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What drives participation in the Farm and Ranch Lands Protection Program?

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What Drives Participation in the Farm and Ranch Lands Protection Program?

by

Julie Whitson

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE
MASTER OF COMMUNITY AND REGIONAL PLANNING

Co-majors: Sustainable Agriculture; Community and Regional Planning

Program of Study Committee:
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Iowa State University

Ames, Iowa

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ABSTRACT

Farmland preservation works to protect working, productive farmland. The Farm and Ranch Lands Protection Program (FRPP) is a federal program that provides matching funds to state, local, non-profit, and private entities that purchase agricultural conservation easements. This research uses a combination of in-depth qualitative interviews and spatial analysis with ArcGIS software to determine what factors influenced participation in FRPP prior to the 2014 Farm Bill. Interviews were conducted with program administrators, non-profit partner entities, and experts in federal agricultural policy. Spatial analysis used six federally-mandated criteria to determine what types of parcels score highest on federal ranking criteria if they were to be applied to Iowa; Story County and Bremer County were chosen as case study counties to be analyzed at the parcel level. Results demonstrate that the availability of matching funds, partner entity capacity, and partner entity focus all play a role in program participation. Results also showed that negative public perceptions about permanent easements and tensions among program partners can affect FRPP participation and implementation. Results of the spatial analysis indicated that federally-mandated ranking criteria do not significantly limit where an FRPP easement can be placed as long as the site has enough prime farmland and agricultural land to qualify for the program.

CHAPTER 1. INTRODUCTION

Agricultural lands are at the frontline of development throughout the country. In many areas, rapid population growth, demand for low-density development, and a lack of effective planning or zoning regulations have created the perfect storm for farmers at the urban fringe. As the market for developable land comes closer to productive farmland, communities must make decisions about future growth. For many communities, economic development, population growth, and demand for housing go hand in hand (Heimlich and Anderson 2001).

Many factors play a role in farmland loss, including the demand for housing, the desire for increased tax revenue from new development, and agricultural economic conditions. To counter farmland loss, state and local governments and non-profit organizations can use several tools to implement farmland preservation measures. One tool, the Farm and Ranch Lands Protection Program (FRPP), is the subject of this research. This research will explore the primary programmatic and administrative factors that influence participation in FRPP among different states.

Factors That Drive Farmland Loss

Part of what is driving the loss of farmland throughout the country is the demand for certain types of housing. A 1997 survey conducted by Brown, Fuguitt, Heaton, and Waseem found that 45 percent of people who currently live in medium to large cities would prefer to live in a rural or small town location more than 30 miles away from the major city hub (3). For residents living in rural or small towns, 35 percent wanted to live closer to the city. In both cases, this demand for housing that is neither located deep in the urban core nor far outside of a

metropolitan area is fueling residential growth at the rural urban fringe. In response to this demand, roughly 80 percent of the acreage that was used for new construction between 1994 and 1997 was outside of urban areas; 94 percent of this land was used for lots of 1 acre or larger, and 57 percent of those lots were 10 acres or larger (Heimlich and Anderson 2001, 2).

More recently, national studies from 2006 and 2008 show that demand for low-density development is still present, but it may be decreasing. Ramsey (2012) found that demand for large-lot suburban homes had decreased to 25 to 30 percent nationwide (4). A 2011 survey found that 60 percent of all adults surveyed wanted to live in a walkable neighborhood that contained mixed uses and more amenities, and 60 percent of respondents would choose a smaller house and smaller lot size in exchange for a commute time of 20 minutes or less (Ramsey 2012, 4).

While demand can play a huge role in the market for housing and development, it is not the sole factor that communities use to determine the types of development to pursue. There are additional considerations that play a direct role in land use decisions for any community. First, increased development outside of urban areas can put pressure on future agricultural viability. 91 percent of fruits, tree nuts, and berries, 78 percent of vegetables and melons, and 67 percent of dairies are located in urban-influenced counties near the rural-urban fringe and are at risk when development occurs (American Farmland Trust 2013). For all producers, agricultural infrastructure is threatened by development when “patchwork” development occurs, which can isolate farms and make farming supply stores and other necessary businesses that farmers rely on go out of business (Duke and Lynch 2007, 125). All farms are at risk of nuisance lawsuits as agricultural and residential land uses border one another more frequently on adjacent lots (American Farmland Trust 1997, 3).

The desire to increase tax revenue of a community can also play a role in land use decisions. New housing developments tend to bring with them the promise of increased tax revenues, but for certain types of low density developments, the costs of building and maintaining additional infrastructure may outweigh the benefit of collecting the tax revenue in the first place. Heimlich and Anderson (2001) discussed a study that found that certain types of low density development generated 74 percent more capital costs than certain types of high density development (Heimlich and Anderson 2001, 26). After the initial infrastructure investment required for new residential development, communities will continue to pay to maintain that infrastructure. 80 “Cost-of-Community-Services” studies were conducted around the nation and found that, on average, “residential development provides less tax revenue than it consumes in public expenditures” (Heimlich and Anderson 2001, 29).

Land use decisions are complex and require the consideration of a variety of viewpoints. It is the decision of communities to determine how they wish to deal with development. Ideally, decisions like these can allow a community to consider issues, opportunities, housing, land use, quality of life, community character, and environmental and economic benefits in a long-term and comprehensive way.

Arguments For and Against Farmland Preservation

There are a variety of perspectives both for and against farmland preservation. A large body of research exists that presents opinions about farmland preservation from the perspective of the general public, rural residents, public officials, lawmakers, program administrators, planners, and home builders (Calavita and Caves 1994) (Kline and Wichelns 1996) (McLeod, Woirhaye, and Menkhous 1999) (Ryan 2006) (Duke and Lynch 2007) (Broussard, Washington-

Ottombre, and Miller 2008). Many factors affect the opinions of these stakeholder groups, and not surprisingly, these studies represent a variety of viewpoints both for and against the need for farmland preservation and what the goals of farmland preservation should be.

Proponents of farmland preservation often cite the benefits that farmland preservation can provide to a community, including: taking pressure off of fruit, vegetable, and dairy farmers located near urban areas; protecting open spaces for community recreation opportunities; preserving scenic vistas; providing environmental benefits including groundwater recharging and wildlife habitat preservation; and managing the growth of urban areas (American Farmland Trust 1997) (Kline and Wichelns 1996) (Broussard, Washington-Ottombre, and Miller 2008). Many of the benefits previously described are difficult to quantify because they are considered non-market values (American Farmland Trust 1997).

Gardner (1977) provided a foundational argument for farmland preservation from an economic perspective, stating that there are four benefits that can result from the protection of farmland: local and national food security, economic benefits for local agricultural industries, open space and environmental benefits, and “more efficient, orderly, and fiscally sound urban development” (1029). According to Lynch and Musser (2001), most economists have dismissed the first two arguments of food security and economic benefits for local agricultural industries as irrelevant due to confidence in land market systems (577). However, many supporters of farmland preservation, including American Farmland Trust (2013), see economic benefits for local agricultural industries as being extremely relevant in the discussion about farmland preservation. While not all types of agricultural may be as threatened by development at the urban fringe, the majority of the US’s fruits, tree nuts, berries, vegetables, melons, and dairies are located in urban-influenced counties and are susceptible to development pressures from

urban areas because they rely on close proximity to urban areas in order to get perishable agricultural products to market and processing facilities quickly.

One argument against farmland preservation stems from the desire for development to be able to occur, unregulated, if market conditions are right for development. Ryan (2006) found that homebuilders in Western Massachusetts were much less likely than planners or the general public to think that more protection was needed for forest land or farmland in the surrounding areas outside of town centers. Some stakeholder groups do not entirely disapprove of farmland preservation; rather, they have a preference about *which* farmland preservation tools are used. This preference exists because of how these tools affect the market environment. For example, McLeod, Woirhaye, and Menkhous (1999) found that 61 percent of the general public in one county in Wyoming viewed zoning as a favorable approach to farmland preservation, but only 43 percent viewed Purchase of Development Rights (PDR) as a favorable approach (53).

One group of farmland preservation tools, PDRs, has been studied with mixed results. Towe, Nickerson, and Bockstael (2008) created an economic model and found statistically significant evidence that, if the option for a landowner to sell a PDR easement is made available, having that option available can decrease the rate of development (624). However, Duke and Lynch (2007) considered some types of farmland preservation tools including PDRs to be either too expensive, not effective, or both (124). Duke and Lynch (2007) highlight how PDRs fail to preserve large areas of farmland unless additional tools are used. They stated that “. . . without strict zoning regulations, farmland often becomes parcelized . . . [and] a checkerboard distribution of farmland occurs such that farmers cannot operate at optimal scales” (125). Coisnon, Oueslati, and Salanie (2014) found that Agri-Environmental Programs (AEPs) including PDRs have the tendency to cause “leapfrog development” in certain unregulated

circumstances. American Farmland Trust (1997) states that it is of paramount importance for communities to use a variety of farmland preservation tools together in order to achieve maximum efficacy. Many of the tools that communities can use are described in the following section.

State and Local Government Approaches to Farmland Preservation

After weighing the arguments for and against farmland preservation, some communities pursue farmland preservation policies and programs. It is the decision of individual states, regions, and municipalities to determine whether to implement farmland protection measures. There are a variety of tools and policies that many state and local government use to protect farmland. Tom Daniels (1997) sorts these tools into four general categories:

- 1) regulation: including zoning, subdivision ordinances, comprehensive plans, urban growth boundaries, and agricultural districts
- 2) spending: on roads, schools, sewer and water facilities, and utilities
- 3) taxation: income taxes, property taxes, and estate taxes
- 4) acquisition of interest in land: purchase of development rights and transfer of development rights (87-88).

The first group of tools, regulation, includes growth management laws. Growth management laws can control the timing and phasing of certain aspects of urban growth (American Farmland Trust 1997, 30). Lexington, Kentucky established the first urban growth boundary in the country in 1958, and more than 100 counties and cities have since adopted urban growth boundaries (Jun 2004, 1333). Another tool, comprehensive planning, can help different local and regional entities work together to outline policies, objectives, and decision guidelines that they will use to implement a community's vision for the future or "blueprint from development" (American Farmland Trust 1997, 30). Additional regulatory tools include agricultural protection zoning, cluster zoning, and agricultural district laws. These tools can

restrict densities, limit development, or if development is allowed, force development to “cluster” together or encourage smaller lot sizes (American Farmland Trust 1997, 32).

A second group of tools, spending, can also influence farmland protection. While Daniels (1997) describes spending on physical infrastructure such as roads, schools, sewer and water facilities, and utilities, another aspect is spending related to state executive orders. Governors of states can issue executive orders that can create task forces within states whose role it is to identify trends related to agricultural conversion, define state-specific problems related to agricultural conversion, and brainstorm policy approaches and other methods to keep agricultural land in production (American Farmland Trust 1997, 29).

A third group of tools that can help protect farmland is taxation. Differential tax assessment laws mandate that agricultural land is assessed for tax purposes at its agricultural value rather than a higher use or full fair market value. This ensures that farmers are not taxed in such a way that profits are reduced, thereby incentivizing them to sell their farm due to a lack of profitability (American Farmland Trust 1997, 34). Differential tax assessment laws are used by every state except Michigan. Circuit breaker tax programs, active in Michigan, Wisconsin, and New York, give farmers state income tax credits based on the amount of their property taxes and incomes (American Farmland Trust 1997, 34).

One weakness many of these approaches have is a lack of permanence in protection; a fourth group of tools that focus on acquiring development rights in targeted areas of land perform best concerning this issue. Transfer of development rights (TDR) programs allow a landowner to transfer development rights from one parcel of land to another parcel of land. The parcel of land from which the development rights are purchased is preserved in a permanent agricultural conservation easement; the development rights from this property can then be

purchased by someone else to use on another parcel that is in an area that is planned for growth (American Farmland Trust 1997, 37). The development rights can be stacked, thereby creating more dense developments than the local zoning code typically allows.

Purchase of Agricultural Conservation Easement (PACE) programs allow a landowner to sell or donate their development rights on a piece of land. In return, the easement program compensates the landowner for the difference between its value as agricultural land and the land's highest use value. The land is then locked into a legal agreement with all current and future owners of that land that prevents certain uses of the land from occurring. The PACE agreement is beneficial to the landowner because it can provide capital to the landowner which can then be reinvested into the operation or put it towards retirement or reducing debt. This capital can also aid in the inter-generational transfer of the farm by giving beginning farmers access to more affordable farmland (Farmland Information Center 2012a). A specific federal PACE program, the Farm and Ranch Lands Protection Program, is the subject of this research.

Purpose of the Farm and Ranch Lands Protection Program (FRPP)

The Farm and Ranch Lands Protection Program (FRPP) is a federal program that is designed to provide financial support to state, local, non-profit, and private entities that purchase agricultural easements (Farmland Information Center 2012a). Congress created and funded FRPP in 1996 through the Farm Bill, giving the NRCS the authority to administer the program (Sokolow 2009, 235). The program has been amended with each subsequent Farm Bill, but the main premise of this program remains; FRPP provides matching federal funds of up to 50 percent that go towards the cost of purchasing an agricultural easement. The entity placing the easement must then raise the remaining 50 percent of the cost of the easement, some of which

can be contributed as a donation by the landowner. Many states take advantage of FRPP and the federal match money the program provides as a way to fund farmland protection efforts. State and local governments, public agencies, and private organizations participate in FRPP to receive matching federal funds of up to 50 percent that go towards the purchase of agricultural easements on certain lands.

Not all states participate in FRPP. Some states have a long history of participation, while others have not participated in the program since its inception in 1996. Table 1 describes participation in FRPP by state from 1996, when the program began, to 2007, based on the cumulative number of easements each state placed during that time period. Table 2 describes state participation during that same time period based on the cumulative number of acres enrolled in FRPP.

Table 1. 1996 – 2007 Cumulative Number of Easements in FRPP

Rank	State	# Easements	Rank	State	# Easements	Rank	State	# Easements
1	PA	297	18	CA	48	35	NM	12
2	MD	259	19	RI	47	36	WY	11
3	VT	242	20	OK	35	37	NV	7
4	NJ	212	21	SC	32	38	TX	7
5	MA	170	22	VA	26	39	OR	6
6	KY	149	23	ME	25	40	HI	4
7	OH	106	24	MT	24	41	ND	4
8	NY	105	25	IL	23	42	SD	4
9	DE	101	26	MN	23	43	AZ	3
10	NH	100	27	AL	22	44	NE	2
11	CT	84	28	IA*	22	45	AK	1
12	CO	82	29	GA	21	46	AR	1
13	MI	82	30	FL	19	47	IN	1
14	WA	79	31	KS	15	48	LA	1
15	WI	79	32	MO	15	49	TN	1
16	NC	69	33	ID	14	50	MS	0
17	WV	59	34	UT	13			

*USDA-NRCS (2014) data shows 22 easements, Iowa NRCS (2014) shows 12 easements.

Source: USDA-NRCS 2014

Table 2. 1996 – 2007 Cumulative Number of Acres in FRPP

Rank	State	Acres	Rank	State	Acres	Rank	State	Acres
1	VT	52,094	18	WI	11,004	35	RI	3,075
2	CO	44,493	19	MI	9,629	36	UT	2,971
3	PA	41,768	20	CT	8,214	37	MO	2,354
4	MD	36,175	21	WV	7,326	38	AZ	2,347
5	MT	30,277	22	NH	6,363	39	MN	2,284
6	KY	26,451	23	WA	6,330	40	TN	946
7	NY	21,876	24	ME	5,561	41	NE	753
8	NJ	21,842	25	VA	5,382	42	HI	473
9	OH	21,187	26	SC	5,181	43	SD	374
10	WY	20,275	27	NV	5,145	44	NM	299
11	DE	18,191	28	ID	4,391	45	ND	294
12	CA	16,403	29	AL	3,774	46	AR	247
13	OR	16,083	30	IA	3,678	47	IN	131
14	FL	15,671	31	IL	3,614	48	LA	41
15	KS	14,563	32	OK	3,589	49	AK	40
16	MA	11,926	33	TX	3,523	50	MS	0
17	NC	11,222	34	GA	3,237			

Source: USDA-NRCS 2014

Market Influence on Program Participation

According to Tables 1 and 2, participation in FRPP between 1996 and 2007 varied widely among states. There are many factors that may be at work when considering why some states choose to participate in FRPP more than others. Agricultural economic conditions in each state may have an influence on program participation. While agricultural economic conditions are not the direct focus of this research, the following tables provide additional context for factors present in some states that may drive participation in FRPP. In order to consider agricultural economic conditions, Tables 3, 4, and 5 have been compiled to display total acres in production by state, average agricultural land value by state, and average value of agricultural production by state, respectively.

Table 3. Total Acres in Production by State

Rank	State	Acres	Rank	State	Acres	Rank	State	Acres
1	TX	121,472,584	18	IN	13,297,585	35	VA	5,515,856
2	MT	57,400,936	19	WA	12,635,145	36	NY	5,210,581
3	KS	44,597,540	20	OH	12,050,039	37	AL	5,203,644
4	NE	44,283,741	21	WI	11,344,182	38	SC	2,743,290
5	SD	42,231,929	22	AR	11,311,501	39	WV	1,987,251
6	NM	40,821,498	23	UT	10,757,376	40	MD	1,584,727
7	ND	37,718,492	24	ID	10,598,640	41	HI	989,822
8	WY	31,412,557	25	KY	10,108,279	42	AK	826,297
9	OK	31,148,416	26	TN	8,766,916	43	VT	655,347
10	CO	29,093,255	27	MI	8,208,952	44	ME	584,537
11	IA	28,559,984	28	MS	7,198,153	45	NJ	565,976
12	IL	24,768,614	29	FL	6,644,996	46	DE	451,644
13	AZ	24,304,282	30	LA	6,250,962	47	MA	237,270
14	CA	23,860,807	31	NC	5,957,401	48	CT	194,585
15	MN	23,667,330	32	GA	5,834,954	49	NH	155,841
16	MO	23,504,672	33	NV	5,761,762	50	RI	29,594
17	OR	14,215,687	34	PA	5,624,985			

Acres in production includes land that is crop land, agricultural land, or pasture land. Acres in production does not include woodlands. Figures are a result of an average of the 2002 and 2007 NASS agriculture census.

Source: NASS 2002 and 2007

Table 4. Average Agricultural Land Value by State

Rank	State	Value	Rank	State	Value	Rank	State	Value
1	RI	\$13,027	18	TN	\$2,892	35	ID	\$1,621
2	NJ	\$12,296	19	WI	\$2,749	36	OR	\$1,546
3	CT	\$11,079	20	IA	\$2,697	37	TX	\$1,019
4	MA	\$10,774	21	GA	\$2,615	38	UT	\$1,003
5	DE	\$7,201	22	VT	\$2,477	39	NE	\$968
6	HI	\$5,598	23	SC	\$2,463	40	OK	\$928
7	MD	\$5,559	24	KY	\$2,253	41	CO	\$901
8	CA	\$4,967	25	MN	\$2,041	42	KS	\$799
9	FL	\$4,238	26	AL	\$1,995	43	SD	\$669
10	PA	\$4,097	27	NY	\$1,992	44	ND	\$588
11	NH	\$4,030	28	ME	\$1,920	45	MT	\$581
12	NC	\$3,592	29	AR	\$1,906	46	AZ	\$573
13	VA	\$3,444	30	WV	\$1,850	47	NV	\$530
14	OH	\$3,130	31	MO	\$1,844	48	WY	\$402
15	IL	\$3,109	32	LA	\$1,796	49	AK	\$379
16	IN	\$3,075	33	WA	\$1,739	50	NM	\$286
17	MI	\$3,038	34	MS	\$1,626			

Average agricultural land value is the average value of agricultural land in each state, including buildings. Figures are a result of an average of the 2002 and 2007 NASS agriculture census.

