	1.2	0.0	32.1	4.8	21.4	33.3
Wild pigs should be eliminated wherever possible. $\chi^2 = 30.204$ $p < 0.005$ $V = .074$							
Personally farm land	5.2	1.1	1.2	6.7	5.2	15.2	65.5
Someone else farms land	7.7	1.1	1.4	11.1	6.6	16.3	55.8
Land is not farmed	10.1	1.1	2.2	13.5	4.5	14.6	53.9

Damage from Wild Pigs

Land owners reported years during which they experienced damage due to wild pigs (individual years 2009 through 2013, before 2009, or all years provided). Similar trends as were noted for years respondents observed pig (previously mentioned) were also observed. Of those landowners reporting wild pig on their land, 24.7% experienced damage due to wild pig before 2009, 14.8% in both 2009 and 2010, followed by increases during 2011 and 2012 to 21.0% and 17.3%, respectively (Figure 5). Five percent (4.9%) of survey participants experienced damage during 2013; however, the survey was concluded before the end of 2013 and before row crop harvest began. Of all respondents who experienced damage, 65.4% took action to correct the

problem (Figure 6). Survey participants were asked to provide actions they took to control pigs on their property (Figure 7). Of those who had damage and took action, 14.8% hunted/shot the animals themselves, and 34.6% allowed hunters to shoot pigs on their property. Other actions included calling a state agency to remove the animals (4.9%), installing fencing (2.5%), and 3.7% took actions other than those provided. None of the respondents attempted to remove the animals themselves with live traps.

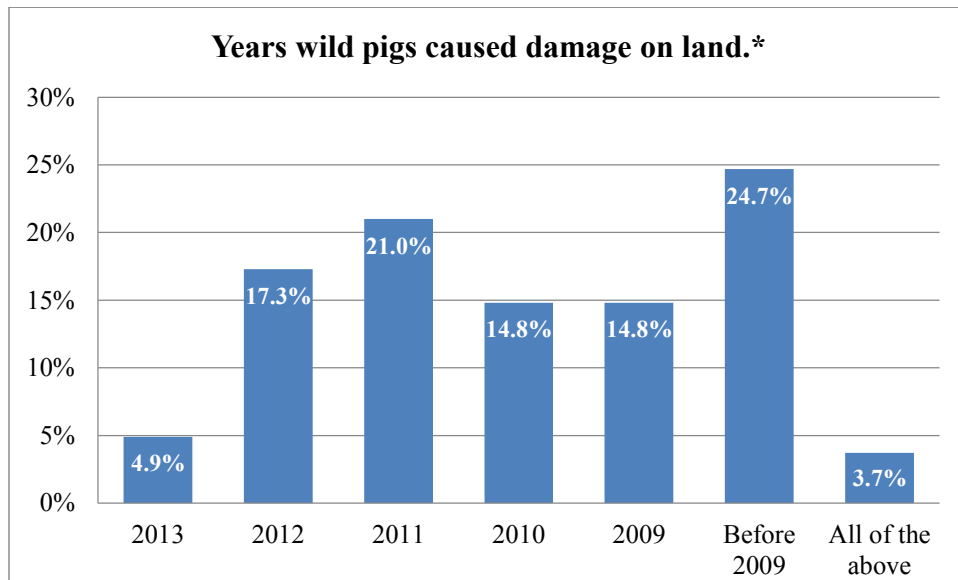


Figure 5. Years land owners experienced damage on their land.

*Respondents who had wild pigs on their land in Illinois. Respondents were asked to select all that applied.

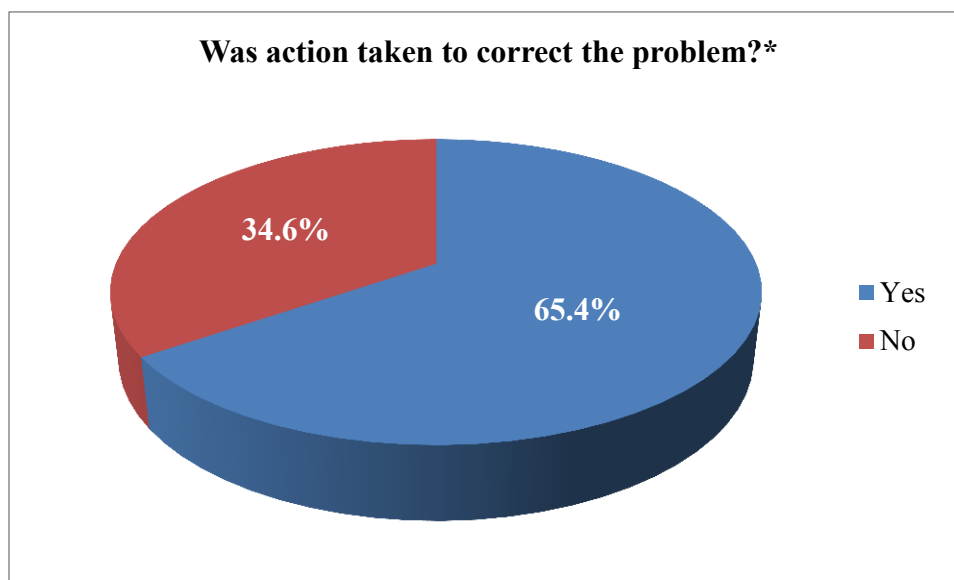


Figure 6. Percentage of survey participants who took action when damage was found on their land. *Respondents who experienced damage.

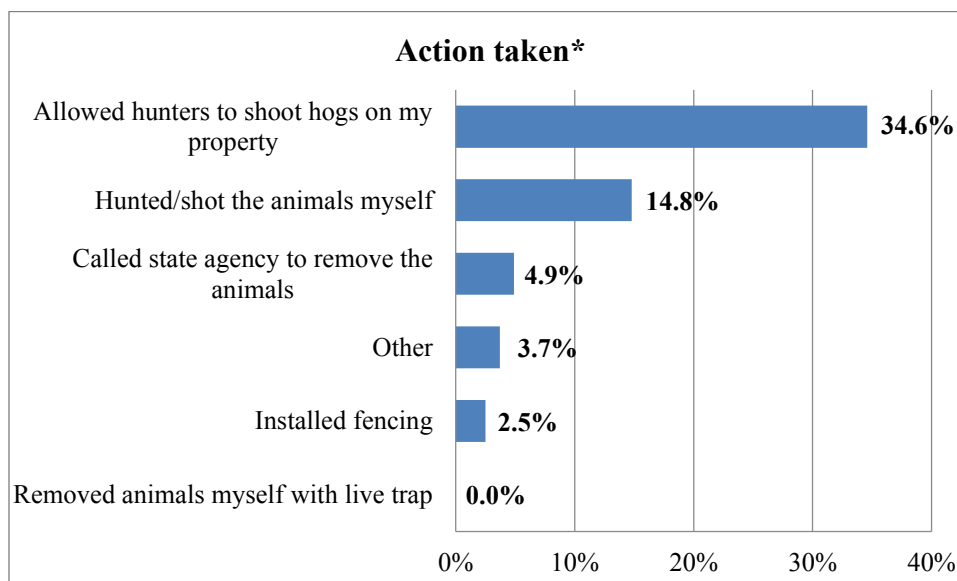


Figure 7. Actions taken by survey participants to stop damage on their land. *Respondents who had damage and took action. Respondents were asked to check all that applied.

Land owners who experienced damage were asked if they reported the damage to a federal or state agency (Figure 8) and if so, to which agency they reported it (Figure 9). Ten percent (10.0%) of the landowners who experienced damage reported the damage. The Illinois Department of Natural Resources was notified by all those who reported damage, while 40% of

respondents also reported to the Natural Resources Conservation Service; the Illinois Department of Agriculture and the U.S. Department of Agriculture both received reports from 20% of those 10% of respondents who reported damage. None of the respondents reported damage to their County Extension Agent. Ratings of the agencies' responses ranged from "Poor" to "Excellent": 20% each for "Poor," "Fair," and "Good" and 40% "Excellent" (Figure 10).

