

THESIS

EXAMINING RANGELAND SOCIAL-ECOLOGICAL SYSTEM CHANGE AND RESILIENCE  
THROUGH LIFE-HISTORY NARRATIVES OF RANCHING WOMEN  
IN NEW MEXICO AND ARIZONA

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## ABSTRACT

### EXAMINING RANGELAND SOCIAL-ECOLOGICAL SYSTEM CHANGE AND RESILIENCE THROUGH LIFE-HISTORY NARRATIVES OF RANCHING WOMEN IN NEW MEXICO AND ARIZONA

Women ranchers are important but under-examined stakeholders in the rangeland systems of the Southwestern United States. This thesis addresses a gap in the social-ecological systems and rangeland science literatures as to how these stakeholders experience change and resilience in ranching. Rangeland researchers are increasingly interested in understanding rangelands as integrated social-ecological systems and in investigating the roles of humans as both drivers and subjects of ecological change. To address these needs, I carried out life-history interviews with 19 ranching women in the Southwestern U.S. and analyzed the resulting transcripts using narrative analysis to address two research questions: 1) how do ranching women experience change on rangelands over the course of their lifetimes? and 2) how do ranching women experience resilience in ranching? Each research question is addressed in a separate manuscript.

Chapter 2 explores common themes in women's experiences with change in ranching. The results reveal the following eight common experiences of women ranchers, illustrating that ranching is a life-long learning process: 1) learning from older generations, 2) finding a personal career path, 3) operating livestock businesses, 4) breaking gender barriers, 5) leading communities, 6) aging and going on alone, 7) living close to the land, and 8) passing

the ranching tradition to the next generation. These findings suggest that women contribute to social resilience in rangeland systems through their leadership and life-long career paths in ranching in the face of economic hardship and ecological challenges.

Chapter 3 examines women ranchers' contradicting material and discursive ranching practices related to resilience. Material practices denote what people do and discourse denotes how people talk about what they should do. Material-discursive contradictions between women's ranching practices and ideologies of ranching culture include contradictions between ranching as a livelihood and financial hardship, between ecological disturbances and range management paradigms, and between gender discourses and women's material practices as ranchers. Discursive-discursive contradictions reveal conflicting ranching paradigms, epistemologies and discourses on the future of ranching. These contradictions demonstrate how women's ranching practices change in response to broader social, ecological and economic change events, and illustrate that assessment of social-ecological system (SES) resilience depends upon the perspective of the observer. Ranching women's narratives help us to understand which changes in material practices and discourse can be accommodated within the rangeland SES that they value, and which changes threaten the existence of that system. Material and discursive practices that appear to support resilience from an external (etic) view, may threaten resilience from an internal (emic) perspective. Analysis of ranching women's daily material and discursive practices can also help identify specific material and discursive changes—and adaptations-- in ranching culture. This insight shows why it is critical for social-ecological systems scholars and practitioners to engage with social theory and methodology when studying

resilience, and to broaden and deepen inquiry to understand the cultural, historical and gendered contexts of the decision-making processes of stakeholders in rangeland systems.

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## DEDICATION

*-To Mom, the strongest woman in the world*

*-To Maggie Synness and Fannie Sperry-Steele, who needs comic book heroes?*

*- To Cora, Izzie and Tessa, the next generation*



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## CHAPTER 1

### CONNECTING GENDER, RANGELANDS AND SOCIAL-ECOLOGICAL RESEARCH

This thesis rests at the crossroads between gender studies, rangeland ecology and management, and the diverse field of social-ecological systems theory. Although these fields may seem disjointed, a closer look reveals how they can inform and enrich one another.

I came to Colorado State University to study rangeland ecology and management. As the name implies, this field is a blend of art and science concerned with the management of those “in-between” lands, lands that are not forest or mountain, not cropland or city, but something between, the range. The range is that intermediate area of our watersheds that provides wildlife habitat, grazing land, open space and other ecosystem-services. And while much of the history of rangeland ecology is rooted in the American West, the field has global significance. The sustainable management of the world’s prairies, savannahs, shrublands, tundra, steppes and grasslands has seen increased attention as we face globalized concerns of climate change, land fragmentation, social and economic inequality, and biodiversity conservation; rangeland ecology seeks to address those problems (Sayre, 2004; Sayre & Fernandez-Gimenez, 2003).

Humans, between 1 and 2 billion of whom directly depend upon rangeland ecosystems (Sayre, McAllister, Bestelmeyer, Moritz, & Turner, 2013), are a driving force in ecosystem modification. While rangeland science has always been closely linked to agricultural sciences and the pragmatism of rangeland management, the recent dialogue from the field has called for an increased examination of how human decision-making processes drive rangeland system change (Abel, Ross, & Walker, 1998; Beratan, 2007; Farmar-Bowers &

Lane, 2009; Lynam et al., 2012). We need a better dialogue between rangeland scientists and those who make their living managing rangelands (Briske et al., 2011; Brunson, 2012; Sayre, 2004). This need reflects a broader shift towards decentralized, translational and participatory approaches to ecological research, policy and governance (Barrett, Brandon, Gibson, & Gjertsen, 2001; Fernandez-Gimenez, Huntington, & Frost, 2007; Knapp, Fernandez-Gimenez, Kachergis, & Rudeen, 2011; Musacchio, 2009; Rodriguez, Cox, deVoil, & Power, 2013). A social-ecological systems approach to rangeland science and management holds promise for addressing these concerns (Brunson, 2012).

