



SCHOOL of
GRADUATE STUDIES
EAST TENNESSEE STATE UNIVERSITY

East Tennessee State University
Digital Commons @ East Tennessee
State University

Electronic Theses and Dissertations

Student Works

12-2020

Policing Farm Crime: An Exploratory Study of Agricultural Crime Units

Brianna Lynn
East Tennessee State University

Follow this and additional works at: <https://dc.etsu.edu/etd>



Part of the [Criminology and Criminal Justice Commons](#)

Recommended Citation

Lynn, Brianna, "Policing Farm Crime: An Exploratory Study of Agricultural Crime Units" (2020). *Electronic Theses and Dissertations*. Paper 3820. <https://dc.etsu.edu/etd/3820>

This Thesis - unrestricted is brought to you for free and open access by the Student Works at Digital Commons @ East Tennessee State University. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons @ East Tennessee State University. For more information, please contact digilib@etsu.edu.

Policing Farm Crime: An Exploratory Study of Agricultural Crime Units

A thesis

presented to

the faculty of the Department of Criminal Justice & Criminology

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Master of Arts in Criminal Justice and Criminology

by

Brianna Aubrey Lynn

December 2020

Dustin Osborne, Ph.D., Chair

Jennifer Pealer, Ph.D.

Bradley Edwards, Ed.D.

Keywords: agricultural crime, agricultural investigators, policing

ABSTRACT

Policing Farm Crime: An Exploratory Study of Agricultural Crime Units

by

Brianna Aubrey Lynn

The purpose of this study was to explore the practices, perceptions, and operations of agricultural crime units. To date, there has been little research conducted on policing agricultural crimes and no known research on units specializing in investigating them. The study utilizes data gathered from qualitative interviews with agricultural crime investigators across several states to fill this gap in the literature. The results allow for an examination of the fundamental practices of agricultural units, their perceptions and their experiences. In addition, they point to several implications for both policy and practice that may serve to guide our efforts to combat the problem.

ACKNOWLEDGEMENTS

None of this would have been possible without the support of my family and the invaluable instruction of the faculty in the department. First, I would like to thank my thesis chair, Dr. Osborne, who has worked tirelessly to ensure my success not only with this thesis, but as a graduate student. It is rare to find a teacher/mentor as dedicated as him, and I know that all the graduate students passing through this department (especially myself) are grateful to him. I would also like to thank my two committee members; Dr. Pealer and Dr. Edwards. During the two years I have been Dr. Pealer's graduate assistant, she has made me a more confident and stronger individual; for which I am appreciative. Dr. Edwards has also been important in my development as a graduate student, as he is constantly challenging his students to improve their ability to think critically and be constantly improving.

Next, I would like to thank my parents; my father for raising me on a farm and inspiring my love of agriculture, and my mother who put the effort into homeschooling me (and my wonderful siblings) so that we would have the best education. Undoubtedly, the skills and independence I learned because of her dedication to homeschooling us have contributed more to my success than I will ever be able to realize. I would also like to thank my Uncle Bob, whose career in law enforcement encouraged me to consider pursuing a degree and career in criminal justice. I would also like to thank my fellow graduate students (of which there are too many to list) who have made these last two years exciting and memorable. Lastly, I would like to acknowledge all of the agricultural investigators who participated in this study. It was a privilege to talk to and learn from them, and this would not have been possible without them.

TABLE OF CONTENTS

ABSTRACT.....	2
ACKNOWLEDGEMENTS.....	3
LIST OF TABLES.....	6
Chapter 1. Introduction to the Problem.....	7
Agricultural Crime.....	8
Prevalence.....	9
Financial Impact.....	11
Factors That Contribute to Victimization.....	13
Lack of Attention on Police Officers.....	14
Current Study.....	15
Chapter Summary.....	16
Chapter 2. Literature Review.....	17
Policing Rural Areas.....	17
Structure of Rural Policing.....	22
The Challenges of Addressing Agricultural Crimes.....	24
Possible Solutions.....	27
Agricultural Crime Units.....	30
Purpose of the Current Study.....	32
Chapter Summary.....	35
Chapter 3. Methodology.....	37
Interview Guide.....	38
Research Question #1.....	39
Research Question #2.....	40
Research Question #3.....	42
Research Question #4.....	44
Qualitative Analysis.....	46
Chapter Summary.....	46
Chapter 4. Results.....	47
Demographics of Participants.....	48

Initiation of Investigations.....	50
Operations of Agricultural Investigators.....	53
Perceptions of Agricultural Crime Investigators.....	61
Patterns of Victimization.....	66
Chapter 5. Discussion.....	71
The Fundamentals of Agricultural Crime Units.....	71
Agricultural Unit Operations.....	73
Perceptions of Agricultural Crime Investigators.....	76
Common Types of Crimes.....	78
Agricultural Crime Offenders.....	79
Farm Victimization.....	82
Farm Security.....	84
Implications.....	87
Limitations.....	92
Future Research.....	93
Conclusion.....	95
References.....	96
APPENDICES.....	102
Appendix A: Interview Guide.....	102
VITA.....	104

LIST OF TABLES

Table 1. Agricultural Crime Units	23
Table 2. Research Questions.....	33
Table 3. Research Questions.....	47

Chapter 1. Introduction to the Problem

For many years, rural crime has been a largely neglected area of criminal justice research (Barclay et al., 2001; Donnermeyer & DeKeseredy, 2014; Harkness, 2017; McIntyre et al., 2017; Payne et al., 2005; Ruddell, 2014; Weisheit et al., 2006). Theories of crime are typically conceptualized and tested using urban populations, with little interest in rural communities. Policing practices are developed to fit the needs of large departments, with most outside funding (e.g., grants) directed toward these approaches (Donnermeyer, 2007; Doucet & Lee, 2014; Hollis & Hankhouse, 2019). Finally, most crime policies at the national- and state-levels are enacted based upon findings from research conducted primarily in urban areas. Several reasons exist for this bias, including the comparatively small populations of rural communities and the assumption that policing practices are and should be implemented uniformly between urban and rural areas (Weisheit & Donnermeyer, 2000). Also to blame is the popular stereotype of rural areas having an inherently low crime rate (Donnermeyer & DeKeseredy, 2014). Put differently, they are viewed as idyllic communities lacking problems significant enough to merit attention.

Contrary to this notion, however, rural communities do suffer from various crime-related problems (Barclay, 2001; Barclay et al., 2001; Liederbach & Frank, 2006; McIntyre et al., 2017; Weisheit et al., 2006). In line with this realization, the past two decades have witnessed a rise in the number of studies dedicated to rural crime. Researchers are now investigating the prevalence of crime in rural communities, the factors that contribute to it, and effective options for policing various problems (Barclay, 2001; Cleland, 1990; Deeds et al., 1992; Dunkelberger et al., 1992; Falcone & Wells, 1995; Liederbach & Frank, 2006; McIntyre et al., 2017; Mears, Scott & Bhati, 2007b; Ruddell, 2014; Weisheit et al., 2006).

Studies exploring the differences in crime rates between urban and rural communities have featured mixed results. Some have suggested that specific forms of offending, such as domestic violence, rape, homicide and burglary are more prevalent within rural locales (DeKeseredy, 2019; Donnermeyer, 2007; Donnermeyer & DeKeseredy, 2014; Rephann, 1999; Weisheit, 2016; Weisheit & Donnermeyer, 2000). However, most find that rural areas feature rates that are either similar to—or lower than—those seen in urban areas (Dunkelberger et al., 1992; Weisheit & Donnermeyer, 2000; UCR, 2017). With that said, rural areas do deal with forms of offending that are unique to their culture and opportunity structures. One example, crimes committed against agricultural operations, has received some scholarly attention in recent years and is the focus of the current study. The remainder of this chapter is dedicated to covering the available literature on agricultural crime before turning to the purpose of the current work.

Agricultural Crime

A commonly cited figure for national losses to agricultural crime in a given year is \$5 billion dollars, (Swanson et al., 2002), with individual losses amounting to thousands of dollars per incident. It is important to note that agricultural crime is a relatively broad term encompassing acts such as vandalism, arson, trespassing, dumping (of waste) and theft. The targets of thefts are varied and include crops, pesticides/herbicides, large machinery, livestock, and specialized equipment unique to different forms of agriculture (Barclay et al., 2001; Weisheit & Donnermeyer, 2000). Livestock and crop theft are two of the costliest crimes on an individual and large-scale basis; however, these are not the most frequently committed agricultural crimes. Rather, farms are more commonly subjected to less severe forms of victimization, such as theft of small tools and equipment (Barclay, 2001; Barclay & Donnermeyer, 2001).

It is important to note that agricultural crime presents problems beyond that of personal financial loss to farm operators. In 2017, the United States Department of Agriculture (USDA) reported that agriculture and its related industries contributed over one trillion dollars to the GDP of the United States and provided over twenty-one million jobs (11% of employment across all sectors). Farming directly contributed approximately 1% of GDP and 1.3% of employment (USDA, 2017).¹ Consequently, the effects of agricultural crime can be felt by the public in the form of higher priced commodities (Chalfin et al., 2007) and/or the loss of jobs in food-related industries (FDA et al., 2007).

Prevalence

Some researchers have explored the prevalence of agricultural victimization, with findings suggesting that it is far from a rare occurrence. For example, a study conducted in Tennessee in the late 1980s found that in the previous year, 24% of farmers experienced vandalism, 17% experienced theft, and 9% were victims of burglary (Cleland, 1990). A similar vandalism rate was found in Mississippi during the same time period (Deeds et al., 1992). However, the studies disagreed on the rate of thefts and burglaries. Deeds and colleagues (1992) found that 22% of farmers experienced theft (somewhat higher than Cleland reported), and 18% experienced burglary—twice the rate found by Cleland (1990).

Both Cleland (1990) and Deeds et al. (1992) reported higher victimization rates for most categories than a peer study in Alabama conducted by Dunekelberger and colleagues (1992). Their results indicated that in the previous year only 13% of farmers had experienced vandalism, 10% were burglarized, and 9% experienced some type of theft (the latter is consistent with the

¹ The importance is not limited to the United States, though as agriculture is also important in other world economies, such as Australia. In 2000, the livestock industry was valued at over \$10 billion AUDs. The value of the crop industry was valued at \$16.6 billion AUDs (Barclay, 2001). In the 2016-2017 year, the gross value for the agricultural industry was \$60 billion AUDs and contributed 3% to Australia's GDP.

Tennessee study). The reported targets of these thefts varied, but included farm materials (4.9%), farm equipment (4.2%), crops (3%) and livestock (1%) (Dunkelberger et al., 1992). Though the low rate for livestock could relate to the sheer difficulty of transporting animals, it is also possible that farmers may simply not notice one or two missing animals as a result of large herd sizes or other possible explanations (i.e. death, wandering off) (Barclay et al., 2001). Notably, Dunkelberger and colleagues (1992) also inquired about farmer's lifetime history with crime and found that 58% of the farmers sampled had experienced some sort of farm crime. Of those that had been victimized, 46.8% experienced theft, 42.7% experienced vandalism, and 32% experienced burglary (Dunkelberger et al., 1992).

The findings of Dunkelberger et al. (1992) were comparable to the rates found in a more recent California study. Mears, Scott and Bhati (2007a) determined that between 11% and 14% of surveyed farmers experienced substantial theft or burglary during the 12-month timeframe under investigation, and that a significant percentage of these individuals (around 30%) lost valuable equipment as a result. Furthermore, they calculated (based upon their own research and the works of others) that between 12% and 25% of farmers are victimized over any given two-year period, with rates in some parts of the country even higher (up to 60%) (Mears, Scott & Bhati, 2007a).

Somewhat troubling, a very recent study conducted in Georgia found much higher victimization rates than those found in past attempts to explore the problem. McIntyre and colleagues (2017) revealed that 33.4% of farms had experienced theft in the previous 12 months and 16.3% had experienced vandalism. Their work also explored the rate of trespassing, poaching, and illegal dumping of refuse on farm properties. Approximately 30% of farmers had experienced illegal dumping, 27.5% poaching, and 44% trespassing. Notably, many farmers

perceived that trespassing was closely followed by an increase in other forms of victimization, suggesting that individuals became aware of criminal opportunities in this manner (McIntyre et al., 2017).

Financial Impact

Little research has explored the financial losses associated with each category of agricultural crime. However, there have been some studies in the United States worthy of discussion. These studies are most commonly conducted at the state level (Cleland, 1990; Deeds et al., 1992; Dunkelberger et al., 1992; Mears, Scott & Bhati, 2007a; Mears, Scott, Bhati, Roman, et al., 2007). For example, Swanson and Territo (1980) estimated that within one year, fruit theft collectively cost Florida farmers \$1 million. They also estimated that agricultural crime as a whole cost the state of California \$30 million per year. An assessment of economic impact in California found the average loss per incident to be \$3,020, though variation existed depending upon the theft target(s) (Mears, Scott & Bhati, 2007a). The previously mentioned study by Cleland (1990) also collected data regarding financial losses. He found that damage due to vandalism amounted to \$644 per incident. Losses to burglary of farm houses and barns were much higher, \$1,343 and \$758 respectively, while losses to burglary of other farm buildings was lower (\$514).

Deeds and colleagues (1992) also explored financial losses; however, their findings differed somewhat from Cleland (1990). The authors found that losses to burglary of barns was much higher than estimated by Cleland (\$5,012 compared to \$758) and was greater than that of houses (\$789) or other farm buildings (\$1,601). Deeds also found a higher average loss for vandalism repairs than did Cleveland (\$1,633 compared to \$644). Other categories of thefts investigated by Deeds et al. (1992) included crops and farm material (e.g. fence materials,

gasoline, fertilizer), which were both quite costly (\$2,100 and \$2,907, respectively). They also found the average loss to equipment theft was \$1,736. Contrary to what most others had found, however, the authors indicated that livestock theft accounted for the lowest average loss (\$383).

Financial losses due to farm theft were also presented in the previously discussed work of Dunkelberger and colleagues (1992). When accounting for outliers, the replacement costs for vandalism ranged from \$25 to \$1,200, with an average of \$400 per incident. The research team also found that farmers who experienced burglaries reported losing up to \$7,000 dollars per incident. Theft of farm materials resulted in losses up to \$4,000 dollars. With that said, equipment theft was the costliest crime, with losses of up to \$15,000 dollars for a single event (Dunkelberger et al., 1992).

The most recent study investigating the financial ramifications of agricultural crime also focused on the individual losses incurred from theft. The average loss associated with each incident of equipment theft was \$3,744. Livestock theft was costlier, with farmers losing \$7,182 on average. With that said, crop theft was the most damaging (which is consistent with the previously discussed studies), with incidents costing farmers an average of \$29,185 (Osborne et al., 2019). Importantly, unlike the other studies discussed so far, this study did not focus on small samples from individual states. Instead, the data were pulled from the National Incident-Based Reporting Systems (NIBRS), which includes reports from many states (36). However, while this is more thorough than the previously discussed studies, it is not a complete representation of the characteristics of agricultural crime in these states, as over half do not have 100% reporting across all law enforcement agencies (Osborne et al., 2019).

Factors that Contribute to Victimization

Several factors related to guardianship and opportunity are hypothesized to contribute to victimization of farms. These include size, layout, proximity to urban areas, proximity to and intricacy of road networks, visibility, terrain and presence of various security measures (Barclay & Donnermeyer, 2001; Barclay & Donnermeyer 2011; Barclay et al., 2001; Brock & Walker, 2005; Bunei et al., 2014; Mears, Scott & Bhati, 2007b; Mears, Scott, Bhati, Roman, et al., 2007). Farm size has been considered one of the most consistent predictors of victimization risk, with an increase in size being associated with an increase in victimization. However, this relationship does not exist for all forms of offending, nor does it influence them all the same way (Barclay & Donnermeyer, 2011; Dunkelberger et al., 1992; McIntyre et al., 2017). For example, Dunkelberger and colleagues (1992) found that the rate of vandalism was fairly uniform for farms of all sizes. This is consistent with the findings of McIntyre and colleagues (2017), who did not find farm size to be a significant predictor of vandalism. They also failed to find a significant relationship between size and illegal dumping, though size was a significant predictor for theft, poaching, and trespassing. The extent of this relationship may also be influenced by the presence or absence of other factors (Barclay & Donnermeyer, 2011; Bunei et al., 2013; Dunkelberger et al., 1992; McIntyre et al., 2017). Decreased visibility of farm buildings, for instance, was an important factor in farmers experiencing more crimes, which can interact with the size of a farm to influence victimization rate (Barclay & Donnermeyer, 2011).

Though other predictors do not perform consistently across studies, there is some evidence suggesting additional factors may be related to victimization rates. Farm terrain, for example, has been found to influence victimization rates for certain crimes. Farms with dense cover appear more likely to experience trespassing, poaching, and stock theft (Barclay &

Donnermeyer, 2001; Barclay et al., 2001; Barclay & Donnermeyer 2011), whereas those considered “non-hilly” are found to be more susceptible to burglaries, thefts, and vandalism. Conversely, some forms of victimization (e.g., fuel theft, dumping, breaking and entering) appear to be less likely when visibility (and thus surveillance) is increased (Barclay & Donnermeyer, 2011; Barclay et al., 2001; Mears, Scott & Bhati, 2007b). A farm’s location relative to highways has also been found to increase risk for some categories of crime; including burglary, malicious damage, dumping, and theft. Further, a farm’s proximity to a town also appears to increase the likelihood of trespassing, theft and repeat victimization (Barclay & Donnermeyer, 2001; Barclay & Donnermeyer, 2011; Barclay et al., 2001).

The effectiveness of various security measures has also been evaluated by researchers. With one exception, studies have found that security measures implemented by farms were not associated with the expected decrease in victimization rate; surprisingly, they were sometimes associated with a higher rate of victimization (Barclay et al. 2001). Barclay et al. (2001) hypothesized that this association is due to increased security measures being taken as a response to previous victimizations, rather than a preemptory precaution. The presence of a guard dogs is to date the only measure to show consistent results (Barclay & Donnermeyer, 2001). It is important to note, however, that there is still very little known about the subject, as these studies are limited in scope and several of them are dated. More support for these findings, as well as investigations into other facets of the topic, is still needed.