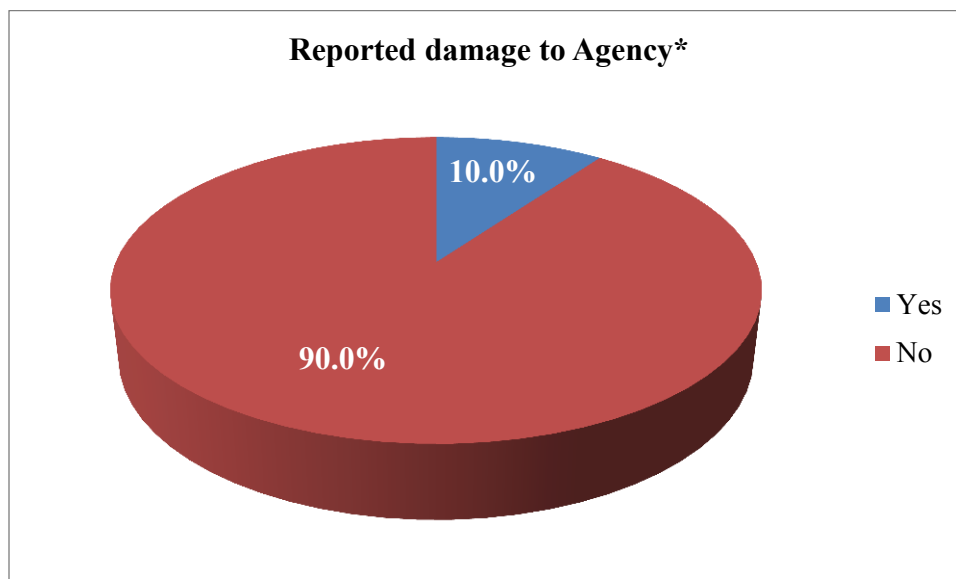


Figure 8. Survey participants who reported damage to a state or federal agency.*Respondents who had damage from wild pigs on their land in Illinois.

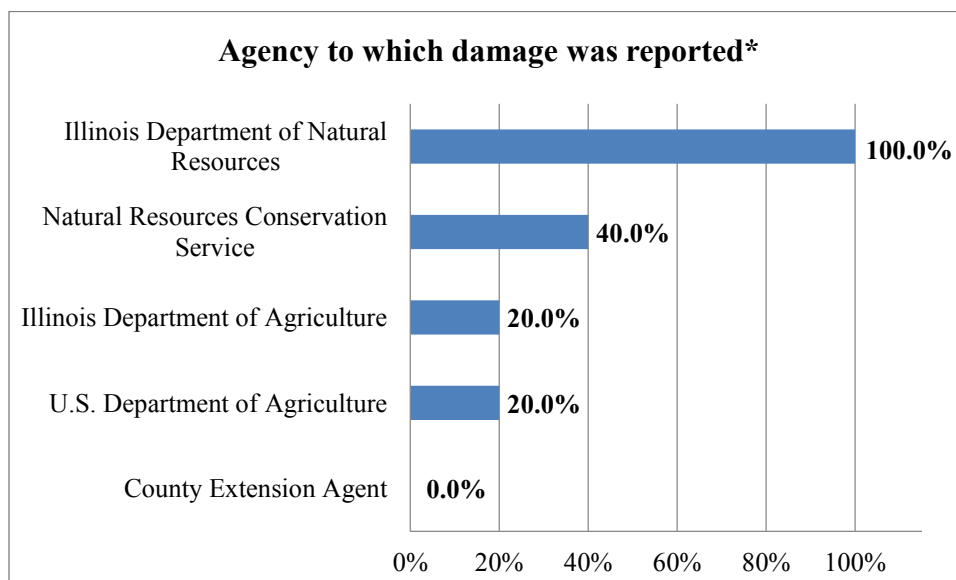


Figure 9. Agency to which damage was reported.*Respondents who had damage and they reported the damage. Respondents were asked to select all that applied.

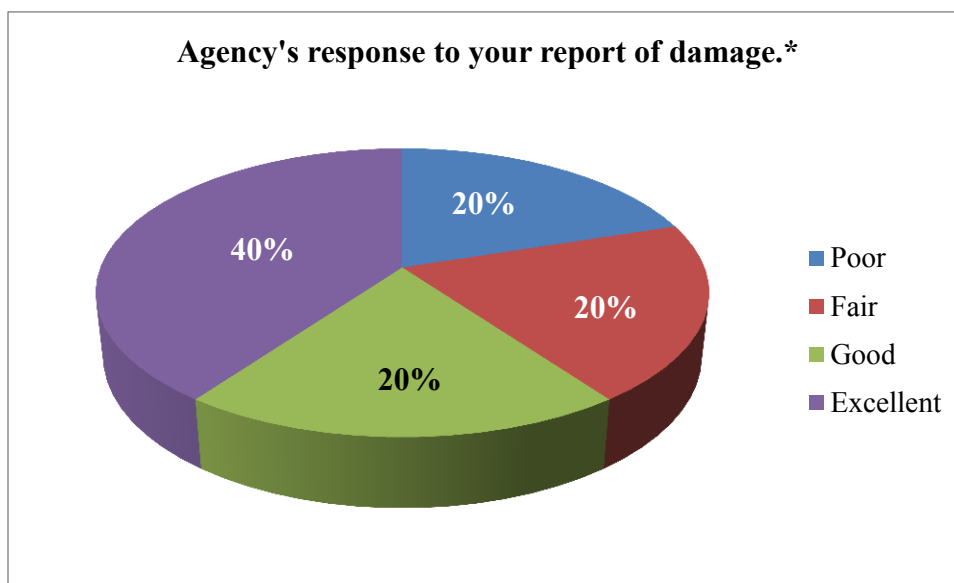


Figure 10. Respondents' perceptions of agencies' responses to report of damage. *Respondents who had damage and reported the damage to a state or federal agency.

During the 12-month period prior to this study, 60.0% of respondents reported less damage (“Much Less” or “Somewhat Less”) due to wild pigs than in the previous 12 months, 22.9% stated the damage was “About the Same,” and 17.2% reported more damage (“Much More” or “Somewhat More”) (Figure 11). Respondents then compared damage on their land from wild pigs to damage due to other wildlife: 46.8% of respondents reported more damage (“Much More” or “Somewhat More”) from pigs than other wildlife, 36.2% reported less damage (“Much Less” or “Somewhat Less”), and 17.0% “About the Same” (Figure 12). When asked how wild pigs may affect other wildlife, 90% or more of respondents indicated some level of threat (“Slight Threat,” “Moderate Threat,” or “Severe Threat”). Majorities indicated a “Severe Threat” for “causing damage to my property” (74.8%), “ground-nesting birds” (71.7%), “tree regeneration” (64.2%), “disease transmission to livestock” (63.0%), “wildlife habitat” (58.3%), “native wildlife populations” (54.7%), and “available food for turkeys” (50.9%). “Injuring or killing pets” (48.7%), “available food for deer” (47.5%), and “disease transmission to humans” (36.0%) were of least concern to respondents (Figure 13). Additional analyses of these questions

by land use of survey respondents (“personally farm the land,” “someone else farms the land,” or “land is not farmed”) showed significant differences ($p < 0.001$) (Table 4).

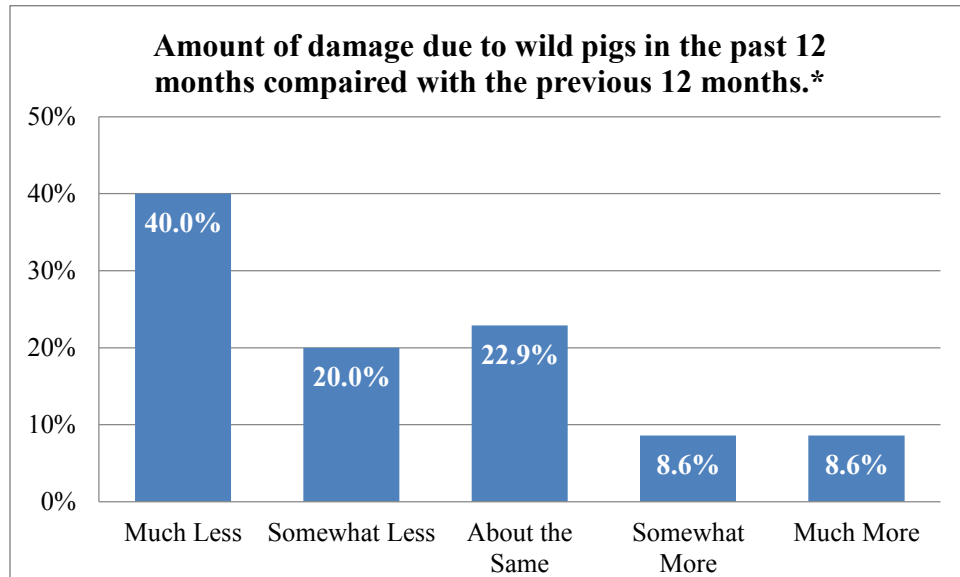


Figure 11. Comparative wild pig damage during 12-month period prior to the study. *Respondents who had damage from wild pigs on their land in Illinois.