In social-ecological systems (SES) theory neither the social nor the ecological is privileged. Under this theory human-nature interaction is conceptualized as an integrated system. That is, humans cannot be understood apart from their environment, and nature cannot be understood as a separate entity apart from human influence (Glaser, 2006). SES is a useful approach to rangeland ecology because it provides a framework with which to address coupled human and natural dimensions of rangelands (Walker, 2006). Rangelands, at many scales, from the family ranch to regional or global scales, can be thought of as social-ecological systems. SES theory examines change in these integrated systems, and emphasizes the role of social learning in management action (Glaser, 2006). Many of the important theories related to SES that address system complexity were developed by ecologists, and these concepts have sometimes had a difficult transition to social research questions (Adger, 2000; Berkes & Ross, 2013; Brown, 2013; Cote & Nightingale, 2011; Peterson, 2000). This is, in part, because of a lack of engagement with social science theory: the human-centered social studies are difficult to reconcile with the integrated SES mental-map of the human-nature relationship, and social scientists and ecologists

sometimes seem to be speaking two different languages. Issues of diversity, inter- and intra-community power asymmetries, and inequality are not thoroughly addressed in SES literature (Cote & Nightingale, 2011), especially in the eastern United States. Gender studies offer an opportunity to connect SES literature with social theory and further explore human experiences of SES theory and concepts.

Gender provides a unique opportunity to connect SES and rangeland research with social science for two reasons. First, research from development economics and community-based natural resource management suggests that women are distinct knowers, users and shapers of ecological landscapes (Agarwal, 2010; Barrett, Carter, & Timmer, 2010; Folbre, 1984; Meinzen-Dick & Zwarteveen, 2001). Second, employing feminist methodologies and using gender as a lens for SES research prompts a re-examination of assumptions about social categories experiences and even the nature of knowledge (Farmer-Bowers, 2010; Harding, 1986; O'Shaughnessy & Krogman, 2011; Pini, 2005; Young, 1994).

The connection between women and natural systems has been of great academic interest for eco-feminist and feminist ecological thinkers, not to mention those concerned with conservation, development and food security. Women are the interest of so much research in natural resources and agriculture because they are both the agents and subjects of ecological, economic and social change (Arora-Jonsson, 2011; Nelson, Meadows, Cannon, Morton, & Martin, 2002; Nirmala & Venkateswarlu, 2012). In examining the connection between nature and gender, these scholars have described women as both vulnerable and empowered stakeholders in ecosystem change.

But the connection between women and natural systems has largely gone un-examined on the rangelands of the United States. Recent gender-in-agriculture scholarship either has focused on a growing population of organic or alternative farmers in the Mid-West and Eastern Sea-board or Australia (Barbercheck et al., 2009; Farmar-Bowers, 2010; Trauger, 2001; Williams, 1992), or has been limited to pastoral or ranching women in developing nations (Arndt, Benfica, & Thurlow, 2011; Brockington, 2001; Coppock, Desta, Tezera, & Gebru, 2011; Coppock & Desta, 2013).

The overall aim of this thesis is to address a gap in the scientific literature related to women's roles in rangeland management and decision-making. It explores women's experiences with change and resilience, or women's ability to maintain livelihoods that support both cultural and material needs (Crane, 2010) on rangelands over the course of their lifetimes. I recorded life-history interviews of 19 women ages 28 to 85 who lived and ranched in three communities in Arizona and New Mexico.

In 2013, after returning from a summer of interviews with ranchers in Arizona and New Mexico, I began to comprehend why gender is so difficult to analyze in ranching culture. In my study sites, women in ranching were largely empowered leaders in their families, communities and industries, and gender identity often took a back seat to one's identity as a rancher. The question of how the analytic frameworks of gender studies were applicable to these strong "original feminists" was a key quandary in the development of my research project and the analysis of my data. (I am indebted to members of my committee who patiently worked through these issues with me for the duration of my course of study.) But in the end, the issue remained. Range scholars do not know very much about the role American ranching women play in sustainable rangeland management, in ranching and

agricultural social systems, or about how those systems impact ranching practices. Here we see the connection between these three fields comes full circle. A closer examination of the combination of rangeland ecology, SES theory and gender reveals critical gaps in our understanding of rangeland system change. Women are important but unexamined decision makers on US rangelands, the integrated social-ecological systems upon which women ranchers depend for their livelihoods and way of life.