Lack of Attention on Police Officers

Most of the studies investigating agricultural crime focus exclusively on the perspective of farmers and the characteristics of their farms (Barclay et al., 2001; Barclay & Donnermeyer, 2011; Bunei & Barasa, 2017; McIntyre et al., 2017; Mears, Scott, Bhati, Roman, et al., 2007),

neglecting the role of the police in responding to such crimes. Only a very limited number of studies have been dedicated to exploring the role and responses of police in rural areas (Hurst, 2007; Liderbach & Frank, 2006). Of these, several have sought to identify how the public perceives them (Dobrin, 2006; Hurst, 2007; Liderbach & Frank, 2003; Lord et al., 2009) and some have compared their activities and responsibilities to urban areas (Barrett et al., 2009; Birge & Pollock, 1989; Maguire et al., 1997; Wells & Weisheit, 2004). Nearly none, however, have investigated how they respond to crime. The operations and practices of urban police are better understood, as studies on these departments are much more numerous due to their size and accessibility to researchers (Liderbach & Frank 2006; Falcone & Wells, 1995; Hurst, 2007). Additionally, it was assumed for many years that policing methods developed in urban areas could be translocated to rural areas, making it appear there was no need for specific research into rural police (Doucet & Lee, 2014; Pelfrey, 2007; Weisheit et al., 1994). Unfortunately, this assumption does not appear to hold in reality due to the unique nature of rural areas, leaving a significant gap in the research literature (Pelfrey, 2007; Regoli & Poole, 1980; Weisheit et al., 1994).

Current Study

This study aims to partially fill this gap by investigating how law enforcement officers tasked with addressing agricultural crimes perceive such crimes and how those perceptions influence the ways that they respond to it. It has been established that agricultural crimes are costly and far from a rare occurrence, yet there has been a lack of research regarding policing these offenses. The strategies and methods investigators use to approach these unique crimes have not been studied thus far, nor have the factors which influence their investigations. How these investigators respond to crimes can be crucial not only to the outcome of the investigation,

but the sheer prevalence of offending. Law enforcement plays an important role in suppressing crime, as demonstrated in urban areas by practices such as hot-spot policing. Therefore, in rural areas, law enforcement attention and response may also contribute to how frequently agricultural crimes occur.

Chapter Summary

This chapter presented the problem of agricultural crime and explained its impacts and the research surrounding it. The lack of knowledge about rural crime in general is a problem that is becoming more commonly addressed, but much remains to be learned. The prevalence of agriculture crime and the financial losses incurred by farmers have been studied in several states, but there has been no national-level study to date, making it difficult to generalize about the problem. Another (and perhaps more significant) issue is the lack of attention that agricultural crime investigators receive. Little is known about the unique challenges they face and how they go about performing their duties. As mentioned above, the current study seeks to assist in filling this knowledge gap.

The following chapter will lay out the unique challenges and dynamics of policing in rural areas and discuss common practices—specifically those that differ from their urban counterparts. Additionally, it will examine programs dedicated to reducing agricultural crime and provide an overview of the current study’s research questions. Chapter three will layout the methods employed in this study, including some basic information about the interview guide, the topics to be covered, and the manner in which responses will be analyzed. Chapter four will present the study’s findings. Finally, chapter five will serve as a discussion of the study’s implications for the field and offer potential directions for future research on the topic.

Chapter 2. Literature Review

By nature, there is a disproportionate distribution of population between urban areas and rural areas. According to a 2016 report released by the United States Census Bureau, approximately 97% of the land mass of the U.S. is considered rural, yet only about 19.3% of the population lives in rural areas (United States Census Bureau, 2016). As expected, the distribution of law enforcement reflects the uneven distribution of the population. As of 2018, only 29% of officers (including municipal and county departments) were employed in a rural area, whereas the remainder (around 71%) worked for urban departments (UCR, 2018).

It is unsurprising that urban areas employ police officers at a far higher rate than rural areas due to the relationship between population density and crime. However, it is worth noting that there are a higher number of rural law-enforcement agencies than urban agencies. Specifically, about 21% of law enforcement agencies are located in urban/metropolitan areas, with the remaining 79% serving rural/nonmetropolitan areas (UCR, 2018). This distribution reflects an interesting relationship between geography and size. Whereas nearly 80% of all law enforcement agencies in the U.S. are in rural/nonmetropolitan areas, only about 30% of the nation's officers work in such areas. While this distribution is understandable given the population density of cities, it still brings into question whether rural areas suffer (in terms of their ability to confront crime) because of how few officers each agency has at their disposal (Falcone & Wells, 1995; Ricciardelli, 2018).

Policing Rural Areas

The size and distribution of law enforcement agencies are far from being the only differences between urban and rural locales. At the local level, Falcone et al. (2002) identified three main characteristics of small-town departments which distinguish them from their urban

counterparts. First, they have significantly fewer employees; a claim that is well-supported by other studies (Birge & Pollock 1989; Brunet, 2015; Harkness, 2017; Liederbach & Frank, 2006; Pelfrey, 2007; UCR, 2018; Weisheit et al., 1994). The second characteristic is that rural officers typically act as generalists. The duties of generalists, as the name suggests, are diverse and include traffic control, proactive patrol, criminal investigations, social work and animal control (Falcone & Wells, 1995; Liederbach & Frank, 2006; Payne et al., 2005). In urban areas such tasks are likely to be delegated to different specialized units (Falcone & Wells, 1995; Falcone et al., 2002). This too is supported by much of the literature (Falcone & Wells, 1995; Falcone et al., 2002; Liederbach & Frank, 2006; Payne et al., 2005). Finally, they suggest that officers have strong bonds with the residents of their communities, which can influence the manner with which they conduct themselves.

There is little dispute within the literature regarding the first and second characteristics identified by Falcone and colleagues (2002). Support for the third characteristic, however, is a little more mixed. Some studies have found only minor differences (primarily acting as generalists) between police in rural and urban areas (Maguire et al., 1997). These studies conclude that both rural and urban police support a traditional, professional approach to policing, particularly in their preference for motorized patrol (Maguire et al., 1997; Pelfrey, 2007). The majority of the literature, though, finds that these social bonds do influence the dynamic of policing by leading officers to be more responsive to the needs of their communities (Liederbach & Frank, 2006; Falcone et al., 2002; Weisheit et al., 1994).

Some researchers have suggested that rural police officers have a higher social stake in carrying out their duties. That is, the officers often live in the communities they police, and as such are much more vested in their relationship with the members of it. They may know many of

the members socially, even as neighbors, leading actions (taken while on duty) to have a salient impact on their personal lives (Buttle et al., 2010; Hurst, 2007; Liederbach & Frank, 2006). This contrasts with officers in urban areas who routinely patrol areas outside of the community in which they live (Buttle et al., 2010; Weisheit et al., 1994). The familiarity between rural police and residents can influence the way officers perform their duties, often pushing them in the direction of handling calls informally (Berg & DeLisi, 2005; Hurst, 2007; Liederbach & Frank, 2006, Ruddell, 2014; Weisheit & Donnermeyer, 2000; Wells, & Weisheit, 2002). One explanation for the more frequent use of informal control (for minor offenses) is that rural officers may know the offender and their families. Therefore, in the interest of preventing an uncomfortable situation, officers may choose to seek solutions outside of the formal legal system (Weisheit et al., 1994).

Another explanation for the high rate of informal control used by rural police is that officers are more frequently asked by residents to handle matters in this manner, preferring formal action to be taken only when other methods have failed (Weisheit et al., 2006). It should be noted that though informal methods are used more frequently in rural areas, rural areas are no more tolerant of crime than urban areas; perhaps even less so (Weisheit et al., 1994). It is also important to bear in mind that public input and the amount of officer discretion involved in informal control poses the potential for discrimination against people not seen as part of the community, as they are likely to be treated differently than those considered part of its' "inner circle" (Dobrin, 2006).

In addition to influencing the dynamic between officers and residents, the high rate of acquaintanceship in rural communities also plays a large role in clearance rates (Weisheit et al., 2006). There is evidence to suggest that rural police departments solve more of their cases than

do urban police departments; which is largely attributed to the offenders being recognized by the victim, neighbors, or other witnesses (Falcone et al., 2002). If the offender is identified, it is likely that officers will know their place of residence or family and will be able to easily locate them (Falcone et al., 2002; Weisheit et al., 1994). In other words, rural police officers have access to the strong social network found in rural communities—a network that can relay information about crimes, thereby increasing their overall effectiveness in solving them (Berg & DeLisi, 2005; Falcone et al., 2002; Liederbach & Frank, 2006).

This social cohesion can offer many advantages for crime control, but there are some distinct disadvantages that come with it as well. For example, Donnermeyer & DeKersedy (2014) posit that these social bonds can enable or excuse certain criminal behavior. They explain that social groups may share similar ideas about acceptable offending, even encouraging it to an extent, and will not report certain criminal behaviors to the police. More alarmingly, the authors also point out that even if the police are made aware of the criminal behavior, they may not act (informally or formally) to stop the behavior because they see it as acceptable or because they have a social bond with the offender. The authors emphasize this problem is particularly prevalent when dealing with domestic violence, though they do acknowledge other illegal behaviors this can extend to (Donnermeyer, & DeKersedy, 2014). Hunting and fishing out of season, for example, are unlikely to be reported to the authorities simply because many rural residents would not see this as a crime; much less a crime requiring police attention (Falcone et al., 2002; Ruddell, 2014).

While access to social networks may assist rural officers in responding to most forms of offending, the issue of unreported crimes is still prevalent in many communities. Weisheit and colleagues (1994) found that there were similar rates of unreported crimes between urban and

rural areas. However, different reasons for the reluctance to report were revealed. Residents in urban areas chose not to report primarily because they did not believe anything would come of it, whereas residents in rural areas did so because they perceived crime as a private matter and preferred to handle it themselves. This was especially true for theft incidents (Donnermeyer, 2007; Harkness, 2017; Weisheit & Donnermeyer, 2000; Weisheit et al., 1994). Research generally finds there is a mistrust of government among rural residents, which can be a contributing factor to this underreporting and “vigilante” mindset (Ruddell, 2014; Weisheit et al., 1994; Weisheit & Donnermeyer, 2000; Weisheit et al., 2006). However, it has been found that residents of rural areas trust local law enforcement more than other governmental agencies (or state and federal departments), viewing them as closer to the community and more understanding of their concerns (Hurst, 2007).

It is important to note that these findings are somewhat general and as such do not apply to every rural area; nor will they apply equally to most of them. Weisheit and colleagues (2006) point out that the widely accepted assumption of rural areas being homogenous is not accurate. They agree that residents within any one rural community tend to be more alike than would be found in an urban area, but contend that there is a fair amount of diversity across rural areas (Weisheit et al., 2006). Geographic location of community is one cited source of differences between rural areas (Weisheit et al., 1994). This can affect not only the residents of a community, but the responsibilities of the police. For instance, Weisheit, Falcone, and Wells (1994) point out that rural areas in Montana are faced with issues such as hikers being lost for weeks, poor road conditions due to weather, and challenging terrain, which are all vastly different from the challenges found within rural areas in Delaware.

Policing practices and criminal opportunities in rural areas can also be found to vary between regions (Maguire et al., 1997), further exemplifying their diversity. Of interest to the current study, the types of agricultural products that are readily available vary by region, providing different targets for theft. For example, the forests of Tennessee can provide ample opportunity for timber theft (Tennessee Department of Agriculture, n.d.; Mortimer et al., 2005), whereas the plains of Kansas present attractive targets in the form of expensive machinery and fertilizer (Kansas Department of Agriculture, 2016). Theft between these two states may require different approaches and skill sets tailored to their environment.

Structure of Rural Policing

While research has suggested that officers in rural areas are unique in several ways, it is important to note that these areas are typically covered by a variety of agencies, each with differing structures and goals (Ball; 2001; Falcone & Wells, 1995; Falcone et al., 2002; Liederbach & Frank, 2006; Weisheit et al., 1994). For example, incorporated areas are typically served by small municipal police departments that handle most crime-related problems occurring within their boundaries. On the other hand, county-level sheriff's departments maintain jurisdiction over unincorporated areas, though at times they are also asked to assist municipal departments with investigations and/or patrol (Falcone & Wells, 1995; International Association of Chiefs of Police [IACP], 2018).

State-level agencies serve as an added resource in most rural communities (Ball, 2001; IACP, 2018; Weisheit et al., 1994) and take several forms. Most common are those tasked with patrol and general investigations, with terms such as state police and highway patrol being used to identify them. These agencies oftentimes assist local law enforcement in combatting crime and

patrolling rural highways. For example, the South Dakota Highway Patrol frequently assists sheriff's departments and other municipal departments in their duties, including performing welfare checks and search warrants (IACP, 2018). Conservation agencies are a second form of state-level policing, and are specifically designed to enforce fish and wildlife laws. Because of the nature of the offenses that they address, most of their work is conducted within rural locales.

Finally, many states have supported units tasked with addressing specific crime problems (Weisheit et al., 2006). Task forces (combining local, state-level and federal officers) addressing drug production and distribution are perhaps most common. However, others have begun to emerge in recent years. Of particular interest to the current study are those focused on agricultural offending. Eleven states now have units whose mandate are to address various forms of agricultural theft and vandalism (see Table 1). These units will be further discussed later in the chapter. First, however, attention will be directed at the challenges associated with addressing agricultural victimization in rural communities.

Table 1
Agricultural Crime Units

State	Agency
Alabama	Alabama Agricultural & Rural Crime Unit
California	California Rural Crime Prevention Task Force
Florida	Florida Agricultural Crimes Intelligence Unit
Louisiana	Louisiana Livestock Brand Commission
Kansas	Kansas Livestock/Brand Investigative Unit
Mississippi	Mississippi Agriculture & Livestock Theft Bureau

(continued)

Table 1 (continued)

Missouri	Missouri Highway Patrol Rural Crimes Investigative Unit
Nevada	Nevada Agriculture Enforcement Unit
Oklahoma	Oklahoma Department of Agriculture Investigative Services Unit
Tennessee	Tennessee Agricultural Crime Unit
Texas	TSCRA Special Rangers

The Challenge of Addressing Agricultural Crimes

As mentioned, the sheriff’s office is typically responsible for the unincorporated areas of the county (Falcone & Wells, 1995). Notably, this is where many farms are located, making these offices responsible for addressing most farm-related crime. Unfortunately, doing so can present many challenges. Perhaps the most commonly accepted and expected challenge is the geographic isolation of rural areas (Birge & Pollock, 1989; Falcone & Wells, 1995; Harkness, 2017; Weisheit et al., 1994; Yarwood, 2001; Smith & Somerville, 2013). Deputies are typically asked to cover large areas, making proactive policing difficult (Birge & Pollock 1989; Weisheit et al., 1994). Furthermore, by nature farms are spread out and removed from towns or cities, creating the potential for farmers to live miles away from the nearest police station. This results in an increase in travel time when responding to a call for service (Birge & Pollock, 1989; Harkness, 2017; Weisheit et al., 1994).

Another factor that impacts travel/response times is the small size of the police force in rural and agricultural areas (Barret et al., 2009; Falcone & Wells, 1995; Weisheit et al., 1994). As pointed out by Weisheit and colleagues (1994), rural areas receive significantly less funding

than urban areas (typically half), leaving them underequipped and understaffed. Consequently, response times in rural areas suffer (Barret et al., 2009; Falcone & Wells, 1995; Harkness, 2017; Weisheit et al., 1994). Falcone and Wells (1995) found that compared to urban areas, where response time is usually measured in minutes, response time in rural areas may be better measured in hours or quarter hours because of the difficulty associated with patrolling a large geographic area. This isolation also creates situations where backup may not be available (Falcone & Wells, 1995; Ricciardelli, 2018). Even when it is available, it could be too far away to be of much use (Falcone & Wells, 1995).

Further issues arise when officer safety is considered. Barret and colleagues (2009) found that in some cases, rural officers were much more hesitant to investigate certain crimes due to the fact that backup was often at least 40 minutes away. There are also more extreme cases when there are only single-officer shifts, eliminating the possibility of backup entirely (Falcone & Wells, 1995). Furthermore, the availability of only a few officers can cause rural police to prioritize calls more so than urban officers, increasing response times even more (assuming a response at all) (Birge & Pollock, 1989).

Aside from their ability to respond to a call, rural officers also face the challenge of learning about crime incidents. As discussed before in general terms, residents of rural areas are sometimes reluctant to report crimes. However, there is evidence suggesting that it is a more prevalent problem in farming communities (Barclay, 2001; Barclay & Donnermeyer, 2001; Harkness, 2017; McIntyre et al., 2017; Mears, Scott & Bhati 2007a; Weisheit et al., 1994; Yarwood, 2001). Dunkelberger and colleagues (1992) found that as many as 43% of farmers did not report vandalism to law enforcement, roughly 66% did not report theft, and nearly 33% did not report burglaries. When agricultural crime was considered as a whole, they estimated that as

many as 60% of crimes were unreported by farmers to law enforcement (Dunkelberger et al., 1992). Barclay (2001) found a comparable percentage (55%), with only about half of stock thefts being reported to the police. McIntyre and colleagues (2017) found a somewhat similar rate in unreported thefts (42%), but found that illegal dumping was very infrequently reported among Georgia farmers (79% did not). The highest rate was put forth by Mears, Scott, Bhati, Roman, et al., (2007), who found that 85% of agricultural crimes in California were not reported to law enforcement.

There are various reasons why farmers are reluctant to report crimes to the authorities. One of the most common is a belief that nothing will be gained by doing so (Barclay, 2001; Barclay & Donnermeyer, 2001; Dunkelberger et al., 1992; Harkness, 2017). There are two prevailing attitudes within this belief. First, farmers may believe that the police simply will not be successful in apprehending the offender or recovering stolen property. Second, some perceive that the police lack an understanding of farming and the agriculture industry, leading to additional problems without any gain (Barclay, 2001; Barclay & Donnermeyer, 2001; Dunkelberger et al., 1992; Harkness, 2017). Dunkelberger and colleagues (1992) agree with the idea that police have been ineffective in their investigations into agricultural crime. However, this perception is part of the problem. The underreporting in rural areas, particularly in agricultural sectors, has not gone unnoticed by the police serving these communities. Interviews with officers reveal that some officers blame underreporting for not being able to successfully carry out their duties; creating an unfortunate dilemma (Harkness, 2017; Weisheit et al., 1994).

While the perceptions of the police may be the most prevalent reason for underreporting, there are several others which farmers also cite. The difficulty in providing proof for the occurrence of a crime is one of these reasons (Barclay, 2001; Dunkelberger, 1992). Livestock

theft poses an additional problem; it can be difficult to distinguish between losing livestock to crime or natural causes (e.g. death, wandering off) (Barclay, 2001). Yet another reason relates to too much time passing between the crime and its discovery. This is especially prevalent on large farms where livestock and equipment are spread out and may not be missed for an extended period of time (Barclay, 2001; Barclay et al., 2001). Difficulty with the legal process and fear of retribution (i.e. acts of revenge by the offenders) are two other reasons given for the lack of reporting (Barclay, 2001; Harkness, 2017; McCall & Homel, 2003).

Possible Solutions

Most of the literature discussed thus far has been descriptive in nature. Unfortunately, this is the approach of most studies pertaining to rural areas (Donnermeyer & DeKeserdy 2014). However, there have been some advancements in terms of developing and implementing strategies to combat agricultural crime, though formal evaluations of the effectiveness of such programs are rare (Mears, Scott & Bhati, 2007a). This section will serve to detail these strategies in some detail.