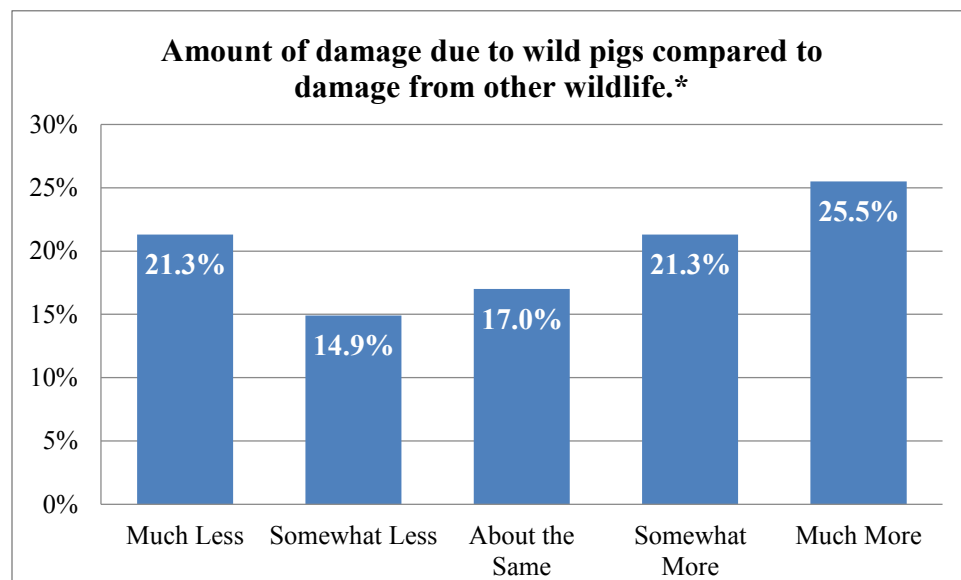


Figure 12. Amount of damage due to wild pigs compared to damage you experienced from other wildlife. *Respondents who had damage from wild pigs on their land in Illinois.

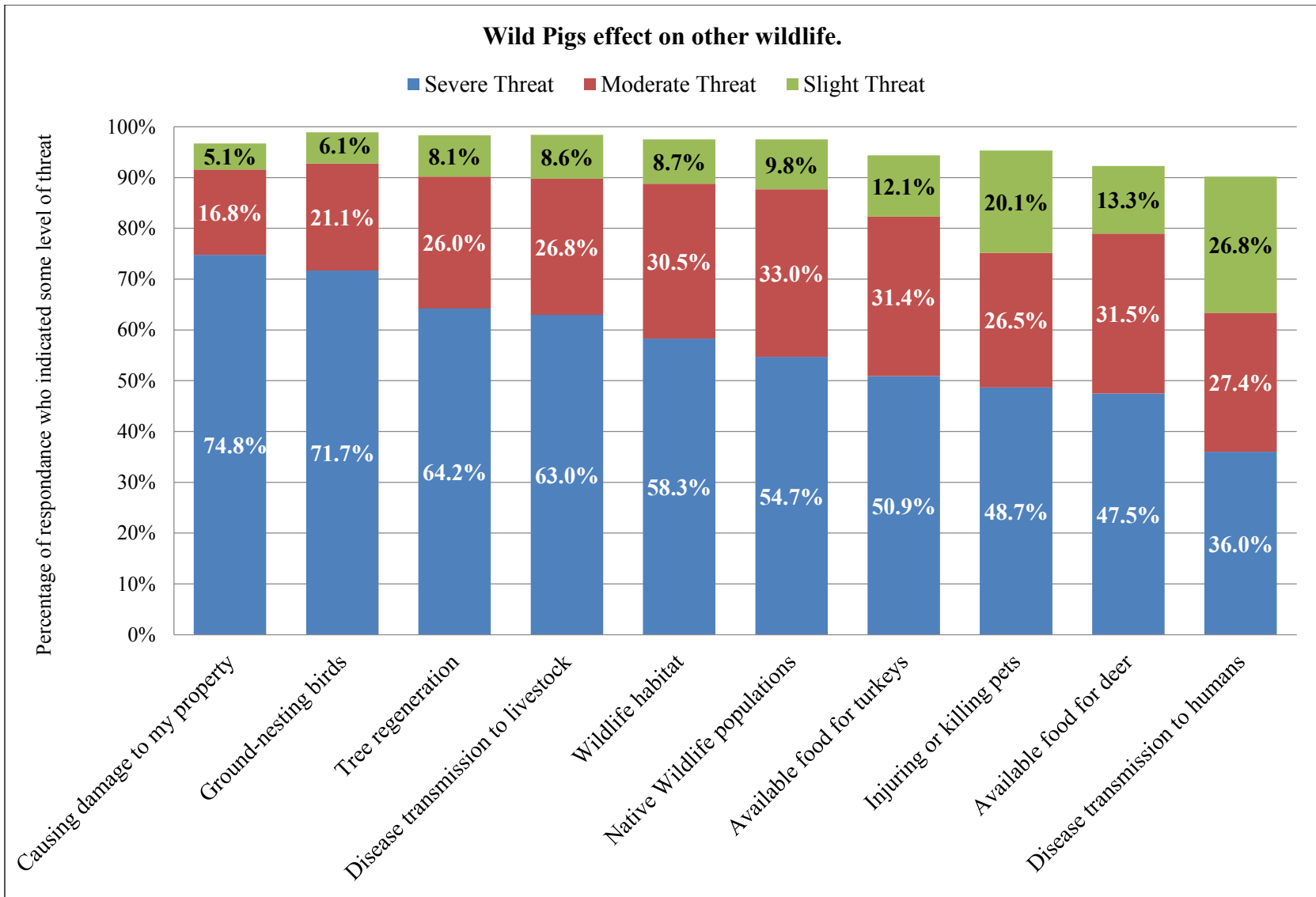


Figure 13. Perceptions of how wild pigs may affect other wildlife.

* Respondents who had damage from wild pigs on their land in Illinois.

Table 4. Illinois Landowners' perceived threats from wild pigs, by land use.

Land use	No Threat %	Slight Threat %	Moderate Threat %	Severe Threat %
Disease transmission to livestock.*				
Personally farm land	1.2	7.5	25.7	65.6
Someone else farms land	2.8	10.4	33.9	52.8
Land is not farmed	4.7	14.1	27.1	54.1
Cause damage to my property.**				
Personally farm land	2.9	4.5	15.5	77.1
Someone else farms land	4.9	8.0	23.0	64.2
Land is not farmed	8.2	2.4	20.0	69.4
* $\chi^2=38.244$ $p < 0.001$ $V= .084$		** $\chi^2=40.993$ $p < 0.001$ $V= .087$		

Survey participants were asked for their level of concern regarding various wildlife causing damage to their property (Table 5). A majority of respondents (86.2%) reported some level of concern (“Slightly Concerned,” “Moderately Concerned,” or “Very Concerned”) regarding wild pigs causing damage on their land; 66% reported they were very concerned. Deer was the species that elicited the greatest level of concern after wild pigs: 34.6% reported they were very concerned and 81.9% of respondents showed some level of concern. Coyotes (25.9%), beavers (21.9%), and raccoons (20.0%) were other species for which 20% or greater of respondents reported they were very concerned.

Table 5. Illinois landowner concerns toward various wildlife species.

Wildlife Species	Very Concerned %	Moderately Concerned %	Slightly Concerned %	Not Concerned %
Wild Pigs	66.1	11.9	8.2	13.7
Deer	34.6	28.5	18.8	18.0
Coyotes	25.9	28.7	24.5	20.9
Beavers	21.9	24.3	20.6	33.2
Raccoons	20.0	28.9	26.1	25.1
Wild Turkeys	15.0	18.3	21.6	45.1
Canada Geese	10.9	19.1	25.4	44.6
Other Mammals	6.8	12.7	26.7	53.7
Opossums	6.0	13.2	29.3	51.4
Other Birds	4.9	10.3	20.4	64.4
Foxes	4.6	11.6	25.0	58.7

Management Actions

Of respondents who had pigs on their land, 58.6% allowed hunters to hunt pigs on their land, whereas 41.4% did not (Figure 14). Of landowners who allowed hunters on their land, 8.8% felt hunting had reduced damage on their land (Figure 15). Survey respondents were then asked if they currently did not allow wild pig hunting on their land, would they consider doing so in the future; over half (54.2%) of respondents said “No” and 10.4% said “Yes” (Figure 16).