Source: NASS 2002 and 2007

Table 5. Average Value of Agricultural Production by State

Rank	State	Value	Rank	State	Value	Rank	State	Value
1	CA	\$21,027,871,500	18	AR	\$2,260,678,500	35	AL	\$633,627,500
2	IL	\$8,373,978,500	19	WI	\$2,179,698,500	36	MD	\$539,752,500
3	IA	\$8,207,428,500	20	ID	\$2,055,980,500	37	NM	\$475,198,500
4	MN	\$5,805,897,500	21	GA	\$1,860,933,000	38	HI	\$437,636,000
5	FL	\$5,648,830,500	22	AZ	\$1,750,394,500	39	CT	\$364,449,500
6	TX	\$5,148,663,500	23	CO	\$1,598,838,500	40	MA	\$320,775,000
7	NE	\$5,115,795,000	24	PA	\$1,595,310,000	41	UT	\$315,096,500
8	WA	\$4,168,858,000	25	NY	\$1,348,528,000	42	ME	\$274,464,500
9	IN	\$4,155,883,000	26	MS	\$1,346,706,500	43	NV	\$188,535,500
10	ND	\$3,749,446,500	27	LA	\$1,335,129,000	44	DE	\$180,519,500
11	KS	\$3,652,829,500	28	KY	\$1,257,489,000	45	WY	\$175,792,000
12	OH	\$3,207,308,500	29	TN	\$1,110,167,000	46	NH	\$94,808,000
13	MI	\$2,846,278,000	30	MT	\$1,003,522,500	47	VT	\$85,422,500
14	MO	\$2,743,692,000	31	OK	\$1,003,351,500	48	WV	\$74,000,500
15	OR	\$2,585,499,000	32	VA	\$788,260,000	49	RI	\$51,370,000
16	SD	\$2,479,703,500	33	NJ	\$754,573,500	50	AK	\$22,646,000
17	NC	\$2,307,456,500	34	SC	\$695,867,500			

Value of agricultural production by state includes crop totals of field crops, fruit, tree nuts, horticulture, and vegetables, measured in US Dollars. Figures are a result of an average of the 2002 and 2007 NASS Agricultural Census.

Source: NASS 2002 and 2007

According to Table 1, the ten states that placed the most FRPP easements from 1996-2007 include Pennsylvania, Maryland, Vermont, New Jersey, Massachusetts, Kentucky, Ohio, New York, Delaware, and New Hampshire. Conversely, the ten states that placed the fewest FRPP easements during this same time period include Hawaii, North Dakota, South Dakota, Arizona, Nebraska, Alaska, Arkansas, Indiana, Louisiana, and Mississippi. If we compare these two groups of both high and low participation states (in relation to one another) based on agricultural economic conditions, we find that high participation states have fewer agricultural acres in production, higher agricultural land values, and lower value of agricultural production, on average. These averages reflect the realities that FRPP is commonly used in East Coast states

with high land prices and less overall agricultural land in production. Table 6 summarizes this comparison.

Table 6. Agricultural Economic Conditions Based on FRPP Participation

	10 States with High Participation in FRPP	10 States with Low Participation in FRPP
Acres in Production	3,664,469	18,841,276.4
Average Agricultural Land Value	\$5381	\$1718
Value of Agricultural Production	\$938,448,650	\$2,265,401,850

It is possible that several of the agricultural economic factors presented in Tables 3, 4, and 5 have influenced FRPP participation, but there are many additional factors that stand to influence program participation. Lynch and Lovell (2003) found that in purchase of development rights programs similar to FRPP, the likelihood for a landowner to participate in the program increased as farm sizes increased (270). Lynch and Lovell (2003) also found that higher percentages of prime soils present in a parcel (beyond minimum program requirements) decreased the likelihood of program participation, a farther distance away from cities increased the likelihood of program participation, and the presence of a child who would continue to farm the land increased program participation. Wang and Libby (2002) tied program participation back to the root of the issue: money. The authors mentioned several monetary considerations related to landowner participation in farmland preservation, including: different appraisal methods by state, economic conditions in the state including development pressures and agro-economic conditions that would affect the value of farmland, importance placed on

easement donation rather than a sale based on fair market value, and the extent to which property rights are affected by the easement terms (Wang and Libby 2002, 9).

These factors and conditions that affect participation are informative, but they are not the direct focus of this research; rather, the subject of this research is the primary *programmatic* and *administrative factors* that may influence participation. Individual landowners were not interviewed for this research in order to keep the focus on administrative and programmatic aspects of FRPP that may influence states' participation in the program.

Research Goals and Questions

After viewing the information presented in Tables 1 and 2 about states' rates of participation in FRPP from 1996 to 2007, I began to wonder what drove certain states to participate in FRPP more than others. Are there specific factors present in these states that make FRPP successful? For states with lower participation rates in FRPP than other states, was there simply not a need for the program, or were there other factors at work? When I discovered that Iowa stopped participating in FRPP in 2005, and that there was no immediately obvious explanation, it further drove my curiosity. This research explores FRPP from the perspectives of both states with high and low participation rates in the program. State-level representatives of the NRCS, national-level policy experts, and regional-level partner entities were interviewed in order to understand how these players in the program view FRPP. What conditions exist in each state that make the program successful? How might politics, policies, or other administrative difficulties affect implementation of or participation in the program?

To address these broad themes, this research asks the following questions:

1. What are the primary programmatic and administrative factors that influenced participation in the Farm and Ranch Lands Protection Program prior to the 2014 Farm Bill?
2. What types of parcels score highest on federal ranking criteria if they were to be applied in Iowa?

Ultimately, this research will provide a broad collection of themes that were common among the research participants. These themes will allow us to better understand how certain factors have influenced participation in FRPP prior to the 2014 Farm Bill.

CHAPTER 2. PROGRAMMATIC OVERVIEW OF FRPP

The Importance of PACE Programs

Purchase of Agricultural Conservation Easement (PACE) programs are programs that provide funding to purchase agricultural conservation easements from landowners. If a landowner agrees to sell their right to develop the land in the future, the landowner is then compensated for the difference between the value of the land for agriculture versus its “highest and best use,” which is generally the value of the land for commercial or residential purposes (American Farmland Trust 1997, 36). While many different types of PACE programs exist, quite a few exist through state or local governments and non-profit land trusts. These organizations use a publicly-funded PACE model as a tool to help guide future development and land use decisions. PACE programs are important in the context of FRPP because PACE funds can be used as “matching” funds to leverage additional funding for easement purchase, such as those that come from FRPP.

Many state and local entities have created PACE programs as a tool to regulate future development. As of January 2012, there were 27 states with state-level PACE programs and at least 91 local PACE programs established in 20 different states (Farmland Information Center 2012b, 1). A vast majority of these local programs are administered by cities, counties, or townships, and even city or county planning departments. One land trust, the Tri-Valley Land Trust in Alameda County, California is built into the city and county government in 1994 to implement a regional agricultural preservation plan (Sokolow 2006, 16).

In addition to providing funding, Dempsey (2012) suggests that the presence of state-wide, publicly-funded PACE programs can generate activity among land trusts. According to Dempsey (2012),

. . . among land trusts that hold at least 25 easements, 87 percent were located in states with state-level [PACE] programs. Only 13 percent (7 land trusts) were located in states without state funding for easement acquisitions. Similarly, 81 percent of the land trusts that had protected at least 5,000 acres were in states with PACE programs (9).

This shows that while land trusts can exist in areas without a state-level PACE program, they are much more prevalent and active in areas with consistent funding sources provided by PACE programs. The main reason for this is that land trusts need funding to purchase agricultural easements: PACE programs can provide this funding.

Tax Benefits Associated With Conservation Easements

One of the factors that make PACE programs such as FRPP are so successful is the potential tax benefit to the landowner. The offering of tax benefits for conservation easements began in 1976 with the Federal Tax Reform Act of 1976; this policy drastically increased the extent to which conservation easements were used (Magedanz 2004).

In addition to the monetary compensation a landowner can receive from the easement transaction, a landowner can also expect to receive a tax benefit. The type and amount of tax benefits a landowner receives depends on the type of easement transaction that takes place. A transaction qualifies as a sale when a payment of cash, or other value, is exchanged (Hoover 2002). If the landowner sells an easement for less than fair market value, this transaction is called a bargain sale. The value of the difference between the fair market value of the easement and the bargain sale value is classified as a donation on behalf of the landowner.

The value of the donation in an easement transaction is the portion of the transaction that qualifies for tax benefits. A landowner can utilize his or her compensation from the easement transaction in two ways: (1) the landowner can get a tax break when acquiring additional, “replacement” working farmland, or (2) the landowner can list the donation amount as a charitable deduction on their income taxes. If the landowner wishes to acquire replacement working farmland, he or she can put the value of the donation towards the new purchase and that portion of the transaction will be taxed at a lower rate. Any additional cost of acquiring new farmland that exceeds the original donation value will be taxed at the normal rate. If the landowner wishes to use the value of the donation towards their income taxes, they can claim up to 50 percent of their adjusted gross income (AGI) and 100 percent of their income for up to 15 years after the easement transaction (Land Trust Alliance 2014).

These tax benefits may provide an incentive to landowners to participation in FRPP. FRPP rules allow landowners to contribute “donations” to FRPP easement transactions in an attempt to decrease the cost of easement purchases. These donations then make the landowner eligible for the specific types of tax benefits that were described in this section.

Brief History of FRPP

FRPP was created in 1996 to help fund the purchase of agricultural easements by state and local partner organizations (Sokolow 2009, 235). However, pressure to act at the federal level existed well before then. In 1972 and 1973, the Land Use Policy and Planning Assistance Act (LUPPAA) was introduced to Congress as a way “to encourage systematic attention to development patterns and to bring some consistency to state efforts” (Eitel 2003, 597). This legislation was rejected both times it was introduced, in part because of the perception that

farmland protection was only of state or local concern. Several internal USDA policy statements and memorandums were issued by the USDA throughout the 1970s asking agencies within the USDA to consider changing programs or policies that might directly contribute to or encourage farmland conversion (Eital 2003, 597).

In 1981, the Farmland Protection Policy Act required all federal agencies “to evaluate the impacts on farmland of growth alternatives and report to the USDA the conversion impacts of their projects” (Sokolow 2009, 242). The 1990 Farm Bill created a limited loan program that funded the purchase of farmland preservation easements; however, it was written in a way that only applied to Vermont, thus making the state a pilot project for a national farmland protection program (Sokolow 2009, 242). The program used \$23.5 million between 1993-1995, allowing Vermont to preserve 44,000 acres of farmland and provide a working example for a federal farmland preservation program (American Farmland Trust 1997, 20).

In 1996, the Federal Agricultural Improvement and Reform Act created the Farmland Protection Program (Sokolow 2009, 242). The legislation initially allocated \$35 million in funding to the program over six years. Two subsequent Farm Bills in 2002 and 2008 increased funding for the program to \$597 million and then \$743 million, respectively (Sokolow 2009, 243). The 2002 Farm Bill, 2008 Farm Bill, and the 2009 Interim Final rule have established the program’s purpose as the protection of agricultural lands, created an easement value appraisal process that closely follows industry standards, and created a certification process through which partner entities can become certified to participate in FRPP (Sokolow 2009, 243) (USDA-NRCS 2010a, 11) (USDA-NRCS Commodity Credit Corporation 2011).

The 2014 Farm Bill provided sweeping changes to the program by combining three NRCS conservation easement programs — FRPP, WRP, GRP — together into one program, the

Agricultural Conservation Easement Program (ACEP) (Stubbs 2014, 10). The 2014 Farm Bill gives ACEP permanent, mandatory, baseline funding of \$200 million which will be shared among the three conservation easement programs (Stubbs 2014, 10). A breakdown of FRPP funding by year from 1996-2012 is included in Figure 1. With this money, FRPP was able to place a total of 4,249 easements totaling 1,125, 480 acres nationwide as of 2012 (USDA-NRCS NEST 2012).

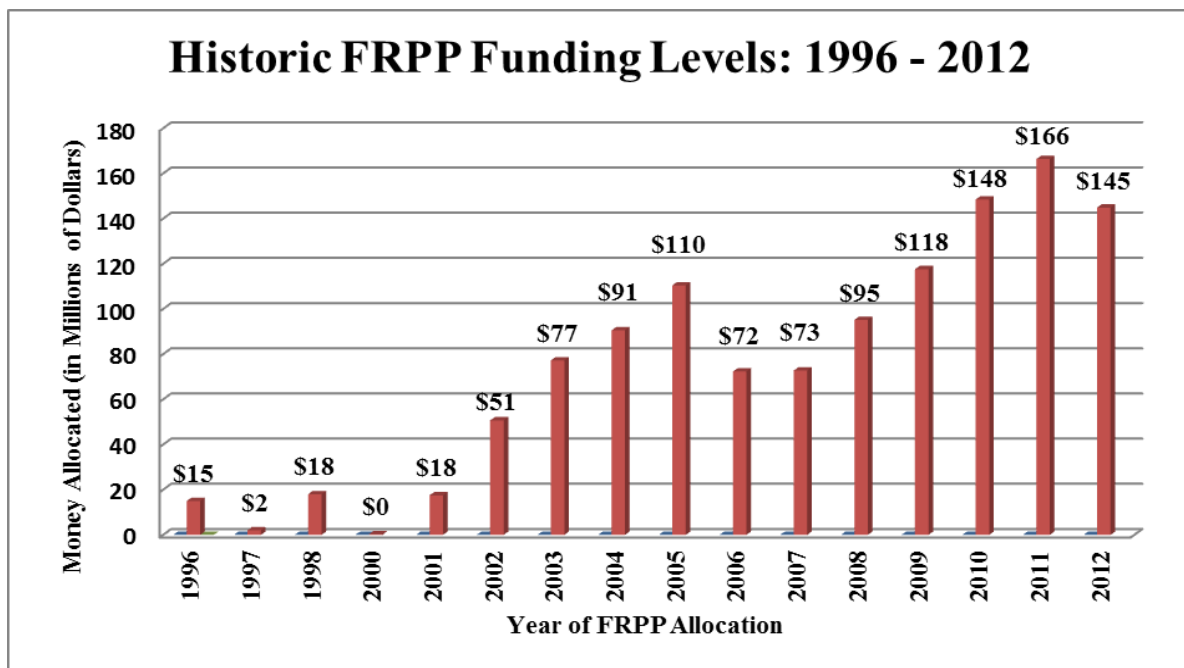


Figure 1. Historic FRPP Funding Levels: 1996-2012

Source: Farmland Information Center 2012a, USDA-NRCS FMMI 2013

How FRPP Works

FRPP Eligibility and Funding

Three conditions are necessary before land can be enrolled in FRPP. The first condition involves the status and quality of the land. A qualifying parcel of land must be part of a privately-owned farm or ranch (Farmland Information Center 2012a). The land must also contain at least 50 percent prime farmland and at least 33 percent cropland, grassland, prairie, or rangeland. A second condition involves the landowner. In order to qualify for the program, landowners cannot have an average Adjusted Gross Income (AGI) that exceeds \$1 million for the previous three years (Farmland Information Center 2012a). Finally, before FRPP becomes involved, the landowner must first establish a relationship with a certified partner entity such as a state government, local government, or a non-profit, and that certified partner entity must have a pending offer on the land in order for the land to be eligible for FRPP. If the conditions described above are met, the certified partner entity can then submit a proposal to the NRCS office in their respective state during what is called an announced project period.

Money used for the purchase of an FRPP easement does not come solely from federal sources. The purchase can be funded with a maximum of 50 percent of funds from the National NRCS office. The remaining cost of the easement is then made up of a cash contribution from the partner entity and a charitable donation from the landowner. As of the 2014 Farm Bill, “up to 50 percent of the non-federal share may be a charitable donation or qualified conservation contribution from the private landowner, assuming the remaining non-federal share is a cash contribution from an eligible entity” (Stubbs 2014).

Partner Entity Role

Landowners, partner entities, the State NRCs office, and the Federal NRCS office work together to implement FRPP. To participate in FRPP, partner entities must be certified. To obtain certification, they first must be either a federally recognized Indian tribe, a state or local government, or a non-governmental organization that already purchases agricultural easements (Farmland Information Center 2012a). They must also have “a commitment to long-term conservation of agricultural lands; a capacity to acquire, manage, and enforce easements; sufficient staff to monitor and enforce easements, and; available funds” (Farmland Information Center 2012a). Simultaneously, partner entities should establish relationships with landowners that they wish to work with in order to place agricultural easements. One of the main steps in establishing this relationship is ensuring that a landowner can furnish a clean title to the land and determining the price of the easement payout at what is called fair market value. The USDA-NRCS Conservation Programs Manual (2010) states that, “Easement price is determined by completing an appraisal for market value of the whole property before the easement (before value) and an appraisal for market value of the whole property after the easement (after value) is placed. The difference between the before value and the after value is deemed the value of the conservation easement” (I2). When the fair market value of the easement is determined, an offer can be placed on that land and the land can enter into the FRPP process. Once a partner entity has a pending offer with that landowner on FRPP-qualified land, it is the partner entity’s responsibility to submit this information to the NRCS State office throughout the year (USDA-NRCS 2010b, A2). Partner entities must have all necessary matching funds on hand at the time of the application.

The parcel will then go through a ranking process; this process and associated ranking criteria are determined by the State NRCS office and the state technical committee (USDA-NRCS 2010b, B5). Once funds are allocated to the state office from the National office and the parcel is ranked and determined eligible for funding, the State NRCS office will allocate this money to the partner entity and enter into a cooperative agreement with that entity. Depending on the terms of the specific agreement, the entity has two to five years to use the FRPP funds to: document the quality of the property before it is entered into the easement agreement; perform legal and administrative duties related to the easement acquisition; produce a legal conservation easement deed, and; provide confirmation to the NRCS State office that the conservation easement has been recorded, or closed (USDA-NRCS 2010b, B5). When the easement closes, the landowner is compensated based on the appraised fair market value of the land as determined by an appraiser. The partner entity serves as the main holder of the agreement with the landowner and is responsible for enforcing the easement terms. The entity is responsible for “managing, monitoring, and enforcing [the terms of the conservation easement]” for the duration of the easement (USDA-NRCS 2010b, B5).

State and National NRCS Role

The State NRCS Office plays a large role in two main FRPP functions: acquiring money from the National NRCS office and administering FRPP in accordance with all federal regulations. Money is allocated to the National NRCS office for the implementation of FRPP through Congress and the Farm Bill. To participate in the program, a State NRCS office must submit a State plan to the National NRCS office. State plans should include, at minimum, information about: existing development pressures or land conversion rates in the state;

established program priority areas; acreage of prime farmland and total farmland lost; total acres proposed for protection for the entirety of the plan; average value of farmland in targeted areas; estimated FRPP contribution per acre of targeted land in the plan; amount of FRPP dollars requested by fiscal year; history of participating entities' previous FRPP performance, and; ranking factors that the state plans to use for the state parcel ranking (USDA-NRCS 2010b, E1).

Based on this plan, the National NRCS office allocates money to states using a formula that considers the historic amount of farmland lost in the state, amount of prime farmland lost, past efforts to protect farmland, the previous performance of partner entities, and any current plans for protection (Sokolow 2009, 248). Data on these topics is pulled from the National Resources Inventory, FRPP database, and the State FRPP plan itself. The Farm Bill does not specifically mandate criteria, or a system, by which the National NRCS office should allocate money to State NRCS offices; instead, the Farm Bill gives the Chief of NRCS (head of the NRCS National office) complete control over this process (Sokolow 2009, 248). General factors that make up the National NRCS allocation formula are known, and previous examples of that formula are available publicly, but the specific formula is not included in the Farm Bill or other administrative documents that are publicly available (Sokolow 2009, 248).

Once money has been distributed from the National NRCS office to the State NRCS offices, it is then distributed to certified partner entities. As mentioned in a previous section, partner entities must submit documentation to State NRCS offices of any land or landowner with which they have entered into an offer if they wish to receive FRPP funding for the acquisition of that easement (USDA-NRCS 2010b, A2). Partner entities can submit this information to the State NRCS at any time during the year. If a State NRCS office receives funding from the National NRCS office, the State office is then responsible for taking all existing parcel

applications from partner entities and putting them through their individual state parcel ranking process. Ranking criteria is created using a combination of federal and state criteria. At least half of this criteria comes from the National NRCS, and every state is required to follow it; states can add additional characteristics as desired, but state or local criteria cannot make up more than 50 percent of the total weighted score (Sokolow 2009, 248). Recommendations for adding additional criteria come from the State Technical Committee, which is a body of experts from various fields with expert knowledge on farming, ranching, and development pressures that threaten these activities (USDA-NRCS 2010b, E2). Federal and state criteria are combined to create a unique formula that ranks parcels on a 100-point scale. If a partner entity's parcel application is ranked and determined eligible for funding, the State NRCS office will allocate this money to the partner entity and enter into a cooperative agreement with that entity. It is the State NRCS office's responsibility to enforce this cooperative agreement in its entirety. A graphic description of the relationship among landowners, partner organizations, the state NRCS office, and the National NRCS office is included in Figure 2.