One option aimed at combating agricultural crime is the formation of *Farm Watch* programming. *Farm Watch* is a crime prevention program implemented at the local level and involves both residents in the community and police officers working together. It is essentially a variation of neighborhood watch translated to rural areas in order to address their unique crime problems. People in the community collectively remain alert for any suspicious activity and report anything that comes to their attention (Farm Watch, 2020; McCall & Homel, 2003). This includes relaying information to other members of the network and/or reporting incidents to the police. It is already a common practice for farmers to ask their neighbors or other farm operators to look after their property when the occupants are away (Mears, Scott & Bhati, 2007b;

Dunkelberger et al., 1992; McCall & Homel, 2003; Weisheit & Donnermeyer 2000), but *Farm Watch* encourages farmers to be proactive in helping each other and not limiting their aid to when their fellow farmers are absent. It is thought that these programs increase awareness of crime, facilitate communication between residents, and promote cooperation between residents and law enforcement; building a community less conducive to agricultural crime (Barclay et al., 2001; Farm Watch, 2020; Hollis & Hankhouse, 2019). With that said, the effectiveness of Farm Watch in preventing crime is thus far unknown. There are some communities that perceive it as being a success, but no formal evaluation has been conducted to assess that claim (Barclay, 2001; McCall & Homel, 2003).

Weisheit and Donnermeyer (2000) point out that implementing *Farm Watch* programs may be difficult in rural areas due to the desire of privacy by many farm owners. Barclay (2001) disagrees with that concern, finding that farmers viewed *Farm Watch* as a promising possibility. However, some farmers view non-farming neighbors as a security risk, posing a significant obstacle for the success of the programs (Barclay, 2001). For them to be successful there must be a high rate of participation (and consequently trust) within the community (McCall & Homel, 2003). Another obstacle for implementing this program is the isolation that most farmers experience (Harkness, 2017; McCall & Homel, 2003). The large size and spread out nature of farms can make it difficult for adequate observation to be maintained, though this may be less difficult in some communities with smaller tracts of land (Harkness, 2017).

Similar to *Farm Watch*, where the emphasis on crime prevention lies primarily with the farmers and the community (though depending on the model may still rely heavily on police assistance), Smith (2019) presents the concept of the “fortress farm” as another method of crime prevention. This approach is designed to shift the responsibility of crime deterrence from the

police to the farmers, creating a community that is less reliant on the police and less likely to be negatively impacted by the challenges restricting the success of rural officers. Five main steps are presented for farmers to create a “fortress farm.” The first and second steps involve evaluating the farm for any security weaknesses and working to improve upon those that are found. The third step involves joining others in crime prevention programs, such as *Farm Watch*. The next step is to determine if technology could be of use in securing the farm and working to obtain it if financially possible. The final step is to build or tear down buildings strategically, as well as to add additional doors or fences that might make the farm look more secure. This may be a lengthy process, depending on the current state of the farm and the number of changes that must be made (Smith, 2019). Though very recent and to date untested, this concept may be useful to farmers seeking to prevent agricultural crime.

The only strategy to date that has been assessed by researchers is the Agricultural Crime, Technology, Information, and Operations Network (ACTION) program. ACTION was implemented in California in the early 2000’s, but was not expanded beyond the State. This initiative was created through the Bureau of Justice Assistance to deter agricultural crime by changing the behavior of both farmers and law enforcement officers. In relation to farmers, the changes were mostly focused on “target hardening,” which was aimed at making it more difficult for farms to be victimized by increasing the risks for offenders (through additional security measures). Changes in the behavior of law-enforcement included increasing investigative efforts, utilization of resources such as surveillance equipment, and the sharing of technology and information between counties involved in the ACTION program (Fresno County Sheriff’s Office, 2019; Mears, Scott, Bhati, Roman, et al., 2007). Taken as a whole, these changes were found to be successful. There was a rise in the number of arrests and convictions for agriculture

crime, and participating agencies recovered over \$6 million in stolen items in a single year (Mears, Scott, Bhati, Roman, et al., 2007).

ACTION is not the only program California has attempted to combat agriculture crimes. In 1981 the State formed the California Rural Crime Prevention Task Force (CRCPTF), which is dedicated to improving law enforcement responses to agriculture crime in rural communities (CRPTF, 2014). The task force utilizes principles emphasized by ACTION (such as resource and information sharing among counties and agencies) and educates officers and citizens on crime prevention techniques (FCSO, 2019). Among other training resources, the task force offers a 40-hour “Rural Crime School” for its members, as well as for residents who wish to be involved. This training covers crime prevention techniques, and also hones the skills necessary for investigating and managing agricultural crimes. Notably, the prevention aspect of the CRCPTF is one of, if not the, main priorities of the task force, and is implemented by forging strong relationships with members of the community (CRCPTF, 2014). Another tool utilized by the CRCPTF is the *Owner Applied Number* (OAN) crime prevention program, in which farmers are assigned unique ten-digit numbers to mark their property. If the property is stolen and recovered, it can be traced to the owner and returned (CRCPTF, 2014; Mears, Scott, Bhati, Roman, et al., 2007).

Agricultural Crime Units

As previously discussed, California is one of 11 states which have specialized units dedicated to agriculture crime (refer to Table 1). There are also additional states that do not have formal agricultural crime units but do employ investigators that specialize in agricultural crimes (such as Kentucky). While the effectiveness of such units has not been evaluated in detail, it is important to note that the concept of having police units specialize in agricultural crimes has

been discussed in the literature. Dunkelberger and colleagues (1992) proposed specialized agencies as a solution to agricultural crime when discussing many of the problems faced by farmers in their sample. They claimed that such units could better understand the relationship between farmers and law enforcement, creating an environment more conducive to resolving agriculture crime. Barclay and colleagues (2001) noted that a majority of farmers also thought that police should have specialized training in agricultural crimes. As discussed earlier in the chapter, some farmers will not report crimes because they do not think police have the knowledge necessary to be effective (Barclay, 2001; Barclay & Donnermeyer, 2001; Dunkelberger et al., 1992; Harkness, 2017). These ideas would suggest that specialized agricultural units would be well-received in spite of the lack of research to date.

As specified on their webpages, most agricultural units have a similar statement of purpose; facilitating the exchange of information to better prevent and respond to agricultural crimes.² However, the nature of the industry in different states can alter the emphasis of their investigations. For example, part of the responsibilities of the county-level agricultural crime units in Florida involves conservation patrols and managing the licenses of citrus haulers (Lee County Sheriff's Office, 2019). This is to be expected when considering the nature of the farming industry within the State. In contrast, the units located in livestock-oriented states, including Texas, Louisiana, and Kansas, focus almost exclusively on livestock theft (Kansas Department of Agriculture, 2016; Department of Agriculture & Forestry; Louisiana 2013; TSCRA, 2020). Agricultural units in other states, including Tennessee and Oklahoma, put an emphasis on arson; though they investigate many other crime types as well (TACU, n.d.; ODAFF, n.d.). Even with the aforementioned differences, most of the agricultural units (except

² CRCPTF, 2014; FACIU; n.d.; MALTB, 2019; MSHP, n.d.; NDA; 2019; ODAFF, n.d.; TACU; n.d.

for the livestock-only units) have a similar definition of what crimes fall under their jurisdictions. Crop theft, livestock theft, equipment theft, and property crimes appear to be most common.³

State-level units have also attempted to share information via the creation of regional organizations, with one example being the Southern States Livestock and Rural Enforcement Association (SSLREA). The main mission of the SSLREA is to provide its members with education about investigative practices related to agricultural crimes (SSLREA, n.d.). The SSLREA hosts an annual 20-hour training course in which participants are educated about various subjects and techniques related to crime in rural areas, preparing them to more effectively combat it. The SSLREA additionally facilitates communication between various agencies to better utilize resources and information (SSLREA, n.d.).

Purpose of the Current Study

The work of specialized agricultural units has not been the focus of any in-depth studies to date. As such, there are many unknown aspects about the operations of these investigators and their perceptions of agricultural crime. This study seeks to fill this knowledge gap by exploring five broad research questions (see Table 2 for a summary). The first relates to the origin of investigations. It is necessary to understand how agricultural investigators become aware of crime incidents. This process may differ by agency, but it is largely unknown (from a research perspective) whether reports come directly from farmers or are made through referrals from another policing agency (e.g., sheriff's offices). If the latter, it is useful to determine the criteria that must be met (e.g., monetary considerations) in order for them to investigate a particular case. This first research question also encompasses how seriously other agencies seem to treat

³ CRCPTF, 2014; FACIU; n.d.; MALTB, 2019; MSHP, n.d.; NDA; 2019; ODAFF, n.d; TACU; n.d.

agricultural crime, as perceived by agricultural investigators. Recall that rural agencies oftentimes prioritize calls (Birge & Pollock, 1989). As such, agricultural offending may be viewed as less serious than other problems within the community by the departments that officers regularly work with.

Table 2

Research Questions

R1: How are investigations initiated?

R1_a: How are agricultural investigators made aware of agricultural crimes?

R1_b: What criteria must a crime meet in order for it to be referred to agricultural investigators?

R1_c: Do other agencies seem to think agricultural crime is serious (in comparison to other types of offending)?

R2: How do agricultural investigators go about performing their jobs?

R2_a: How are most cases solved?

R2_b: What percentage of cases result in an arrest (and recovery of stolen items if applicable)?

R2_c: Do clearance rates differ by the type of crime?

R2_d: How important is it to have the cooperation of farmers, and are they generally helpful?

R2_e: Do other agencies provide adequate assistance?

R3: How do agricultural investigators perceive agricultural crime?

R3_a: How prevalent do investigators believe agricultural crime is?

R3_b: What types of offenses are most common and does it seem to change with time?

R3_c: Have investigators noticed any commonalities among offenders?

R3_d: What have investigators found offenders' motivations to be?

(continued)

Table 2 (continued)

R3_e : Are offenders strategic in committing agricultural crimes?

R4: What factors do agricultural investigators perceive to be most important in explaining agriculture crime?

R4_a : Do characteristics of the farm play a role?

R4_b : Do farmers take enough security measures to limit their potential for victimization?

R4_c : What additional factors can play a role in farm victimization?

Research question two addresses the next chronological step in the process: the investigation. It explores the steps investigators take to solve agricultural crimes, how often they are successful in their endeavors (in terms of arrest rate and recovery rate), and what factors can serve to impact their success rate (such as the cooperation of farmers and other agencies). This question also explores whether there are differences between categories of crimes. For example, are some crime types associated with higher clearance and recovery rates?

Research questions three and four move away from a focus on the investigatory process and instead gauge officer perceptions of the problem of agricultural crime. Research question three specifically explores how agricultural investigators perceive the overall prevalence of offending, its most concerning forms, and any commonalities that they notice among offenders (such as whether they appear to be strategic in planning their crimes and whether they seem to work within an organized group). Research question four addresses perceptions regarding farmer victimization. As discussed in the first chapter, the role of farm characteristics in conditioning victimization risk has received some attention (Barclay & Donnermeyer, 2001; Barclay &

Donnermeyer 2011; Barclay et al., 2001; Mears, Scott and Bhati, 2007b; Mears, Scott, Bhati, Roman, et al., 2007), but it has not been considered from the perspective of agricultural investigators. Assessing officer perceptions may allow for additional understanding regarding the impacts of characteristics such as size, proximity to towns and roadways, and guardianship measures.

Importantly, this question is not limited to farm characteristics. Other factors such as community characteristics will be considered as well. Only one study to date has explored this possibility, with results indicating that structural factors (such as poverty and residential mobility) may play a role in victimization risk (Osborne, 2015). Though the current approach will not take a standardized approach in testing these factors, the opinions of officers may serve to bolster these findings and/or introduce new characteristics that may be worthy of considering in future projects.

Chapter Summary

This chapter described some of the advantages and challenges for police officers who operate in rural areas. In addition, it covered issues unique to farming communities and various attempts to address problems through the creation of specialized agricultural investigation units and other prevention programs. However, the voices of law enforcement officers are largely absent from the research literature. A few international studies have investigated the perceptions of rural police (Harkness, 2017; Jobes, 2002; Mawby, 2003; Winfree & Taylor, 2004), but only one did so in the context of addressing agricultural crimes (Harkness, 2017). This leaves a considerable gap in the literature—particularly within the United States—relating to how law enforcement officers approach agricultural investigations and the additional factors that may influence their response. The research questions presented in this chapter were created to explore

these neglected topics in order to offer a better understanding of agricultural crime and those tasked with confronting it. The next chapter will discuss how data were gathered through a qualitative interview approach.

Chapter 3. Methodology

Chapter two reviewed the available literature on rural policing and the operations of agricultural crime units. It was established that there is little known about the operations of rural law-enforcement in general, and that this is especially true for agricultural crime units. The current chapter describes how this study addresses this lack of knowledge by exploring how agricultural investigators become aware of incidents, how they go about carrying out their duties, and how they perceive various aspects of the problem. The sampling technique and methodological approach will be addressed. In addition, the research questions introduced in the previous chapter will be covered in additional detail. Finally, the chapter includes a discussion of how the data were analyzed in order to answer the research questions.

This study is based upon primary data collected through interviews with 11 agricultural crime investigators. These individuals were selected using a snowball sampling technique, through which initial participants were asked to refer the interviewer to others who would be willing to participate (Babbie, 2018). The initial interviewees were gained via pre-existing relationships between officers employed by one state-level agricultural crime unit and a faculty member at East Tennessee State University. Because agricultural investigators regularly interact with one another through conferences and the sharing of information, securing additional participants through professional connections was pursued. The interviews were collected with officers employed by a range of agencies at the state-level located throughout the United States.

The interviews were conducted via telephone due to the widely-dispersed nature of the population. Interviews were recorded for all the participants, as all consented to this. The responses to the interview questions were transcribed and provided with unique identifiers in

order to ensure participant confidentiality. The audio files were immediately deleted following transcription.

Interview Guide

A series of open-ended questions based on the research questions introduced in the previous chapter were created to form the interview guide (see Appendix 1 for the complete document). However, the first set of questions related to the demographic characteristics of participants. This allowed for an understanding of the sample makeup and provided insight into the impact of personal characteristics on perceptions and tactics (associated with the job). Six demographic questions were included: (1) *gender*, (2) *age*, (3) *level of education*, (4) *years of experience*, (5) *employment background* and (6) *geographic origin*. The participants were not asked about *gender* directly—rather it was inferred from the conversations and categorized as either male or female. *Age* was measured continuously, with officers asked to provide their age at the time the interview was conducted. *Level of education* was asked as an open-ended question, but for purposes of description and analysis it was categorized into six groups: (1) completed high school/GED, (2) some college education (but no degree), (3) completed associates or technical degree, (4) completed undergraduate degree, (5) some graduate education (but no degree), and (6) completed graduate degree.

Years of experience as an agricultural investigator was measured continuously (framing the question as open-ended), and queried how long officers had been employed within the field. The question regarding *employment background* was open-ended as well, allowing for a wide variety of responses. Officers were asked to discuss their previous occupations to gain a better understanding of common backgrounds (e.g., prior policing experience, military service). Lastly, two dichotomous questions were used to determine the *geographic origin* of investigators. The

first explored whether they were raised in a rural area (0=no; 1=yes), whereas the second asked if they grew up on any type of farming operation (0=no; 1=yes).

Research Question #1

The second set of questions (corresponding to Research Question #1) explored how investigations are initiated. To fully understand this process, the question was broken down into three sub-questions exploring separate components of it. The first interview question (corresponding to R1_a) was, *how do you typically find out about agricultural crime incidents?* It is unclear whether most investigations begin as referrals from police departments or as a result of direct contact by farmers. It is possible that some farmers may not be aware of the existence of agricultural crimes units, and first contact their local agency to file a report. Alternatively, those who are aware may seek to contact investigators directly. Previous research has demonstrated that farmers lack confidence in the abilities of police officers to respond to agricultural crimes, but would have more faith in police officers with special knowledge about such crimes (Barclay, 2001; Dunkelberger et al., 1992). Therefore, farmers may be more inclined to contact agricultural investigators about crimes if they know of their existence.

The second interview question in this set (corresponding to R1_b) explored whether *law enforcement agencies refer every crime relating to agriculture to investigators or handle some of the cases on their own*. This was followed up by querying the factors that determine *how they make the decision*. It is unknown whether there are criteria determining which cases are handled by local police departments and which ones are referred to agricultural units. It is thought that some police departments may handle a portion of agricultural cases (i.e., specific forms), while others may prefer to refer all such cases to the agricultural units. It is also possible that loss

thresholds exists, with agricultural units becoming involved only if financial losses are above some predetermined amount.

The last question in this set (corresponding to R1_c) was *do you think that police agencies take agricultural crime seriously or do they seem more focused on other crime issues (and if so, why)?* As discussed within the literature review, rural agencies oftentimes prioritize calls for service (Birge & Pollock, 1989). A substantial amount of time can elapse between the occurrence of a crime and farmers becoming aware of it, which can be a hindrance to investigations (Barclay, 2001). This can potentially make these crimes seem less urgent to law enforcement, lowering their perceived priority. Barclay (2001) also notes that police officers perceive farmers as being uncooperative as a community, which could make them less inclined to devote time and resources to agricultural crime when there are other cases requiring their attention. Because agricultural investigators regularly work with both officers and farmers, their insight is highly beneficial in exploring these questions.

Research Question #2

The third series of questions (corresponding to Research Question #2) investigated how agricultural investigators perform their jobs. This question was relatively broad, and as such was broken into five sub-questions to ensure that all aspects were sufficiently explored. The first question in this series (corresponding to R2_a) asked the following: *How are most cases solved?* There is some literature explaining how rural police departments interact with the community and how they use available social networks to solve crimes (Berg & DeLisi, 2005; Falcone et al., 2002; Liderbach & Frank, 2006). However, it was unclear how applicable this is to agricultural crime investigations. It was thought possible that investigators rely on networks of contacts in order to complete their investigations, but other techniques may be equally important. As such,

this question was followed by one asking officers to indicate *what type of evidence they find most useful*.

The next question in the series (corresponding to R2_b) was, *what percentage of cases result in an arrest?* To date, no studies have explored clearance rates related to agricultural crime (Osborne et al., 2019). Developing an understanding of investigator effectiveness is not possible without this information. As a result, no concrete suggestions related to the improvement of policies and investigatory practices could be offered. Because of this gap in the literature, it was also important to determine whether *arrest rates differ by type of offense*. Research has shown that some forms of agricultural victimization are more common than others (Cleland, 1990; Deeds et al., 1992; Dunkelberger et al., 1992), but no information was available in relation to whether arrest rates differ by form.