To determine support or opposition toward management actions by the IDNR, survey participants were asked about “capture and removal of wild pigs using dogs,” “targeted sharpshooting on the ground over bait sites,” “trap and removal,” and “aerial control by helicopter.” All management actions were deemed acceptable by majorities of survey respondents if the action was happening in their county or on their own property (Table 6).

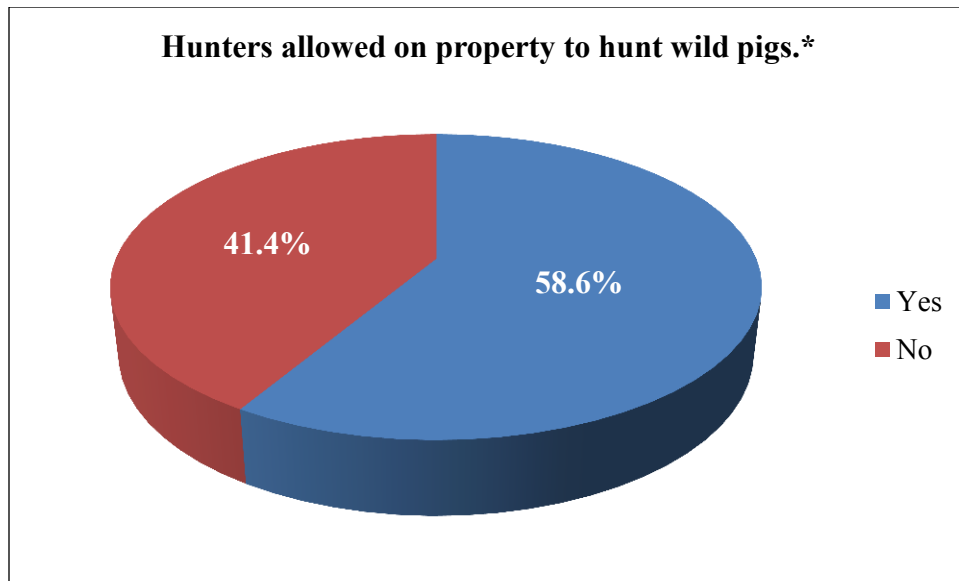


Figure 14. Survey respondents who allow hunters on their land to hunt wild pigs. *Respondents who had damage from wild pigs on their land in Illinois.

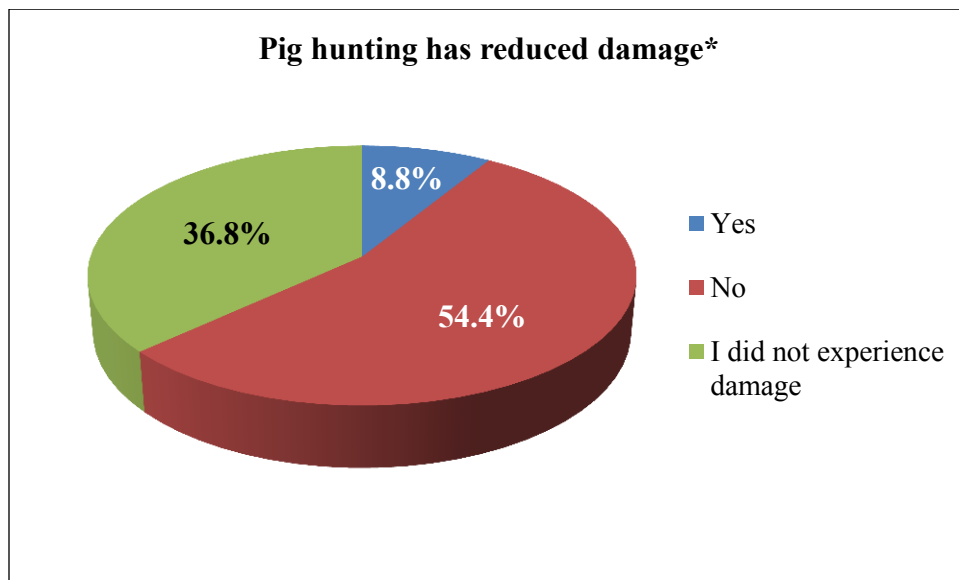


Figure 15. Survey respondents' perceptions of how hunting pigs has reduced damage on their land.*Respondents who allow wild pig hunting on their land.

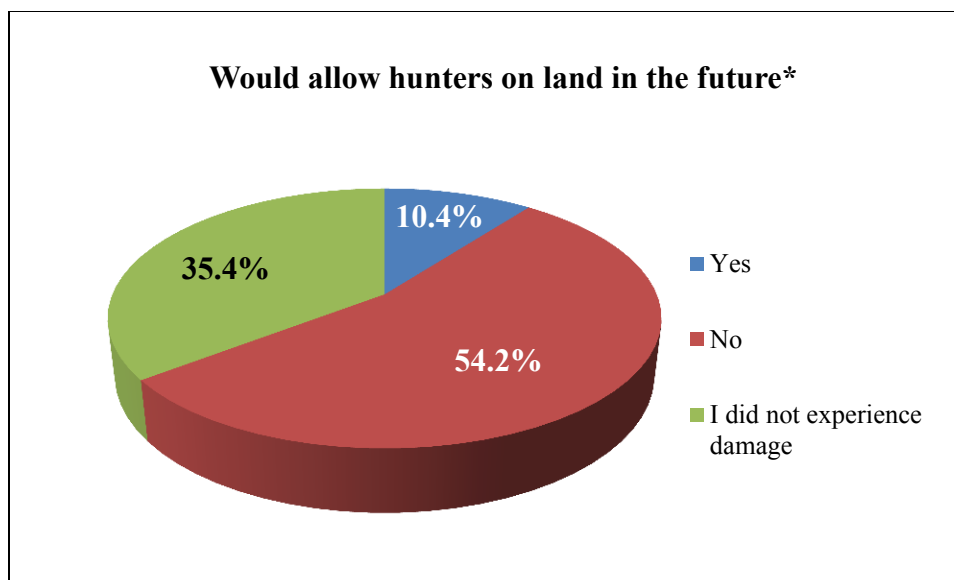


Figure 16. Land owners who would consider allowing hunters on their property.*Respondents who indicated they do not allow wild pig hunting on their land.

Table 6. Acceptability of management actions in county or on personal property of Illinois landowners.

Management Action	Completely Unacceptable %	Somewhat Unacceptable %	Unsure %	Somewhat Acceptable %	Completely Acceptable %
Management in land owner county.					
Capture and removal of wild pigs using dogs	11.9	6.4	15.2	13.6	53.0
Targeted sharpshooting on the ground over bait sites	8.7	2.6	8.2	12.2	68.3
Trap and Remove	8.8	4.1	8.7	12.4	65.9
Aerial control by helicopter	16.1	6.3	17.8	11.5	48.3
Management on land owner property.					
Capture and removal of wild pigs using dogs	15.5	6.9	14.4	12.1	51.2
Targeted sharpshooting on the ground over bait sites	10.7	2.9	9.0	11.4	66.0
Trap and Remove	11.1	4.4	9.6	13.2	61.8
Aerial control by helicopter	19.1	6.3	16.9	10.4	47.4

“Targeted sharpshooting on the ground over bait sites” had the strongest acceptability with 80.5% of respondents selecting “somewhat acceptable” or “completely acceptable” for the action to occur in their county and 77.4% indicated these responses for their own land. “Trap and remove” was the second most acceptable management action, with 78.3% for the management in their county and 75.0% on their own land. “Capture and removal of wild pigs using dogs” received 66.6% and 63.3% acceptability for in the county and on own land respectively. Though “aerial control by helicopter” had the lowest acceptability, a majority of respondents consider it acceptable in their county (59.8%) and on their own land (57.8%). Further analysis of these questions by the land use of the survey responder (“personally farm the land,” “someone else farms the land,” or “land is not farmed”) shows no significant difference (Table 7 & 8) except for “targeted sharpshooting” both “on your land” ($p < 0.001$) and “in your county” ($p < 0.001$).

Table 7. Illinois landowner acceptability of management actions to be used on their property.