Key Players In FRPP Implementation

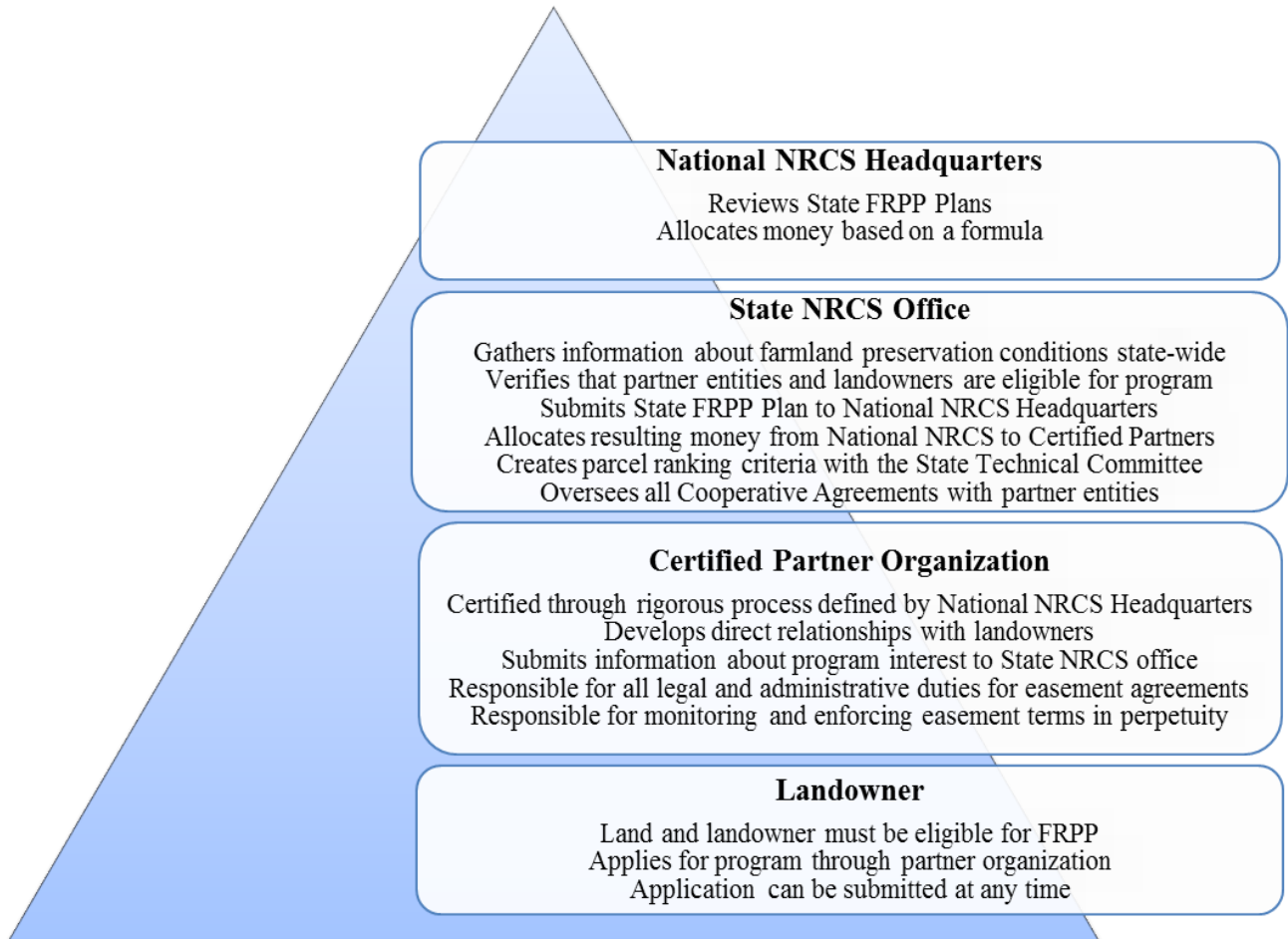


Figure 2. Key Players in FRPP Implementation

Source: USDA-NRCS 2010b

CHAPTER 3. METHODOLOGY

This research has been designed to answer the following questions:

1. What are the primary programmatic and administrative factors that influenced participation in the Farm and Ranch Lands Protection Program prior to the 2014 Farm Bill?
2. What types of parcels score highest on federal ranking criteria if they were to be applied in Iowa?

To answer these questions, the research explores the topic using two research methodologies: in-depth qualitative interviews and geographic information systems (GIS) spatial analysis. Each method will be described in detail below.

In-Depth Qualitative Interviews

Interviews were conducted with program coordinators, administrators, experts in federal agricultural policy, and others with experience in issues related to FRPP. In order to get the full picture of FRPP administration, participants were chosen based on their level of involvement with and knowledge of FRPP at the regional, state, and federal level. Three types of participants were included in this study: (1) representatives from the NRCS at the state level, (2) representatives from a partner entity in select states, and (3) a national representative. These three types of participants are important because they serve different roles in the implementation of FRPP. First, NRCS state offices are responsible for administering FRPP in each state. Next, partner entities, including non-profits and governmental entities (such as states, counties, municipalities), work with both landowners and the state NRCS office to implement FRPP on the ground. Finally, national representatives, including national NRCS representative and national non-profits, have the ability to see the program at a more macro level and comment on trends that may be present for the entire nation rather than just a state or region.

Participants from these three groups were chosen based on two factors. State-level NRCS representatives and partner entities were chosen based on a state's level of participation in FRPP from 1996-2007. Levels of participation were measured by how many FRPP easements each state placed during that time period (see Table 1) (USDA-NRCS 2014). All 50 US states were separated into two categories: those states with "high participation rates" that ranked 1-25 in terms of the cumulative number of FRPP easements placed and those states with "low participation rates" that ranked 26-50 in terms of the cumulative number of FRPP easements placed. This categorization as "low" and "high" participation states does not reflect any consideration other than individual states' participation rates in the program relative to one another.

Three state-level NRCS representatives were interviewed from the "high participation" category. States in this category placed 75-150 FRPP easements from 1996-2007. Two state-level NRCS representatives were interviewed from the "low participation" category. States in this category placed 1-25 FRPP easements from 1996-2007. One partner entity was also selected from each "high" and "low" category to be interviewed. One national representative was chosen to be interviewed based on that person's depth of knowledge and experience regarding FRPP policy and implementation. Table 7 illustrates the diversity of participants interviewed.

Table 7. Participant Types For Qualitative Interviews

Participant Type	Participants Interviewed
States that had high participation rates in FRPP (1996-2007)	
Representative from State NRCS office	3
Representative from partner entity	1
States that had low participation rates in FRPP (1996-2007)	
Representative from State NRCS office	2
Representative from partner entity	1
National Representative	1
Total Number of Participants	8

A total of eight semi-structured interviews were conducted by phone. Each interview lasted approximately 30 minutes to one hour with an average time of 50 minutes. Interviews were recorded and then transcribed. The following standard questions were asked to each participant:

- Q1: How many years has your (state or organization) administered FRPP?
- Q2: How many partner entities are in the state?
- Q3: What resources and conditions are necessary for a state to participate in FRPP?
- Q4: Has the state ever had a lapse in participation in FRPP?
- Q5: How have federal changes in FRPP affected your state's participation?
- Q6: To what extent do politics play a role in FRPP participation?
- Q7: How do you see partner organizations' involvement in FRPP?
- Q8: What steps does your state take to secure FRPP dollars?
- Q9: What are the biggest challenges to FRPP in your state?
- Q10: What specific requirements does your state have that differ from national requirements?
- Q11: To what extent does participation in other NRCS programs play a role in FRPP participation?
- Q12: What external factors play a role in FRPP participation?
- Q13: What is the future of farmland preservation?

These questions were designed to parse out themes related to program implementation and administration. Having three different participant types generated a wide variety of themes from these standard questions. Even so, common themes and comments began to emerge and it became apparent that saturation had been reached after eight interviews.

After interviews were transcribed, Descriptive and Evaluation coding methods were used to code each transcript (Saldana 2009). 286 codes were identified from the eight interview transcripts. These codes were compiled into 19 categories and resulted in 4 major themes that came out of the research. The qualitative interview portion of this research received IRB approval from Iowa State University.

State Profiles

Of the eight qualitative interviews included in this research, five interviews were conducted with representatives from five different state-level NRCS offices. The graph in Figure 3 represents each state's level of participation in the three NRCS easement programs combined under the 2014 Farm Bill. These three programs are FRPP, GRP, and WRP. A Freedom of Information Act (FOIA) request was submitted for program data broken down by year before 2005, but this data was unfortunately not available. This graph is designed to give the reader a better sense of the level of participation that each state has in NRCS conservation easement programs in order to better understand the themes and issues discussed in the findings, discussion, and conclusion of this research.

Information at the state level about NRCS conservation easement program allocations have been totaled to maintain state anonymity and to provide a more holistic picture of easement program allocations as a result of these three programs being combined under the 2014 Farm

Bill. Each state representative that participated in this research has been given a pseudonym: State 1, State 2, State 3, State 4, and State 5. States are also identified in Figure 3 as states with “high” and “low” participation rates in FRPP. It is important to note that “high” and “low” states have been ranked relative to each state’s historic participation in FRPP.

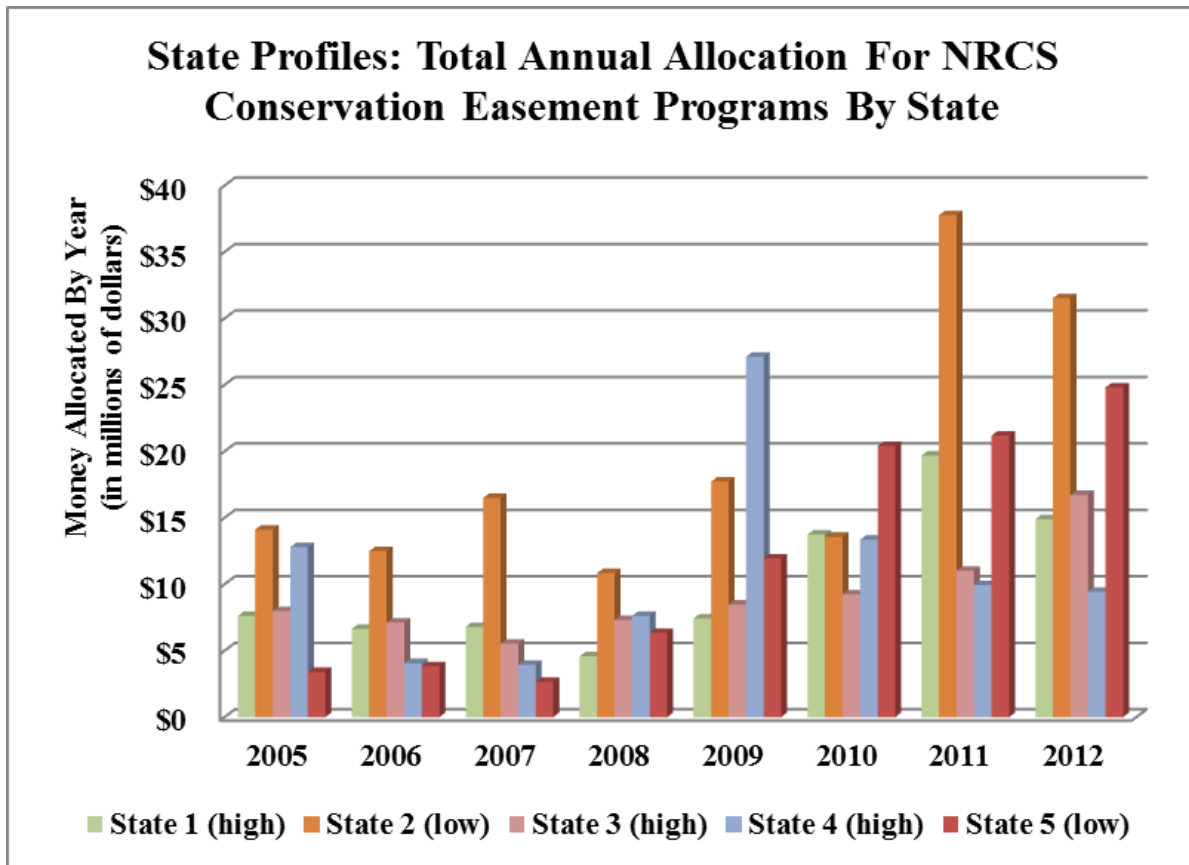


Figure 3. State Profiles: Total Annual Allocation For NRCS Conservation Easement Programs By State

Source: USDA-NRCS FMMI 2013, USDA-NRCS FFIS 2011

Figure 3 shows the total annual allocation for NRCS conservation easement programs: FRPP, WRP, and GRP. One may notice that the two “low” participation states included in this study (States 2 and 5) have some of the highest NRCS allocations on a yearly basis. These high overall program allocations are a result of high WRP allocations. To look at the data from another perspective, Figure 4 illustrates the percentage of each state’s yearly NRCS allocation

that was allocated for the purposes of FRPP during the same time period. From this visual, we can see that States 1, 2, and 4, also known as the “high” participation states for this research, have significantly larger percentages of their allocation that go towards FRPP.

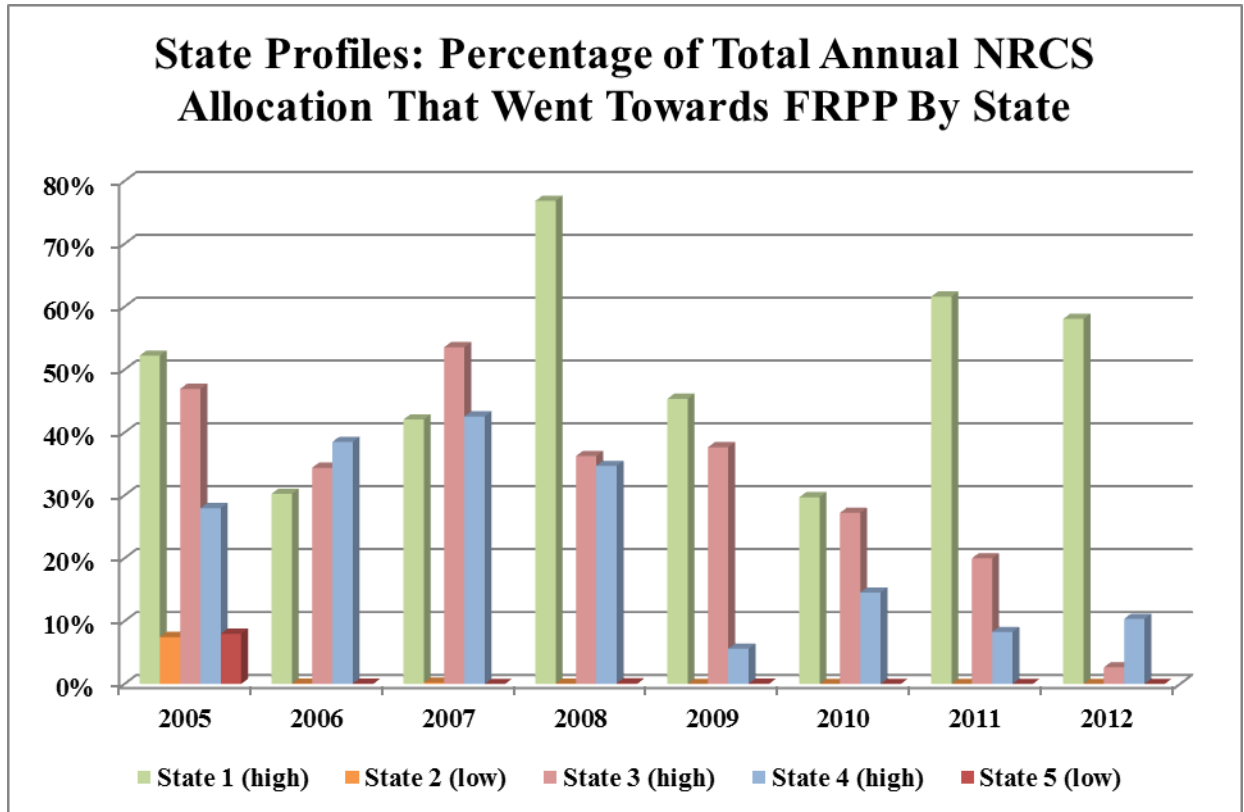


Figure 4. State Profiles: Percentage of Total Annual NRCS Allocation That Went Towards FRPP By State

GIS Spatial Analysis

Using GIS for Farmland Preservation

LESA, or Land Evaluation and Site Assessment, evaluates and ranks specific sites for certain types of land uses based on multiple factors (Dung and Sugumaran 2005). According to Dung and Sugumaran (2005), LESA was developed by the U.S. Soil and Conservation Service

as a tool that was used to implement the 1981 Farmland Protection Policy Act (228). Since then, LESA has been used in a variety of ways with Geographic Information Systems (GIS) software to tie the technology to farmland preservation. Hoobler, Vance, Hamerlinck, Munn, and Hayward (2003) used LESA methodology to compare existing land uses in a several-county area in Wyoming with ideal land uses with a focus on agriculture since prime farmland is at a premium in their study area. They combined and weighted factors including: area with less than 5% slope on quadrangles containing more than 25% agricultural land; irrigated cropland; soil family classifications that were then categorized into land capability classes, crop yields, and prime farmland, and; distance from roads, sewers, and urban growth or municipal boundaries. Final results led to several different models that prioritized certain factors using different weighting methodologies.

The Penn State Cooperative GIS Program (RGIS 2000) has created a LESA system that automates the ranking system for county government offices by allowing users to identify a farm parcel and instantly access information about that parcel. Users identify the parcel by either its parcel identification number (PIN) or by clicking on it from an aerial photograph. Users can then instantly access information about the parcel's soil characteristics, farm size, surrounding uses, and location of roads and sewers. Other factors can be inputted and weighted as desired. A final score is then computed that can help government officials prioritize land for farmland preservation.

Tulloch et al. (2003) used LESA methodology in a study of one county in east-central New Jersey. The researchers employed the current guidelines used by the County Agricultural Development Board, which sets minimum standards for participation in a state-wide purchase of development rights farmland preservation program. In this country, criteria includes: soils,

including productivity and prime farmland characteristics; boundaries and buffers, including land uses of neighboring parcels and beneficial land uses for agricultural parcels; local commitment, including zoning ordinances, sewage plans, and right to farm ordinances; size and density, including size of the parcel and relationship of the parcel to other preserved land in the local region, and; farm and family characteristics, including percentage of land farmed, soil conservation measures, good farm management practices, and on-site farming investment. The LESA automatic then gives each parcel in the county a score based on the criteria described above.

The literature includes many uses of LESA, especially related to agricultural uses, but GIS's specific use with federally mandated parcel ranking criteria for FRPP is not as widely documented. Many state NRCS offices use GIS to standardize the process of parcel selection for FRPP, but no published papers were found regarding this process. The methodology adopted for the GIS portion of this research is described in detail in the following sections.

Overview of Methodology

The purpose of the GIS analysis is to explore, if federal FRPP ranking criteria were applied in Iowa, what types of parcels would score highest. Ultimately, this analysis provides a glimpse of which types of parcels the federal ranking criteria prioritizes, using Iowa as an example.

The research used ArcGIS 10.1 software to perform a spatial analysis that used a set of ranking criteria that is mandated by the Natural Resources and Conservation Services (NRCS) for all states that participate in FRPP. The research was divided into two stages: Stage I, county-level analysis, and Stage II, parcel-level analysis. Stage I considered ranking criteria that used

data at the county level and created a state-wide analysis for Iowa based on those criteria. From the Stage I analysis, two case study counties, Story County and Bremer County, were chosen to be analyzed during Stage II. Stage II considered ranking criteria that was specific to the parcel level of analysis. Parcel-level results from the two case study counties were then compared.