Officers were then asked about the *recovery rate for stolen items* associated with theft incidents and whether rates *differ by the type of property*. It has been suggested that rural areas have higher clearance rates than urban areas (Weisheit et al., 2006). However, past studies have found the opposite to be true for agricultural crimes (Barclay, 2001; Mears, Scott, Bhati, Roman, et al., 2007). Because the samples utilized in these studies are relatively limited (in terms of both size and geography), the perceptions of investigators provided information of value. Agricultural offending is a broad term inclusive of several forms (e.g. vandalism, theft, illegal dumping) and the types of property stolen can widely vary (e.g., fertilizer, heavy equipment, livestock, tools). By interviewing officers located throughout the country, potential differences relating to clearance rates were explored.

Next, officers were asked: *How important is it to have the cooperation of farmers? Are they generally helpful* (R2_d)? The literature suggests that residents of rural areas – farmers in

particular— can be uncooperative with law enforcement (Barclay, 2001). Usually, this is manifested in high rates of underreporting and secrecy (Barclay, 2001; Harkness, 2017; Weisheit et al., 1994). One common complaint among farmers who do not report crimes is that they believe the police lack an understanding of their business and would therefore be unable to provide meaningful assistance (Barclay, 2001; Dunkelberger et al., 1992). In support of this, research has found that farmers would be in favor of having law enforcement officers with specialized training in the agricultural field (Barclay, 2001; Barclay & Donnermeyer, 2001; Dunkelberger et al., 1992). Logically, it would follow that the existence of agricultural crime units would increase farmer cooperation and encourage them to aid investigators. The validity of this assumption was revealed through responses to the above questions.

To close out this series, participants were asked the following: *What level of cooperation do you have with other police agencies when responding to agricultural crime (R2_e)?* As mentioned previously, how police agencies view agricultural crime and specialized investigations units has not been investigated to date. Programs promoting the sharing of information among agricultural crime units and other law-enforcement agencies have been established by organizations such as ACTION and the SSLREA. However, how willingly agencies participate in them was somewhat of a mystery, as was their effectiveness. Additionally, the degree to which agricultural units and police agencies cooperate with each other outside of such programs was thus far unknown. This question provided exploratory insight into these processes and relationships.

Research Question #3

The fourth sequence of questions (corresponding to Research Question #3) explored how agricultural investigators perceived agricultural crime. Some studies have assessed the

perceptions of farmers, seeking their input regarding prevalence and seriousness (Barclay 2001; Barclay et al., 2001; Dunkelberger et al., 1992). However, little has been written regarding how agricultural investigators view these topics. Five sub-questions were utilized to help fill this knowledge gap. The first question in this sequence (corresponding to R3_a) was, *how prevalent do you think agricultural crime is within your jurisdiction?* Findings were compared to past attempts to estimate prevalence based upon surveys of farmers (which typically feature low response rates and thus validity concerns) and through the use of official datasets, such as NIBRS (see Osborne et al., 2019).

The next question (corresponding to R3_b) was, *what types of offenses are most common?* As discussed previously, agriculture crime is an umbrella term inclusive of a wide range of offenses. It was considered likely that some are more prevalent than others and that prevalence will be dependent upon geographic location and the opportunity structure within a particular area. It was also thought possible that the most common forms of offending have changed over time. For example, past research suggests that the most accurate predictor of the rate of livestock theft are market prices associated with the meat industry (Barclay, 2001). To date, very few other potential trends and correlates have been explored. As such, it was important to ask officers whether they *have seen any changes over time, and if so, why they believe them to occur?*

The next three questions (corresponding to R3_c, R3_d, and R3_e) related to the investigator's perceptions of agricultural offenders. The question corresponding to R3_c asked whether *offenders seem to share similar characteristics*. Only one study has investigated the characteristics of agricultural offenders to date (Osborne et al., 2019), and it was largely exploratory in nature, focusing on variables such as age, gender and race. More exhaustive querying was impossible due to the secondary nature of the data. The current study was not

restricted by those limitations and presented the opportunity to explore a wide range of characteristics.

The next two questions (corresponding to R3_d and R3_e) asked officers whether they *perceive the motivations of offenders to be similar and think that criminals plan ahead (or does it seem like they just take advantage of opportunities)?* A small body of research suggests that offenders who target agricultural areas do so because of the opportunities they present (Mears, Scott & Bhati, 2007b; Mears, Scott, Bhati, Roman, et al., 2007). However, one international study speculated that such offenders planned their crimes carefully (Barclay et al., 2001). Overall, though, the lack of inquiry into the subject prevents a thorough understanding to this point and warrants an additional attempt to discern offender mindsets and motivations.

Research Question #4

The final set of questions addressed the factors that agricultural investigators perceive to be most important in explaining agricultural crime. The first question in this set (corresponding to R4_a) asked the following: *Do you think that farm characteristics play a role in likelihood of victimization?* For those who answered yes, a follow-up question was asked regarding *the characteristics they perceive to be most impactful*. As discussed in the literature review, there are several farm characteristics (such as size, terrain, and location) that have been investigated as potential predictors of victimization (Barclay & Donnermeyer, 2001; Barclay & Donnermeyer 2011; Barcaly et al., 2001; Bunei et al., 2014; Dunkelberger et al., 1992; Mears Scott & Bhati, 2007b; McIntyre et al., 2017). The research to date has assessed these predictors through surveys of farmers, who have responded with information about the layout and characteristics of their farms (Barclay & Donnermeyer, 2011; Dunkelberger, 1992; McIntyre et al., 2017). There are certain limitations associated with surveys (such as limited response options), as well as potential

inconsistencies that can arise when people are asked to respond to subjective questions (Tewksbury, 2009). Interviewing agricultural investigators in an open-ended manner presented the potential for a more detailed understanding (than would be possible through surveys). Further, gaining the perspective of investigators who have responded to numerous crimes reduced the potential for subjectivity to influence the results. This also allowed for additional farm characteristics of importance to be discussed that were not captured in previous research.

The next set of questions (corresponding to R4_b) queried the following: *Do you believe that farmers take enough security measures to protect themselves? Which security measures do farmers seem to rely on the most? Which security measures do you think are the most important? Why?* Generally speaking, past research has revealed that security measures tend to have little impact (Barclay & Donnermeyer, 2001; Barclay et al., 2001). However, and as discussed in the previous chapter, it is possible that these analyses are biased by the fact that security measures are typically put into place following a victimization. The perceptions of investigators were able to offer insight into whether they do offer some benefit to farmers (an insight that quantitative assessments lacking a longitudinal design cannot provide).

The final question (corresponding to R4_c) asked, *outside of security measures and farm characteristics, what other things do you think influence risk of victimization?* It has been suggested that community characteristic can influence victimization rates at the county level (Osborne, 2015), though only one study to date has explored this possibility. By seeking the opinions of investigators regularly operating in farming communities, insights into the roles of such characteristics and the behavioral patterns of farmers were gained.

Qualitative Analysis

Interviews were conducted in a semi-structured format, with participants being provided prompts (i.e., questions) and allowed to freely respond to them. Follow-up questions (not listed within the interview guide) were asked based upon the responses in order to allow for greater insight into the various topics. The obtained data were analyzed via content analysis of the transcribed interviews. Each transcript was reviewed multiple times by the researcher, allowing for identification of relevant themes. These responses were then grouped by theme, providing the opportunity to explore commonalities as a means of addressing each research question.

Chapter Summary

This chapter described the methodology that was used to answer the four research questions introduced in the previous chapter. As discussed, these questions sought to assess the function and operations of agricultural investigators, as well as their perceptions of the problem. Data were gathered through a semi-structured interview approach, with participants being located through a snowball sampling strategy. Interviews were coded for themes in order to determine commonalities among officers and the units that employed them.

Chapter 4. Results

The purpose of the current study was to explore the operations and perceptions of agricultural crime investigators through qualitative interviews with investigators located in several states. The first two chapters discussed the problem of agricultural crime and the results of previous attempts to understand it, while the third chapter explained the methodology and purpose of the current work. This chapter will present a summary of the results gathered from the interviews. Qualitative analysis of these interviews was conducted to answer the research questions first presented in the second chapter, and reiterated in the following table for reference (Table 3). Results are discussed in relation to each of the research questions in the sections that follow.

Table 3

Research Questions

R1: How are investigations initiated?

R1_a: How are agricultural investigators made aware of agricultural crimes?

R1_b: What criteria must a crime meet in order for it to be referred to agricultural investigators?

R1_c: Do other agencies seem to think agricultural crime is serious (in comparison to other types of offending)?

R2: How do agricultural investigators go about performing their jobs?

R2_a: How are most cases solved?

R2_b: What percentage of cases result in an arrest (and recovery of stolen items if applicable)?

R2_c: Do clearance rates differ by the type of crime?

R2_d: How important is it to have the cooperation of farmers, and are they generally helpful?

R2_e: Do other agencies provide adequate assistance? (continued)

Table 3 (continued)

R3: How do agricultural investigators perceive agricultural crime?

R3_a : How prevalent do investigators believe agricultural crime is?

R3_b : What types of offenses are most common and does it seem to change with time?

R3_c : Have investigators noticed any commonalities among offenders?

R3_d : What have investigators found offenders' motivations to be?

R3_e : Are offenders strategic in committing agricultural crimes?

R4: What factors do agricultural investigators perceive to be most important in explaining agriculture crime?

R4_a : Do characteristics of the farm play a role?

R4_b : Do farmers take enough security measures to limit their potential for victimization?

R4_c : What additional factors can play a role in farm victimization?

Demographics of Participants

The first set of questions was designed to determine the makeup and characteristics of the sample. As laid out in Chapter 3, the demographics explored were (1) *gender*, (2) *age*, (3) *level of education*, (4) *years of experience*, (5) *employment background*, and (6) *geographic origin*.

The sample was predominantly male, with the average age of the participants being approximately 47 years. The educational background of the participants varied, with the most common category (N=5) being those with some college education, but not a completed degree.

Two of the participants reported completing a technical or associates degree, and an equal number reported having some education at the graduate level. One participant reported

completing their undergraduate degree, while the final participant stated that they had completed high school.

Five of the participants reported having more than 15 years' experience investigating agricultural crimes, with four indicating that they had worked in the field for three-to-eight years and two reporting that they had recently been hired (a year of experience or less). However, each of the participants featured an extensive background in the law enforcement field prior to becoming an agricultural investigator. Nine of investigators were previously a sheriff's deputy or municipal police officer. Other common assignments prior to becoming an agricultural investigator (often in addition to other positions) included working as forestry officers or military police officers. Combining their tenure as agricultural investigators with other related involvement, most participants featured over 20 years' experience in the criminal justice field, with some having over 30 years' experience.

Interestingly, all investigators discussed growing up in a rural community, and six grew up on farms. However, even those who did not grow up on farms (with one exception) had experience in agriculture, either by assisting family members or other farmers in the community. For example, Bruce explained "...no, I didn't grow up on a farm per say...I didn't grow up with cattle as a young boy, but my family...either had cattle of their own, they had farms of their own, [or] they were in timber business...so uh agriculture was my life." This was also demonstrated by Scott, saying that where he grew up, "...it's one of those communities and areas to where everybody knows everybody...you just go everywhere and help work cattle."

Initiation of Investigations

Research Question #1 sought to understand how investigations of agricultural crimes are typically initiated. This included exploring what methods are used to make the agricultural investigator aware of crimes, what crimes fell under their jurisdiction, and the manner in which other law enforcement agencies perceived agricultural crimes. Unsurprisingly, the investigators reported that there were two main methods by which they were informed about incidents: (1) directly from farmers and (2) through referrals from other agencies, such as municipal departments, sheriff's offices and brand inspectors. Several investigators mentioned that some farmers contacted them directly using their personal numbers (n=7). For example, Clint said "They more or less pass my number around and they'll call me directly, or uh I'll get a call from another law enforcement agency needing assistance or a complaint will come directly into our main office..." Diana explained that "...I get calls, like when you help somebody and they find out about you, whether it's an agency or whether it's a citizen...they tell a friend who tells a friend, and so word of mouth is a big one."

Alternatively, some (n=4) of the investigators said that the predominant method was referrals from other law enforcement agencies. "...how I get involved in most of my investigations are referrals from other...agencies that are requesting assistance." He did note though, that "a select few times I'm contacted by the victim their selves." In fact, all the investigators noted that they had experienced both methods of notification to some extent, as discussed in the following quotation from Bruce "...it's probably about half and half...a lot of the times the victim will call me direct. Uh, but often you know the sheriff's department will call and say hey we had a cow theft or timber theft or something along those lines..." Clint gave a

similar estimate: “I’d say that’s probably mainly 40-45% of how I found out is through word of mouth. People call me.”

Notably, in Tennessee, there is one additional way by which farmers or citizens can directly report agricultural crimes—through a system known as farm TRACS that allows reports to be made online. It was mentioned by Clark that “...we get many everyday through that reporting system.” Farm TRACS can also be used as a notification system by law enforcement. Clark explained that: “...if we’re having a rash of say tractor thefts or cattle thefts, I can send the alert out to them to make sure they’re keeping their eyes [open], if anything is moving that, it doesn’t look right, or to keep a better watch on their livestock.”

According to interviewees, the role of law enforcement agencies was not limited to simply notifying agricultural investigators of reports of agricultural crime. It was generally accepted that other law enforcement agencies (namely county sheriff’s offices) did handle some agricultural cases on their own. For example, Clark said “...all of them [county sheriff’s offices] do take care of a...few [agriculture] crimes.” When asked *how* other law enforcement agencies made the decision to refer crimes to the agricultural crime investigators, there appeared to be two predominant themes; (1) it varied by county, and (2) it depended on the complexity of the case. In support of the first theme, Matt explained “it goes by county to county...if it’s something small they’ll usually sometimes take it themselves, or some of them just forward everything on to us, so it’s just a mixture.” Steve gave a similar response, saying:

“...it’s just a county by county basis...there are some sheriff’s offices that really prefer to do everything on their own and they don’t want an outside agency coming in to help them, and then there are others that...we would call pawn it off as quick as they can cuz

they don't wanna work it, and then there are others that want to work it with you and want to learn something...it all depends on how that sheriff's office is ran more or less."

In support of the second theme, Bruce said "...where it's a cut and dry case, they [the sheriff's office] take care of it for sure." Peter stated "...some of the more complex investigations they'll ask me to look into or assist them with." Clark agreed with this notion, saying "... if something major is going on many of them do contact us and get us involved in the investigation." It is important to note, though, that while these were the two major categories of responses there were other variables mentioned that could dictate whether police departments handled agricultural crimes, with workload of the department being the most common.

The heavy workload that sheriff's offices must contend with was also cited as a factor in how local agencies viewed agricultural crimes. Generally speaking, the interviewees thought that the large amount of crimes the sheriff's office must address led them to be focused on more common and/or pressing issues than agricultural crimes. For example, Tony explained "a lot of times they have, they are inundated with so many other cases like your meth cases, your alcohol cases, your rapes...so these agriculture crimes come in and they're like we just don't really have time to get to these..." Clark also agreed that "anyone working the county as a detective or investigator or just patrol, they're just overwhelmed. There are just so many cases they deal with each and every day..."

Another explanation given (though not necessarily a mutually exclusive one) for the focus on other crimes was that traditional policing agencies were simply not very knowledgeable about agricultural crimes: "...there are deputies throughout the state that are passionate about ag, but they don't have the knowledge of the livestock laws to back it up" (Scott). It was also mentioned that this lack of knowledge may make it difficult for local police agencies to be

invested in agricultural crimes: "...it's kind of hard to be passionate about something like that [agricultural crime] and it's no fault of theirs, they just don't know." (Clint). However, it is important to note that many (n=7) of the interviewees stressed that any oversight of agricultural crimes was not the fault of the law enforcement agencies and was rather the result of a large and pressing workload.

Operations of Agricultural Investigators

As demonstrated thus far, the investigators frequently pointed to the uniqueness of each individual case when discussing their approach and what was required to reach a successful resolution. This dependence on the individual case also extended to the discussion about clearance rates. For example, Tony said "...it's hard to give you a definitive number [of arrests] because it really depends on the case..." This made developing a full understanding somewhat difficult, but some themes did emerge. Some of the investigators, for instance, mentioned that cases where the identity of the suspect was already known, such as agricultural fraud (including inspection), animal welfare/cruelty cases, and misuse of pesticides were generally the easiest to solve/prosecute. However, other cases were labeled as consistently difficult to solve and/or prosecute. Arson was one example, as explained by Tony:

"...a lot of times on our wildland arson cases...those don't get solved a lot typically because they're generally on the backside of nowhere. There's no one around to witness it, no cameras, there's no nothing. While you may have some physical evidence left at the scene to tell you where the point of origin where the fire started is, without a witness those cases are very hard to prove even if you do have a suspect."

Timber theft and illegal dumping were also labeled as difficult cases. “Your hardest ones are your arsonists and your timber theft...or...illegal dumping. That’s a really big thing we have trouble with.” (Diana). One unique response came from Clint, an investigator from Kentucky, who mentioned that ginseng theft was a “difficult one to prosecute.” When asked why this was, he answered “because it’s such a black market world, the ginseng is, it’s hard to narrow down where the person sold it.” However, much of the success of solving a case still depended on the unique nature of each crime, rather than the type of crime, as illustrated by Peter: “No, I wouldn’t say that any type of case is easier than others.”

In spite of the variance in outcomes due to factors associated with cases and crime types, some investigators did give estimates of the percentage that ended in arrests. These varied from 20%-80%, though estimates for the recovery of stolen property were somewhat lower (roughly 10%). Considering that theft of property was viewed as one of the most difficult to solve by most investigators, such a finding is not overly surprising. This difficulty extended to both equipment theft and cattle theft, though a few investigators did state that cattle theft was more difficult to work. Bruce explained:

“I would say...as far as tractors go there’s probably a little higher rate of recovery there because they do normally stay...probably within the state, or certainly within a few counties over. A lot of people say that stolen tractors go to Mexico, and they do, some do, that’s true, but as the majority it’s been my experience that most of the stolen tractors and things like that are fairly close...Cattle are more easily moved and more easily hid...”

Another obstacle in cattle recovery was pointed out by Steve: “...it’s really difficult to recover cattle, and that’s because they can almost hide in plain sight. I mean a black cow is a black cow if it’s not branded.” However, this is not to say that equipment theft is not without its

challenges. For example, Peter pointed out “a lot of the times whenever they’re stealing a piece of equipment out of the farm, off the farm or out of the field of the farmer, there’s absolutely no evidence...they just get in the tractor and drive off.”

One common element was noted as being crucial to recovery of both stolen equipment and cattle—time. Oliver noted that “...time is the key, because a piece of property, you know somebody’s going to get spooked and want to get rid of it, they’re going to chop it or you know try to destroy it more or put it in a location, and it’s just going to sit.” Bruce said something similar in relation to cattle:

“If somebody calls me today and says somebody took my cattle last night...there is a good chance that I might recover those...you have to understand, that cattle that is bought or stolen today can be in Nebraska or South Dakota tomorrow...so you’ve gotta get on cattle very quickly if you’re actually gonna make that recovery for the most part.”