Land use	Completely Unacceptable %	Somewhat Unacceptable %	Unsure %	Somewhat Acceptable %	Completely Acceptable %
Aerial control by helicopter. $f=12.925$ $p \approx 0.114$ $V= .051$					
Personally farm land	18.7	6.3	16.2	10.4	48.3
Someone else farms land	18.3	5.0	19.9	11.5	45.3
Land is not farmed	27.8	8.9	17.7	3.8	41.8
Trap and removal. $f=12.925$ $p \approx 0.441$ $V= .045$					
Personally farm land	11.2	4.4	9.2	12.6	62.5
Someone else farms land	10.5	4.3	11.0	16.6	57.5
Land is not farmed	9.4	4.7	15.3	12.9	57.6
Targeted sharpshooting. $f=46.817$ $p < 0.001$ $V= .095$					
Personally farm land	9.2	2.5	8.1	11.6	68.6
Someone else farms land	14.7	3.2	13.4	10.8	57.9
Land is not farmed	21.4	7.1	10.7	8.3	52.4
Capture and removal of wild pigs using dogs. $f=10.887$ $p \approx 0.208$ $V= .047$					
Personally farm land	15.2	6.9	13.7	11.9	52.2
Someone else farms land	17.5	6.0	17.0	12.8	46.7
Land is not farmed	10.1	11.4	17.7	13.9	46.8

Table 8. Acceptability of various control methods to be used **in your county**.

Land use	Completely Unacceptable %	Somewhat Unacceptable %	Unsure %	Somewhat Acceptable %	Completely Acceptable %
Aerial control by helicopter. $f=11.939$ $p \approx 0.154$ $V= .049$					
Personally farm land	15.4	6.2	17.3	11.6	49.5
Someone else farms land	17.2	5.3	21.2	11.1	45.2
Land is not farmed	20.7	11.0	15.9	6.1	46.3
Trap and removal. $f=7.087$ $p \approx 0.717$ $V= .037$					
Personally farm land	9.0	4.3	8.6	12.0	66.1
Someone else farms land	7.9	3.7	10.2	14.1	64.0
Land is not farmed	4.7	5.9	11.8	15.3	62.4
Targeted sharpshooting. $f=37.355$ $p < 0.001$ $V= .084$					
Personally farm land	7.4	2.3	7.6	11.8	70.9
Someone else farms land	12.1	3.1	10.9	14.2	59.8
Land is not farmed	15.3	7.1	10.6	10.6	56.5
Capture and removal of wild pigs using dogs. $f=13.686$ $p < 0.100$ $V= .052$					
Personally farm land	11.4	6.6	14.6	13.1	54.4
Someone else farms land	14.4	5.6	17.7	16.2	46.1
Land is not farmed	8.6	7.4	13.6	17.3	53.1

Property Information

Approximately 80% of the respondents farm their own land (Figure 17). Of those who do not farm their land (20.4%), 82.6% have someone else who farms their land (Figure 18). When asked what types of farming took place on the land, row cropping was the highest response (77.4%) (Figure 19). Livestock and forage crops came in at 21.1% and 19.1% respectively. Other types of farming include orchards (1.9%), tree nurseries (1.9), poultry (1.2%), dairy (0.2%) and other (3.4%).

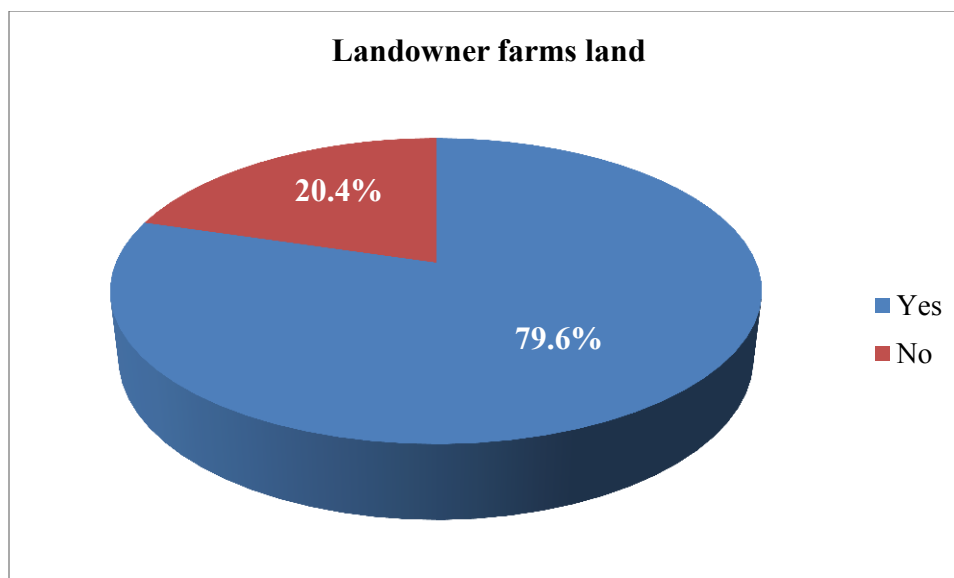


Figure 17. Land owner farms land.

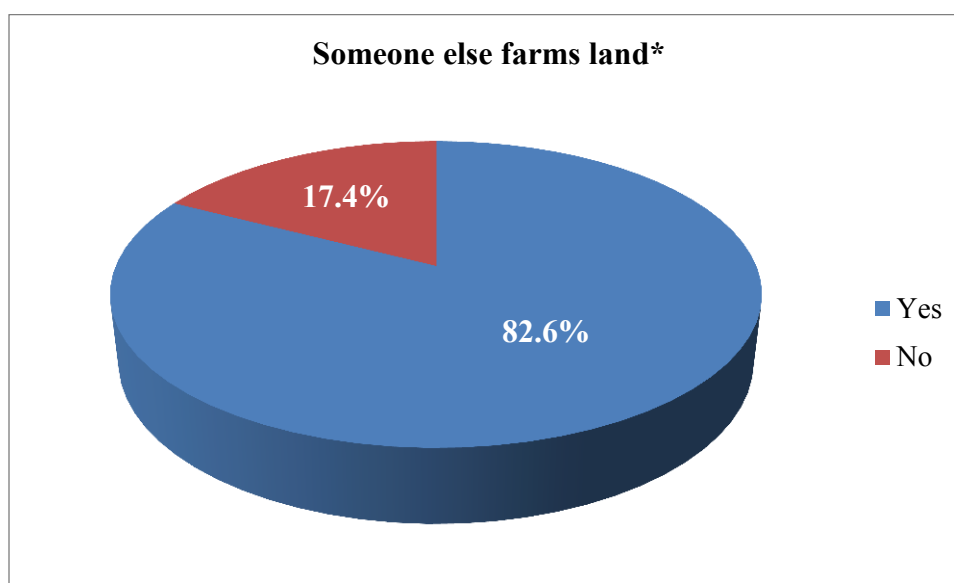


Figure 18. Proportion of land farmed by someone other than the landowner. *Cases selected for those who indicated they do not farm their own land

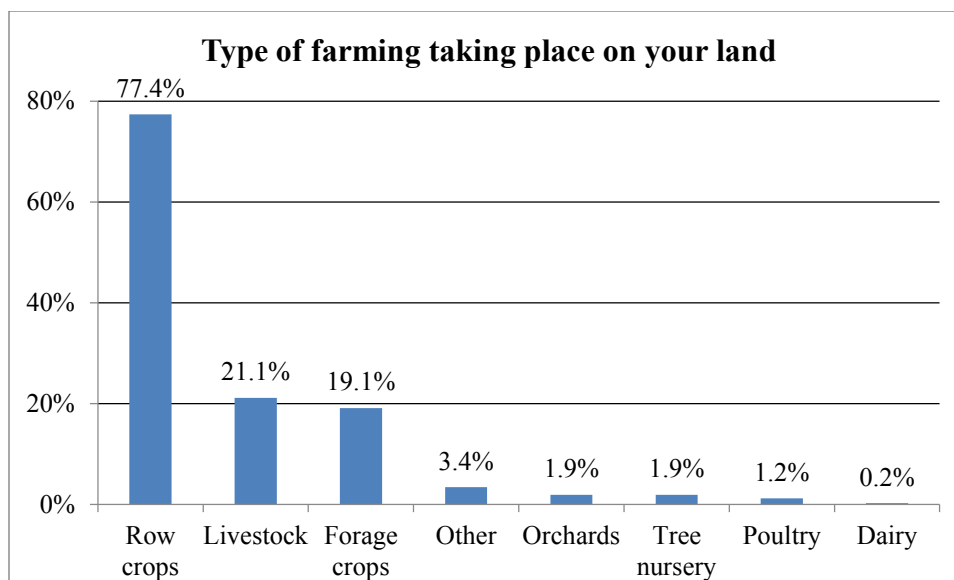


Figure 19. Type of farming taking place on survey respondent's land.

*Respondents were asked to select all that apply.