Parcel Ranking Methodology

All states that participate in FRPP are mandated by the rules of the National Natural Resources and Conservation Services (NRCS) to rank parcels based on eight criteria. The criteria are as follows:

- (1) Percent of prime, unique, and important farmland in the parcel to be protected
- (2) Percent of cropland, pastureland, and rangeland in the parcel to be protected
- (3) *Ratio of total acres of land in the parcel to average farm size in the county according to the most recent USDA Census of Agriculture
- (4) Decrease in the percentage of acreage of farm and ranch land in the county in which the parcel is located between the last two USDA Censuses of Agriculture
- (5) Percent population growth in the county as documented by the most recent U.S. Census
- (6) Population density (population per square mile) as documented by the most recent U.S. Census
- (7) Proximity of parcel to other protected land, including military installations
- (8) *Proximity of parcel to other agricultural operations and infrastructure (USDA-NRCS 2010b, E2)

*These criteria were not used in the spatial analysis because they are too dependent on individual parcel characteristics. This analysis was hypothetical based on the parcel data available from county assessors. Individual parcel sizes and characteristics would be likely to change in an actual application for the program.

All states that participate in FRPP must consider these eight specific criteria, and those criteria must make up at least 50% of the total weighted score of each parcel that is being considered (USDA-NRCS 2010b, E2). However, states have flexibility when creating the design of their parcel ranking criteria points system, which results in different levels of emphasis on each of the eight criteria listed above. This spatial analysis considered six of the eight criteria listed above.

One criterion, ratio of total acres of land in the parcel to average farm size in the county, was excluded from the analysis because actual farm sizes in the case study counties were much larger than the average parcel size in each county and would not add value to the research. Another criterion, proximity of the parcel to other agricultural operations and infrastructure, was excluded because “agricultural operations and infrastructure” could be defined in more ways than by simply considering acres of cropland, pasture, grassland, or rangeland within a given area. Additional spatial data that would be required to fully consider this criterion was not readily available.

Parcel ranking methodology was collected from six states that have participated in FRPP in recent years and had their FRPP Parcel Ranking Worksheet easily accessible from each states’ NRCS website. The states, and corresponding year that the parcel ranking methodology was used, are as follows: Florida (2014), Kansas (2009), Kentucky (2014), Minnesota (2013), Ohio (2014), and Oklahoma (2014). After comparing states’ methodologies and weighting systems, it was determined that Minnesota’s weighting methodology was one of the most straightforward. Minnesota’s methodology was also chosen because of the state’s close proximity to Iowa and the fact that Minnesota maintained a very similar participation rate in FRPP from 1996-2007 when compared to Iowa. Minnesota enrolled 23 easements and ranked 26th out of 50 states while Iowa enrolled 22 easements and ranked 28th out of 50 states (USDA-NRCS 2014). See Appendix A for Minnesota’s 2013 FRPP Ranking Sheet (Minnesota NRCS 2014).

Data Collection

NRCS program rules require that much of the data used for parcel ranking come from specific sources (USDA-NRCS 2010b). Tables 8 and 9 show specific ranking criteria and required data sources from which Iowa-specific data was obtained.

Table 8. Stage I Data Collection

Criteria	Data Source	Mandated Data Source by NRCS?
Decrease in the percentage of acreage of farm and ranch land in the county	USDA Census of Agriculture 2002 and 2007	Yes
Percent population growth in the county	US Census 2000 and 2010	Yes
Population density (population per square mile)	US Census 2000 and 2010 National Association of Counties	Yes

Table 9. Stage II Data Collection

Criteria	Data Source	Mandated Data Source by NRCS?
Percent of prime, unique, and important farmland in the parcel to be protected	Soil Survey (SSURGO) Database, USDA NRCS	Yes
Percent of cropland, pastureland, and rangeland in the parcel to be protected	Cropscape National Agricultural Statistics Service	No*
Proximity of parcel to other protected land	USDA NRCS	No**

*Not mandated by law, but this data source is common practice for all NRCS easement program parcel rankings according to Iowa NRCS.

**For the purpose of this research, “other protected land” is defined as parcels that are protected as a result of NRCS programs including EWPP-FRE, EWRP, FRPP, GRP, and WRP. For states that participate in FRPP, this criterion is to be defined by the State Conservationist (head of State NRCS).

Additional data collected for this analysis includes Story County and Bremer County parcel shapefiles, Iowa county shapefiles, and Iowa incorporated area shapefiles. This data was obtained from the Bremer County GIS Department, the Iowa GIS Repository, and the Natural Resources GIS Library.

Two-Stage GIS Analysis

The research analyzed six of the eight federally-mandated criteria using Minnesota's parcel ranking methodology for point allocation. The research was divided into two stages: Stage I, a county-level analysis, and Stage II, a parcel-level analysis. Stage I considered the decrease in the percentage of acreage of farm and ranch land, the percentage of population growth, and the population density in each county in Iowa. Table 10 describes point assessment to each county in Iowa for Stage I criteria. Each criterion was worth a maximum of 100 points. A total of 300 points were possible for each county in Stage I. Points were assessed and totaled using ArcGIS, and two case study counties were chosen from these results.

Table 10. Stage I Criteria with Point Allocation Method

Point Allocation Method Using Minnesota's 2013 FRPP Methodology	Maximum Points Possible
Decrease in the percentage of acreage of farm and ranch land in the county <ul style="list-style-type: none"> ▪ 0 points for no farmland loss ▪ 50 points for 1-4% loss ▪ 100 points for 5-9% loss ▪ 50 points for 10-15% loss ▪ 0 points for more than 15% loss 	100
Percent population growth in the county (Iowa state growth rate: 4.1%) <ul style="list-style-type: none"> ▪ 0 points for growth rate of less than the state growth rate ▪ 50 points for growth rate of 1 to 2 times the state growth rate ▪ 100 points for growth rate of 2 to 3 times the state growth rate ▪ 0 points for growth rate of more than 3 times the state growth rate 	100
Population density in the county (population per square mile) (Iowa state population density: 54.4) <ul style="list-style-type: none"> ▪ 0 points for population density less than the state population density ▪ 50 points for population density of 1 to 2 times the state population density ▪ 100 points for population density of 2 to 3 times the state population density ▪ 0 points for population density of more than 3 times the state population density 	100

The two case study counties then underwent Stage II, parcel-level analysis. Parcel-level data was collected for each county. Only parcels in unincorporated areas of those counties were considered for analysis. Parcels in unincorporated areas in case study counties were first

assessed based on the percentage of prime farmland and the percentage of cropland, prairie, grassland, and rangeland in each parcel. To qualify for FRPP on a parcel level, parcels must contain both 50% or more prime farmland *and* 33% or more cropland, prairie, grassland, or rangeland. *Only* qualifying parcels were included in Stage II analysis.

Points were assessed to all eligible parcels based on these two factors, each worth a maximum of 200 points. A third and final criterion, proximity to existing protected land within a one-mile buffer, was used to evaluate eligible parcels. Table 11 describes point assessment to each county in Iowa for Stage II criteria. It is important to note that while Stage I analysis provides

Table 11. Stage II Criteria with Point Allocation Method

Point Allocation Method Using Minnesota's 2013 FRPP Methodology	Maximum Points Possible
Percent of prime, unique, and important farmland in the parcel to be protected <ul style="list-style-type: none"> ▪ 0 points for 50 percent or less ▪ 4 points for every percent above 50 percent 	200
Percent of cropland, pastureland, grassland, and rangeland in the parcel to be protected <ul style="list-style-type: none"> ▪ 0 points for 33 percent or less ▪ 3 points for every percent above 33 percent 	200
Proximity of other protected land, including military installations to the boundaries of the parcel <ul style="list-style-type: none"> ▪ 0 points for no protected land within a mile of the parcel ▪ 50 points for 1-250 acres of protected land within a mile of the parcel ▪ 100 points for 251-500 acres of protected land within a mile of the parcel ▪ 150 points for more than 500 acres of protected land within a mile of the parcel 	150

A total of 550 points were possible for each parcel during Stage II of the analysis.

Finally, Stage I and Stage II points were totaled, giving each parcel a final score with a maximum of 850 points possible. See Figure 5 for further description of the two-stage process.

Two Stage GIS Process

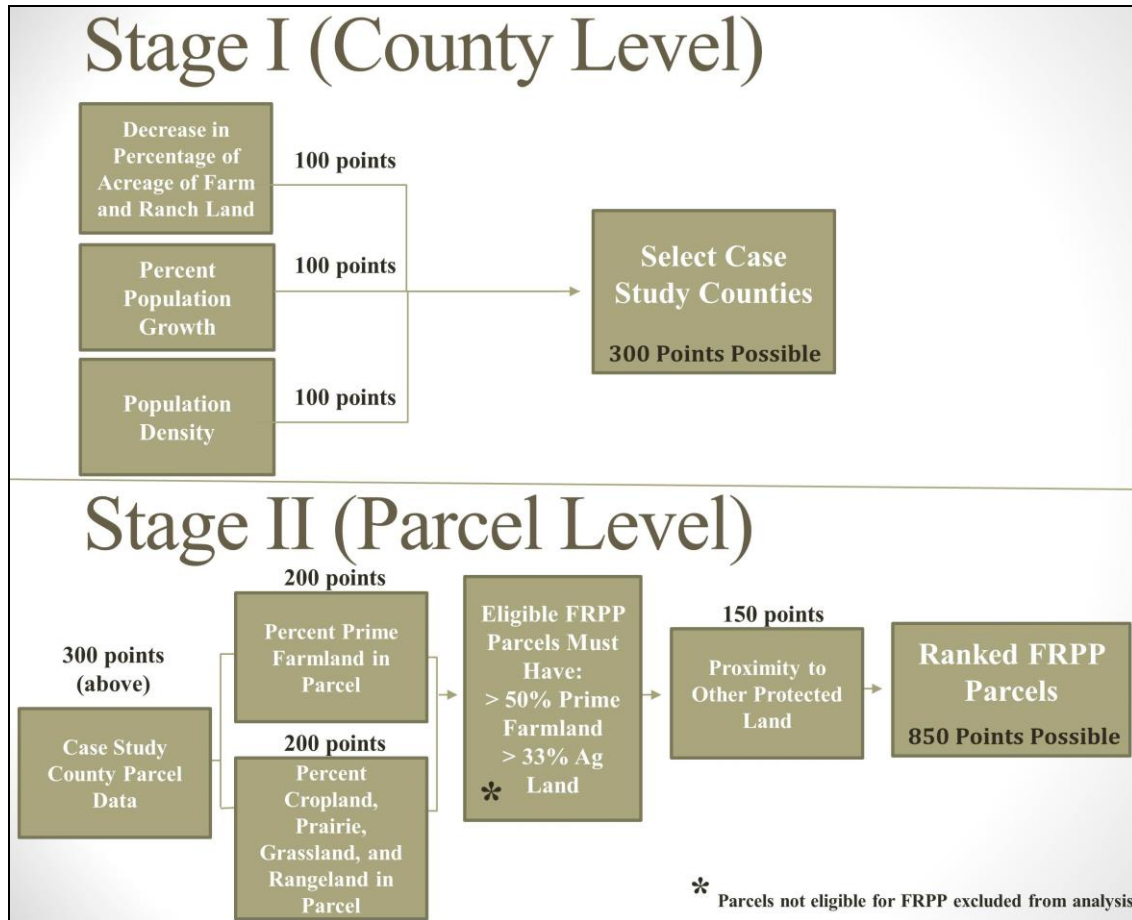


Figure 5. Two-Stage GIS Process

CHAPTER 4. FINDINGS FROM QUALITATIVE INTERVIEWS

Several key findings developed from the qualitative data collection process. Four key themes emerged from interviews as factors that influence FRPP participation and implementation:

- (1) Funding-Related Programmatic Factors
- (2) Other Programmatic Factors
- (3) External Factors
- (4) Working Relationships

These themes emerged as a result of the coding process that generated 304 codes, which were then compiled into 21 categories. Findings are presented in a way that aims to include as much relevant dialogue from the interviews as possible in order to develop these themes with rich descriptions provided by participants in their own words. The findings presented in this chapter use the four themes as a way to frame the data. Themes are presented from highest to lowest frequency with which they occurred in the eight qualitative interviews. Within each theme, sub-themes are also mentioned by order of frequency. A chart summarizing the frequency of specific themes and sub-themes can be found at the end of the chapter. A more detailed analysis of how these themes apply to the larger goals of the research is included in the following chapter, Discussion and Conclusion.

Theme 1: Funding-Related Programmatic Factors That Influence FRPP Participation and Implementation

Theme one was the most frequently coded theme from the eight interviews with a total of 119 comments. Major sub-themes are described in the following paragraphs from highest to

lowest occurring frequency within this overall theme. Findings indicate that the availability of matching funds, the federal money allocation process, and lobbying and political power can all have a significant influence on program funding and participation in FRPP. These findings are described in detail below.

Availability of Matching Funds

An extremely important finding of the research is how the availability of funding affects program participation. Funding in this sense refers to the 50 percent match that partner entities must raise in order to leverage federal dollars. All eight participants cited a concern about “cash,” “match,” “funding,” or “money” 46 times throughout the entire interview process.

I wish that our politicians would see the need for it, and dedicate some sort of annual funding to our state program. We have farmers call me every year and, they hear about the program and they want to participate. . . but right now we have no matching funds. (State 3 2014) (high participation state).

Really what it came down to is the cash match. It’s not that they weren’t interested, it’s just that they did not have the cash match to do it (State 5 2014) (low participation state).

I think [lack of participation before 2002] was just because there were a lack of participants in [State 1] that could leverage the funds. 2002 was the first year we came online, and it was because the state came up with their farmland preservation program and got it funded that same year (State 1 2014).(high participation state).

Without federal resources, those state resources are not able to be maximized and without the state resources the federal resources are not able to be maximized. So, resources remain to be the big factor with these programs (State 4 2014) (high participation state).

As seen from the previous quotes, four out of five states interviewed talk about how FRPP participation in the state was directly tied to access to matching funds for partner entities. This issue is a programmatic concern because, prior to the 2014 Farm Bill, FRPP required partner entities to raise this 50 percent match if they wanted to participate in FRPP and receive federal

funds. If match money was not available in a state, this circumstance significantly limited a state's ability to participate in FRPP.

A lack of a consistent source of matching funds can also be a concern for landowners who need to know that FRPP is a reliable program that can be used as part of a farm transition plan. As one participant noted, lack of consistent funding, especially concerning the match money, could affect program participation.

[There needs to be] consistent funding at the state or local level to fund that program . . . in the states that have land trusts that are implementing FRPP . . . they don't consistently have the resources to provide the required match. And so, landowners don't view it as a viable option. They're just not, there's not the certainty that it will be there to incorporate in their planning (National Representative 2014).

Federal Money Allocation Process

Six participants talked about the process by which federal money is allocated to states for use in FRPP a total of 31 times. Most participants were relatively unclear about the process that the National NRCS office used to allocate money to states. In some cases, states seemed to go through different processes to receive their federal allocation. The following four quotes from representatives in different states illustrate the confusion surrounding the issue of federal money allocation.

Usually we . . . submit what we call a state plan, and our state plan is developed asking the entities . . . if we have a sign up this year, what are you likely to ask for? . . . then we base a state plan on that, send it to our national office, and our allocations are . . . based on that request (State 3 2014) (high participation state).

Well we don't actually apply. National office . . . has some sort of allocation formula based on past performance, closing efficiency, how many sites you have, how much interest you have . . . they do ask us how much we think we could use, and based on interest at that time and applications on hand, we'll tell them a number, but it's not like we submit an application or anything (State 1 2014) (high participation state).

Actually I think we were given a small allocation and then in my subsequent years, we fill out what we call a state resources assessment, a way of requesting funding from national headquarters, and I basically zeroed that line out and didn't request any funds. (State 5 2014) (low participation state).

Especially this year, you have to show demand. . . you have to show your ability to acquire easements. We need our partners to acquire easements. So we basically work to get rid of our backlog of unclosed easements, but at the same time, [we do] outreach with partners to see who's interested (State 4 2014) (high participation state).

This confusion surrounding *how* states obtain federal funding could influence whether or not states choose to participate in FRPP. Even after a state goes through the process of submitting documentation to the federal government, there is uncertainty about how much money a state will receive. The exact federal fund allocation process is not public information, and because of this, participants are left to speculate about how money allocation decisions are made. The following quote illustrates this speculation.

I've noticed in some years that they give an equal sort of break down dollar amounts, so I don't know how to make the decision on, you know, [a particular state is] on this level. I've heard national program managers say in the past that they would certainly like to give money to states that can execute the projects and an entity that can get the deal done, in addition to demonstrating that they have all of these eligible applications. . . . it's just weird because . . . sometimes you see these very even breaks of money, and so, unless, at some point, let's just say that Delaware's in the good category, so we'll give them 5% [of the total federal allocation] . . . It's funny (National Representative 2014).

Uncertainty about the federal allocation process could keep some states from participating altogether if they can obtain NRCS money through another NRCS program that is perceived to be more straightforward.

Lobbying and Political Power

Especially since FRPP is a federal program, its funding is often subjected to politics.

Lobbying and political power in the context of funding was mentioned by four different

participants a total of 14 times. Lobbying can be a controversial topic for some, but one participant believed that lobbying by partner entities on behalf of FRPP may have actually saved the program from being defunded, saying “Without those politics we might not even have a program” (State 4 2014) (high participation state).

Program funding can be subject to change every year depending on both the political climate and the track record of program implementation. As one participant described, slow program implementation at the federal level can affect federal funding on a political level.

NRCS has had a lot of administrative and procedural stuff that is just incredibly burdensome for partners . . . it’s a real problem for the program, because it just depresses participation in the program, which then affects funding for the program. It’s a vicious cycle . . . Members say, well, you don’t really need more than this level . . . that’s not what you were sending out the door (National Representative 2014).

The participant in the previous quote referred to the federal government not being able to utilize the money they were allocated due to program inefficiencies. These issues with implementation can have a significant effect on lawmakers’ opinion of the program, which can then lead to decreased funding and participation.

For the federal funding that is secured, politics can play a role in where that funding is directed. One participant alluded to a high-level political figure using his political position to direct FRPP funds to a particular state:

All of that money was going to a certain state to accomplish probably not first and foremost farmland protection, but more to accomplish wildlife protection, sage grass habitat. And a lot of money was given to a particular state. . . that was very much the Chief’s decision at the time . . . I think it undermines the credibility of the entire program when that happens (National Representative 2014).

The previous quote is a programmatic concern because it illustrates how some states that may be politically connected can benefit from more federal funding than others, thus rewarding certain states with more money than others. For other states, state politics can get in the way of FRPP

funding and participation. One participant mentioned how state politics and large lobbies played a role in whether or not the state participated in FRPP.

It's just not politically popular. . . the farm lobby is . . . really powerful . . . They're just really powerful. I think it's a denial of the need . . . it's a little deeper than just FRPP, it's conservation in general . . . I think the premise behind it, that it permanently restricts it, they don't like the permanent . . . (Partner 2 2014) (low participation state).

The overall theme of lobbying and political power in relation to program participation and implementation is important as a finding because it uncovers part of the reason why some states may not participate in FRPP. There are a variety of factors that play a role in states' decision to participate in FRPP; political forces may play a role in this overall decision.

Theme 2: Structural Programmatic Factors Not Related To Funding That Influence FRPP Implementation and Participation

Theme two was the second most frequently coded theme from the eight interviews with a total of 63 comments. Major sub-themes are described in the following paragraphs from highest to lowest occurring frequency within this overall theme. Findings indicate that partner entity capacity, partner entity motivation, and program incentives for landowners can all affect program participation. In addition, some program requirements may need to be reconsidered to most efficiently implement the program.

Capacity and Focus of Partner Entities

Four participants mentioned a need for partner entities to have capacity a total of 15 times. Due to how FRPP is structured, partner entities play a role in much of FRPP implementation. Responsibilities of program implementation include one-on-one interactions with landowner, having the property appraised, drafting the easement language, finding matching

funds, and managing the easement agreement in perpetuity with the landowner (USDA-NRCS 2010b). As several participants described, partner entities must have sufficient organizational capacity to take on those responsibilities.

For entities, make sure you know what you're getting into. . . know that it's not just your whim of today, it's something that you're committing to forever because these are perpetual easements that require annual monitoring, so we need to make sure that the entities know their responsibilities (State 3 2014) (high participation state).

We definitely need conservation partners that are willing, ready, and able to leverage the federal funds and also take on the responsibility of acquiring, managing, and enforcing easements (State 4 2014) (high participation state).