This thesis is organized as two stand-alone journal manuscripts (Chapters 2 and 3) each addressing a separate research question. Chapter 4 provides concluding recommendations. The first paper (Chapter 2) examines women's experiences with change in ranching over the course of their lifetimes. The findings reveal common experiences from the interviews of women's roles in ranching, from horseshoeing to home-schooling. The paper examines how women experience ranching as both a livelihood and a vital way of life. This first paper has implications for understanding a rangeland manager's life-long learning experiences and how social, ecological and economic elements of rangeland systems bring meaning to ranching women's lives.

The second paper (Chapter 3) digs deeper into each interview to examine women's subjective experiences with resilience. In this paper, I analyze specific contradictions between what ranching women do and how ranchers talk about what they should do in order to understand how women adapt to change and recover from disturbance. This second paper reveals key conflicts, changes and unresolved issues in the narratives, and challenges us to see resilience from the point of the view of the rancher.

In the final chapter of this thesis, I summarize the common themes of change described by ranching women as analyzed in Chapters 2 and the contradictions in women's

experiences as analyzed in Chapter 3. This summary considers the value of taking an internal (emic) examination of resilience for women in rangeland and ranching systems. In Chapter 4 I discuss how this study serves to begin a dialogue between the field of rangeland science and gender studies and feminist methodologies in SES research. This dialogue is an opportunity to connect diverse stakeholders in rangeland SESs, and to examine the nuanced social processes at play in ranching communities and in rangeland management decision-making.



## REFERENCES

- Abel, N., Ross, H., & Walker, P. (1998). Mental models in rangeland research, communication and management. *Rangeland Journal*, 20, 77–91.
- Adger, W. N. (2000). Social and ecological resilience: Are they related? *Progress in Human Geography*, 24(3), 347–364.
- Agarwal, B. (2010). *Gender and green governance: The political economy of women's presence within and beyond community forestry*. Oxford: Oxford University Press.
- Arndt, C., Benfica, R., & Thurlow, J. (2011). Gender implications of biofuels expansion in Africa: The case of Mozambique. *World Development*. Retrieved from <http://biofuelsandthepoor.com/gender-implications-of-biofuels-expansion-in-africa-the-case-of-mozambique/>
- Arora-Jonsson, S. (2011). Virtue and vulnerability: Discourses on women, gender and climate change. *Global Environmental Change*, 21(2), 744–751.  
doi:10.1016/j.gloenvcha.2011.01.005
- Bailey, J. (2012). Gender dimensions of drought and pastoral mobility among the Maasai. Africa Portal: A Project of the Africa Initiative. Retrieved from <http://dspace.cigilibrary.org/jspui/handle/123456789/32561>
- Barbercheck, M., Brasier, K., Kiernan, N. E., Sachs, C., Trauger, A., Findeis, J., ... Moist, L. (2009). Meeting the Extension needs of women farmers: A perspective from Pennsylvania. *Journal of Extension*, 47(3).
- Barrett, C. B., Brandon, K., Gibson, C., & Gjertsen, H. (2001). Conserving tropical biodiversity amid weak institutions. *BioScience*, 51(6), 497.

- Barrett, C. B., Carter, M. R., & Timmer, C. P. (2010). A century-long perspective on agricultural development. *American Journal of Agricultural Economics*, 92(2), 447–468.
- Beratan, K. K. (2007). A cognition-based view of decision processes in complex social–ecological systems. *Ecology and Society*, 12(1), 27.
- Berkes, F., & Ross, H. (2013). Community resilience: Toward an integrated approach. *Society & Natural Resources*, 26(1), 5–20. doi:10.1080/08941920.2012.736605
- Briske, D. D., Sayre, N. F., Huntsinger, L., Fernandez-Gimenez, M., Budd, B., & Derner, J. D. (2011). Origin, persistence, and resolution of the rotational grazing debate: Integrating human dimensions into rangeland research. *Rangeland Ecology & Management*, 64(4), 325–334. doi:10.2111/REM-D-10-00084.1
- Brockington, D. (2001). Women’s income and the livelihood strategies of dispossessed pastoralists near the Mkomazi Game Reserve, Tanzania. *Human Ecology*, 29(3), 307–338.
- Brown, K. (2013). Global environmental change I: A social turn for resilience? *Progress in Human Geography*. doi:10.1177/0309132513498837
- Brunson, M. W. (2012). The elusive promise of social-ecological approaches to rangeland management. *Rangeland Ecology & Management*, 65(6), 632–637. doi:10.2111/REM-D-11-00117.1
- Coppock, D. L., Desta, S., Tezera, S., & Gebru, G. (2011). Capacity building helps pastoral women transform impoverished communities in Ethiopia. *Science*, 334(6061), 1394–1398.