Over half of respondents (53.8%) had land placed in conservation set-aside programs (Figure 20). When asked if any management practices were performed on the property for the specific benefit of wildlife, 46.7% of respondents said “yes” (Figure 21). For those who said “yes”, 69.1% indicated they use conservation tillage, 49.8% plant trees, shrubs or grasses, 29.0% manage forests, 17.9% manage wetlands, and 23.6% do some other form of management for the benefit of wildlife (Figure 22).

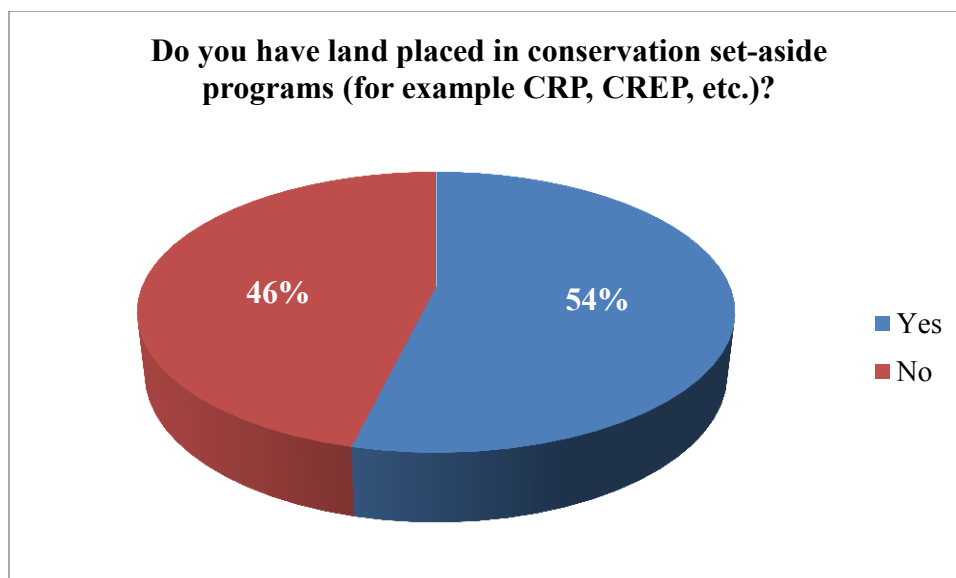


Figure 20. Percent respondents who have land placed in conservation set-aside programs.

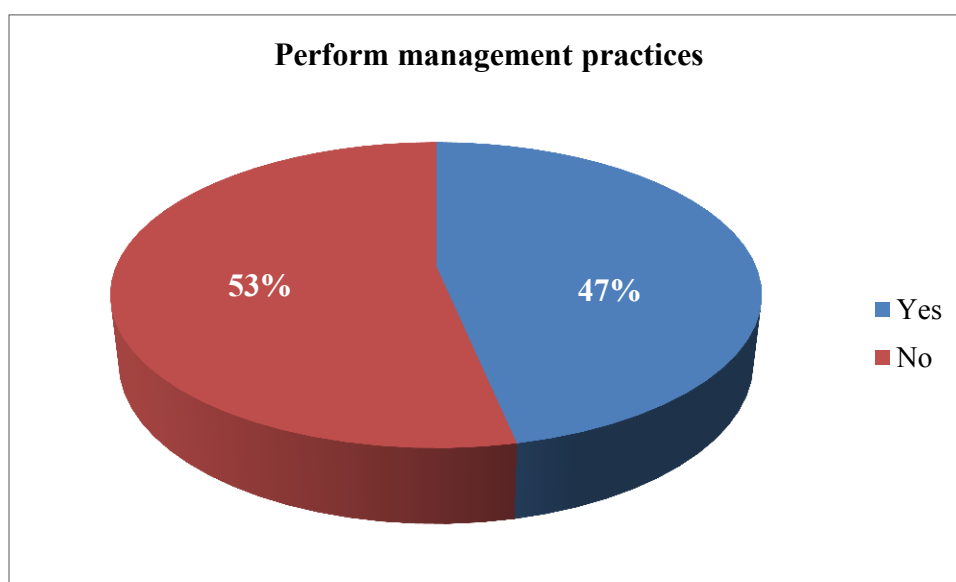


Figure 21. Percentage of landowners reporting management practices on land for the benefit of wildlife.

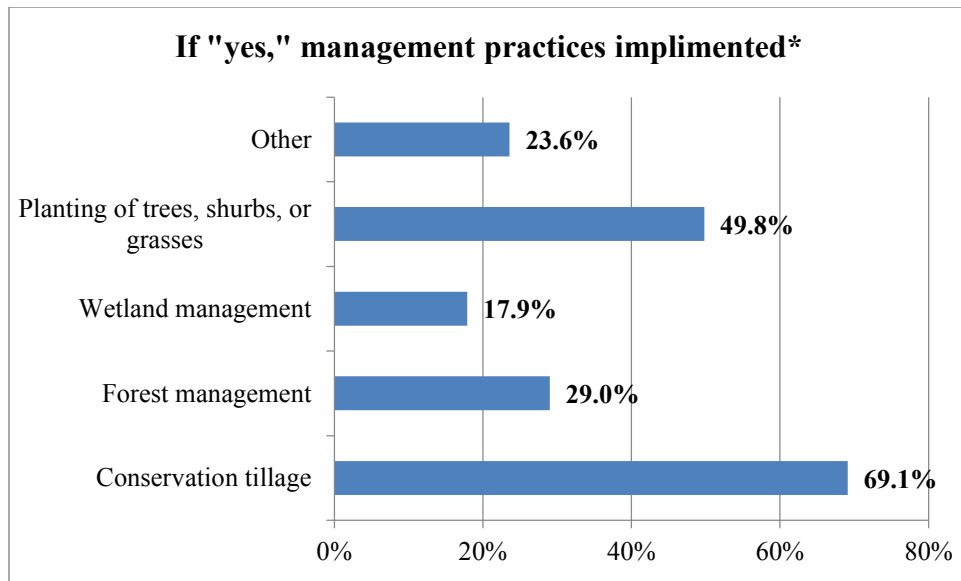


Figure 22. Management practices performed by land owner. *Respondents who perform management practices for the benefit of wildlife.

Demographics

Ninety-four percent of respondents were male and 90.6% were between the ages of 50-65 (Figures 23 & 24). The counties of residence of respondents can be viewed in Table 10.

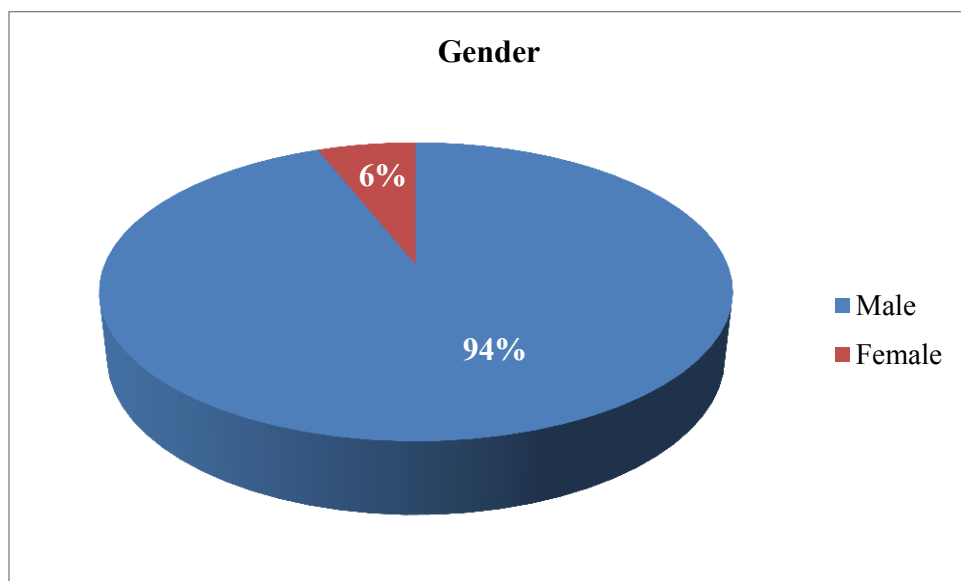


Figure 23. Gender of survey respondents.