Whether or not a state has organizations with sufficient capacity to implement FRPP has a direct result on program participation. However, even though an entity may have capacity, it can create problems if the organization's focus is not directly related to the goals of preserving working, productive agricultural lands. If organization sees FRPP funding as "just another source of funding" this difference in focus could affect the quality of program implementation.

I think you're really relying upon mostly private non-profits . . . and their focus is on protecting natural areas, and working farmland is not a natural area. So, that's not always gonna be a good fit . . . farmland protection doesn't always match what they're trying to accomplish, their mission (National Representative 2014).

This finding is especially important because, to a large extent, partner entities have the most control over where easements are placed. They are the first point of contact with landowners, and they do the most program implementation on the ground. There are some basic program requirements that must be met according to FRPP rules, but most of these are not limiting geographic factors. Therefore, it is important that partner entities have similar program goals to those of FRPP.

Program Incentives For Landowners

One large factor that affects FRPP participation is the incentives that are built into the program for landowners. Program incentives for landowners were mentioned by four participants a total of 14 times. The main program benefit that drives participation is a tax deduction that can be applied to any part of the easement value that the landowner donated (Land Trust Alliance 2014). One participant describes the benefit in the following quote.

. . . landowners voluntarily reduce their cash price . . . [so that there is a] charitable contribution they could deduct with the IRS and get lucrative tax deductions from that. [Those benefits] are outside the payment they're gonna get from FRPP and the entity's cash match (State 1 2014) (high participation state).

The IRS tax deduction can be a huge boon to landowners. The same participant went on to say that program participation would change if this incentive was ever removed from the program.

If you take away the IRS deduction, I guarantee participation in FRPP would either go down drastically, or we would not be able to fund as many sites because we would have to compensate more for that lack of that deduction (State 1 2014) (high participation state).

Parcel Ranking Criteria

Issues related to the parcel ranking process that is mandated by NRCS were mentioned by four participants a total of nine times. States that had high participation rates in FRPP felt that the ranking criteria was not effective in determining which parcels were ultimately allowed to participate in the program.

I'm gonna be honest with you, I think [the ranking criteria] makes no difference because we've always been fortunate . . . in getting the amount of funding that we need. So, it wouldn't matter probably how we ranked them (State 3 2014) (high participation state).

I've never had to weed anyone out because of their ranking score. They all pretty much score about the same. [This is] because every entity picks the site that's all prime. So

they all pretty much are within the same range of points (State 1 2014) (high participation state).

As long as a parcel is qualified based on federal criteria that mandates at least 50 percent prime farmland and at least 33 percent cropland, grassland, prairie, or rangeland criteria, parcel applications had ample federal funding available. States do have the option to add additional ranking criteria that could help to tailor the ranking process to meet state-specific needs, but the regulations are written in a way that one participant described as too limiting due to FRPP's concern of bias towards certain types or sizes of farms. The following quote illustrates the representative's frustration.

We didn't get too detailed in [developing the state ranking criteria] . . . There are so many different questions that could be biased . . . you can't pick a site based on only size, and you can't pick a site based on the cost. It can't be a distinguishing factor. So that pretty much limits your questions. How do you ask good questions for farmland preservation without saying those? I mean, everything is based on the size. So, we didn't put a lot of weight into the state criteria (State 1 2014) (high participation state).

Problems with the FRPP parcel ranking criteria is a programmatic concern because it shows that the program design may not be working as intended. If the ranking criteria is not a limiting factor when determining which farms can participate in FRPP, this issue can also give partner entities more control over where easements are placed. This consideration can be helpful in some cases, but it can also be harmful to the program if partner entities do not have the goals of farmland preservation in mind when placing easements. If the parcel ranking policy was changed to give states more freedom to implement policies that they believe *would* help target sites for the goals of farmland preservation, the change could make program implementation more efficient.

Theme 3: External Factors That Influence FRPP Participation and Implementation

Theme three was tied with theme four for the least frequently coded theme from the eight interviews with a total of 61 comments. Major sub-themes are described in the following paragraphs from highest to lowest occurring frequency within this overall theme. Findings indicate that negative public perceptions and concern over future land use conflicts may influence program participation. In addition, the presence of state-wide farmland preservation programs can alter how FRPP is implemented.

Public Perception

The sub-theme “public perception” was mentioned 22 times by six participants. In certain localities, the general public does not support either the goals of farmland preservation or the process of placing permanent easements for any purpose and restricting future land uses. These opinions have a tendency to affect participation in FRPP and other federal easement programs. One interviewee described his interactions with disapproving landowners in the following quote.

. . . some individuals don’t like easements, they don’t like to restrict farming, and so you can see that as a general theme in [state], that, you know, restricting farmers’ rights is not politically viable . . . It’s just not politically popular (Partner 2 2014) (low participation state).

Other participants described negative perceptions of federal easement programs as having to do with whether the measure is mandatory versus voluntary, whether the easement program is federally-based versus non-federal, and whether the general public believed that an easement purchase was synonymous with the government “owning the land” (State 5 2014) (low participation state) (Partner 1 2014) (high participation state).

Some states have attempted to counter various negative perceptions of federal easement programs by launching public campaigns and avoiding negative press. One participant described the state's political focus on the story of farmland loss in the state as a way to change public perception and to increase participation in FRPP.

[The farmland loss in the state] spurred a lot of interest in the state government to get involved. And when they got involved all the land trusts started popping up. And then the interest grew from there, and landowners are very aware because there's lots of publicity out there. It's all a recipe for success (State 1 2014) (high participation state).

Permanent Easements Raise Future Land Use Concerns

This sub-theme was mentioned by six participants a total of 14 times. Since FRPP easements are perpetual in nature, they can register concerns from landowners and others about how the land will be used in the future, especially if circumstances change. For example, one participant expressed concern over FRPP easements related to the threat of encroaching infrastructure.

We're seeing more and more roads, utility infrastructure, they're starting to encroach upon easements . . . if there's an oil and gas pipeline that needs to be run north to south through the state, there's a possibility that it's gonna impact one of the easements. . . that is a threat. The more easements you have, the more likely that they're gonna be subject to impact or at the very least, the request (State 4 2014) (high participation state).

Another participant described concern from landowners about what might happen if the next generation in a family changes their mind about continuing to farm after the FRPP easement has already been placed.

I'm curious what's gonna happen in the future in you know 30 years when this generation is gone and their kids are say, what do you mean I can't build a Walmart on this place? I think that there could be some potential legal fights in the agency's future over some of these (State 3 2014) (high participation state).

Future land use concerns like the ones just presented can be enough to make a landowner not want to participate in FRPP. This issue is not an inherent FRPP program flaw; easement language is written in a way that attempts to counter most future legal arguments. However, future land use conflicts may simply be inevitable as more instances of land use conflict occur. Uncertainty about future land use conflicts have the potential to decrease participation in FRPP.

State-Wide Farmland Preservation Programs

This sub-theme was mentioned by four participants a total of 14 times. States have various strategies for FRPP implementation. For some, states have created a state-wide farmland preservation program that provides matching funds using public funding. Other states have not created this infrastructure and instead rely on non-profit organizations and private land trusts to raise matching funds and to implement the program. Several participants talked about the benefits to having a public, state-wide program, including having a more focused farmland preservation strategy that considers trends throughout the entire state rather than just a region. The quotes below illustrate this sentiment.

[A state farmland preservation program is] just setting the direction for all of the local entities so that everybody's growing in the same direction instead of, you know, if you have all these independent land trusts doing all of these individual projects, it's just not necessarily rolling up to achieve something better (National Representative 2014).

Land trusts can step in, but they step in for, at the project scale, individual project scale, whereas a public program can be much more strategic and consistent, and the landowners know it's going to be there. So it's just more, they can act state-wide, land trusts tend to have very small geographic footprints (National Representative 2014).

Having a state-wide, publicly-funded program can significantly affect how the program is implemented. Dempsey (2012) also found that private land trusts were more likely to enroll ranch land in FRPP, while state-wide and public programs were more likely to enroll crop land.

Theme 4: Working Relationships That Influence FRPP Implementation and Participation

Theme four was tied with theme three for the least frequently coded theme from the eight interviews with a total of 61 comments. Yet, this theme is extremely important when considering the dynamics of program implementation. Major sub-themes are described in the following paragraphs from highest to lowest occurring frequency within this overall theme. Findings indicate that tensions exist between partner entities and the state about how FRPP should be implemented. The importance of outreach becomes incredibly important within these relationships to smooth tensions and increase program participation.

Tensions

Implementing a multi-faceted program like FRPP requires good working relationships among partner entities, landowners, and various tiers of government. Tensions were mentioned by six participants a total of 29 times. Some coordinators had issues with the level of detail with which partner entities approached their work.

Some of the biggest issues are that a lot of the entities do not do some of the things that I would prior to selecting their sites. Like, I would do a title search on every property if I was a non-profit prior to even talking to the landowner just to make sure the title is clean (State 1 2014) (high participation state).

For one low participation state, staffing and limited financial resources were concerns that affected FRPP program implementation.

Staffing and bringing the interest of the land trust agency and the program together [is key to getting FRPP to work in this state]. I think that's the key and the prioritization of you know, with limited financial resources, limited staffing resources, there has to be a prioritization of where our energy is going to be directed. And we try to treat the primary resources concerns first (State 2 2014) (low participation state).

Choosing which issues are “primary resource concerns” over others has created tension in this state, thus affecting program participation and implementation. Some of these tensions can be addressed through better communication and outreach.

Importance of Outreach

Outreach is one of the most important things that states can do to smooth over tensions related to program implementation. One of the most important findings regarding relationships is that states that had high participation rates all had representatives who mentioned “outreach” to partner entities as part of their perceived job duties. Outreach was mentioned 17 times by three participants located in states with high FRPP participation rates. Participants spoke about the importance of outreach for a successful program.

. . . I do a lot of outreach. I think I’ve talked, visited, and met every single entity that I could in the last three years. Once they understood how to use the federal funding, because it was being underutilized, once they had a face to talk to, which is me, they understood right away, there’s no real barrier between them and FRPP if they have a match. They just need to make sure all of their sites are eligible (State 1 2014) (high participation state).

. . . [we do] outreach with partners to see who’s interested. . . I try to reach out to those folks (active programs) and have good relationships. Once it’s established, that they have an interest, that we have an interest, we’ve been able to move forward (State 4 2014) (high participation state).

The main point that these quotes illustrate is that state coordinators are initiating an open line of communication with partner entities so that they can better implement the program.

Coordinators’ attitudes about outreach being necessary may significantly impact program participation rates.

Findings Based on Participant Type

To further understand the qualitative findings, Figure 6 illustrates how much each participant group spoke about the four main qualitative themes. Funding was the dominant theme for three of the four participant groups – high participation states, low participation states, and the national representative – while the theme “external factors” was most dominant for partner entities. External factors discussed by partner entities included the difficulty of dealing with negative perceptions of easement programs, future and current land use disputes related to easement placements, and how organizational strategy did, or did not, fit together with a larger, state-wide vision for farmland preservation.

For high participation states and partner entities, the category “working relationships” was another dominant theme with 34 percent and 22 percent, respectively. This theme likely did not appear as often for the national representative or the low participation states because these groups do not regularly implement the program and therefore do not have the same experience with working relationships related to FRPP. All of the themes mentioned in this chapter contribute to the broader goal of understanding what programmatic and administrative factors have influenced FRPP participation.

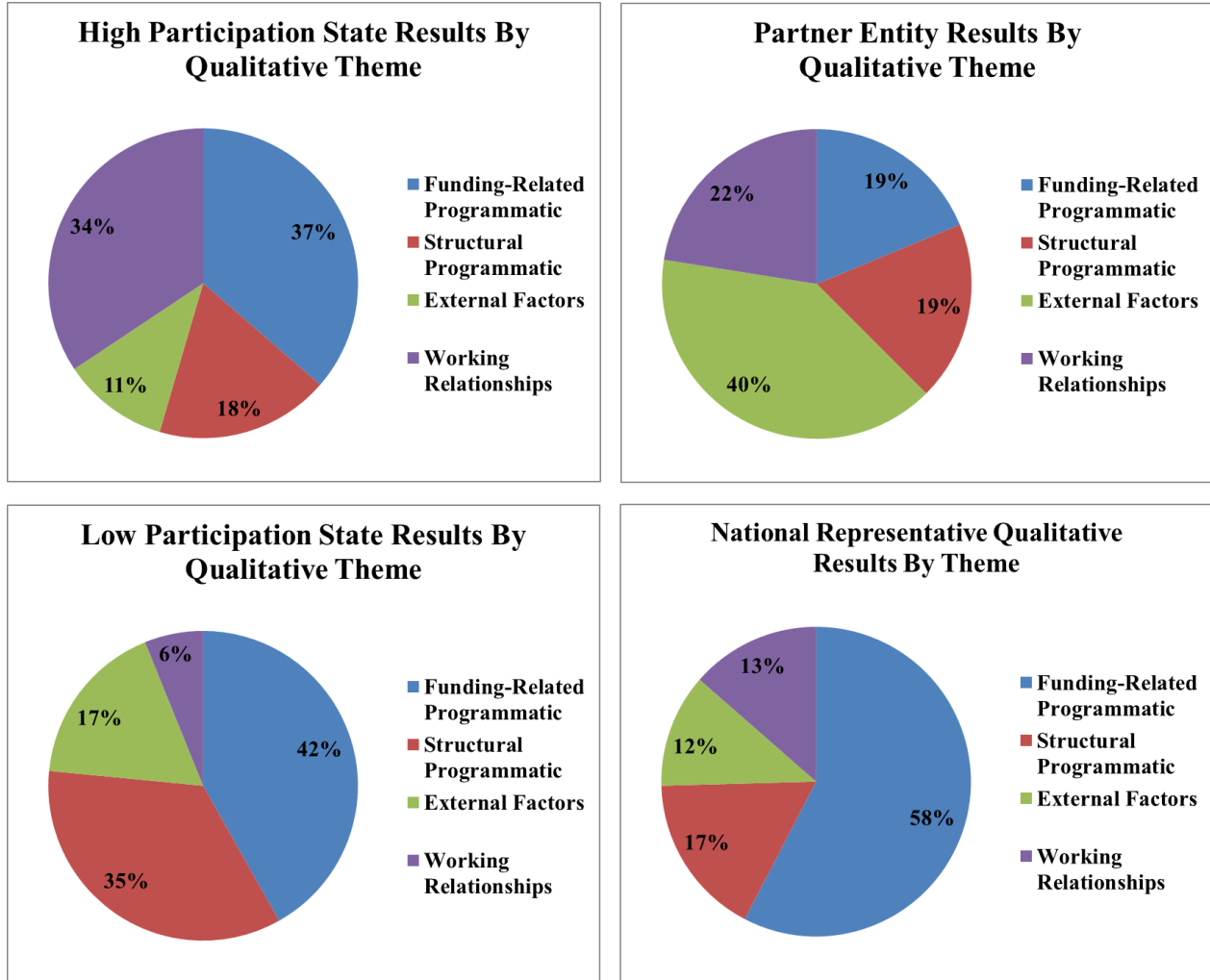


Figure 6. Findings Based On Participant Type

Final Codebooks

Final codebooks for the four major themes are included on the following pages. These codebooks provide a brief summary of the themes and sub-themes described in this chapter. Codebooks include the number of participants who contributed to each sub-theme, the frequency with which comments were collected on each sub-theme, and any additional significant categories that emerged from the coding process.

Table 12. Theme 1: Funding-Related Programmatic Factors That Influence FRPP Participation and Implementation

Sub-Theme	Frequency	HP	LP	Part	Nat
<i>Availability of funding for required cash match</i> (8 participants) Mention of cash, match, funding, or money	46	23	5	11	7
<i>FRPP federal program process of allocating money to states</i> (6 participants)	31	18	3	0	10
<i>Need for state-wide farmland preservation program that funds easement purchases (cash match)</i> (5 participants)	15	6	2	1	6
<i>Need for consistent FRPP funding so that landowners can plan to participate in the future</i> (4 participants)	7	4	1	1	1
<i>Program inefficiencies and problems with implementation costing program money</i> (1 participant)	6	0	0	0	6
<i>The role of lobbying for more federal funding for FRPP</i> (3 participants)	6	4	1	0	1
<i>Using political power to direct federal funding for FRPP</i> (1 participant)	3	0	0	0	3
<i>State-level politics affecting program participation, funding</i> (2 participants) State political players influencing political agricultural climate	3	1	0	2	0
<i>Federal program funding depends on national political climate</i> (1 participant)	2	2	0	0	0
TOTAL Theme Frequency: 119		58	12	15	34

Table 13. Theme 2: Structural Programmatic Factors Not Related to Funding That Influence FRPP Implementation and Participation

Sub-Theme	Frequency	HP	LP	Part	Nat
<i>Need for partner entities to have adequate capacity and focus to implement FRPP</i> (6 participants)					
Need for capacity	13	10	0	0	3
Partner entities seeking to achieve goals other than FRPP program goals	15	0	1	12	2
Need for organizations with farmland preservation focus	7	0	3	0	4
Demonstration of leadership from partner entities	3	2	1	0	0
<i>Program incentives for landowners</i> (4 participants)					
Non-economic landowner motivations	9	2	4	3	0
Taxes, IRS tax deduction	3	3	0	0	0
Bargain sales	1	1	0	0	0
Settling estate issues	1	1	0	0	0
<i>Program requirements - ranking criteria</i> (4 participants)	9	8	1	0	0
<i>Program requirements - certified partner entities</i> (2 participants)					
Not as experienced with acquiring easements as they should be	1	1	0	0	0
NRCS delayed implementation of partner entity certification	1	0	0	0	1
TOTAL Theme Frequency: 63		28	10	15	10

Table 14. Theme 3: External Factors That Influence FRPP Participation and Implementation

Sub-Theme	Frequency	HP	LP	Part	Nat
<i>Public perceptions of easements and restrictions on land affecting program participation</i> (6 participants)					
Misperception of easements, public opinion about value of farmland preservation	11	6	4	1	0
Federal restrictions on land undesirable	5	0	0	5	0
Public campaigns	4	2	0	2	0
Clarifying that NRCS doesn't "own" the land	2	1	1	0	0
<i>Permanent easements raise future land use concerns</i> (6 participants)	8	1	0	7	0
Oil and gas rights	3	1	0	1	1
Younger generations' plan for land	1	1	0	0	0
Utility and infrastructure					
Don't see land conversion because there is so much agricultural land	1	0	0	0	1
Future legal fights	1	1	0	0	0
<i>State-wide farmland preservation programs play an important role in FRPP implementation</i> (4 participants)					
Create larger farmland preservation strategy for state	13	0	0	10	3
Land trusts protect more ranch land, public programs protect more farmland	1	0	0	0	1
<i>Local politics affecting program participation</i> (4 participants)					
Resolution from township trustees	5	0	0	5	0
Local politics	2	0	0	1	1
<i>Change of state government administration, defunding of program</i>	4	4	0	0	0
TOTAL Theme Frequency: 61		17	5	32	7

Table 15. Theme 4: Working Relationships That Influence FRPP Implementation and Participation

Sub-Theme	Frequency	HP	LP	Part	Nat
<i>Tensions during program implementation</i> (6 participants)					
Tensions between entities and state	23	8	0	15	0
Tensions between state and federal	6	1	1	0	4
<i>Importance of outreach</i> (3 participants)	17	16	0	1	0
<i>FRPP cannot be successful without landowners and partner entities that want to participate</i> (6 participants)	15	8	1	2	4
TOTAL Theme Frequency: 61		33	2	18	8

CHAPTER 5. FINDINGS FROM SPATIAL ANALYSIS

Stage I Analysis

Stage I analysis considered three criteria: decrease in the percentage of acreage of farm and ranch land, the percentage of population growth, and the population density in each county in Iowa. Point allocation methodology for Stage I is included in Table 16. This table is repeated from Chapter 3 (Methodology) for the reader's convenience.