One additional issue that emerged from the interviews was deciding whether to recover stolen property or not. The recovery of equipment seemed fairly standard, however two of the investigators mentioned that depending on the circumstance (namely, the passing of time and if they have been resold), they sometimes hesitated to recover cattle. Scott explained that in his unit:

“we will not, depending on the timeline, if it’s been very long at all that somebody else has had those animals that have been stolen, we will not seize them. Um, because we end up creating two victims at that point...So if they’re not recovered in a short amount of time, then our policy is not to seize those animals.”

Of course, this dilemma arises only if the cattle have been sold. Additionally, though it is not part of his unit's official policy, Bruce mentioned that he would sometimes discuss seeking restitution/prosecution in lieu of recovery of the cattle with the original owner. Although, he did say "...if I'm right behind them [the thieves] then I do go ahead try to recover them [cattle]."

In the process of investigating these cases, there was not one prevailing factor which seemed to predict successfully solving a case. Different investigators noted the importance of different factors. For example, Bruce explained the importance of having witnesses: "...in my opinion, the people who solve the crimes, for the most part, it's the witnesses." Alternatively, Tony noted the importance of evidence. "Well, agriculture crimes are no different than any other. You have to look at the evidence." Overall, though, most of the investigators agreed that there was not one singular factor they relied on, as evidenced by the following quote:

"...every case is uh different and unique...it just all depends on the case and how it is. Some are solved by physical evidence, uh some are solved by circumstantial evidence with witness statements, um, compiled looking at the totality of the case. Others are solved by confessions of the suspect or suspects." (Peter).

In addition to all the different variables previously discussed, there was one aspect of investigations that all of the participants agreed was important; the cooperation of farmers. Matt said "it's very important. It's probably one of the most important aspects of the job." Tony agreed that "without them, we don't have a case." However, there was not as much agreement on how *well* the farmers cooperated. As an example, Clint said "...you got a lot of people who are super cooperative...but you have a few that are really anti-government, uh, anti-police; it's their business it's nobody else's." Another investigator said "Some of them are, some of them don't want you anywhere around. It's about fifty-fifty." (Diana). However, most of them agreed that

the farmers were generally helpful. For example, Bruce said “Well normally you don’t have any problem with cooperation out of them...they understand that they’ve got somebody in their court.” This was echoed Peter, saying “I’ve never personally ran into one that’s been uncooperative. Most victims are 100% cooperative.”

The majority (n=8) of the investigators thought that farmers cooperated with them more willingly than they would regular police officers. Scott explained why he thought this was the case in some detail:

“There’s a rapport that’s there because of the bond in agriculture...we’re all ag based individuals ourselves...I have cows and horses and I’ve been around them my entire life. We’re all, we can speak their language, we understand what they’re saying. It makes them more willing to talk to us than a regular officer that doesn’t have a clue or care what they’re talking about.”

It was also common for the investigators who wore civilian clothes (rather than a standard uniform) to cite that as one of the reasons people were more cooperative. Oliver said “I really do think so because of the way we dress...we don’t have a uniform per say...we’re identified by our badge and our hats and our clothing. We dress like rangers.” Bruce expanded on this, saying:

“...when you’re talking about witnesses...I do think they communicate with us better...we’re wearing the hat, we got the boots and the jeans. And yea we got the badge and the gun on...they see us as authority but not as the guy that’s writing that ticket. Not that guy that’s enforcing the seat belt law. Not that guy that’s being inquisitive about other things...I think there’s a relationship there built in because they perceive us as

being a lot like them. So yes, I do believe that oftentimes, especially when you're talking to witnesses that are in agriculture, they relate better to us."

In addition to the cooperation investigators received from farmers, the amount of cooperation received from other law enforcement agencies was also explored through the interviews. Most responses fell into two categories; 1) very good cooperation, or 2) it varied by jurisdiction/county. The investigators whose responses fell into the first category explained that "...we always generally get, for the most part, pretty good cooperation from the sheriff's department." (Tony). Clark added "...they offer great help. Even if they give us the whole case and ask us to work the case, they're always there for us and they always have a detective there to help out with anything that we need." Clint echoed this, saying they received "100% cooperation."

While a few responses fell into the first category (n=4) the majority (n=6) fell into the second one. To explain this viewpoint, Steve said:

"They're all different...some of them [county sheriff's offices] want to learn and want to be next to you so that you can teach them how it needs to be done...some of them will just straight up call you and say I have this case and you'll never hear from them again and they expect you to take off and work it...but that's not always the case, I mean there are some sheriff's offices...they're very cooperative and willing to assist."

Similarly, Diana reported that "... there are some counties that love us and there are some counties that don't want our help because they took money and spent money to train a couple of their deputies..." However, Diana also explained that on most cases, especially those involving arrests, investigators would usually be accompanied by deputy sheriffs and gave several accounts

of good inter-agency cooperation. Bruce also provided an explanation as to why sheriff's offices were sometimes more hesitant to bring in the agricultural investigation unit: "...he [the sheriff] looks at that as I'm the elected official in this county, if there's something goin on in this county you bring it to me..." However, he did add that "...but as a whole...we get along well with our local law enforcement agencies." Put concisely, most of the investigators in this category agreed that while the level cooperation did depend upon the specific sheriff's office, overall, they had fairly good cooperation.

One other interesting relationship that emerged was that between the courts and the investigators. A few (n=3) of the investigators said that agricultural crimes were not always readily accepted by the courts. For example, Diana explained:

"I've had half a dozen cases in the last six months thrown out that were righteous cases, everything was done right, but the courts sometimes don't think animal cruelty or timber theft or arson and that kind of stuff, if there's not physical bodily harm, because these are non-violent type crimes when it comes to hurting people...they've got so many priorities that they feel is more important than that. Unless it's a real habitual case and the public gets upset about it. I've had a lot of cases thrown out when they get to court because it's a waste of the court's time they think."

Bruce also mentioned that agricultural crimes were not always a priority, but he also offered a way to improve the rate of agricultural crimes accepted.

"...understand this, he's [the D.A.] got lots of cases that comes across his desk. He's got murders and all kinds of stuff, so when you lay him an ag crime case and you say 'I'd

sure like to have this prosecuted,' the simpler and the most basic you can make that understandable, you're gonna get him on your side right off the bat..."

Steve also mentioned that it was important to have special training in agricultural crimes to "understand how to collect evidence and what documents to look for, how to handle and put together a special prosecution case to make it easier on the prosecutors." However, it is important to note that although these crimes were not considered violent in the traditional sense; instead, the investigators emphasized the seriousness of these crimes:

"...agricultural crimes are personal because there's a lot of blood sweat and tears...I'm not saying you didn't work hard to go earn the money to buy the Rolex, ok, that's not what I'm saying, but that Rolex doesn't love you back...it doesn't have a personality. Ag crime, you're dealing with the living. And people think 'oh well that's just corn' but it's alive, right? And what do you do with it? You watch it grow. You nurture it. You take care of it. You harvest it. You raise it...it's a different kind of personal, I guess I should say." (Diana)

"...I hate to it, but all across the country...there is a force at work to say that certain crimes are not really crimes, they don't hurt anybody. And I hate to say it but they're looking at property crime as the same thing; 'well it doesn't hurt anybody, it's not a violent crime so nobody got hurt, somebody stole these cows but it wasn't violent,' well that's bull...if you've got cattle standing out here in the pasture that you make your living off of and somebody goes and takes them, you've been violated. That's violent." (Bruce)

Perceptions of Agricultural Crime Investigators

The initial research questions focused largely on exploring the jobs of those interviewed and their investigations. Research Question #3 on the other hand, was designed more broadly and sought primarily to reveal the perceptions of agricultural crime investigators on agricultural crime as a whole. This included their perceptions on the prevalence of agricultural crime, the types of crimes frequently seen, and the characteristics, motivations and strategies of offenders. Several (n=6) of the investigators agreed that agricultural crime was prevalent within their jurisdictions: "...[it's] very prevalent. And it is a growing industry, to be quite honest with you." (Tony). Peter agreed, stating "I'd say if you're, if you're expanding the ag crime to include, you know, trailers, equipment, and going over to the construction side a little bit...I'd say it's very prevalent."

Others featured a different opinion. For example, Clint said "...you usually have your average, average call volume. But for the most part I mean it's not crazy." Bruce noted that "it's kind of swinging pendulum." Because of these two conflicting opinions, a singular answer was not established. However, when answering this question, many (n=5) of the investigators (regardless of how prevalent they thought the crimes were) noted the *importance* of the crimes. For example, Matt stated that "A lot of our areas here in TN are very rural...so it's very important." Two investigators (Scott and Steve) also pointed out that their perceptions of prevalence may not be accurate due to underreporting. Steve said "I can't necessarily say we have a lot of them because I think a lot of them go unreported. I don't think the victims report them and we do find that happens a lot..." Recall the issue of underreporting was explored in Chapter 2 and will be discussed in relation to the responses of the investigators in Chapter 5.

Of the various crimes that agricultural investigators handle, there were three that emerged as the most predominant: 1) arson, 2) theft, and 3) animal welfare. Not all of the investigators interviewed handled arson cases (forestry cases fell into the jurisdiction of some units, but not others), but of those who did it was cited as one of the most common. "...in my area, the most common [case] is wildfire..." (Bruce). Notably, the frequency of arson cases was influenced by the time of year. Tony said that "From October 15th to May 15th we do a lot of wildland arson fires. The rest of the year we don't do that simply because there's not that many fires." Frank agreed, "...fire season is from October to May, and during that time you're usually really busy."

All of the units handled theft of property (though a small minority of the investigators only handled one or two livestock thefts during their careers as agricultural investigators), with some citing it as the most common crime they investigated. Peter said "The most common type of offense I see is just equipment theft." Diana agreed, saying "...just basic theft. Theft of anything. People will steal anything." Interestingly, it was found that theft was also influenced by the time of year (particularly theft of cattle). For example, Bruce said "I see cattle taken in my area more in the late winter, early springtime." He then offered an explanation as to why this was the case: "One of the reasons for that is because the farmers are still feeding them a little bit...they'll come up to a feed bucket or whatever...the access to the cattle are easier." Clark gave another explanation as to why the rate of cattle theft may fluctuate, "If the cattle prices go up, cattle theft goes up greatly. When the cattle prices are down it does drop." However, he did note this is not exclusive to cattle theft, and that a similar trend could be found in relation to the prices of equipment.

It is unclear whether animal welfare, the third type of case commonly discussed, was handled by all of the agricultural units. These were not mentioned by investigators outside of

Tennessee and Kentucky; but it is was not specified whether that is because these crimes were not reported to the agricultural units, or because they were not very prevalent in those areas. Two of the investigators who did handle animal welfare cases estimated that they comprised about 20% of their workload. "...we have about 20 something percent is probably animal health related cases, animal welfare..." (Frank). Others, alternatively, saw it as their most common. For example, Matt mentioned that that "Animal welfare is probably the most common cases for me." Tony agreed, saying "The type of cases I'm working right now is livestock welfare.

It is worth noting that some (n=3) of the investigators explained that the types of crimes depended largely on the state or region that they were located in. For example, Steve suggested "...the Western part of the state is more of the, more of your ranching area and... [the agents] out there will primarily work a lot of cattle theft investigations...I probably get more, investigate property crime more than anything." Oliver pointed out a similar pattern "...There's more cattle down here [the Southeast part of the state] than there would be up there. So they don't have the cattle crime that we have down here...but I don't have the equipment that they do up there." This is hardly surprising, but it does provide some difficulty in making generalizations regarding the frequency of particular agricultural crimes.

In addition to the investigator's perceptions of the crimes themselves, their perceptions of the offenders were also discussed. Different investigators noted different characteristics that they thought that offenders shared, such as being predominantly young males (for arson), being uneducated about laws, or being unemployed; but these were not commonly recurring responses. With that said, there was one characteristic that was mentioned by many of the investigators; the offenders often had experience in agriculture. Clark said "I believe it's usually someone with some agricultural knowledge." To explain this, he added "...that herd of cattle out there is worth

thousands of dollars and a lot of people don't realize that. And they [the offenders] have that much knowledge to know what this is worth." Bruce answered this question very similarly. "Not everybody understands how to steal that cow and turn it into money." He later elaborated on this, saying:

"Not only that, they have to have the equipment to do it. They have to have a truck, they have to have a trailer. So ag related crime I'm gonna say, gosh, it's a very high percentage, it's in the high nineties that when you have an agriculture related crime that person has connection to agriculture."

It was further noted by some of the investigators that the offenders were often people with connections to the victimized farm or operation, including hired hands. "I don't mean disrespect to any of'em, but typically the people that are getting hired that I've seen in these rural communities are people that can't go get a job elsewhere...and eventually they wind up stealing from each other." Diana also pointed this out: "...most of our farm crime with equipment being stolen are usually inside jobs."

Aside from having a connection to agriculture, there was not much consistency found in relation to the characteristics of offenders. However, the motivations driving the offenders were much more apparent. The majority (n=6) of the investigators agreed that the crimes were committed to support a drug habit. "...they're addicted to drugs...in my opinion that is the number one motive." (Bruce). Two of the investigators estimated a percentage of cases where drugs were the motivating factor. Steve said: "...I would say, and I think all of our guys would agree with this, probably once we get in and work a crime and get to the bottom of it and interview the offender, I think we'll find probably 80% of those are related to methamphetamine." Oliver gave an even higher estimate, "I'm gonna say 90% of them is based

around dope, the drug trade.” Some investigators also said these crimes could be committed for a “quick dollar” (which did not necessarily have to be for drugs). For example, Scott said “money’s the biggest one [motivation]. Quick easy money.” However, this was not the motivation for all crimes, as some crimes did not have a financial component. For example, Tony indicated that revenge was as a motive behind arson: “Well as it relates to wildland arson, we have a lot of what I call revenge arsonists.” In relation to animal welfare cases, ignorance/financial inability to properly maintain the animals was cited by Matt:

“...I’m not stereotyping here, but most animal welfare type cases seems to be the people that do not really have any farm, I don’t know really how to explain it, maybe just you call farm sense...it seems to be more of that maybe mixed in with maybe not having the financial means...”

Interestingly, a motivation for crime in general was given by Clint, who said: “A lot of people are just, that’s just the way they’ve always done it. They’re not gonna change, and it’s just a lot of em think the good’ ol boy system works.” Though there are undoubtedly other motivations not mentioned in the interviews, this does provide a good understanding of the common motivations perceived by investigators and demonstrates how they can vary by crime type.

In addition to discussing *why* investigators thought the offenders committed agricultural crimes, the *how* was also explored. The general consensus among the interviewees was that there was a mixture of planned crimes and opportunistic crimes. For example, Frank said “Well, it’s a little bit of both.” However, there was some disagreement about how many crimes were planned as opposed to opportunistic. Diana thought it was “about fifty-fifty planned and opportunity,” whereas Matt said “Probably a little bit of both...it’s just more of a crime of opportunity. There’s probably a little planning into it but they’re pretty easily caught and discovered, so there’s

probably not a whole lot of planning involved in it.” There were some investigators, though, who thought that there was a propensity towards one or the other. For example, Clint thought “They just take advantage of opportunities.” Alternatively, Clark thought “They have a plan.” Examples of both methods of offending were given across the interviews though, ranging from offenders acting with no forethought to working at a plan for weeks.

Patterns of Victimization

The last research question explored what factors agricultural investigators thought could influence the likelihood of farm victimization. All but two of the investigators thought that farm characteristics played a role in some form, but which characteristics and how they influenced victimization varied. The characteristic that was cited as most influential was location, though context was viewed as being important. The most common context was the location of farms in relation to roadways, particularly when discussing theft. Frank said that “most of the time they [offenders] get a farm that’s not on a well-traveled road.” Others, however, found a different relationship. Peter noted that “...if you’re equipment’s parked within sight of a roadway, it’s gonna make it where it’s more likely to be stolen just because criminals will see it if they’re just passing through the area.” This is similar to what Oliver noted about cattle theft: “...one thing that I see the most...people will put, say, loading pens right next to the roadway because it’s convenient for them. And I always tell those ranchers that do that; if it’s convenient for you, it’s convenient for a thief.”

This particular problem of loading pens being near to the road was mentioned by many (n=7) the investigators as a key factor in target selection and was the most common response to this question. The influence of location was also discussed in relation to populated areas. However, this factor was only mentioned by a few (n=3) of the investigators, and each time was

noted to be only weakly associated (with farms being more remote making them more likely to be targeted). As an example, to clarify this Peter explained that “location is a big factor, but it’s not the all-inclusive factor by any means because the stolen equipment, stolen cattle, just vary so much...”

Unlike location, other characteristics were rarely mentioned as playing a role in victimization. Only two investigators (Scott and Oliver) thought that size of the farming operation played a role. Both agreed that larger operations were more likely to be targets because they were more difficult to properly manage. “I would say the larger it is, the harder it is for you to maintain as an individual.” (Oliver). Only Diana mentioned terrain as a factor; however, multiple investigators mentioned the importance of buildings. Oliver said it was important to keep equipment close to buildings or the residence, while several others noted it was important to keep equipment locked up in barns or sheds. Frank said “That’s a big deal, is giving them places, shops, and shed rows to secure and protect their equipment.” As with location, however, these were only discussed as playing a minor role in impacting whether a farm was victimized.

Along with farm characteristics, the security measures implemented by the farmers were also explored. Overall, the perceptions about these varied, but patterns did emerge. Some (n=5) of the investigators thought that at least a portion of the farmers did take adequate security measures. For example, Clint thought “They do...the majority...” and Clark said “It varies from farms. Some have great security measures set up...” However, others (n=6) thought the opposite was true. Bruce said “... no, they don't take enough precautions. They don't, they really don't.” Scott explained “...they still have that good neighbor mentality and they don't, they don't think about ways of protecting themselves like they should.” Interestingly, two of the investigators also had opposite opinions regarding the effectiveness of security measures. Clark said “I do

believe that [security measures] defers crime away from them...” whereas Peter found “It doesn’t matter how much you try, they’re still gonna get to you.” It was also noted by some of the investigators that farmers would often not implement security measure until either they were victimized, or they had a neighbor who was victimized. For example, Steve said “...it’s because their neighbors have been targeted or they’ve had something stolen. It’s like they had to have an awakening before you know, they’ll take the next step measure.”

For the farmers who did take security measures, it was most often in the form of locking up their property. This included locking gates with padlocks and/or locking their equipment in a shed. Peter noted that “For the most part they try to be diligent in locking their gates...” Tony similarly pointed out that “...most farmers have come to the realization that they have to lock their place up...” Having yard lights and cameras (surveillance cameras or game cameras) were also mentioned as common approaches. Scott found that “Yard lights are probably about the biggest security measure anybody does,” while Frank mentioned “The majority of ’em are now using a lot more field cameras.” However, these were mentioned only by a few investigators.