- Coppock, D. Layne, & Desta, S. (2013). Collective action, innovation, and wealth generation among settled pastoral women in Northern Kenya. *Rangeland Ecology & Management*, 66(1), 95–105. doi:10.2111/REM-D-11-00211.1
- Cote, M., & Nightingale, A. J. (2011). Resilience thinking meets social theory: Situating social change in socio-ecological systems (SES) research. *Progress in Human Geography*, 36(4), 475–489. doi:10.1177/0309132511425708
- Crane, T. A. (2010). Of models and meanings: cultural resilience in social-ecological systems. *Ecology and Society*, 15(4), 19.
- Farmer-Bowers, Q. (2010). Understanding the strategic decisions women make in farming families. *Journal of Rural Studies*, 26(2), 141–151.
- Farmer-Bowers, Q., & Lane, R. (2009). Understanding farmers' strategic decision-making processes and the implications for biodiversity conservation policy. *Journal of Environmental Management*, 90(2), 1135–1144.
- Fernandez-Gimenez, M. E., Huntington, H. P., & Frost, K. J. (2007). Integration or co-optation? Traditional knowledge and science in the Alaska Beluga Whale Committee. *Environmental Conservation*, 33(04), 306. doi:10.1017/S0376892906003420
- Folbre, N. (1984). Household production in the Philippines: A non-neoclassical approach. *Economic Development and Cultural Change*, 32(2), 303–330.
- Glaser, M. (2006). The social dimension in ecosystem management: Strengths and weaknesses of human-nature mind maps. *Human Ecology Review*, 13(2), 122.
- Harding, S. (1986). *The science question in feminism*. Ithaca, NY: Cornell University Press.

- Knapp, C. N., Fernandez-Gimenez, M., Kachergis, E., & Rudeen, A. (2011). Using participatory workshops to integrate state-and-transition models created with local knowledge and ecological data. *Rangeland Ecology & Management*, 64(2), 158–170. doi:10.2111/REM-D-10-00047.1
- Lynam, T., Mathevet, R., Etienne, M., Stone-Jovicich, S., Leitch, A., Jones, N., ... Perez, P. (2012). Waypoints on a journey of discovery: Mental models in human-environment interactions. *Ecology and Society*, 17(3). doi:10.5751/ES-05118-170323
- Meinzen-Dick, R., & Zwarteveen, M. (2001). Gender dimensions of community-based natural resource management: The case study of water users' associations in South Asia. In A. Agrawal & C. Gibson (Eds.), *Communities and the environment: Ethnicity, gender and the state in community-based conservation* (pp. 89–110). New Brunswick: Rutgers University Press.
- Musacchio, L. R. (2009). The ecology and culture of landscape sustainability: emerging knowledge and innovation in landscape research and practice. *Landscape Ecology*, 24(8), 989–992. doi:10.1007/s10980-009-9393-1
- Nelson, V., Meadows, K., Cannon, T., Morton, J., & Martin, A. (2002). Uncertain predictions, invisible impacts, and the need to mainstream gender in climate change adaptations. *Gender & Development*, 10(2), 51–59.
- Nirmala, G., & Venkateswarlu, B. (2012). Gender and climate resilient agriculture: an overview of issues. *Current Science*, 103(9), 987.

- O'Shaughnessy, S., & Krogman, N. T. (2011). Gender as contradiction: From dichotomies to diversity in natural resource extraction. *Journal of Rural Studies*, 27(2), 134–143.  
doi:10.1016/j.jrurstud.2011.01.001
- Peterson, G. (2000). Political ecology and ecological resilience: An integration of human and ecological dynamics. *Ecological Economics*, 35(3), 323–336.
- Pini, B. (2005). The third sex: Women leaders in Australian agriculture. *Gender, Work & Organization*, 12(1), 73–88.
- Rodriguez, D., Cox, H., deVoil, P., & Power, B. (2013). A participatory whole farm modeling approach to understand impacts and increase preparedness to climate change in Australia. *Agricultural Systems*, *In press*. doi:10.1016/j.agsy.2013.04.003
- Sayre, N.F. (2004). Viewpoint: The need for qualitative research to understand ranch management. *Rangeland ecology & management*, 57(6), 668–674.
- Sayre, N.F., & Fernandez-Gimenez, M. (2003). The genesis of range science, with implications for current development policies. In N. Allsopp, A. R. Palmer, & S. J. Milton (Eds.), *N. Allsopp; AR Palmer; SJ Milton; KP Kirkman; GIH Kerley* (pp. 1976–1985). Durban, South Africa: Proceedings produced by: Document Transformation Technologies.
- Sayre, N.F., McAllister, R., Bestelmeyer, B., Moritz, M., & Turner, M. D. (2013). Earth stewardship of rangelands: Coping with ecological, economic, and political marginality. *Frontiers in Ecology and the Environment*, 11(7), 348–354. doi:10.1890/120333
- Trauger, A. (2001). Women farmers in Minnesota and the post-productivist transition. *The Great Lakes Geographer*, 8(2), 53–66.

Walker, B. (2006). *Resilience thinking sustaining ecosystems and people in a changing world*.

Washington: Island Press.

Williams, J. (1992). *The invisible farmer: A summary report on Australian farm women*.