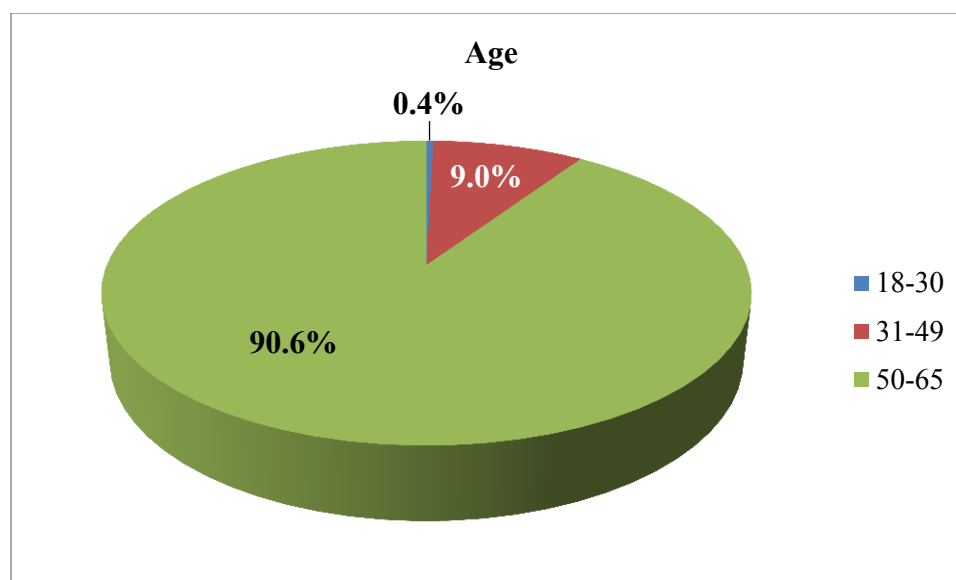


Figure 24. Age of respondents.

Table 9. County of Residence of respondents

County	<i>n</i>	County	<i>n</i>	County	<i>n</i>
Adams	104	Henry	140	Pope	36
Alexander	13	Iroquois	2	Pulaski	26
Bond	63	Jackson	76	Randolph	88
Champaign	1	Jasper	69	Richland	53
Christian	69	Jefferson	102	St. Clair	75
Clark	54	Johnson	51	Saline	43
Clay	63	Kendall	1	Sangamon	82
Clinton	1	Knox	88	Schuyler	56
Coles	2	Lawrence	36	Scott	6
Cook	1	McDonough	2	Shelby	3
Crawford	52	Macon	1	Stark	2
Cumberland	66	Macoupin	2	Union	57
Edwards	35	Madison	115	Vermilion	86
Effingham	122	Marion	108	Wabash	22
Fayette	102	Marshall	1	Warren	8
Franklin	83	Massac	39	Wayne	112
Fulton	91	Mercer	1	White	49
Gallatin	25	Monroe	69	Williamson	53
Hamilton	58	Morgan	59	Florida	2
Hardin	13	Perry	59	Texas	1
Henderson	41	Pike	94	Wyoming	1

Discussion

Few landowners observed wild pig or experienced damage on their lands, however most were concerned about wild pig coming onto their land and impacts resulting from their presence. Beliefs about and attitudes toward wild pig were highly negative, independent of land use or type of farming activity. Landowners rated wild pigs as the greatest threat compared to a list of wildlife species that are typically associated with crop and other agricultural damages. These beliefs and related attitudes were expressed when crop damage from most wildlife species was considered. Wild pigs were rated highest by landowners in terms of threats to their lands, either towards agriculture or damage in general. Even though wild pigs were not present they were rated as a higher threat than those species that were present and causing damage (e.g., white-tailed deer). That wild pigs, even when not present, were viewed as a greater threat than existing species, exemplifies the perception among landowners that they pose a serious threat.

Landowners appeared least informed about risks from diseases wild pigs may carry. This aspect of wild pigs may need to be emphasized to a greater extent in information provided to landowners (and to other publics as well). Encouragement of reporting should also be emphasized. Although few landowners indicated having wild pigs on their land, even fewer said they had reported the presence to a state agency.

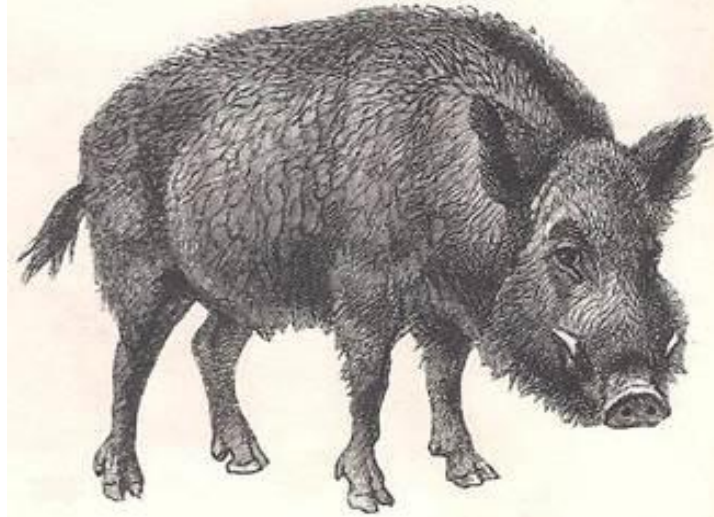
This study was undertaken as an initial data point regarding beliefs and attitudes toward wild pigs prior to adoption of new management approaches. In this way, findings here will serve as a baseline to monitor the human dimensions of wild pig management as populations change. We intend to replicate this study over time to investigate changes in beliefs and attitudes given concerted efforts to reduce wild pig damage in Illinois.

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Appendix A
Illinois Wild Pig Survey Questionnaire

Wild Pigs on Private Lands in Illinois



ALL RESPONSES ARE CONFIDENTIAL

THANK YOU FOR YOUR COOPERATION!

Postage-paid return envelope provided

Illinois Department of Natural Resources
Division of Wildlife Resources
and the
Illinois Natural History Survey

Please take 15 minutes of your time to complete this questionnaire. Your responses will tell us more about wild pigs in Illinois.

The Department of Natural Resources is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under the Illinois Compiled Statutes, The Wildlife Code, Chapter 520. Disclosure of information is voluntary.

Section 1. Crop damage and wild pigs. Please answer the following questions regarding the extent of crop damage that you have experienced due to wild pigs.

1. Have you ever had wild pigs on your land in Illinois?

Yes (please continue with **Question 2**)

No (Please go to **Question 14**)

2. If you have had wild pigs on your land, which of the following have you experienced? (Please check all that apply).

I have personally observed wild pigs on my land

Others have observed wild pigs on my land

I have experienced crop damage from wild pigs on my land

I have seen evidence of pigs on my land (rooting sites, tracks, etc.)

3. Please list the counties where you **observed** wild pigs on **your own** land:

4. In which of the following years did you **observe** wild pigs on **your own** land? (Please check all that apply).

2013 2010

2012 2009

2011 Before 2009

All of the above

If you did NOT experience damage from wild pigs, please go to question 11.

5. In which of the following years did you experience damage from wild pigs on your land? (Please check all that apply).

2013 2010

2012 2009

2011 Before 2009

All of the above

6. Did you take any action to correct the problem?

Yes

No

7. What steps did you take? Please check all that apply.

- Removed animals myself with live trap
- Called state agency to remove the animals
- Hunted/ shot the animals myself
- Allowed hunters to shoot pigs on my property
- Installed fencing
- Other (please identify): _____

8. Did you report this damage to a state or federal agency?

- Yes (please go to **Questions 8a and 8b**)
- No (Please go to **Question 9**)

8a. If “Yes,” to which agency did you report the damage? Please check all that apply.

- Illinois Department of Natural Resources
- Illinois Department of Agriculture
- County Extension Agent
- U.S. Department of Agriculture (Animal and Plant Health Inspection Services)
- Natural Resources Conservation Service

8b. How do you rate the agency’s response to your report of damage? Please circle the number that matches your response **for the agency that worked with you to manage wild pigs on your property.**

Poor	Fair	Good	Excellent
1	2	3	4

9. In your opinion, how did the amount of damage due to wild pigs that you experienced **in the past 12 months** compare to the **previous 12 months**? Please circle the number that matches your answer.

Much Less	Somewhat Less	About the Same	Somewhat More	Much More
1	2	3	4	5

10. In your opinion, how did the amount of damage due to wild pigs compare to damage you experienced from other wildlife? Please circle the number that matches your answer.