There were several different security measures that were perceived as being important; including locking gates and equipment, having cameras, keeping the farm well-lit, having security cameras, marking equipment with identification, and keeping accurate records of livestock (counting cattle at least weekly). Typically, investigators would name two or three of these as being critical, and some specifically discussed how it was important to have more than one security measure in place. For example, Matt said “...it’s important to take multiple security measures and not rely on one...”. Similarly, Bruce said “Well, you never want to rely on one particular security measure.” Surprisingly, the effectiveness of one security measure that was mentioned, the presence of neighbors, was contested. It was mentioned that for farm security,

“...nothing is better than a neighborhood watch...” (Steve). Diana also agreed that having good neighbors was helpful for security purposes. However, Bruce noted that though farmers did likely depend on their neighbors as a means of security, he found:

“...that doesn’t work. In my experience, in many cases the neighbor will see somebody on the property when cattle get stolen or the equipment but they, 9 times out of 10 they’ll just say ‘well I thought that they had somebody, they brought somebody in to move some cattle for them or something. I never though nothing about it. I just assumed that was them up there.’ That happens all the time.”

Outside of farm characteristics and security measures, there were three other notable factors that investigators thought could make farmers more likely targets. The first was having routines. Peter explained “If they are watching you and watching what you’re doing everyday...they can develop your pattern; when you’re there and when you’re not there, when you feed, when you don’t feed...they may be able to get there when you’re not around.” This was echoed by Steve: “They [offenders] can tell you what time he [the farmer] goes out here...to feed his cattle then he leaves. They know that after that they can get into the property. Scott mentioned that “...if victims could change their patterns up on maybe a daily, semi-daily, weekly basis, it keeps them guessing when the farmer’s gonna be around...”

While the issue of routines emerged as an individual factor, it could also be considered to fall under the broad term of “complacency,” which was the second aspect mentioned by some (n=3) investigators. Steve explained this, saying “...they just get really complacent and they don’t think anything’s gonna happen to’em...they leave property out or they plow a field or whatever and they leave their tractor and trailer there overnight or their Polaris ranger out there...that’s when stuff gets stolen.” Bruce gave a similar statement: “...complacency, you

know, not checking their cattle on a regular basis, not keepin their shop doors locked, not putting a gate on their driveway...complacency is the number one reason people get their stuff stolen.”

The third factor that made farms more likely to be victimized according to interviewees was lease land. Bruce explained: “if it’s lease ground for cattle or your equipment gets stolen from a lease ground, that’s the reason, because it’s a lease...lease ground is vulnerable...” However, this factor was only mentioned by two investigators. One other factor that bears mentioning because of its novelty is social media. This was only mentioned as an issue by one investigator, Matt, but was an interesting insight. To explain how social media can play a role in victimization, Matt explained “...you can turn around and go to Facebook right now and start browsing through people’s names and you’ll see that people have their pictures, you know, of them and their wife or girlfriend or whatever and they’re in a pasture field and there’s a bunch of cattle all around them. So it don’t take a genius to figure out, well Joe Bob over here lives in [omitted] city...so now you know where he’s at and they’ll steal his cattle.”

Chapter Summary

This chapter aimed to discuss the content of the interviews with agricultural investigators and how they served to answer each of the established research questions. The results showed that many of the processes (such as notifications of crimes, cooperation from other police agencies, and clearance rates) were highly dependent on the individual case. However, many of the perceptions of agricultural crime investigators, as well as their observations about what factors can influence victimization, displayed a fair amount of agreement. These results will be discussed in further detail in the next chapter.

Chapter 5. Discussion

Compared to urban crime problems, little research has been conducted on agricultural crimes; with even less attention given to how law enforcement responds to these crimes. Consequently, there are numerous gaps that exist within the literature. Based on these gaps, a series of research questions designed to elucidate the role of agricultural crime units and their operations were generated. These were answered through interviews conducted with agricultural investigators across several states. This chapter serves to discuss the results of these interviews and how they relate to existing knowledge. In addition, policy implications, directions for future research and limitations of the current study are covered.

The Fundamentals of Agricultural Crime Units

To begin to understand the operations of agricultural units, it was first necessary to establish how they are informed of agricultural crimes. As most agricultural units are state-level agencies, it is unclear whether crimes are relayed to them directly from the victims or through an intermediary, such as local law enforcement agencies. The results of this study showed that both methods were commonly used; though it is worth noting that some of the investigators saw a change over time. Several explained that their units were not well-known to the public, and as such they would seldom receive reports directly from the public. However, as time progressed and they became more well-known in the agricultural community (through efforts on their part and “word of mouth” by the farmers), they began receiving more direct reports. The Tennessee unit also had an online reporting system, which is a rather recent development. This system did seem to be fairly popular and has seen much use since its implementation. In the future, it may be beneficial for other agricultural investigation units to deploy similar systems or create other avenues of reporting crimes.

Though agricultural crime incidents are oftentimes referred to investigators, all of the interviewees discussed how enforcement agencies (namely county sheriff's offices) handled at least some of the cases. However, there appeared to be no universal criteria that dictated which cases these agencies would handle and which ones they would refer to agricultural crime units. The complexity of the case was commonly cited as a factor in the decision, with interviewees perceiving that agencies referred the more complicated ones to agricultural crime units. Unsurprisingly, the workload of the agency was also mentioned as a factor in the decision. Though it is by no means exclusive to them, being overworked and understaffed is a problem among rural law enforcement agencies that has been well-discussed in the literature (Birge & Pollock 1989; Ricciardelli, 2018). This issue was confirmed by the interviewees, with some investigators believing that sheriff's offices referred most agricultural crimes to them as a means of reducing their workload and allowing them to focus on more pressing issues.

The perceived workload of these rural agencies also appeared to play a role in how they viewed agricultural crime, according to investigators. It has been suggested that rural law enforcement must occasionally prioritize calls and cases, forcing them to at times neglect certain crimes in favor of others (Birge & Pollock, 1989; Ricciardelli, 2018). This issue was acknowledged by the interviewees to some extent. The investigators did agree that prioritizing sometimes occurred within agencies (though they emphasized that the officers were not at fault for this), and that agricultural crimes were oftentimes deemed less pressing. Despite this, most felt that law enforcement officers did consider agricultural crimes to be important and tried to ensure the crimes were given the proper attention (either through independent investigations or aiding agricultural crime investigators).

Agricultural Unit Operations

Previous research has suggested that rural law enforcement agencies have higher clearance rates than their urban counterparts (Weisheit et al., 2006). This is attributed to factors such as offenders being easily recognized by witnesses and quickly located within a small community (Falcone et al., 2002; Weisheit et al., 2006). However, in contrast there is a common perception that agricultural crimes are either difficult to solve, or that dedicating resources to investigating them would be a “waste of time” (Barclay, 2001; Barclay & Donnermeyer, 2001). Interviews conducted for the current study revealed that between 20%-80% of agricultural crimes are successfully closed, which does not on the surface support either viewpoint. The former would predict a high percentage of cases being closed (which some of the investigators did suggest); but it would also predict that witnesses recognizing the offender would be the key to solving crimes, which was not supported by the results (though witnesses in general were noted as being important). If the latter belief was true, it is doubtful that the estimates would vary so greatly (particularly when several investigators estimated around an 80% success rate). However, some of the investigators did note that certain types of crimes were more difficult to solve than others. For example, theft was commonly considered a difficult case to close, which was reflected in the perceived recovery rate of property (roughly 10%). The prevailing viewpoint, though, was that the success rate largely depended on the unique circumstances of each crime and the quality of available evidence or leads.

Another factor that differentiates policing in rural areas from that in urban areas is the social network. Recall from the literature review that some research has shown that residents in rural areas have stronger social bonds with local law enforcement, compared to those in urban areas (see Liederbach & Frank, 2006; Falcone et al., 2002, Weisheit et al., 1994 for examples).

This relationship is primarily credited to the law enforcement officers living in the same communities they police; therefore knowing the residents socially and being invested in maintaining a positive relationship with them. However, agricultural units typically have only a handful of agents to cover an entire state, resulting in a single agent being responsible for several counties. Therefore, the premise that social bonds between agricultural investigators and the residents they serve (in this case, farmers) is based on a need to maintain civility within a shared and limited community does not necessarily explain the social bonds between the groups. Furthermore, while the frequency of investigators socially encountering farmers was not inquired about, it was not volunteered as playing a role in the relationships between the groups (whereas other variables were).

Contrary to the research suggesting that the relationship between law enforcement and residents in rural area is generally positive, it is well established that many farmers are not optimistic in their assessment of law enforcement's ability to solve agricultural crimes (Barclay, 2001; Barclay & Donnermeyer, 2001; Dunkelberger et al., 1992; Harkness, 2017). Put differently, they oftentimes indicate that police officers lack the understanding of agriculture necessary to combatting and solving such crimes. Barclay and colleagues (2001) suggested that having police officers with specialized knowledge in agricultural crime could minimize this issue and increase farmer confidence and cooperation with law enforcement. Additionally, in their survey they found that farmers were overwhelmingly receptive to this idea.

The model of social networks in rural communities and the perceptions of farmers regarding the ability of police to respond to agricultural crime offer two perspectives of the relationship between farmers and law enforcement. Both were to some degree explored in the current work. It found that investigators did share strong social bonds with farmers, but rather

than being facilitated through proximity (as the models focused on rural residents and local law enforcement suggest), social cohesion occurred through a belonging to the “close-knit” community of agriculture. Interestingly, this was attributed to all of the investigators owning farms or having extensive experience working in agriculture, rather than simply the perception that they had the knowledge necessary to conduct the investigations.

Furthermore, many of the investigators pointed out that instead of standard police uniforms, they wore civilian clothes (usually resembling ranchers or farmers). It was their perception that this identified them as being part of the agricultural community. The investigators acknowledged that this not only served to distinguish them from other police officers, but reinforced the idea that as part of the agricultural community their interest was in aiding the farmers. The length of time an investigator spent in their position could also be a factor. Several of the investigators spent over 15 years as agricultural investigators, giving them ample time to be accepted into the community. Consequently, the investigators agreed that overall, the farmers cooperated very well with them (with few exceptions). Further, many of them agreed that farmers cooperated with them more willingly than they would other police officers, and seemingly had more trust in them.

While there still remains much to be explored about the relationship between farmers and investigators, this study does provide a solid foundation for future research. However, it is also important to keep in mind that little is known about the relationships between law enforcement agencies in rural areas. The results of the current study showed that cooperation between law enforcement agencies and agricultural crime units varied. Overall, the relationship between the agencies was perceived to be generally positive by the interviewees. One unanticipated finding, however, was the relationship between agricultural units and prosecutors/judges. While it has

been discussed how police officers sometimes prioritize calls (Birge & Pollock, 1989; Ricciardelli, 2018), it was interesting that agricultural investigators mentioned that this also happens within the court system. Some investigators noted that prosecutors would only accept agricultural crime cases if they appeared to be simple and supported by strong evidence. The reason given for this was that prosecutors have limited time and high caseloads; therefore, they are more likely to accept cases that can be prosecuted quickly. Barclay and colleagues (2001) also found that relatively few agricultural crimes were dealt with by the courts, and that there were some associated difficulties (namely in proving ownership of livestock, which was also revealed in the current study) with prosecution. It was also mentioned by some of the investigators that because agricultural crimes are considered non-violent crimes, a fair number of their cases were not accepted by the courts, allowing their attention to be focused on those deemed more important.

Perceptions of Agricultural Crime Investigators

Several studies have sought to investigate the prevalence of agricultural crimes (Barclay & Donnermeyer, 2011; Barclay; Cleland, 1990; Deeds et al., 1992; Dunkelberger et al., 1992; McIntyre et al., 2017). Unsurprisingly, rates have been found to vary depending on time period, region, and offense type. However, the most generalized estimate found that between 12% and 25% of farmers experience victimization in a period of two years (Mears, Scott, & Bhati, 2007b). It is important to note that all of the studies conducted to date are based on data gathered from surveys of farmers. The current work took an alternative approach by gauging investigators' perceptions of the prevalence of agricultural crimes within their jurisdictions. Due to the qualitative nature of the study, overall impressions were assessed instead of estimates. Of course, the perceptions varied among the investigators. Some suggested that agricultural crimes were

very prevalent and increasing in recent years, while others thought that it depended on the circumstances (such as time of year). Others, yet, were rather neutral on the matter, finding the prevalence to be about “average.” However, most did note that agriculture crimes were not only prevalent, but very important. In addition to the financial losses, the investigators remarked on the personal nature of agricultural crimes and the consequent emotional injuries.

One problem that did emerge when discussing the investigators’ perceptions about the frequency of agricultural crimes was underreporting. Two of the investigators pointed out that it was difficult for them to accurately estimate prevalence, as they knew that some crimes did not get reported to them. This finding is not unique to the current study, as past investigations have reached similar conclusions. The highest rate of underreporting was found by Mears, Scott, Bhati, Roman et al. (2007), who posited that as many as 85% of all agricultural crimes went unreported. Various reasons have been put forth to explain the high rate of underreporting, with the most common being farmers believe nothing would be gained by doing so. Other reasons include problems such as difficulty in providing proof and an uncertainty about how much time had elapsed since the occurrence of the crime (Barclay, 2001; Dunkelberger et al., 1992). One of the interviewees in the current study provided a similar take, but added that oftentimes farmers did not want to burden the sheriff’s office; particularly when the crime could have happened weeks or months prior to their becoming aware. Another investigator attributed the underreporting of livestock theft (which he dealt with exclusively) to farmers believing they could have miscounted their livestock and not wanting to report something that could be a mere mistake.

Common Types of Crimes

In addition to the overall prevalence of crime, the prevalence of different *types* of crimes was also investigated. Interestingly, on this topic there seemed to be differences between the research literature and the current study. It is likely that this can be attributed to the fact that other studies have focused on the experiences of farmers. Past attempts to estimate the problem have found that vandalism and theft are the two most common forms of victimization (Cleland, 1990; Dunkelberger 1992; McIntyre et al., 2017). While theft was cited by investigators as one of the most common crimes they dealt with, vandalism was not mentioned. Of course, it could be suggested that farmers did not see vandalism as a crime worth reporting to the investigators, which would account for the difference. Additionally, it may be that vandalism is handled by local law enforcement and would consequently not be referred to the agricultural units.

Another common crime mentioned by interviewees in the current work was arson. However, the frequency of these crimes was difficult to quantify, as arson did not fall into the jurisdiction of all the agricultural crime units. Additionally, the units who did handle arson investigated the crimes on both private and state property. Because of this, these cases are often not be considered agricultural crimes in the traditional sense. It is therefore not surprising that while arson has been discussed in a handful of other studies (Barclay et al., 2001; Barclay et al., 2001; Dunkelberger et al., 1992), it is rarely given the same level of attention as other non-agricultural crimes that can occur on farming operations. Animal welfare has also been neglected in previous studies, but was cited as being one of the most common cases handled by investigators in this sample. This difference could be attributed to farmers not reporting these crimes, as they are usually the perpetrators; not the victims of these crimes.

It was noted by some investigators that some crimes did become more prevalent at certain times of the year. Unsurprisingly, arson was reported to be much more common during fire season (October to May) and was not frequently handled during the other months. One investigator also noted that cattle theft tended to increase during the late winter and early spring seasons, which he attributed to the cattle being fed during this time period, making them easier to gain access to. Barclay (2001) previously found that theft tended to increase during certain times of the year, though her work found it to be centered around calving seasons. She also indicated that a relationship could exist between stock prices and incidence of theft, an assertion that was supported by one of the investigators in this study. Interestingly, though, Barclay (2001) did not find that there was a certain time of day in which theft was most likely to occur. Several investigators interviewed for this project, however, suggested that most theft occurred during the night. This was also explored by Osborne et al., (2019), who found that agricultural crimes were most commonly reported during the morning or midday. The authors point out, though, that it can be difficult to construct conclusions about the time at which crimes occurred based on time of reporting.

Agricultural Crime Offenders

The current study also aimed to uncover whether investigators had noticed any commonalities among offenders in terms of characteristics and motivations. To date, only one study has explored the topic of offender characteristics as it relates to agricultural crime, focusing on age, gender, race, and residency (Osborne et al., 2019). Using data from a nationwide database, they determined that the overwhelming majority of offenders were white males who lived in the same jurisdiction as those they targeted. Though taking a different approach, the current study revealed some overlap. In relation to arson, investigators reported

that offenders tended to be young, white males. Several also mentioned that the offenders tended to know the area, which could be indicative of their residency within the community in which the crime occurred.

Additional characteristics mentioned by a few investigators included being uneducated and being unemployed. Bunei and Barasa (2017) also found unemployment was a characteristic shared by some agricultural crime offenders. However, their work found this was usually more prevalent among young offenders, whereas no such trend was mentioned by the investigators in this study. One other characteristic that was identified by one investigator was that offenders tended to subscribe to the “good’ol boys system.” This is described as the perception that the law does not apply to the offender, and the inclination to offend because it is seen as a common and long withstanding practice.

The most agreed upon characteristic by the interviewees was that most offenders had a background in agriculture. This was usually discussed in terms of theft, as almost all acknowledged that in order to successfully commit an equipment or livestock theft, some special knowledge was needed. They emphasized that the offenders were not farmers, though. Instead, they found that offenders were people who had past connections with agriculture, such as growing up around a farm, having experience working on a farm, or having family members who owned farms. This concept was, to some extent, explored by Mears, Scott and Bhati (2007), who hypothesized that certain crimes would be more or less susceptible to other risk factors depending on the level of knowledge needed to commit the crime. However, their results did not support the hypothesis and did not explain whether the knowledge level of offenders actually impacted crime.

One other notable finding was that several investigators mentioned that offenders very often had a connection to the owner or the property. This connection could be as simple as merely being on the farm once or twice, but more commonly involved someone working on it. Put differently, they perceived many incidents as being “inside jobs.” This concept has been noted in other research (Barclay, 2001; Bunei & Barasa, 2017; Mears, Scott & Bhati, 2007b), but most have found it difficult to quantify the relationship. Regardless of the type of connection, however, the idea that an offender chooses a specific farm to target based on its *ownership* and their own *experiences* with the farm emerged as one of the most salient factors in the current study and is worthy of additional exploration in the future.

Similar to the characteristics of offenders, not much attention has been given to the motivations of offenders who commit agricultural crimes. Typically, when a motive is discussed it is usually financial in nature and is associated with theft (see McIntyre et al., 2017 for an example). The current findings were in line with this notion, as investigators indicated that most crimes had a profit motive. However, it also revealed a potential reason for offenders seeking financial gains—to support a drug habit. The majority of investigators agreed on this point, with some estimating that as many as 80%-90% of offenders steal for this reason. Bunei and Barassa (2017) found a similar relationship and also extended it to alcohol use.