Canberra: Commonwealth Department of Primary Industries and Energy.

Young, I. M. (1994). Gender as seriality: Thinking about women as a social collective. *Signs*,

19(3), 713–738.

## CHAPTER 2

### FINDING A PLACE ON THIS PLACE:

#### NARRATIVES FROM THE LIFE-HISTORIES OF RANCHING WOMEN OF THE SOUTHWEST

##### Introduction

*"What's the hardest part about being a rancher? Putting up with droughts and endless wind and dirt blowing. But every time we go through one of those spells, [like] this year, then I think about a city. I think about buildings everywhere, and I think my gosh I'm glad I've got dirt blowing in my face, and I get over it right quick."* -Lucy, New Mexico

In 2012 and 2013, the effects of the hottest drought in the recorded history of

Southwestern United States weighed heavily on the minds of ranchers like Lucy, whose livelihoods and way of life depend upon rangelands. The rangelands of the American Southwest are a confluence of valuable economic, ecological and cultural resources. But as Sayre, McAllister, Bestelmeyer, Moritz, & Turner (2013) point out, rangelands, which globally support between 1 and 2 billion people, are most simply understood as lands that have not yet been converted to other uses with higher rates of economic production and return (p. 348).

In the ranching communities in the Southwestern US, social change is as pressing a concern as ecological change. There, complex economic, ecological and cultural landscapes have been shaped by long-term shifts in rural demographics, economic opportunities and local and federal land management practices and regulation (Bradford, Reed, LeValley, Campbell, & Kossler, 2002; Briggeman, Gray, Morehart, Baker, & Wilson, 2007; Brunson & Huntsinger, 2008; Hansen et al., 2002; Johnson, 2011; MacDonald, 2010; Pugh, 2012; Robbins, Meehan, Gosnell, & Gilbertz, 2009; White, Morzillo, & Alig, 2009). Nationally, market forces, changing government support policies, pressure to adopt production

technologies, and more diverse competition have increased the size, reduced the number, and altered the structure of American family farms and ranches (Barbieri, Mahoney, & Butler, 2008; Briggeman et al., 2007). If rangelands are lands that have not yet been converted to cropland, residential, industrial or other less diverse and more valuable land-uses, does it follow that those who depend upon rangelands, including ranchers like Lucy, can be understood as people who have simply not yet been pushed into other ways of life?

Recently, the field of rangeland science has seen a marked social turn, an increased emphasis on exploring the connection between rangeland ecosystems and humans, who are both drivers and subjects of rangeland change (Bestelmeyer & Briske, 2012; Brunson, 2012; Sayre, deBuys, Bestelmeyer, & Havstad, 2012; Sayre et al., 2013). While previous scholarship has explored land-manager decision-making related to economic and innovation adoption decisions (Didier & Brunson, 2004; Habron, 2004; Kennedy & Brunson, 2007; Rowe, Bartlett, & Swanson, 2001; Smith & Martin, 1972; Tanaka, Torell, & Rimbey, 2005), little research has explored how those dependent upon rangeland systems of the Southwest experience change. That is, while we may understand ranchers' innovation adoption behavior and that many take an opportunity cost to stay in ranching (Torell & Bailey, 2000), we know little about the nuanced social processes and experiences that drive rangeland system change from the rancher's perspective. There is growing recognition that understanding these processes is critical to developing policies and research that support the sustainable management of social-ecological systems (SES), including rangelands (Ahlborg & Nightingale, 2012; Beratan, 2007; Briske et al., 2011; Farmar-Bowers & Lane, 2009; Sayre, 2004).



SES researchers have struggled to find research tools that link social and cultural knowledge from the members of ranching communities with ecological and technical models (Brunson, 2012; Cote & Nightingale, 2011; Crane, 2010). At the same time, there has been a wide-spread rise of decentralized, participatory and translational approaches to research, policy and governance in the fields of range science, ecology and agriculture (Bestelmeyer, Estell, & Havstad, 2012; Mayoux, 1995; Musacchio, 2009; Rodriguez, Cox, deVoil, & Power, 2013). Rangeland research has also seen a turn toward post-normal science, science that seeks to generate dialogue between scientists and local land managers (Sayre, deBuys, Bestelmeyer, & Havstad, 2012). A body of work has documented local ecological knowledge of US rangeland ecosystems (Knapp & Fernandez-Gimenez, 2009; Knapp, Fernandez-Gimenez, Kachergis, & Rudeen, 2011). This approach holds promise for incorporating the content of local knowledge into rangeland research and management, but the context of this knowledge is also important (Cote & Nightingale, 2011; Cruikshank, 2001). By context I refer to the historical, cultural and subjective meaning of knowledge from the perspective of those who are involved in the process of knowledge creation and application (Cote & Nightingale, 2011; Cruikshank, 2001).