Table 16. Stage I Criteria with Point Allocation Method

Point Allocation Method Using Minnesota's 2013 FRPP Methodology	Maximum Points Possible
Decrease in the percentage of acreage of farm and ranch land in the county <ul style="list-style-type: none"> ▪ 0 points for no farmland loss ▪ 50 points for 1-4% loss ▪ 100 points for 5-9% loss ▪ 50 points for 10-15% loss ▪ 0 points for more than 15% loss 	100
Percent population growth in the county (Iowa state growth rate: 4.1%) <ul style="list-style-type: none"> ▪ 0 points for growth rate of less than the state growth rate ▪ 50 points for growth rate of 1 to 2 times the state growth rate ▪ 100 points for growth rate of 2 to 3 times the state growth rate ▪ 0 points for growth rate of more than 3 times the state growth rate 	100
Population density in the county (population per square mile) (Iowa state population density: 54.4) <ul style="list-style-type: none"> ▪ 0 points for population density less than the state population density ▪ 50 points for population density of 1 to 2 times the state population density ▪ 100 points for population density of 2 to 3 times the state population density ▪ 0 points for population density of more than 3 times the state population density) 	100

Figure 7 illustrates the decrease in the percentage of acreage of farm and ranch land in Iowa counties from 2002 to 2007 according to data obtained from the US Census of Agriculture (USDA-NASS 2002) (USDA NASS 2007). Several interesting themes appear on this map.

First, there is a trend of farmland *gain* is apparent in areas of the state with more fertile soils and

higher agricultural yields. A shift in the agricultural economy during this time, including increasing land values and corn prices, could explain why many counties in this region gained farmland during this period. Another trend visible on this map is the massive decrease in farmland in many southern Iowa counties during this time period. This trend may be a result of the changing agricultural economy, but it is not certain. The reasons for these changes are not the direct focus of this research. Note that almost all of the counties adjacent to Polk County in Central Iowa lost farmland. Several other population centers in the state exhibited trends of farmland loss near population centers, including the Iowa City / Cedar Rapids area (Linn County) and the Council Bluffs / Omaha area (Pottawatomie County). Counties that experienced more than a 15% farmland loss were not assessed points according to Minnesota's parcel ranking methodology.

Figure 8 illustrates the percentage of population growth in Iowa counties from 2000-2010 according to the US Census (U.S. Census Bureau 2014). Areas near Des Moines (Polk County, Dallas County, Warren County, Madison County, and Story County), Iowa City (Johnson County), and Cedar Rapids (Linn County) saw the highest rates of growth in the state. Dubuque (Dubuque County), Council Bluffs (Pottawatomie County), and Davenport (Scott County) also experienced higher rates of growth than the state average. Points were not assessed to counties with a growth rate of higher than 12.3%, or three times the state growth rate, according to Minnesota's parcel ranking methodology.

Figure 9 illustrates the population density in Iowa counties in 2010 according to the US Census (U.S. Census 2014). High population density areas in the state appear to correlate with high population areas such as Polk County, Johnson County, Linn County and Dubuque County. One unexpected result was Black Hawk County's population density, which was 231.61 people

per square mile. This is well over three times that of the Iowa's population density of 54.4 people per square mile. The density of Black Hawk County and the Waterloo area appears to spill over to the north into parts of Bremer County, pushing that county's population density up to 55.81 people per square mile, just slightly over the Iowa's population density. Points were not assessed to counties with a population density of higher than 163.5 people per square mile, or three times that of the state population density, according to Minnesota's parcel ranking methodology.

Figure 10 illustrates the final scores of all Iowa counties after scores from these three criteria have been combined. Story County received the highest score in the entire state with 250 points out of a possible 300 points and was therefore chosen as a case study county. Following closely behind, Madison County and Dubuque County tied for second with 200 points. Surprisingly, Bremer County emerged as an outlier in the northeastern part of the state. It received a relatively high score of 150 points while being surrounded on all sides by counties that received no points based on the methodology used. Bremer County was chosen as the second case study county because of this. The two case study counties offer diversity in overall Stage I scoring with Story County at 250 points and Bremer County at 150 points, diversity in location in the state with Story County in central Iowa and Bremer County in northeastern Iowa, and diversity in population growth pressures with Story County experiencing population growth from the Des Moines metro area and Bremer County experiencing population growth pressures from the Waterloo area. The results of Stage I analysis are on the following pages.

Percentage Farmland Loss in Iowa by County 2002 - 2007

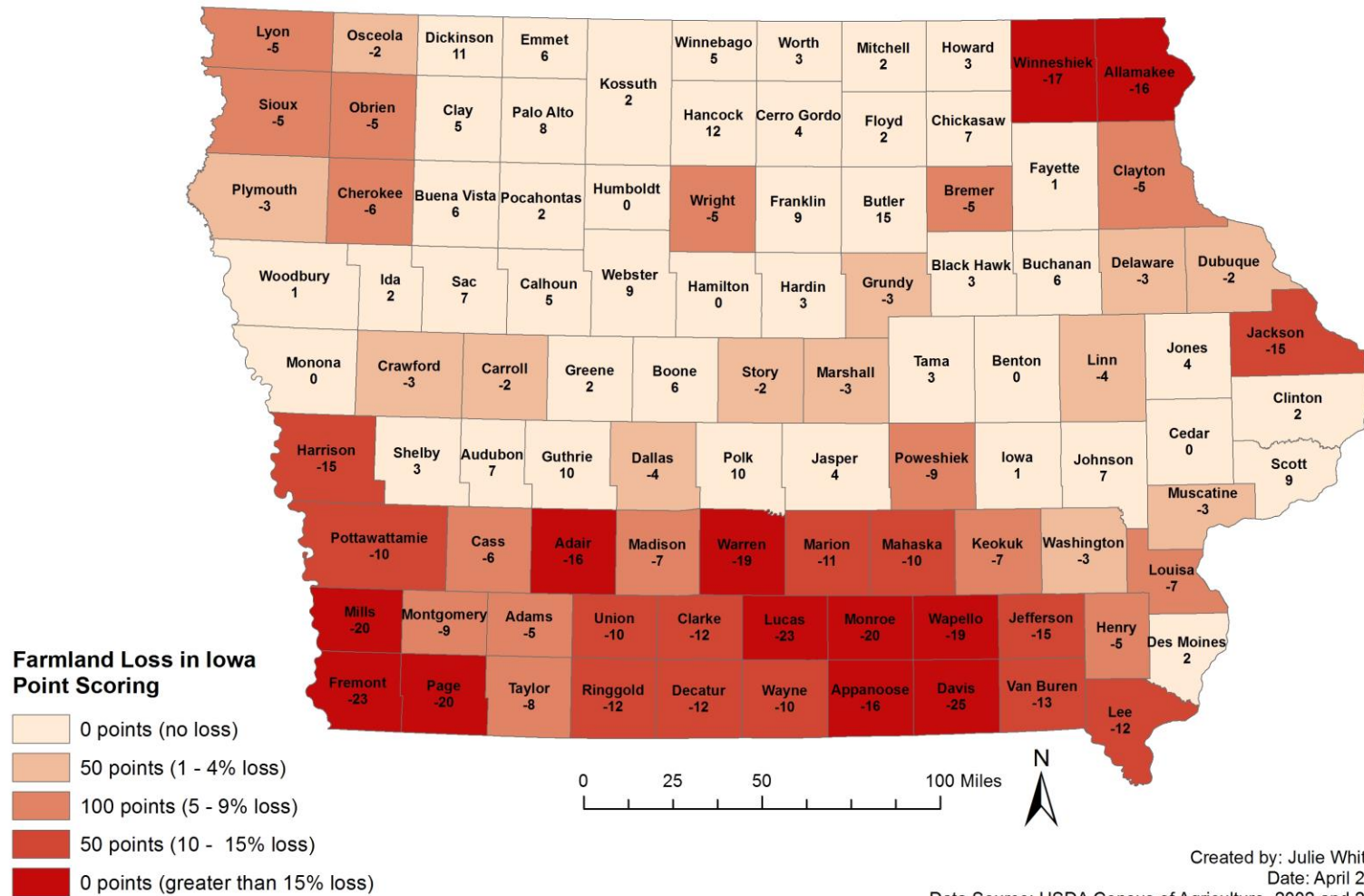


Figure 7. Percentage Farmland Loss in Iowa by County 2002-2007

Percentage Population Growth in Iowa By County 2000 - 2010

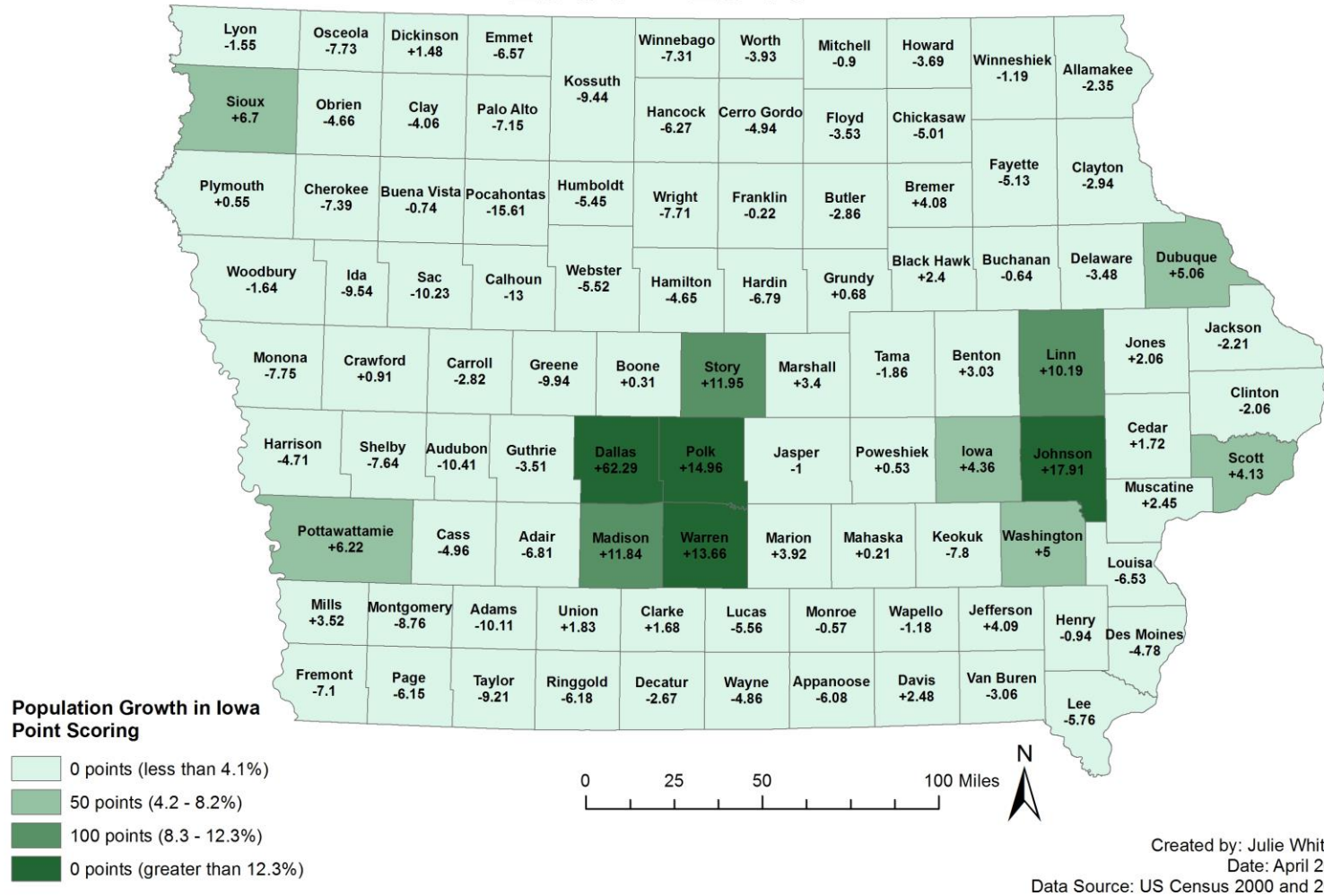


Figure 8. Percentage Population Growth in Iowa By County 2000-2010

Created by: Julie Whitson
Date: April 2014
Data Source: US Census 2000 and 2010

Population Density in Iowa By County 2000 - 2010

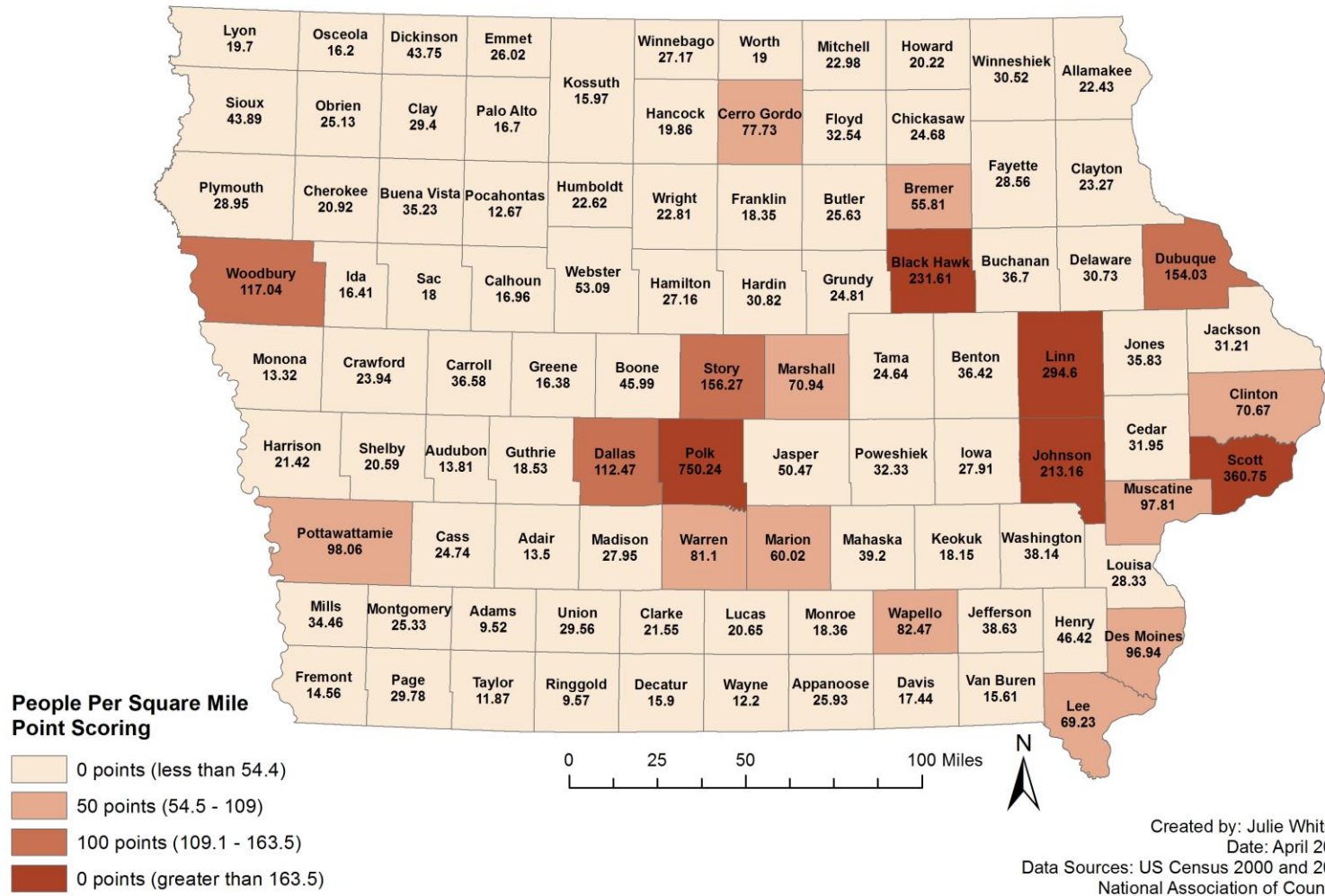


Figure 9. Population Density in Iowa By County 2000-2010

Created by: Julie Whitson
Date: April 2014
Data Sources: US Census 2000 and 2010
National Association of Counties

Scores By County Based on Farmland Loss, Population Growth, and Population Density

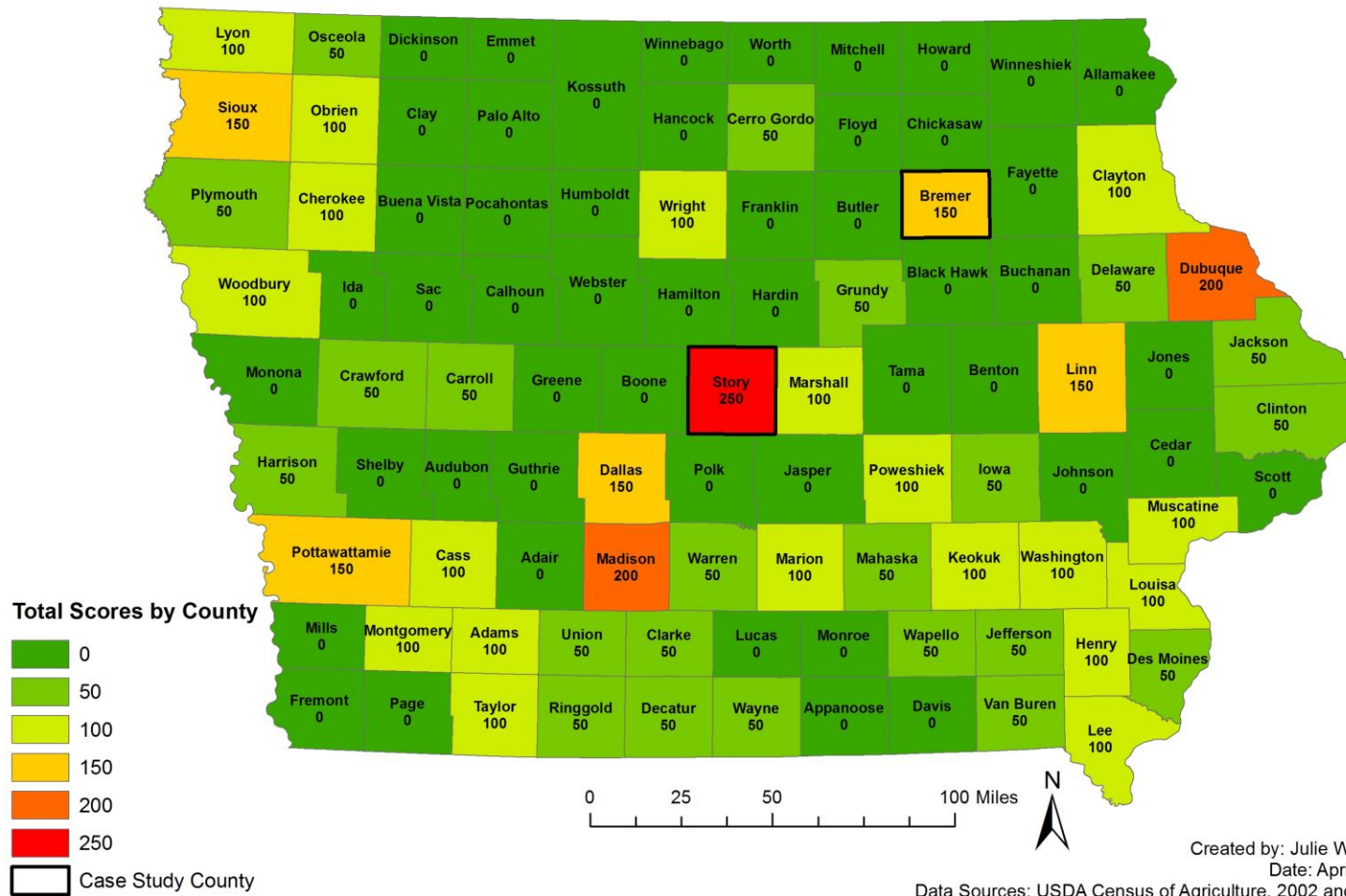


Figure 10. Scores By County Based on Farmland Loss, Population Growth, and Population Density

Stage II Analysis

The Stage II analysis examined two case study counties, Story County and Bremer County, and considered the additional three criteria: percentage of prime farmland; percentage of cropland, prairie, grassland, or rangeland; and proximity to existing protected land within a one mile buffer. It is important to note that this portion of the spatial analysis is not seeking to make policy change recommendations; the analysis is simply applying the federal parcel ranking criteria to areas that received high scores based on Stage I of the spatial analysis. Point allocation methodology for Stage II is included in Table 17. This table is repeated from Chapter 3 (Methodology) for the reader's convenience.