In addition to the characteristics and motivations of offenders, it is also important to understand the methods that they use to carry out their crimes. It has been suggested that there may be well-organized rings that target agricultural property (Barclay, 2001), but most studies have focused on individuals committing these crimes (Bunei & Barasa, 2017; Barclay et al., 2001; Cleland, 1990; Deeds et al., 1992; Dunkelberger et al., 1992; McCall & Homel, 2003; McIntyre et al., 2017; Mears, Scott & Bhati, 2007b; Mears, Scott, Bhati, Roman, et al., 2007).

The previous research is limited in its discussion regarding how much forethought is given to agricultural crimes, though generally it is assumed that targets are chosen based on how accessible they are (Mears, Scott and Bhati, 2007b). The current study explored this concept by inquiring if investigators noticed whether offenders tended to plan their crimes or if they responded to seeing opportune targets. There was agreement among most of the investigators that both scenarios occurred, though some believed there were stronger tendencies towards one or the other. It is worth noting, however, that some remarked that they worked several crimes that involved weeks of planning. While this was only said as occurring in a few instances, it lends an interesting insight into how some offenders may choose specific targets instead of simply capitalizing on opportunities.

Farm Victimization

A large portion of the research on agricultural crime has been dedicated to investigating whether farm characteristics can impact whether an offender chooses to target a specific farm (Barclay & Donnermeyer, 2001; Barclay & Donnermeyer 2011; Barclay et al., 2001; Bunei et al., 2014; Brock & Walker, 2005; Mears, Scott & Bhati, 2007b; Mears, Scott, Bhati, Roman, et al., 2007). Several characteristics have been identified as potential risk factors, the most notable of which are size of the farm/operation, layout, the terrain, the location of the farm relative to metropolitan areas or roadways, and the presence or absence of security measures (Barclay & Donnermeyer, 2001; Barclay & Donnermeyer 2011; McIntyre et al., 2017). Size is generally accepted as the most consistent predictor (larger farms are associated with a higher rate of victimization), but it does not explain a significant portion of the variation (Barclay & Donnermeyer, 2001; Barclay & Donnermeyer, 2011; McIntyre et al., 2017). Somewhat surprisingly, all but two of the investigators interviewed in this study did not believe that size

had any influence on whether a farm was targeted or not. In addition, the two who did mention its potential role stressed that it was relatively minor in comparison to other factors. This seems to suggest that it is unreliable to focus on any single characteristic as a predictor; and that while farm characteristics may be influential to some extent, there are likely other factors not yet identified that have a more salient role in predicting victimization.

Other possible characteristics have received mixed-support in the literature. In some studies, farm terrain has been found to influence the rates of crimes such as stock theft (Barclay & Donnermeyer, 2001; Barclay et al., 2001; Barclay & Donnermeyer 2011). This was not necessarily supported in the current work. Only one investigator thought terrain could be a factor, and it was mentioned only as something that an offender may consider when looking for a suitable target, not a consistent predictor. The arrangement of farm buildings throughout a property is another predictor identified in previous research. Barclay and Donnermeyer (2011) found that when farm buildings were visible from the residence, it was less likely that an offender would steal the equipment or tools in the building. One investigator in the current study agreed that the location of buildings relative to the residence could influence how likely a farm was to be targeted. Several other investigators agreed that farm buildings were important for the reason of providing a place to store (and lock) equipment and tools. Housing and locking equipment in buildings has also been noted in previous studies as being important in decreasing victimization (Barclay, 2001, Barclay et al., 2001).

The factor which the current study found to be most salient was location in relation to roadways. It has been indicated by past research that farms close to well-traveled roads (particularly highways) are at an increased risk for victimization (Barclay & Donnermeyer, 2001; Barclay & Donnermeyer, 2011; Barclay et al., 2001). Research has also suggested that the

proximity of livestock and equipment to roadways can increase the likelihood of being targeted (Barclay, 2001; Mears, Scott, & Bhati, 2007b). The impact of well-traveled roadways was not discussed by the interviewees in the current study. Contrarily, one mentioned that being on a road that was *not* well-traveled increased how likely they were to be targeted. However, almost all the investigators agreed that the accessibility of livestock or equipment was important. Many articulated that farmers would often have loading pens or corrals near the road and would pen their cattle there, producing a prime target which would often end with some or all the cattle being stolen. A similar trend was noted for equipment theft, as many of the investigators said that much of the equipment that was stolen was left in sight of the road. The location of farms relative to towns or cities was also mentioned, though only by few investigators. Contrary to the findings of past studies, the investigators noted that farms in remote or very isolated areas were more likely to be targeted. However, it was stressed that this relationship was weak in their opinions.

Farm Security

One other factor commonly investigated in relation to victimization is security measures. Research has found that oftentimes farmers have limited security on their farms (Barclay et al., 2001; Dunkelberger et al., 1992; McIntyre et al., 2017; Mears, Scott, & Bhati, 2007a; Mears, Scott & Bhati, 2007b). However, even if security measures are taken it is unclear whether this can influence the rate of victimization. Several studies have hypothesized that an increase in security measures or guardianship would decrease victimization. Unfortunately, these studies generally conclude that such measures have little or no impact on victimization. In some cases, a contradictory relationship is found (farmers with security measures experience more victimization), which research attributes to farmers implementing security measures *after* they

were victimized (Barclay, 2001; Mears, Scott & Bhati, 2007b). Some investigators in this study agreed that farmers would oftentimes not even consider security measures until after they or a neighbor were targeted. Although, other investigators thought that farmers took adequate security measures (or as many as their limited resources allowed).

Interviewees perceived that the most common measures implemented by farmers involved target hardening; specifically, locking up their property. Yard lights or other outdoor lights were also regularly mentioned. This is consistent with some of the literature (Barclay, 2001; Dunkelberger et al., 1992), which has identified these as frequently employed measures. These studies also reported that farmers would rely on neighbors as a form of security, which was also discussed by the investigators; though their effectiveness was contested. Some of the investigators believed that neighbors were valuable as both a security measure and as a knowledgeable witness. Others, alternatively, thought that neighbors were generally not very helpful in providing security or timely information regarding crimes. Importantly, this was not attributed to an apathetic attitude among the neighbors, but rather a general ignorance of the activities of the owner compared to the activities of an offender.

In line with the available literature, the investigators were somewhat skeptical about how effective security measures were in discouraging victimization. However, they stressed that certain types, particularly cameras, were instrumental in solving crimes; and for thefts increased the chance of recovery of property. Marking equipment with an ID number was perceived as being of great help to investigations. It was also suggested that this could potentially dissuade an offender, in spite of the fact that some could be easily removed. In light of this, several investigators suggested putting the markers in a place it would not be readily noticed to prevent the offender from removing it, therefore acting as proof of ownership in the recovery process

rather than a preventative measure. Mears, Scott and Bhati (2007b) noted that this was a common practice among farmers; though other studies found the opposite (Barclay, 2001; Dunkelberger et al., 1992).

Farmers failing to mark equipment was not singled out by investigators as being particularly prevalent, but several agreed that there was an overall complacency in the farming community. Barclay (2001) found a similar sentiment about farmers by local police, who thought that this could contribute to victimization among farms. Likewise, several of the agricultural investigators explained that this was a key reason some farmers were targeted. Another explanation offered for why some farms were targeted was that many use leased property. Several investigators noted that in their experience, leased farms had an increased chance of being victimized. According to the investigators, this was primarily due to individuals in the community realizing that the farmer(s) seldom visited those properties (and did not have homes in the vicinity). This is consistent with the idea of guardianship put forth by Mears, Scott and Bhati (2007b), which suggests that an increase in guardianship can minimize the risk of victimization. Their study found little support for the hypothesis, but the relationship between lease land and victimization presents an interesting addition worthy of further exploration.

The most prominent factor related to opportunity and victimization mentioned by investigators was the tendency for farmers to have routines. Nearly all explained that this was important because if the offenders observed the farmer for a period prior to committing a crime, they would know exactly when the farmer would be gone. Specifically, they would realize how long they had to commit the crime before the farmer returned. This problem was also explored by Bunei and Baressa (2017), who found it to be an important predictor in target selection. Fortunately, the problem of routines can be easily addressed, as pointed out by some

investigators, by simply varying the times they are present on the farm. However, addressing the other issues which impact victimization is more complicated, as often they require more “involved” solutions.

Implications

The results of this study advanced the field of agricultural crime research in four important ways. Firstly, it established how state-level investigations of agricultural crimes are initiated. No previous research has explored these specialized units, rendering it important to understand how these agencies are contacted and what types of investigations fall within their jurisdiction. Unsurprisingly, the agricultural crime units were contacted by both law-enforcement agencies (in the form of referrals) and directly by the farmers. Interestingly, one unit did have an online reporting system which appeared to be gaining popularity among farmers. It may be beneficial for other units to employ other methods of reporting such as an online system. This may not only increase reporting, but can easily manage and organize crimes based on an algorithm or by an administrator. Additionally, data collected by these systems have the potential to be used in mapping high-target areas and informing law enforcement officers of sectors that could benefit from additional police presence or preventative measures.

Secondly, this study explored the operations of units specifically dedicated to handling agricultural crimes. Because no other works have addressed this topic, it was necessary for the fundamentals of their processes to be explained, as well as the factors that could contribute to their success. The results of this study showed that farmer cooperation was pivotal to investigations and suggests that the most important part of this relationship is the farmer’s perception that agricultural crime investigators are part of the agricultural community and not just law enforcement officers. This perception seems to be furthered by investigators wearing

civilian clothes rather than a standard uniform, which suggests that agricultural crime units whose investigators wear uniforms may be better received in the community by switching to civilian clothes.

Additionally, the use of cameras on properties and identification markings on equipment can be of great use during investigations and should be considered high priorities for farmers. There have been developments within ID technology which make the practice of marking equipment more effective. The CESAR scheme, for example, is an ID system used primarily in the UK that is specifically dedicated to construction and agricultural equipment. Equipment is marked with small electronic transponders (from the datatag company) which are easily hidden (and are therefore not easily removed). These transponders can be read by scanners used by the police department, allowing the unique code to be traced back to the owner (CESAR, n.d.). SmartWater CSI is another ID technology that cannot be removed by the offender, making it very effective. SmartWater is invisible once placed onto a piece of equipment, but is visible under ultraviolet light. Each SmartWater solution is unique, which allows the owner of the equipment to be identified (SmartWater CSI, n.d.). These technologies are very promising, and are relatively simple steps that could be taken by farmers to improve their security.

The third key insight offered by this study was an explanation of agricultural crime from the view of those who investigate it. With very few exceptions (such as Barclay, 2001) the research literature has focused on the experiences of farmers, which only allows for a portion of the topic to be explored. Capitalizing on the experience of agricultural crime investigators, the current study was able to explore aspects related to the offense and offenders, such as their characteristics, motivations, and strategies. Other research has hypothesized about offenders (Barclay, 2001; Mears, Scott, & Bhati, 2007b), but this has largely been theoretical due to the

lack of available data. One exception is the work of Osborne and colleagues (2019), who presented basic demographic profiles based upon NIBRS data. The current findings builds upon that work and should set the stage for programs focused on preventative measures. These could assume the form of drug interventions, employment programs, or other social services that specifically target individuals most likely to commit agricultural crimes. Further research into the specifics is necessary before such an undertaking, but these results allow for a more focused approach to be taken in the future.

The motivations of offenders are typically considered to be related to financial gain (according to past research). The investigators interviewed in this study agreed that these gains were often a driving motivation, but also offered additional insight to crimes without a financial component. By understanding the motivations of these offenders, researchers can potentially devise more suitable methods for prevention and intervention. By focusing on the viewpoints of agricultural crime investigators, this study was also able to explore the strategies of offenders; namely how many crimes were planned as opposed to how many were purely opportunistic. While it is difficult to minimize the likelihood of being targeted, their perception that many crimes were planned does call for farmers to be more vigilant, as it may make them appear less desirable as a target for offenders who are searching one out. Some possible steps farmers could take include ensuring they have a visible presence on the farm, keeping equipment locked in sheds or close to the residence, counting cattle (or other livestock) daily, or setting up feed bunks away from the road.

Lastly, this study offered a chance to explore additional factors related to the potential for victimization not previously discussed in the literature. While many of the factors did overlap (though there was a fair amount of disagreement with previous literature), some new ideas

emerged. The current work found that one of the most important factors identified by investigators was keeping cattle penned by the road. While it is not a novel concept that keeping property close to the road makes it a more desirable target, this specific practice seemed particularly damaging. Investigators noted that it was a very common practice and was equated with frequent occurrences of theft. The solution to this is rather simple and calls for farmers to hold their cattle in more secure locations. Additionally, it is important to make farmers aware that such practices do, in fact, result in thefts.

As discussed, several of the investigators noted that farmers held the belief that it was not likely they would be the target of crimes, and as such did not take appropriate preventative steps. Therefore, by making farmers aware of the prevalence of agricultural crime, it could increase the vigilance of farmers and the likelihood that the farmers would report the crimes. One way this could be accomplished is by agricultural units organizing events or campaigns to raise awareness of the prevalence of agricultural crimes. Additionally, such efforts could also be undertaken by the agricultural extension agencies. Birkhaeuser et al. (1991) pointed out that agricultural extension agents do act as a significant source of information for farmers, so it is logical to conclude that these agents could communicate the prevalence of agricultural crimes to farmers and help educate them about appropriate measures to take to reduce the risk of being victimized.

Reducing the complacency of farmers by educating them on agricultural crime is important; but even if it is successful, there is still the prevailing question of what steps can farmers take to protect themselves. While this is an enormous issue that warrants further research, this current work can offer some suggestions. As discussed in the literature review, Smith (2019) introduced the concept of a *fortress farm*, which provided some broad steps farmers can take to minimize their risk of victimization. The current study elaborates on the

specifics of this approach that may be most effective when emphasized. The first two steps suggested by Smith (2019) involve pinpointing the security weaknesses of a farm and improving upon them. While this was referred to largely in relation to physical aspects of the farm, the current work suggests that weaknesses also exist in relation to the behaviors of farmers. Practices such as having equipment and cattle by the road, not locking gates with padlocks, not properly protecting equipment, and leaving cattle in loading pens overnight are behaviors which present a security threat. In most cases, these are actions can be changed or altered to help increase security.

The next step proposed by Smith (2019) is to implement community prevention strategies, such as *Farm Watch*. As demonstrated in the result section, some investigators thought neighbors were pivotal in preventing crime, whereas others did not. However, the investigators that were skeptical of the contribution of neighbors attributed this to a lack of awareness. Therefore, if the neighbors were actively watching for suspicious behavior and were aware of each other's activities, it would follow that this could be a promising practice. The fourth step presented by Smith (2019) is to implement the use of technology when helpful. Several investigators noted the importance of cameras and yard/motion lights and would seem to support integrating this practice into farming operations. The final suggested step is improving the layout and overall appearance of the farm. This is primarily centered around tearing down buildings that look unsecure, constructing new buildings in strategic locations, and maintaining or adding fences. Many of the investigators said that it was important to house equipment in locked buildings, but little else in this step can be supported by the results of this study.

In addition to taking steps to secure their property, one other factor farmers should take into consideration are the people who are familiar with their farm. Some investigators suggested

that offenders choose their targets based on their familiarity with the property or with the farmers themselves. It is hardly feasible to suggest that farmers keep people off their property, but there are certain precautions that can be taken. For example, farmers could keep equipment sheds closed when guests are on the property, preventing them from noticing valuable equipment and its location. Farmers could also refrain from talking about specific pastures or barns that are being used to hold cattle (as farmers sometimes have multiple and rotate stock between them). Similar precautions could be taken for a variety of matters, including possession of herbicides and pesticides. However, as mentioned previously, these crimes are sometimes committed by hired hands. In that event, such precautions would be ineffective. This can be managed in other ways, though. Some investigators in the current study noted that farmers often give little thought to who they hire, which frequently results in a theft. Logically, this should be improved by farmers being somewhat more cautious about who the hire.

Limitations

While the current study did offer a novel exploration of agricultural crime units across several states, there were some important limitations. The primary limitation was the sample size (n=11). These interviews were conducted over a limited time span and depended on the availability of the agricultural crime investigators during this period. Several units did not respond to the request for participation. The demanding nature of their jobs may have made taking the time to participate in the interviews unfeasible. Additionally, some investigators were not allowed to participate due to public relations policies. One final complication (in terms of sample size) related to the method of sampling. This study relied primarily on snowball sampling, which depending on the motivation of individuals being interviewed, can limit the pool of possible participants.

Relying on snowball sampling presented an additional limitation. It is possible that the participants shared certain viewpoints or experiences which made them more likely to take part in the interviews. This design also inherently excluded participants that were not part of a social network within or between the units. In addition, an accurate representation of the population was not possible to ensure. However, some agricultural crime units were contacted using contact information from the unit websites. While this did not overcome the limitations of snowball sampling, it did help to mitigate them to some extent, as more than one network of investigators was included.

Future Research

This study constituted the first attempt to develop an understanding of agricultural crime units. As such, it has created a strong foundation on which further research should build upon. There were several concepts introduced during the interviews which were outside of the purview of the study but could prove to be important ideas. One topic that should be explored further is how actively agricultural units reach out to farmers. The relationship between agricultural crime units and farmers were explained to some extent in this study, but there still remains a question of how proactive agricultural units are within each state. In passing, it was mentioned by a few investigators that they tried to raise awareness of certain issues with farmers to improve their security. It is unclear if these were unit-level efforts or if the individual investigators took the initiative on their own. It could be useful to explore whether units host seminars or other campaigns in an effort to reduce victimization.

Another subject of interest was the participation of federal agencies (e.g., Federal Bureau of Investigation) in some agricultural investigations. One of the participants was a member of a state agricultural crime unit, while also commissioned as a federal agent (specifically, a task

force officer). Aside from working cases assigned to him by the state-level unit, he also worked any federal cases in the area which dealt with agriculture. There is little, if anything, known about how agricultural crimes are handled on the federal level or the stance of the FBI on these crimes. The employment of an agricultural crime investigator by the FBI does show that, to some extent, the federal government acknowledges that these crimes are a problem. It is unclear, though, how much effort has been given to these crimes by agencies such as the FBI, and how many investigators specializing in agricultural crimes they commission.