Research that attempts to understand and incorporate the historical, cultural and subjective contexts of decision making of diverse stakeholders in rangeland systems may help bridge a gap between the academic field of rangeland science and actual rangeland managers (Briske et al., 2011; Crane, 2010; Sayre, deBuys, Bestelmeyer, & Havstad, 2012). The contextualization of local ecological knowledge would include an exploration of the multi-dimensional social processes, relationships and identities that influence decision-making in these systems (Cote & Nightingale, 2011). Gender is one category of social

identity through which rangeland scholars can explore the heterogeneous social context of rangeland system change. Defined as the social, rather than biological, difference between men and women (Radel, 2009), gender is an under-examined, complex and deeply personal experience with implications for broader social power asymmetries. Thus, it provides an important starting point in the effort to contextualize the social processes driving change on rangeland systems.

### **Diverse Perspectives: Why Gender Matters to the Range**

Women are major stakeholders in rangeland systems, but their experiences in ranching are poorly understood. Recent census data and agricultural research suggest that women play an important role in the management of family farms, but like other natural resource fields (O'Shaughnessy & Krogman, 2011), the rangeland science literature is all but silent on women's contributions to rangeland stewardship in the United States.

What we do know about the contributions of Western ranching women comes from a small number of studies on women in the livestock industry (Pilgeram, 2007; Pini, 2005) and from biographies and historical accounts like the memoir of Alice Marriott, who efficiently noted: "the cattle business is a damn fine business for men and mules, but it's hell on horses and women" (Marriott, 1953). A sample of this literature is steeped in romantic imagery of the socially and economically empowered Western woman, the original career woman, working beside or without her husband on the land (Peñaloza, 2001; Stefanco, 1987) Fink, 1992). Recent explorations of women's experiences in ranching provide a more nuanced view of ranching life, an existence blessed and challenged by traditional gender roles, rugged social and economic landscapes and geographic isolation (Schackel, 2011). Contemporary ranching women, like author Linda Husa and cowgirl-

poet and humorist Gwen Peterson, have taken up the pen to defend, celebrate and comment on the ranching lifestyle and the experiences of ranching women (Hussa & Blake, 2009; Petersen, 2007).

Even as the voices of ranching women emerge in the current dialogue on gender in an ever-changing West, rangeland scientists still have a limited understanding of how women contribute to rangeland management. The dearth of research in this area was highlighted during a special symposium on Women as Change Agents on Rangelands at the 2012 meeting of the Society for Range Management (Coppock, Fernández-Giménez, & Harvey, 2013). This call from the field of rangeland science for more research on women and rangelands came on the heels of decades of gender studies from the fields of agriculture, development economics, sociology and natural resource management that probed into the connection between women and natural resource systems around the globe.

The literature related to the interface between women and natural systems spans disciplines and generations. It has been greatly influenced by core concepts from eco-feminism, including that ecology is a feminist issue, that there are connections between the oppression of women and the oppression of the environment, and a rejection of all systems of oppression (Cheney, 2008; Moore, 2008; Warren, 2008). Feminist political ecology has addressed gendered differences in the environment related to ecological knowledge, gendered rights over resources and gender organizations (Rocheleau, Thomas-Slayter, & Wangari, 1996). The foundational work of economist Bina Agarwal on women's participation in common pool forest resource governance has also had great influence (Agarwal, 2010).

Much of the research on women in agriculture or natural resources has been focused at the family-farm level (Sachs & Alston, 2010). This work considered issues such as the gendered divisions of farm-household labor, the impact of intra-household inequality on women's access to resources (Folbre, 1984), and their roles in production and food security. At the community level, recent work has explored how women take leadership and governance roles in agriculture and forestry (Farmer-Bowers, 2010; Meinzen-Dick & Zwartveen, 2001; Pini, 2005) and the gendered implications of numerous innovations and practices in natural resources and agriculture (Arndt, Benfica, & Thurlow, 2011; Kiptot & Franzel, 2011; Moser & Barrett, 2006).

The gendered challenges of rural realities (Pruitt, 2007), including access to educational resources (Trauger et al., 2010) and credit (Anderson, Locker, & Nugent, 2002), as well as barriers to securing power in resource management (Meinzen-Dick & Zwartveen, 2001), have been well explored across disciplines. Scholars have also celebrated women's cultural, economic and spiritual connections to natural resources (Kassam & Soaring Eagle Friendship Center, 2001). The link between gender, socio-cultural systems and natural resource systems may also be important to understanding wide-spread norms. There is now some evidence to suggest that the historical origins of today's gender norms rest in agricultural practices (the use of the plow) that produced a gendered division of labor (Alesina, Giuliano, & Nunn, 2013).

This need to explore the gendered experience in rangeland systems originates from the almost complete omission of gender from social rangeland literature. There is also mounting evidence that women are key drivers of change within rangeland systems and that the impact of change in natural resource systems is gendered (Coppock & Desta,

2013). There is concern that researchers have little understanding of the diverse perspectives, labor responsibilities and needs of ranching and pastoralist women (Coppock et al., 2013). Additionally, there is concern that women in natural resources are often invisible, that they are brushed over in the literature or lumped into the “household” and do not receive recognition or distinct consideration in rangeland research or policy. Concerns that women are vulnerable to change in natural resource systems contrast with the discourse about women as a source of labor and leadership in production, development and conservation activities that help solve both social and ecological problems (Mayoux, 1995; Pilgeram, 2007; Sachs & Alston, 2010).