Much Less	Somewhat Less	About the Same	Somewhat More	Much More
1	2	3	4	5

11. Do you currently allow hunters to hunt wild pigs on your property? Yes No
12. Do you feel hunting pigs has reduced damage on your land?
 Yes No I did not experience damage

13. If you currently **do not allow wild pig hunting on your land**, but experienced damage from wild pigs or if the level of damage you currently experience increases, would you consider allowing hunters to hunt wild pigs on your property?
 Yes No I did not experience damage

14. How do you think wild pigs came to Illinois?

- They have always been in Illinois
- Intentionally released
- Escaped from someone’s livestock
- Came to Illinois naturally from a surrounding state
- I do not know

15. Please give your level of acceptance for the following management actions to be used by the Illinois Department of Natural Resources ***in your county*** to control wild pig populations. Please circle the number that matches your response. Please keep in mind that all work would occur on or over properties with landowner approval.

Management Action	Completely Unacceptable	Somewhat Unacceptable	Unsure	Somewhat Acceptable	Completely Acceptable
Aerial control by helicopter	1	2	3	4	5
Trap and remove	1	2	3	4	5
Targeted sharpshooting on the ground over bait sites	1	2	3	4	5
Capture and removal of wild pigs using dogs	1	2	3	4	5

16. Please give your level of acceptance for the following management actions to be used by the Illinois Department of Natural Resources ***on your land*** to control wild pig populations. Please circle the number that matches your response. Please keep in mind that all work would occur on or over properties with landowner approval.

Management Action	Completely Unacceptable	Somewhat Unacceptable	Unsure	Somewhat Acceptable	Completely Acceptable
Aerial control by helicopter	1	2	3	4	5
Trap and remove	1	2	3	4	5
Targeted sharpshooting on the ground over bait sites	1	2	3	4	5
Capture and removal of wild pigs using dogs	1	2	3	4	5

17. Please indicate how strongly you disagree or agree with the following statements about wild pigs by circling the number that matches your response.

	Strongly Disagree	Disagree	Somewhat Disagree	Unsure	Somewhat Agree	Agree	Strongly Agree
I enjoy seeing wild pigs around my property.	1	2	3	4	5	6	7
I worry about problems wild pigs might cause to my property.	1	2	3	4	5	6	7
Wild pigs are an important part of the environment.	1	2	3	4	5	6	7
Wild pigs are not a threat to the safety of people.	1	2	3	4	5	6	7
Wild pigs are common where I live.	1	2	3	4	5	6	7
People should learn to live with wild pigs near their homes or farms.	1	2	3	4	5	6	7
Wild pigs destroy native wildlife.	1	2	3	4	5	6	7
Wild pigs are a source of disease.	1	2	3	4	5	6	7
Wild pigs should be eliminated wherever possible.	1	2	3	4	5	6	7

18. Please give your opinion on how wild pigs may affect the following. Please circle the number that matches your opinion.

	No Threat	Slight Threat	Moderate Threat	Severe Threat
Native wildlife populations	1	2	3	4
Disease transmission to livestock	1	2	3	4
Ground-nesting birds	1	2	3	4
Tree regeneration	1	2	3	4
Available food for deer	1	2	3	4
Wildlife habitat	1	2	3	4
Available food for turkeys	1	2	3	4
Disease transmission to humans	1	2	3	4
Injuring or killing pets	1	2	3	4
Causing damage to my property	1	2	3	4

19. Please give your opinion of the species below and **your concern of them causing damage** on your land by circling the number that matches your opinion.

Wildlife Species	Not Concerned	Slightly Concerned	Moderately Concerned	Very Concerned
Raccoons	1	2	3	4
Coyotes	1	2	3	4
Deer	1	2	3	4
Wild Pigs	1	2	3	4
Foxes	1	2	3	4
Opossums	1	2	3	4
Beavers	1	2	3	4
Canada Geese	1	2	3	4
Wild Turkeys	1	2	3	4
Other Birds	1	2	3	4
Other Mammals	1	2	3	4

Section 2. Land Use Practices. Please help us find out more about agricultural operations by completing the questions listed below.

1. Do you personally farm your land? Yes No

1a. If "No," does someone else farm your land?

Yes

No

2. Please provide the number of acres and counties where you own or lease land:

County	Total Acres Farmed	Acres Owned	Acres Leased

3. What type of farming do you or your tenant do on your land? (Please check all that apply).

row crops forage crops livestock poultry

dairy orchards tree nursery

other (Please list): _____

4. Do you have land placed in conservation set-aside programs (for example CRP, CREP, etc.)?

Yes (please go to **Questions 4a**)

No (please go to **Question 5**)

4a. If “Yes,” please give the name of the program(s), acres, and counties where enrolled.

Name of Program	Acres	County
_____	_____	_____
_____	_____	_____
_____	_____	_____

5. Do you perform any management practices on your property for the specific benefit of wildlife?

Yes (please go to **Question 5a**)

No (please go to **Section 3**)

5a. If “Yes,” check all the following management practices that apply.

conservation tillage

wetland management

forest management

planting of trees, shrubs, or grasses

other (please identify): _____

Section 3. General Information. The following questions are important to help us understand more about the people involved in farming in Illinois. All responses are kept confidential.

1. What is your gender? Male Female

2. Please give your age. _____ years

3. What is your county of residence? _____ County

COMMENTS



RETURN ENVELOPE IS PROVIDED – POSTAGE-PAID

THANK YOU FOR YOUR TIME AND ASSISTANCE!

Your input will help us understand more about agriculture and wildlife in Illinois.

The Illinois Department of Natural Resources receives federal assistance and therefore must comply with federal anti-discrimination laws. In compliance with the Illinois Human Rights Act, the Illinois Constitution, Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act as amended, and the U.S. Constitution, the Illinois Department of Natural Resources does not discriminate on the basis of race, color, sex, national origin, age, or disability. If you believe you have been discriminated against in any program, activity, or facility, please contact the Equal Employment Opportunity Officer, Department of Natural Resources, One Natural Resources way, Springfield, IL 62702, (217)782-7616 or the officer of Human Resources, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

Appendix B
Cover letter 1



ILLINOIS NATURAL HISTORY SURVEY

Prairie Research Institute
University of Illinois at Urbana-Champaign

July 01, 2013

Dear Illinois Landowner,

Feral hogs have become an issue of concern in certain counties of Illinois. It is important to have landowner input in order to properly manage feral hogs in the state.

You have been randomly selected as an Illinois landowner to participate in this study. Please take 10 minutes of your time to complete the enclosed questionnaire, **even if you are unaware of feral hogs in your area**. The time you take to complete the enclosed questionnaire is essential to the success of feral hog management in Illinois.

Your decision to participate in this study is voluntary, and the information you provide us will be kept confidential. Successfully managing feral hogs in your area depends on landowner input.

You may access the results of this study at <http://www.inhs.illinois.edu/programs/hd/>. You may also find information about feral hogs from the Illinois Department of Natural Resources at <http://dnr.state.il.us/orc/wildliferesources/>.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig A. Miller", with a long horizontal line extending to the right.

Craig A. Miller
Human Dimensions Research Program

Appendix C
Cover letter 2



ILLINOIS NATURAL HISTORY SURVEY

Prairie Research Institute
University of Illinois at Urbana-Champaign

July 31, 2013

Dear Illinois Landowner,

You are one of a select group of Illinois landowners asked to provide your input regarding feral hogs in the state. We recently mailed you a survey regarding your experiences with and attitudes toward feral hogs and feral hog management. We have not received your completed questionnaire at this time. If this letter was sent before we received your responses, we apologize and thank you for your time.

If your questionnaire has not yet been completed, we have enclosed another copy for your convenience. **Even if you are not aware of feral hogs in the area where you own land, please complete the survey and return in the postage-paid envelope provided.**

The findings of this study will help wildlife managers make decisions about managing feral hogs while addressing landowners' concerns.

Thank you for helping with this important study.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig A. Miller", with a long horizontal line extending to the right.

Craig A. Miller
Human Dimensions Research Program

Appendix D
Post Card



Dear Illinois Landowner,

You were recently mailed a questionnaire about feral hogs on your land and surrounding areas. We have not yet received your completed questionnaire. If this postcard and your questionnaire crossed in the mail, we thank you for your response! If you have not had a chance to complete the questionnaire, please do so at your earliest convenience. Your input is very important!

Your name will be removed from our mailing list once your questionnaire is received. Thank you for your input and cooperation.

Equal opportunity to participate in programs of the Illinois Department of Natural Resources (IDNR) and those funded by the U.S. Fish and Wildlife Service and other agencies is available to all individuals regardless of race, sex, national origin, disability, age, religion or other non-merit factors. If you believe you have been discriminated against, contact the funding source's civil rights office and/or the Equal Employment Opportunity Officer, IDNR, One Natural Resources Way, Springfield, IL 62702-1271; 217/785-0067; TTY 217/782-9175.