Table 17. Stage II Criteria with Point Allocation Method

Point Allocation Method Using Minnesota's 2013 FRPP Methodology	Maximum Points Possible
Percent of prime, unique, and important farmland in the parcel to be protected <ul style="list-style-type: none"> ▪ 0 points for 50 percent or less ▪ 4 points for every percent above 50 percent 	200
Percent of cropland, pastureland, grassland, and rangeland in the parcel to be protected <ul style="list-style-type: none"> ▪ 0 points for 33 percent or less ▪ 3 points for every percent above 33 percent 	200
Proximity of other protected land, including military installations to the boundaries of the parcel <ul style="list-style-type: none"> ▪ 0 points for no protected land within a mile of the parcel ▪ 50 points for 1-250 acres of protected land within a mile of the parcel ▪ 100 points for 251-500 acres of protected land within a mile of the parcel ▪ 150 points for more than 500 acres of protected land within a mile of the parcel 	150

To begin the analysis, all parcels in incorporated areas were excluded from the analysis. The remaining parcels in unincorporated areas were assessed based on the percentage of prime farmland and the percentage of cropland, prairie, grassland, and rangeland in each parcel. To qualify for FRPP on a parcel level, parcels must contain both 50% or more prime farmland *and* 33% or more cropland, prairie, grassland, or rangeland.

Figure 11 illustrates eligible parcel scores in each case study county based on the percentage of prime farmland in each parcel. One can plainly see that Bremer County has significantly more high-scoring parcels than Story County; this is because Bremer County has a slightly larger percentage of prime farmland (48%) than Story County (42%). Out of a maximum possible score of 200 points, Bremer County parcels had an average score of 113 points, while Story County had an average of 63 points.

Figure 12 illustrates eligible parcel scores in each case study county based on the percentage of cropland, prairieland, grassland, or rangeland. Parcel scores in both counties were high as a result of high levels of cropland in each county. Bremer County had 80% of land that was used for corn, soybeans, or grass/pasture, and Story County had 84%. Out of a maximum possible score of 200, Bremer County parcels had an average score of 170 points and Story County parcels had an average score of 165 points.

Figure 13 illustrates eligible parcel scores based on the proximity of protected lands within a mile of the parcel. Bremer County has significantly more existing protected parcels (33) than does Story County (12), therefore Bremer County had more parcels that scored points related to this criteria. However, the number of parcels that received points for this criterion in each county was still small. In Bremer County, only 865 of the 4523 total eligible parcels, or 19%, received a score for this criterion. In Story County, 243 of its 3978 total eligible parcels, or 6%, received a score for this criterion.

Final Eligible Parcel Scores

Figure 14 combines the results of Stage I and Stage II to create the final eligible parcel scores for each county. It is important to note that Stage II analysis considered *only* parcels that were eligible for FRPP; eligible parcels contained at least 33 percent cropland,

grassland, prairie, or grassland and at least 50 percent prime farmland. There are several major findings. First, some of the highest scoring parcels in both case study counties are parcels that are in close proximity to already protected land. In Bremer County, this criteria seemed to significantly add to overall average parcel scores. To compare total parcel scores, scores have been organized into four groups: group 1 (200-349 points), group 2 (350-499 points), group 3 (500-649 points) and group 4 (650-800 points). Figure 18 represents this in graph form. In Bremer County, 100% of group 4 parcels (15 of 15 parcels in group 4) received points from the protected land criteria. In Story County, 19% of group 4 parcels (19 of 102 group 4 parcels) received points from the protected land criteria.

A comparison of total scores for both case study counties in Table 18 shows that despite Story County having a significantly higher score for Stage I of the analysis, average final parcel scores for both counties only differed by 36 points. This can be attributed in part to differences in parcel scores for the criteria of percentage of prime farmland in which there was a 50 point gap observed in county averages, differences in parcel scores for the criteria of cropland, grassland prairieland, or rangeland in which there was a 15 point gap observed in county averages, and differences in parcel scores for the criteria of existing protected lands in which there was an 8 point gap observed in county averages. Table 18 describes several of these differences.

Table 18. Case Study County Comparison: Parcel Scores

	Bremer County	Story County
Total parcels in county	19,428	41,374
Parcels in unincorporated areas (starting number of parcels for analysis)	10,856	12,129
Total eligible parcels	4,523 (42%)	3,978 (33%)
Total points assessed from Stage I analysis	150	250
Cropland – Average parcel score	170	165
Prime Farmland – Average parcel score	113	63
Protected Lands – Average parcel score	12	4
Total Score – Average parcel score	446	482

Spatial distribution of eligible parcels may appear random in both counties, but parcel eligibility significantly depended on whether a parcel had at least 50% prime farmland. Final eligible parcel maps for both counties appear to be directly affected by the locations of prime farmland in the county. One can see this trend when comparing a map of prime farmland in each county to the spatial location of eligible parcels for FRPP in each county. The distribution of eligible parcels for FRPP very closely mirrors the geographic location of prime farmland in each county

Finally, both case study counties showed that program eligibility requirements related to cropland, grassland, prairieland, rangeland, and prime farmland do limit which parcels can be enrolled in the program. Because of these requirements, only 42% of parcels in unincorporated Bremer County and 33% of parcels in unincorporated Story County were eligible for participation in FRPP. While FRPP may not be a good fit for all parcels in a given county, this analysis shows that it can be a useful tool for certain parcels with the right characteristics. See Figures 15-18 for a total comparison of scores.

Case Study Counties Comparison Parcel Scores Based on Percentage of Prime Farmland

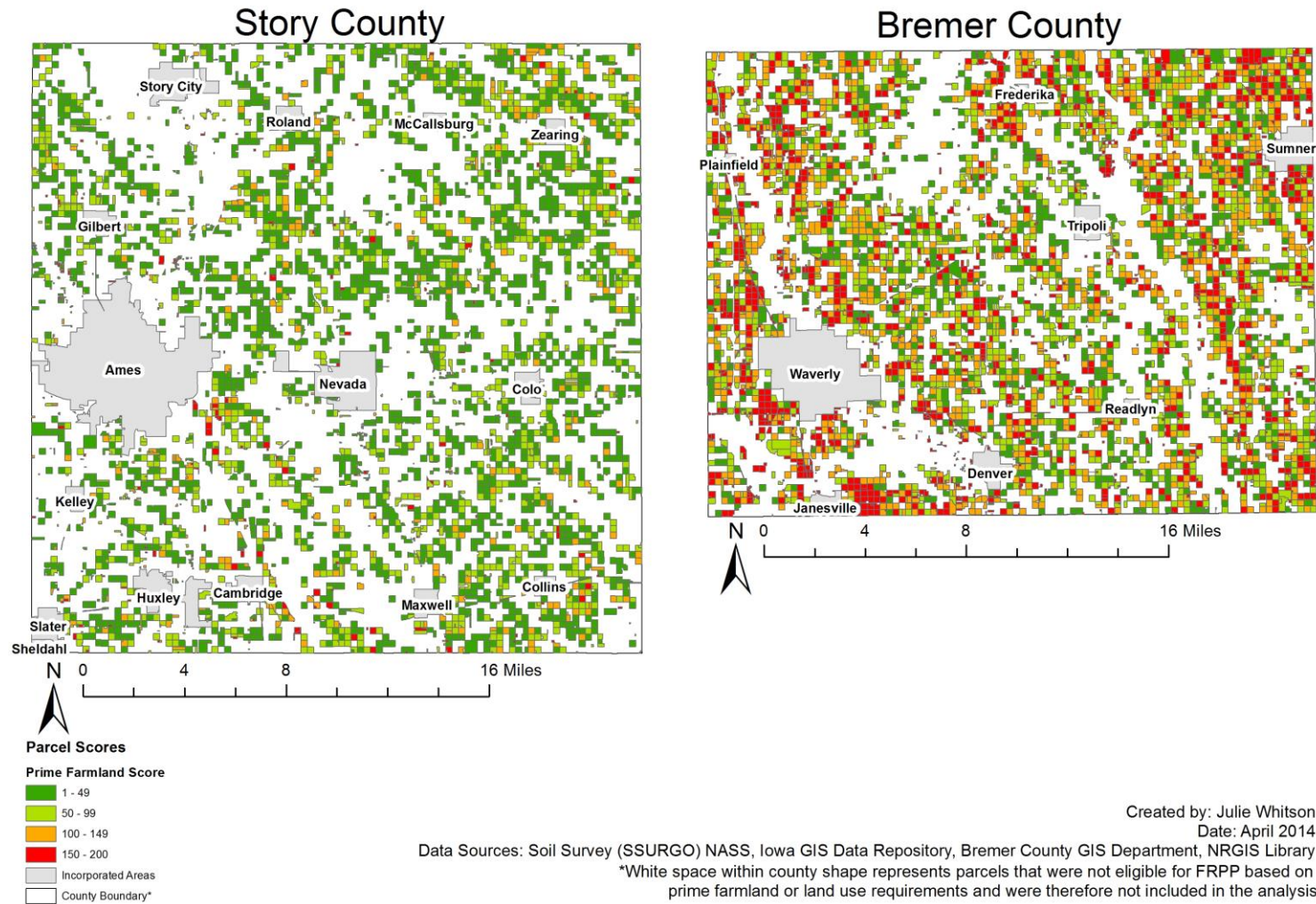


Figure 11. Case Study Counties Comparison: Parcel Scores Based on Percentage of Prime Farmland

Case Study Counties Comparison Parcel Scores Based on Percentage of Cropland, Grassland, or Rangeland

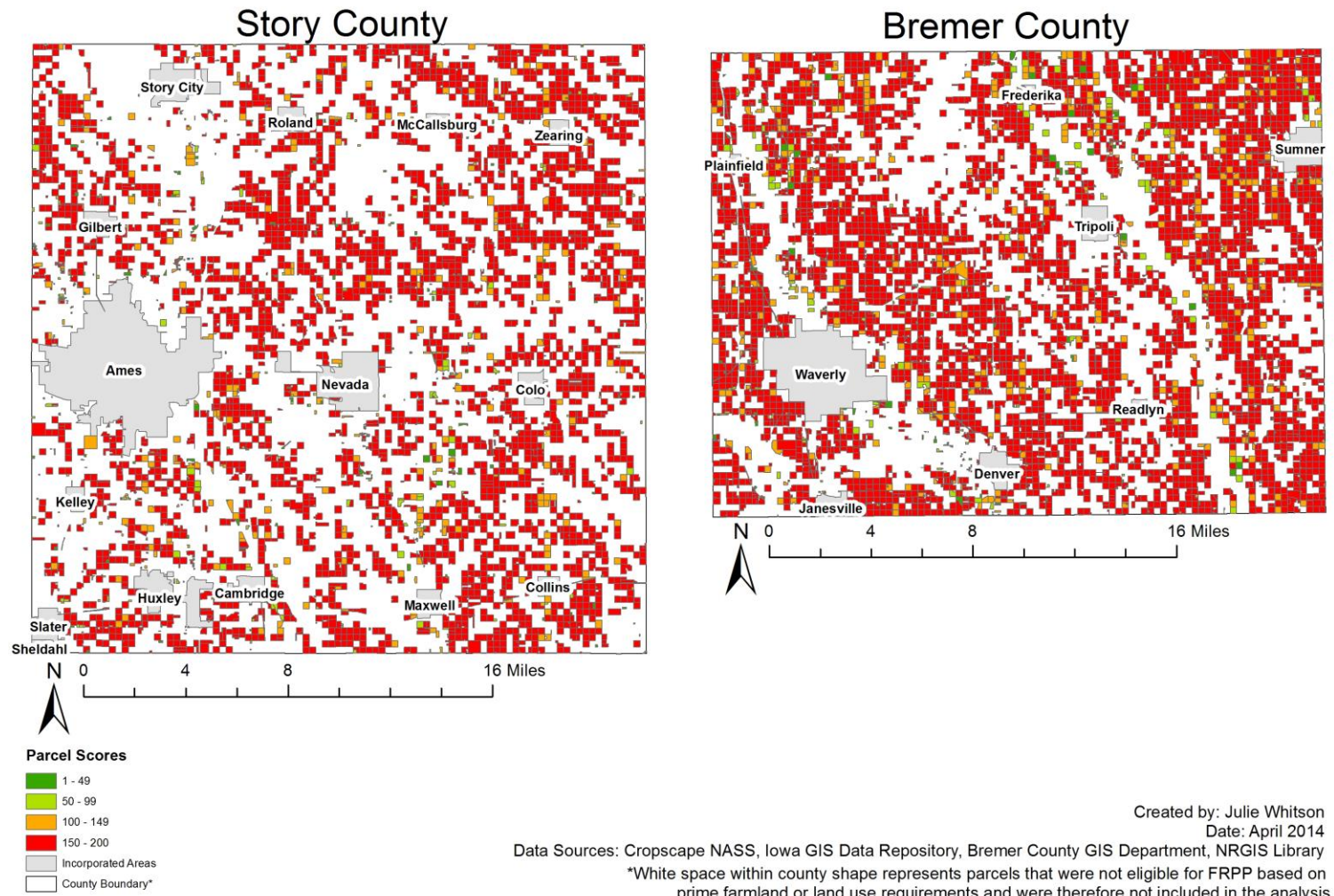


Figure 12. Case Study Counties Comparison: Parcel Scores Based on Percentage of Cropland, Pastureland, Grassland, or Rangeland

Case Study Counties Comparison Parcel Scores Based on Proximity to Existing Protected Lands

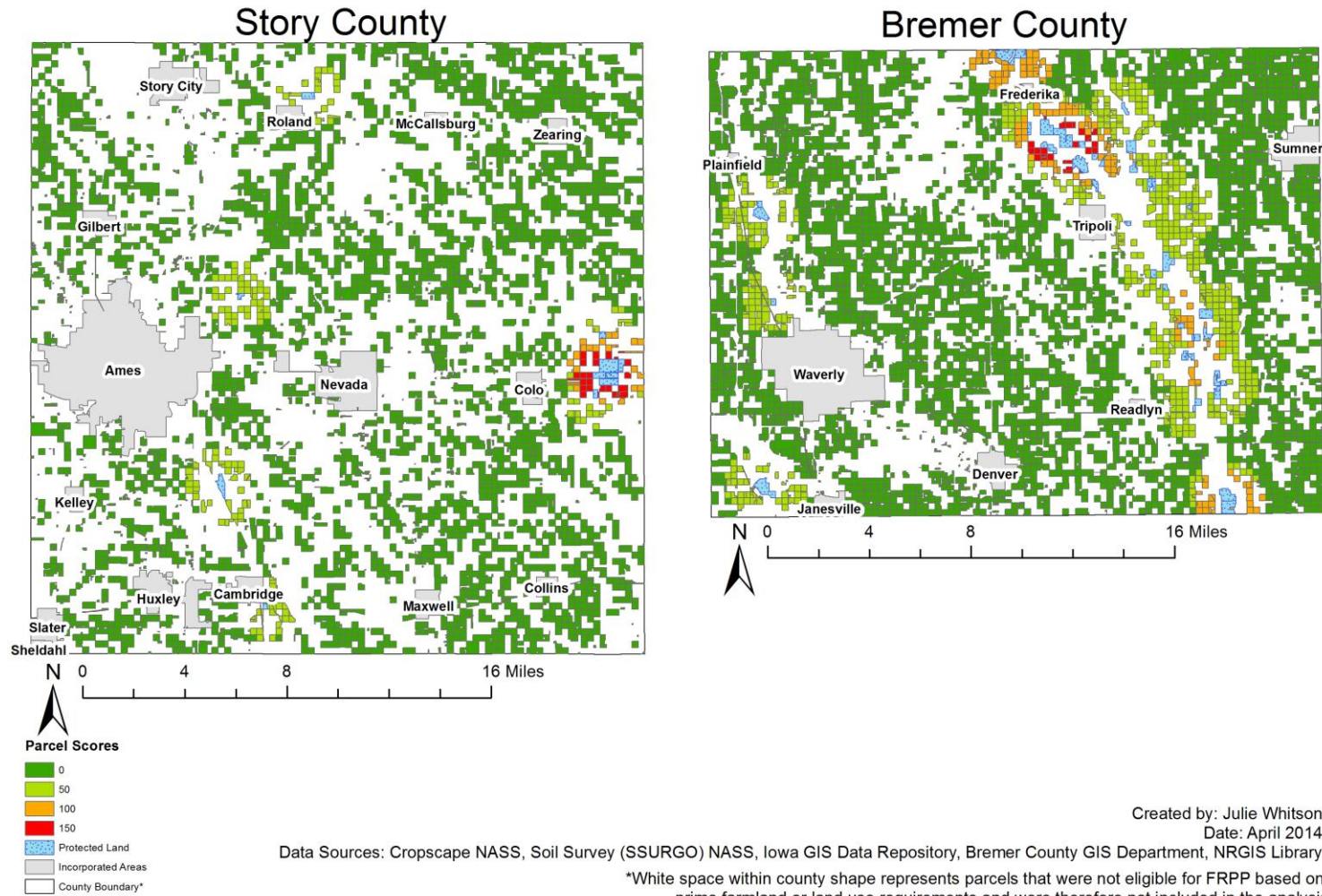


Figure 13. Case Study Counties Comparison: Parcel Scores Based on Proximity to Existing Protected Lands

Created by: Julie Whitson
Date: April 2014

Case Study Counties Comparison Total Parcel Score (850 Points Possible)

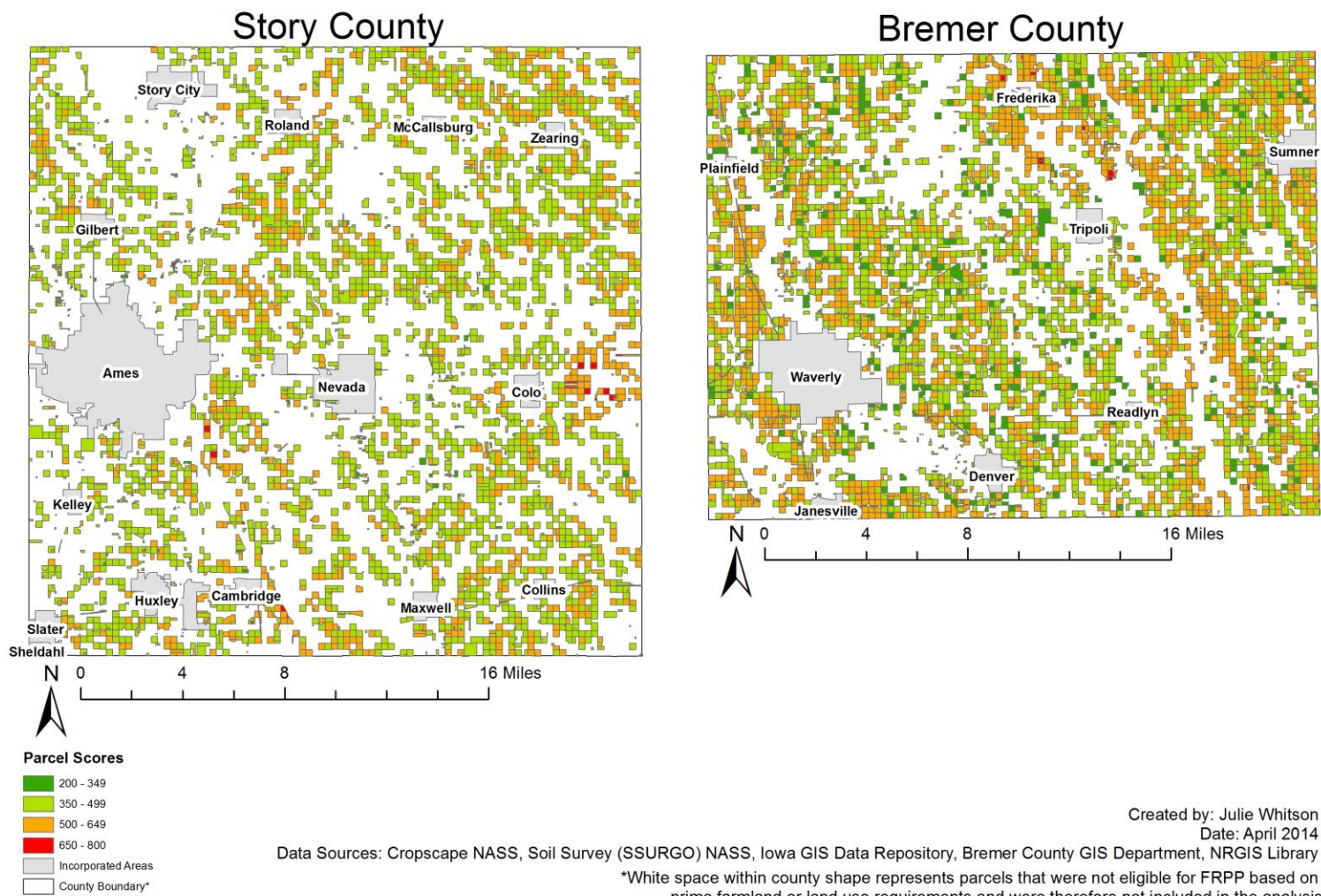


Figure 14. Case Study Counties Comparison: Total Parcel Score

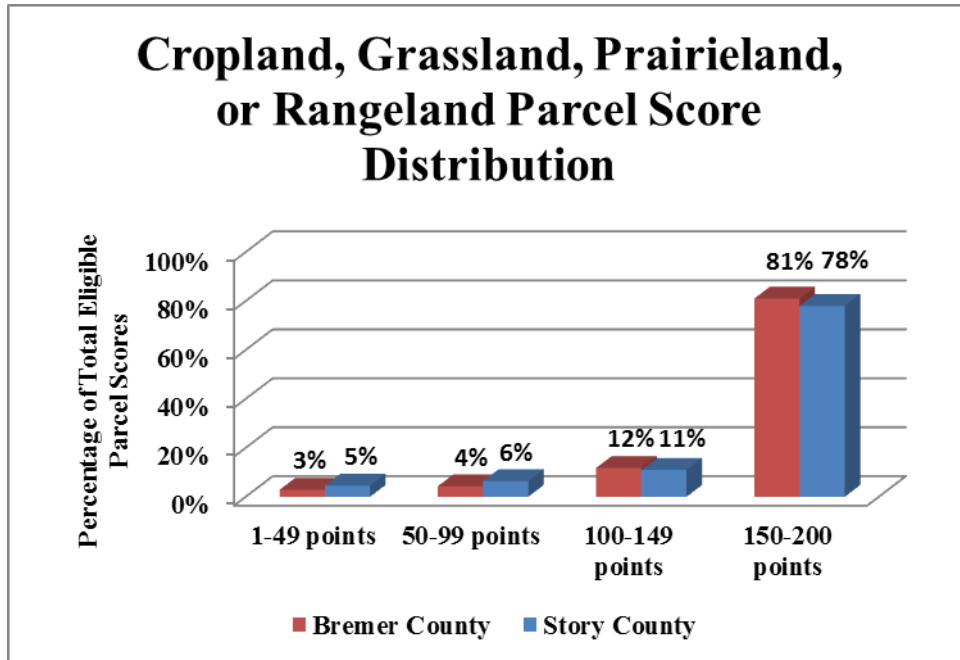


Figure 15. Cropland, Grassland Prairieland, or Rangeland Parcel Score Distribution