In this study, I address a gap in the social rangeland SES literature by exploring, through narrative analysis, the subjective experiences and roles of women ranchers in rangeland system change. Specifically, I examine how women ranchers experience change in rangeland systems over the course of their lifetimes. This research provides insight into the context of rangeland manager decision-making processes, and analyzes the perspective of an under-examined group of ranchers.

## **Methodology**

### **Analytical Framework**

Simply noting that all of the participants in this study were women does not fully frame the complexity of gender and gendered experiences. Like race, ethnicity and class, gender is a serial organizer of the social experience. Seriality refers to a social collective that does not necessarily dictate group status or activity (Young, 1994). Gender is seen as serial because gender categories organize how men and women negotiate a number of experiences and social roles, but social contexts are heterogeneous, and gender may not necessarily stimulate action or status in gender groups (Young, 1994). Seriality implies

that gender cannot be understood by looking for trends among universal, binary categories of men and women because gendered experiences are diverse, and many human experiences are shared regardless of gender (Radel, 2009; Sachs & Alston, 2010). In choosing to interview women, I recognized the seriality and diversity of the social performance of gender (O'Shaughnessy & Krogman, 2011) and that gender is just one of many diverse experiences that may contextualize ranching women's experiences of change and adaptation on rangelands. Thus, I chose not to directly compare the roles of men and women in ranching, or to develop a list of ranching women's roles. Instead, I sought to focus on gathering women's voices so as to record diverse perspectives on how change occurs on rangelands through life-history narratives.

Narratives are a way that humans make sense of the world; they are a reconstruction of stories across time and place, and show transformations on many levels (Squire, 2008). In ranch life, narratives are a natural and almost daily social process employed in ranch kitchens, corrals and pick-up trucks by men and women. They are used to organize ranch history, internalize gendered experiences and explain ranching culture. As a research methodology, life-history narratives link such meaning making to events, locations and characters through sequential stories (Squire, 2008; Daly, 2007). My use of life-history narratives is rooted in a theoretical tradition recognized in family and gender studies for its value in exploring relationships, habits and private and public experiences through a unique blend of art and science (Daly, 2007, Järviluoma, Moisala, & Vilkkö, 2003). Narrative inquiry reverses the usual researcher-subject power dynamic by inviting greater participant agency in the research experience, but the researcher plays an active role in both data collection and analysis. While interviewees can frame their narrative, its

characters and events however they see fit, researcher and interviewees construct the narrative together. Narrative inquiry subscribes to the idea that there is no “wrong” narrative. It allows the researcher to recognize that the data from interviews are an interpretation of women’s experiences and actions, and that many interpretations of the same experience or social situations may exist (Daly, 2007).

### **Study Sites and Sample**

The participants for this study were all ranchers who lived along a precipitation gradient throughout Arizona and New Mexico. Although all participants in the study had served in some decision-making capacity on a ranch that would qualify as a “farm” under the U.S. Agriculture Census, they described themselves across a spectrum from to primary or co-operator to having limited input into daily decisions on the ranch. Two of the women interviewed for this study had been active in ranching but were retired from most ranching responsibilities at the time of the interview.

Those women who were not retired were all public lands ranchers and had varying levels of dependence upon public grazing permits and the forage these lands provide (Tanaka, Torell, & Rimbey, 2005). Such public lands permit grazing continues in a highly contentious political environment. Various interest groups have pressured for the elimination or reduction of grazing permits because of concerns for the ecological and social impacts of grazing and ranching practices, particularly related to endangered species (Tanaka et al., 2005; Pugh, 2012), while arguing that the economic importance of public lands ranching is declining (Salvo, 1998). Advocates of the practice and governmental agencies that maintain permit systems cite economic, socio-cultural and ecological benefits of public lands grazing (Bradford, Reed, LeValley, Campbell, & Kossler, 2002; Pugh, 2012).

I focused on recruiting individuals who were considered to be “ranch women” by their communities and peers. Because these states are populated by a small number of close-knit ranching families and communities, and because I have a responsibility to maintain participant confidentiality, I have omitted the names of the communities and ranches where the women live and used pseudonyms when referring to individuals.

To recruit ranchers for this study I used a snow-ball sampling technique. For introductions to ranching women I reached out to community gatekeepers, including Forest Service and Natural Resource Conservation Service staff and known ranchers in the study sites. I sought contacts across a spectrum of socio-economic backgrounds, ages and ranching practices. I then gathered contacts from these initial participants, again seeking participation from ranchers with diverse ranching roles and backgrounds.