In addition, it is also important to discover how agricultural crimes are viewed by the court system. There has been a very limited amount of research exploring how the system handles agricultural crimes. Barclay and colleagues (2001) investigated this to some extent, but their work was focused solely on Australian courts. The investigators in the current study noted that agricultural cases were sometimes disregarded in order to make time for crimes considered more urgent. Additionally, some of the investigators mentioned how important it was to convince the prosecutor that an agricultural crime case would be easy to prosecute. In order to truly understand this, further research is necessary. Importantly, the amount of cases that proceed to court may also influence the amount of confidence farmers have in the system, and by extension, agricultural crime investigators. This aspect also warrants further research, and may be found to have an impact on the rate of reporting agricultural crimes.

One final concept that warrants further attention is the notion of organized agricultural crime. This has been mentioned in previous research (Barclay, 2001), but it has not been explored to date. Two investigators in this study did indicate the existence of such groups, but they were only mentioned in passing; therefore. However, if such organizations exist in more than one or two isolated areas, the overall view of agricultural crime could be changed.

Conclusion

Agricultural crime is a salient problem in the United States. It can be damaging to individual farmers, in addition to impacting state economies on a broader scope (Barclay et al., 2001; McIntyre et al., 2017). As established, police response to these crimes has been largely neglected, and the experiences of the officers dedicated to investigating them has garnered very little attention from scholars. This current study sought to fill this gap by exploring the operations and perceptions of agricultural crime units. This not only provided an opportunity for a different aspect of agricultural crimes to be explored, but also allowed for a new perspective on concepts explored in the literature. Results from interviews with the participants established some fundamental knowledge about the processes of investigating agricultural crimes and provided additional information about risk factors associated with farm victimization. These findings should serve as a foundation on which further research regarding policing agricultural crimes can build, and should increase awareness about the importance of agricultural crime units.

References

- Alabama Law Enforcement Agency. (n.d.). *Report Rural Crime*.
<https://www.alea.gov/sbi/fusion-center/report-rural-crime>
- Babbie, E. (2018). *The Practice of Social Research*. Cengage Learning.
- Ball, C. (2001). Rural perceptions of crime. *Journal of Contemporary Criminal Justice*, 17(1), 37-48.
- Barclay, E. (2001). A review of the literature on agricultural crime. *New South Wales, Australia: University of New England*.
- Barclay, E., & Donnermeyer, J.F. (2011). Crime and security on agricultural operations. *Security Journal*, 24(1), 1-18.
- Barclay, E., & Donnermeyer, J. F. (2001, June). Crime in regional Australia. In *4th National Outlook Symposium on Crime in Australia*.
- Barclay, E., Donnermeyer, J. F., Doyle, B. P., & Talary, D. (2001). Property crime victimisation and crime prevention on farms. *The Institute for Rural Futures, University of New England, Armidale*.
- Barrett, K.J., Haberfeld, M., & Walker, M.C. (2009). A comparative study of the attitudes of urban, suburban, and rural police officers in New Jersey regarding the use of force. *Crime, Law, and Social Change*, 52(2), 159-179.
- Berg, M.T., & DeLisi, M. (2005). Do career criminals exist in rural America? *Journal of Criminal Justice*, 33, 317-325.
- Birge, J.R., & Pollock S.M. (1989). Modelling rural police patrol. *Journal of the Operational Research Society*, 40(1), 41-54.
- Birkhaeuser, D., Evenson, R.E., & Feder, G. (1991). The economic impact of agricultural extension: A review. *The University of Chicago Press Journals*, 39(3), 607-650.
- Brock, D., & Walker, D. (2005). Rural policing and the drug problem: An examination of the influence of major metropolitan areas on drug offending in surrounding rural communities. *The Police Journal*, 78, 129-146.
- Brunet, J.R. (2015). Goodbye Mayberry: The curious demise of rural police departments in North Carolina. *Administration & Society*, 47(3), 320-337.
- Bunei, E.K., & Barasa, F.O. (2017). Farm crime victimization in Kenya: A routine activity approach. *International Journal of Rural Criminology*, 3(2), 224-249,
- Bunei, E.K., Rono, J.K., & Chesssa, S.R. (2013). Factors influencing farm crime in Kenya: Opinions and experiences of farmers. *International Journal of Rural Criminology*, 2(1), 75-100.

- Bunei, E.K., Rono, J.K., & Chessa, S.R. (2014). Crime prevention on farms: The opinions of farmers. *International Journal of Rural Criminology*, 2(2), 209-224.
- Buttle, J. Fowler, C., & Williams, M.W. (2010). The impact of rural policing on the private lives of New Zealand police officers. *International Journal of Police Science & Management*, 12(4), 596-606.
- California Rural Crime Prevention Task Force (2014). *California Rural Crimes Prevention Task Force*. <http://www.crcptf.org/>
- California Rural Crime Prevention Task Force (2014). *Owner Applied Number*. <http://www.crcptf.org/oan/>
- Chalfin, A., Roman, J., Mears, D.P., & Scott, M.L. (2007). The costs and benefits of agricultural crime prevention: A primer for estimating the costs and benefits of the Agricultural Crime Technology Information and Operations Network (ACTION). *Urban Institute, Justice Policy Center*.
- Cleland, C.L. (1990). Crime and vandalism on farms in Tennessee: Farmer opinions about and experience with. *Knoxville, TN: University of Tennessee*.
- Construction Equipment Security and Registration. (n.d.). *Agricultural security system*. <https://cesarscheme.org/agriculture.php>
- Deeds, J., Frese, W., Hitchner, M., & Solomon, M. (1992). *Farm crime in Mississippi*. Mississippi Agricultural & Forestry Experiment Station.
- DeKeseredy, W.S. (2019). Intimate violence against rural women: The current state of sociological knowledge. *International Journal of Rural Criminology*, 4(2), 312-331.
- Department of Agriculture & Forestry: State of Louisiana. (2013). *Livestock Brand Commission*. <http://www.ldaf.state.la.us/animal-health/veterinary-health-division/livestock/>
- Dobrin, A. (2006). Professional and community oriented policing: The Mayberry model. *Journal of Criminal Justice and Popular Culture*, 13(1), 19-28.
- Donnermeyer, J. F. (2007). Rural crime: Roots and restoration. *International of Rural Crime*, 1(1), 2-20
- Donnermeyer, J.F., & DeKeseredy, W.S. (2014). *Rural criminology: New directions in critical criminology*. Routledge.
- Doucet, J.M., & Lee, M.R. (2014). Civic community theory and rates of violence: A review of literature on an emergent theoretical perspective. *International Journal of Rural Criminology*, 2(2), 151-165.
- Dunkelberger, J.E., Clayton, J.M., Myrick, R.S., & Lyles, G.J. (1992). *Crime and Alabama farms: Victimization, subjective assessment, and protective action*. Alabama Agricultural Experiment Station.

- Farm Watch (2020). *Farm watch-this land is our land*. <https://www.nnw.org/publication/farm-watch-land-our-land>
- Falcone, D.N., & Wells, L.E. (1995). The county sheriff as a distinctive policing modality. *American Journal of Police*, 14 (3/4), 123-149.
- Falcone, D.N., Wells, E., & Weisheit, R. A. (2002). The small-town police department. *Policing: An International Journal of Police Strategies & Management*, 25(2), 371-384.
- FDA, USDA, & Homeland Security (2007). Agriculture and Food Sector-Specific Plan. *Critical Infrastructure and Key Resources Sector-Specific Plan as input to the National Infrastructure Protection Plan*. <https://www.fda.gov/media/72391/download>
- Federal Bureau of Investigations (2017). *Uniform Crime Report*. United States Department of Justice.
- Federal Bureau of Investigations (2018). *Uniform Crime Report*. United States Department of Justice.
- Florida Agricultural Crimes Intelligence Unit. (n.d.). *Florida Agricultural Crimes Intelligence Unit*. <https://florida-faciu.org/>
- Fresno County Sheriff's Office (2019). *Ag Task Force*. <https://www.fresnosheriff.org/units/specialty-units/ag-task-force.html>
- Harkness, A. (2017). Crime prevention on farms: Experiences from Victoria, Australia. *International Journal of Rural Criminology*, 3(2), 131-156.
- Hollis, M. E., & Hankhouse, S. (2019). Crime risks and rural routines: A theoretical examination of guardianship activities in rural areas. *International Journal of Rural Criminology*, 4(2), 273-291.
- Hurst, Y.G. (2007). Juvenile attitudes toward the police: An examination of rural youth. *Criminal Justice Review*, 32(2), 121-141.
- Jobes, P.C. (2002). Effective officer and good neighbor: Problems and perceptions among police in rural Australia. *Policing: An International Journal of Police Strategies & Management*, 25(2), 256-273.
- Kansas Department of Agriculture. (2016). *Brands Program*. <https://agriculture.ks.gov/divisions-programs/division-of-animal-health/brands-program>
- Kansas Department of Agriculture (2016). *Kansas Agriculture*. <https://agriculture.ks.gov/about-kda/kansas-agriculture>
- International Association of Chiefs of Police. (2018). Policing in small, rural, and tribal communities. *Practices in Modern policing*. International Association of Chiefs of Police.

- Lee County Sheriff's Office. (2019). *Agricultural Crimes Unit*.
https://www.sheriffleefl.org/bureau_and_departments/agricultural_crimes_unit.php
- Liederbach, J., & Frank, J. (2003). Policing Mayberry: The work routines of small-town and rural officers. *American Journal of Criminal Justice*, 28(1), 53-72.
- Liederbach, J., & Frank, J. (2006). Policing the big beat: An observational study of county level patrol and comparisons to local small town and rural officers. *Journal of Crime and Justice*, 29(1), 21-44, 365-386.
- Lord, V.B., Kuhns, J.B., & Friday, P.C. (2009). Small city community policing and citizen satisfaction. *Policing: An International Journal of Police Strategies & Management*, 32(4), 574-594.
- Maguire, E.R., Kuhns, J.B., Uchida, C.D., & Cox, S.M. (1997). Patterns of community policing in nonurban America. *Journal of Research in Crime and Delinquency*, 34(3). 368-394.
- Mawby, R.I. (2003). Myth and reality in rural policing: Perceptions of the police in a rural county of England. *Policing: An International Journal of Police Strategies & Management*, 27(3), 431-446.
- McCall, M. & Homel, P. (2003). Preventing crime on Australian Farms: Issues, current initiatives and future directions. *Australian Institute of Criminology*.
- McIntyre, R. N., Prine, K.R., & Knowles, F. (2017). An exploratory assessment of agricultural crimes in Georgia. *International Journal of Rural Criminology*, 3(2), 157-175.
- Mears, D.P., Scott, J.L., & Bhati, A.S. (2007a). A process and outcome evaluation of an agricultural crime prevention initiative. *Criminal Justice Policy Review* 18(1), 51-80.
- Mears, D.P., Scott, J.L., & Bhati, A.S. (2007b). Opportunity theory and agricultural crime victimization. *Rural Sociology*, 72(2), 151-184
- Mears, D.P., Scott, J. L., Bhati A.S., Roman, J., Chalfin, A., & Jannetta, J. (2007). *A Process and Impact Evaluation of the Agricultural Crime Technology, Information, and Operations Network (ACTION) Program*. The Urban Institute.
- Mississippi Department of Agriculture & Commerce. (2019). *Mississippi Agriculture & Livestock Theft Bureau*. <https://www.mdac.ms.gov/bureaus-departments/agricultural-livestock-theft-bureau/>
- Mortimer, S.B., & Shaffer, R.M. (2005). Assessing and understanding timber trespass and theft laws in the Appalachian region. *Northern Journal of Applied Forestry*, 22(2), 94-101.
- Nevada Electronic Legislative Information System. (2019). *Budget 4557-Agri-Livestock*.
<https://www.leg.state.nv.us/App/NELIS/REL/80th2019/Budget/6007/Overview>
- Oklahoma Department of Agriculture Food and Forestry. (n.d.). *Investigative Services Unit*.
<https://www.oda.state.ok.us/invsvc/>

- Osborne, D.L. (2015). *Examining macro-level correlates of farm equipment theft: A test of routine activity theory and social disorganization theory*. University of Louisville.
- Osborne, D.L., Swartz, K., Stover, A. (2019). Utilizing the national incident-based reporting system to further our understanding of agricultural theft. *International Journal of Criminology*, 4(2), 240-257.
- Payne, B.K., Berg, B.L., & Sun, I.Y. (2005). Policing in small town America: Dogs, drunks, disorder, and dysfunction. *Journal of Criminal Justice*, 33, 31-41.
- Pelfrey, W. V. (2007). Style of policing adopted by rural police and deputies: An analysis of job satisfaction and community policing. *Policing: An international Journal of Police Strategies & Management*, 30(4), 620-636.
- Regoli, R.M., & Poole, E.D. (1980). Police professionalism and role conflict: A comparison of rural and urban departments. *Human Relations*, 33(4), 241-252.
- Rephann, T.J. (1999). Links between rural development and crime. *Papers in Regional Science*.
- Ricciardelli, R. (2018). "Risk it out, Risk it out": Occupational and organizational stresses in rural policing. *Police Quarterly*, 21(4), 415-439.
- Ritchie, J., & Lewis, J. (Eds.). (2003). In-depth interviews. In *Qualitative research practice: A guide for social science students and researchers* (pp. 138-169). Legard Keegan & Ward.
- Ruddell, R. (2014). Rurality and crime. *The Encyclopedia of Theoretical Criminology*, 1-5.
- SmartWater CSI. (n.d.). SmartWater CSI is revolutionizing security. <https://smartwatercsi.com>
- Smith, R. (2019). The 'fortress' farm: Articulating a new approach to redesigning 'defensible space' in a rural context. *Crime Prevention and Community Safety*, 21, 215-230.
- Smith, R., & Somerville, P. (2013). The long goodbye: A note on the closure of rural police-stations and the decline of rural policing in Britain. *Policing*, 7(4), 348-358.
- Southern States Livestock & Rural Enforcement Association. (n.d.). <http://www.sslrea.com/seminar.html>
- Swanson, C. R. Jr., Chamelin, N. C., & Territo, L. (2002). *Criminal investigation*. McGraw-Hill.
- Swanson, C.R. Jr., & Territo, L. (1980). Agricultural crime: Its extent, prevention, and control. *FBI Law Enforcement Bulletin*, 49(5), 8-12.
- Tennessee Department of Agriculture. (n.d.). *Agricultural Crime Unit*. <https://www.tn.gov/agriculture/consumers/ag-crime-unit.html>
- Tennessee Department of Agriculture (n.d.). *Forestry*. <https://www.tn.gov/agriculture/forests.html>
- Texas and Southwestern Cattle Raisers Association. (2020). *Theft and Law*. <https://tscra.org/what-we-do/theft-and-law/>

- United States Census Bureau. (2016). *New Census Data Show Differences Between Urban and Rural Populations*.
- United States Department of Agriculture (2017). *Ag and Food Sectors and the Economy*.
<https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy/>
- United States Department of Agriculture (n.d.). *Interagency Task Force on Agriculture and Rural Prosperity*. <https://www.usda.gov/topics/rural/rural-prosperity>
- Weisheit, R. A. (2016). Rural crime from a global perspective. *International Journal of Rural Criminology*, 3(1), 5-28.
- Weisheit, R.A., Falcone, D.N., & Wells, L.E. (1994). Rural crime and rural policing. National Institute of Justice.
- Weisheit, R. A., Falcone, D.N., & Wells, L.E. (2006). *Crime and policing in rural and small-town America*. Waveland Press.
- Weisheit, R. A., & Donnermeyer, J. F. (2000). Change and continuity in crime in rural America. *Criminal Justice*, 1, 309-357.
- Winfrey, L.T. Jr., & Taylor, T.J. (2004). Rural, small town, and metropolitan police in New Zealand: Differential outlooks on policing within a unified police organization. *Policing: An International Journal of Police Strategies & Management*, 27(2), 241-263.
- Yarwood, R. (2001). Crime and policing in the British countryside: Some agendas for contemporary geographical research. *Sociologia Ruralis*, 41(2), 201-219.

APPENDIX: Interview Guide

1. First, I would like to ask you to answer a few basic demographic questions:
 - a. What is your age?
 - b. How long have you been an agricultural crime investigator?
 - c. Were you employed as a police officer prior to becoming an agricultural crime investigator?
 - i. If so, how long?
 - ii. What were your primary assignments (e.g., patrol, investigations)?
 - d. What is your educational background?
 - i. Highest level of degree?
 - ii. College major, if applicable?
 - e. Did you grow up in a rural community? If so, did you grow up on a farm?
2. The next set of questions relate to how you respond to agricultural crime incidents:
 - a. How do you typically find out about them? Do you hear directly from farmers or do you receive referrals from other law enforcement agencies?
 - b. Do law enforcement agencies refer every crime relating to agriculture to you, or do they handle some of the cases on their own?
 - i. What determines how they make that decision if only some are referred?
 - c. Do you think that police agencies take agricultural crime seriously or do they seem more focused on other crime issues? Why?
3. Now I want to ask you a few questions about your job:
 - a. How are most cases solved?
 - b. What type of evidence is most useful?
 - c. What percentage of cases typically end in an arrest?
 - d. What percentage of cases involving stolen property end in recovery?
 - e. Is it easier to solve certain types of cases? Similarly, is it easier to recover certain types of property?
 - f. How important is it to have the cooperation of farmers?
 - i. Are they generally helpful?
 - ii. Do you think that they cooperate with you more willingly than they do regular police officers?
 - g. What level of cooperation do you have with other police agencies when responding to agricultural crime?
4. The next few questions are about your perceptions for agricultural crime:
 - a. How prevalent do you think it is within your jurisdiction?
 - b. What types of offenses are most common?
 - i. Have you seen any changes over time?
 - c. Do offenders seem to share similar characteristics?
 - d. What about their motivations—do those seem similar?
 - e. Do you think that criminals plan ahead or does it seem like they just take advantage of opportunities that they come across?
5. The last set of questions deal with your perceptions of victimization and the factors that influence it:
 - a. Do you think that farm characteristics play a role in likelihood of victimization?

- i. Size of the farm?
 - ii. Terrain of the farm?
 - iii. Location of the farm in relation to towns or cities?
 - iv. Location of the farm in relation to roadways?
 - v. Location of buildings and homes on farm property?
 - vi. Location of equipment, crops and livestock?
- b. Do you believe that farmers take enough security measures to protect themselves?
- c. Which security measures to farmers seem to rely on the most?
- d. Which security measures do you think are most important? Why?
- e. Outside of security measures and farm characteristics, what other things do you think influence risk of victimization?

VITA

BRIANNA AUBREY LYNN

Education: M.A. Criminal Justice and Criminology, East Tennessee State
University, Johnson City, TN, 2020

B.S. Biology, East Tennessee State University, Johnson City, TN,
2018

Professional Experience: Graduate Teaching Assistant, Department Of Criminal Justice &
Criminology, East Tennessee State University, Johnson
City, TN, 2018-2020

Courses Assisted:

CJCR-1100 Introduction to Criminal Justice

CJCR-3000 Statistics for Criminal Justice & Criminology

CJCR-3100 Crime in the Life Course