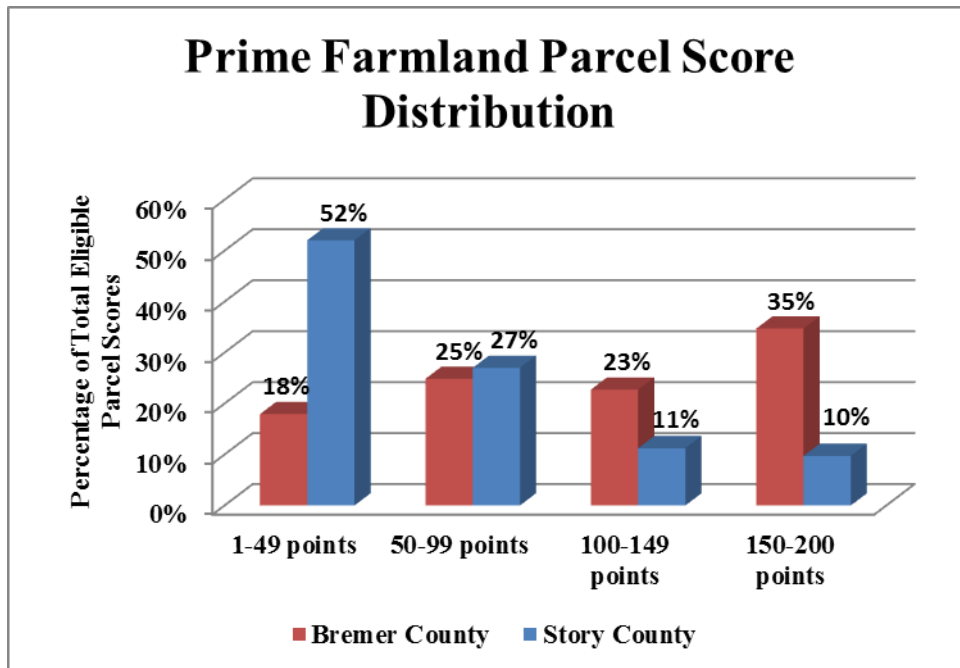


Figure 16. Prime Farmland Parcel Score Distribution

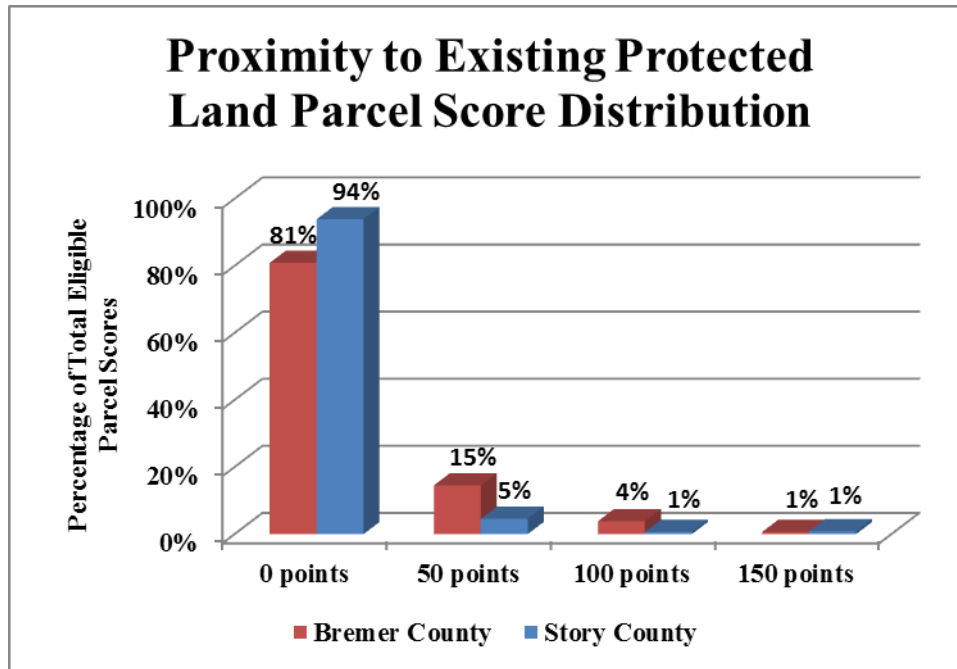


Figure 17. Proximity to Existing Protected Land Parcel Score Distribution

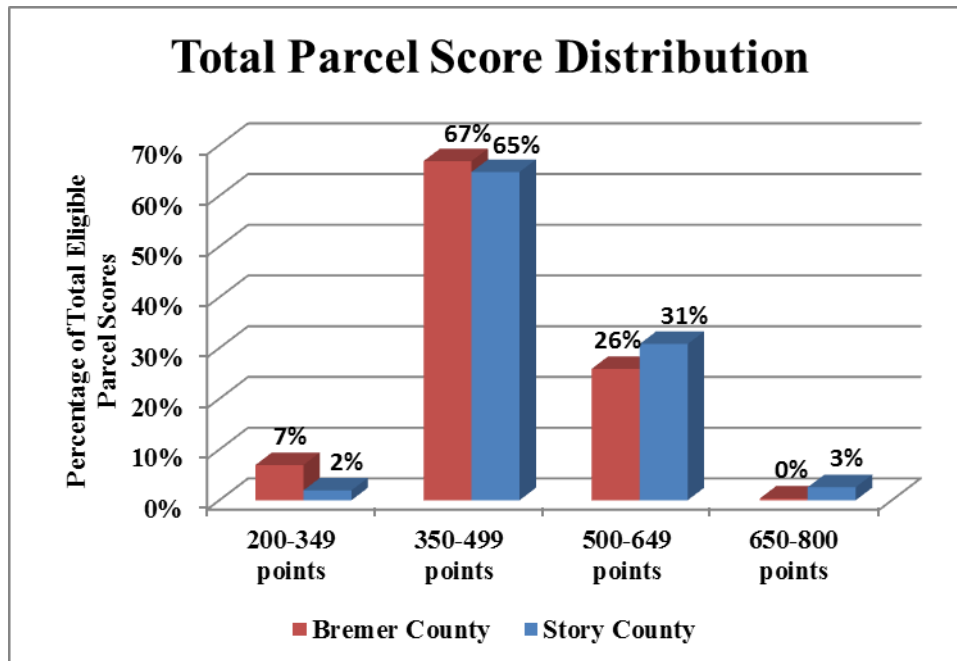


Figure 18. Total Parcel Score Distribution

CHAPTER 6. DISCUSSION AND CONCLUSION

This chapter will provide an overview of key qualitative findings from Chapter 4 and key spatial analysis findings from Chapter 5. The discussion will cover how these factors may prevent greater FRPP participation and whether there are any changes to the program that might help to increase program participation. Program recommendations and opportunities for future research will also be presented.

Summary of the Findings

Findings indicated that there were several major themes that influenced participation in FRPP. The first major theme was tied to money, and specifically, the cash match that is required in order to use federal funding from FRPP allocations. This finding is significant because it shows us that participation has a direct link to whether or not a cash match can be obtained. If a state does not have infrastructure in place to supply the cash match, or if there are no private donors willing to provide the cash match, then the state will not be able to participate in FRPP. If the match requirement was eliminated, altered, or loosened in certain circumstances, greater program participation could be achieved.

Another finding was related to the capacity and focus of partner entities. FRPP currently requires partner entities to do the majority of FRPP implementation, including such responsibilities as building a relationship with the landowner, creating the easement language, setting up land appraisals, and closing and monitoring the easement in perpetuity (USDA-NRCS 2010b). Because the program places most of the responsibility of implementation on partner entities, organizations that participate in FRPP must have adequate capacity to complete these tasks. If a state does not have any organizations with the

capacity to take on these responsibilities, the state cannot participate in FRPP. If the program were restructured to balance program implementation responsibilities more equally between the state and partner entities in certain cases, greater program participation could be achieved. In addition, findings indicated that FRPP works best when partner entities have similar goals to that of FRPP. Not all states have partner entities with primary organization focus rooted in the preservation of working, productive farmlands, which could present a problem. Additional research should be conducted that measures the prevalence and location of organizations with a farmland preservation focus and what incentives might help to increase such entities in places where they are currently not located.

A third finding dealt with negative public perceptions of FRPP and permanent easement programs at large. This finding is not a specific program inefficiency since it occurs outside of FRPP rules and regulations. Because of this, nothing can be done from a program perspective to change this circumstance. As was mentioned in the findings, some states have chosen to launch public awareness campaigns to influence public perceptions, but this approach may not be helpful or realistic in all circumstances. This issue would be best addressed on the state level on a case by case basis.

Finally, the fourth major qualitative finding discussed working relationships within the structure of FRPP implementation. Some of the anecdotes collected from qualitative interviews were very situation-specific and may not have broad application throughout the country; however, other findings may be common across states. New program protocol could be explored to address some of the tensions of working relationships within program implementation, but first, more research should be conducted to determine which problems or tensions occur most frequently across all states. This research can help to determine

which problems can be addressed with federal program changes versus giving states more leeway to implement their own new program rules specific to the situation.

Findings from the spatial analysis indicated that aspects of the parcel ranking methodology may not be helpful in determining the best locations for permanent FRPP easements. In Stage I of the spatial analysis, the criteria of farmland loss, population growth, and population density were considered at the county level. The results of Stage I appear to be somewhat helpful in determining areas in Iowa that may be at risk for farmland loss, although additional criteria could be easily added to achieve a more targeted result. More research should be conducted to determine which factors and data sources various state programs use at the county level and why. Point scoring methodology can also be applied to weight some factors higher than others. Current FRPP regulations provide flexibility when applying a point scoring methodology and allow states to add additional criteria as desired.

In Stage II, percentage of prime farmland, agricultural land, and proximity to already-protected land were all considered at the parcel level for two counties in Iowa. The results of Stage II did not show that the parcel ranking criteria significantly limited where an FRPP easement could be placed as long as the site had at least 50 percent prime farmland and at least 33 percent agricultural land. States can choose to add more variables to the ranking methodology, but these variables cannot consider farm size, type of agriculture, or other factors that FRPP has deemed as biased (USDA-NRCS 2010b, E4). FRPP regulations do not define reasoning, research, or literature that shows why the program mandates the current ranking criteria, data sources, or their definition of biased ranking criteria. This information should be made available. In addition, more research should be conducted to determine how states choose additional ranking criteria. Based on the results from the spatial analysis, it is

not clear that the FRPP parcel ranking methodology that is currently mandated by program rules is effective in targeting the most ideal land for farmland protection. The current program rules give states the opportunity to add additional criteria, but there are large limitations and again, the reasoning is not clear on why these limitations are in place. The entire parcel ranking policy should be evaluated.

Recommendations

This section will describe a number of recommendations that were created based on the results of this research. These recommendations are based on observed program inefficiencies or policies that influence participation rates in FRPP.

1. **Consider changing the cash match requirement.** The cash match was the most limiting factor to program participation, according to the qualitative results. If the match requirement was eliminated, altered, or loosened in certain circumstances, greater program participation could be achieved. Suggestions include decreasing the size of the cash match to less than 50 percent, requiring less of a cash match if a large landowner donation occurred, or waiving the requirement altogether if a state could provide documentation that it didn't have access to funds. The value of the cash match could be replaced in part through landowner donation or additional funding from the federal FRPP allocation.
2. **Research where organizations with a primary farmland preservation focus are located.** For areas that do not have organizations that specialize in farmland preservation, are there certain factors present that are keeping these organizations from locating in certain regions? Are there incentives that could draw them to limited service areas? More research needs to be conducted regarding how these organizations are funded, staffed, and what drives them to start up in certain areas. Communities that do not have organizations like this cannot participate in FRPP.
3. **Consider allowing the state to take on some program implementation responsibilities in the event that there are no partner entities in a state with adequate capacity.** For some states, a lack of a partner entity with enough capacity to implement FRPP is one reason for limited FRPP participation. The Grassland Reserve Program operated with a similar rule prior to the 2014 Farm Bill.
4. **Research problems related to program implementation.** Are there certain regulations that make program implementation difficult? Do regulations need to be tightened or loosened in different circumstances? Several anecdotes came up in

qualitative interviews, but more research is needed to determine how common those specific issues are and whether they can be addressed with federal program changes, or if a state-specific solution is a better alternative.

5. **Consider changing the parcel ranking methodology or releasing more information about how the current methodology targets farmland that is at risk of development.** It is not clear how the eight federally-mandated criteria are actually targeting farmland that is at risk of development. Anecdotally, the eight criteria make sense, but results from the spatial analysis showed that they do little to target farmland that might be at risk of development. The only limiting factor is the program requirement that a parcel have at least 50% prime farmland and at least 33% agricultural land. In addition, many states use point allocation methods that do not make the reasoning behind their methodology clear. These methodologies seem to prioritize land that is not at risk of development now but might be in the future.
6. **Re-evaluate how FRPP defines “bias” within the parcel ranking system.** FRPP rules currently prohibit states from ranking states based on farm size or type of agriculture, among other factors. It is not clear why bias is defined in this way. The USDA needs to make the reasoning behind this regulation clear. Certain types of agriculture, including fruit, vegetable, and dairy farmers, are more impacted by development than others. If this is a reality, why would regulations prohibit states from recognizing this and attempting to prioritize the preservation of these types of farms?

Future Research

There are several additional questions to consider beyond the scope of this research. Midwestern states have had lower rates of participation in farmland preservation than other areas of the nation, and therefore less research has been conducted about farmland preservation in the Midwest. Is this difference in participation strictly because of a lack of development pressure or a presence of certain agricultural economic conditions? Or, are there political aspects of this trend? Is participation, and lack of participation, a result of lobbying done on behalf of coastal states or the farm lobby? What changes might need to occur in program policy for Midwestern states to become more involved in farmland preservation efforts?

Additional research should investigate what drives landowners to participate in FRPP. Specific to the Midwest, how do land prices and different agricultural economies affect individual landowner decisions to participate in the program? Can any of these factors be offset by the creation of new program incentives? Finally, several Midwestern states do not have partner entities with which the State NRCS office can work to implement FRPP. How can we incentivize more partner entities to become involved in farmland preservation efforts in Iowa and other Midwestern states? Many of the questions raised in this section have been studied in part, but more research needs to be conducted in and applied to conditions in the Midwest.

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APPENDIX A
MINNESOTA FRPP PARCEL RANKING SHEET

FRPP Ranking Sheet
National Ranking Factors (50% of Total Points)

Parcel Name: _____ County: _____ Entity: _____	Max. Points	Points
Percent of prime, unique, and important farmland in the parcel to be protected <ul style="list-style-type: none"> ▪ 0 points for 50 percent or less ▪ 4 points for every percent above 50 percent (National Mandate – 0 points for 50% or less – Eligibility Criteria)	200	
Percent of cropland, pastureland, grassland, and rangeland in the parcel to be protected <ul style="list-style-type: none"> ▪ 0 points for 33 percent or less ▪ 3 points for every percent above 33 percent (National Mandate – 0 points for 33% or less – Eligibility Criteria)	200	
Ratio of the total acres of land in the parcel to be protected to average farm size in the county according to the most recent USDA Census of Agriculture (www.agcensus.usda.gov) see page 3 and 4 <ul style="list-style-type: none"> ▪ 0 points for a ratio of 1 or less ▪ 50 points for ratios of 1.0 to 2.0 ▪ 100 points for ratios of greater than 2.0 (National Mandate – 0 points for ratio of 1 or less)	100	
Decrease in the percentage of acreage of farm and ranch land in the county in which the parcel is located between the last two USDA Censuses of Agriculture (www.agcensus.usda.gov) see page 3 and 4 <ul style="list-style-type: none"> ▪ 0 points for decrease of 0 percent or less ▪ 50 points for decreases of 0 to 5 percent ▪ 100 points for decrease of 5 to 10 percent ▪ 50 points for decreases of 10 to 15 percent ▪ 0 points for decreases of more than 15 percent (National Mandate – 0 points for 0% or less)	100	
Percent population growth in the county as documented by the United States Census (www.census.gov) see page 3 and 4 <ul style="list-style-type: none"> ▪ 0 points for growth rate of less than the state growth rate ▪ 50 points for growth rate of 1 to 2 times the state growth rate ▪ 100 points for growth rate of 2 to 3 times the state growth rate ▪ 0 points for growth rate of more than 3 times the state growth rate (National Mandate – 0 points for growth rate less than the state growth rate)	100	
Population density in the county (population per square mile) as documented by the most recent United States Census (www.census.gov) see page 3 and 4 <ul style="list-style-type: none"> ▪ 0 points for population density less than the state population density ▪ 50 points for population density of 1 to 2 times the state population density ▪ 100 points for population density of 2 to 3 times the state population density ▪ 0 points for population density of more than 3 times the state population density) (National Mandate – 0 points for population density less than the state density)	100	
Proximity of other protected land, including military installations to the boundaries of the parcel <ul style="list-style-type: none"> ▪ 50 points for less than 250 acres of protected land within a mile of the parcel ▪ 100 points for 250-500 acres of protected land within a mile of the parcel ▪ 150 points for more than 500 acres of protected land within a mile of the parcel 	150	
Proximity of other agricultural operations and infrastructure to the boundaries of the parcel <ul style="list-style-type: none"> ▪ 0 points for less than 250 acres of other agricultural operations within a mile of the parcel ▪ 25 points for 250-500 acres of other agricultural operations within a mile of the parcel ▪ 50 points for more than 500 acres of agricultural operations within a mile of the parcel 	50	
Total Points for Nationally Mandated Ranking Factors	1000	