### **Data Collection**

Data collection occurred in two phases, participant observation in 2012 and 2013 followed by formal semi-structured life-history interviews in 2013. I conducted participant observation in New Mexico and Arizona ranching communities during the summers of 2012 and 2013. Participant observation included involvement in ranching tasks such as gathering and branding livestock, fixing fence, cooking and child-care, rangeland extension activities and in social and religious gatherings. I also attended meetings of agriculture professional organizations and read articles, websites and papers, including a senior thesis, written about or by the research participants or their ranches. This stage of data collection was important in selecting an appropriate theoretical framework and narrative inquiry method. Participant observation data were also used during data analysis and interpretation to triangulate with interview data.



Life-history interviews were conducted and audio-recorded with 19 ranching women in homes, during ranch work, or in a public place of convenience during the summer of 2013. These women were between the ages of 28 and 85. The participants were asked to narrate their life as a ranching woman and to explain the changes in rangelands and ranching they had experienced over the course of their lifetimes. The participants were encouraged to start their narrative at any point in their life story. I provided a sheet of paper with questions covering early life, family and ranch history, ranching practices, changes on the ranch, and views of the future. I asked clarifying and prompting questions where necessary. If participants asked about the researcher's

background and knowledge of ranching systems, I answered that I had a blue-collar, rural background from my upbringing in Montana and that I had worked as an agriculture

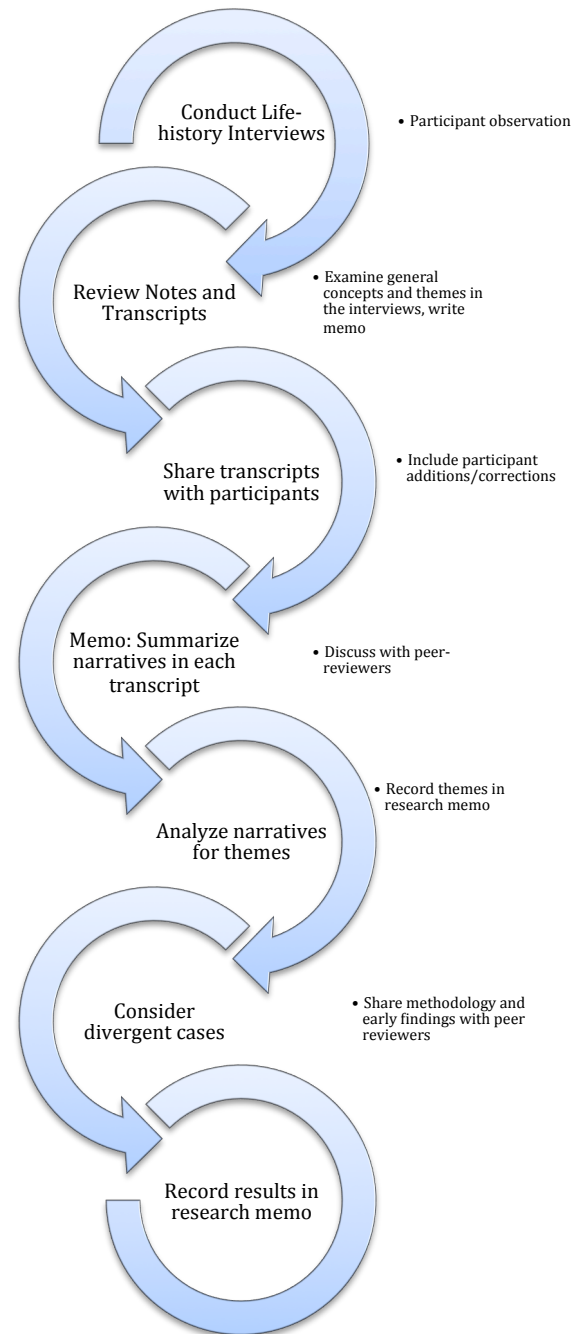


Figure 1: Analyzing narratives to understand women rancher's experience with change on rangelands.

teacher before studying rangeland ecology. The interviews were transcribed verbatim by the author and a research assistant, and I checked transcripts transcribed by the assistant, six in total, against the audio records for accuracy. Twelve interviews were emailed to the participants for member checking and four women responded with corrections or additions to their transcripts or additional data. All revisions provided by participants were accepted into the transcripts. This research was conducted under Colorado State University IRB Protocol numbers 10-1829H and 11-3178H.

### **Data Analysis**

I considered 208 “big” stories from the interviews, a term in narrative inquiry that refers to long stories of life determining episodes (Bamberg, 2006). During narrative analysis I took an experience-centered approach that assumed that these narratives: 1) are sequential and meaningful, 2) contribute to human sense-making, 3) reconstitute and express experience, and 4) display change (Squire, 2008). I engaged in prolonged immersion in the data, which involved reading and re-reading the transcripts and research notes (Lincoln & Guba, 1985), each time examining patterns, sequences and themes related to understanding women’s experiences in change. I took detailed notes of the narratives and summarized each woman’s description of her experience with change in ranching. I checked the patterns I was seeing in individual “big story” narratives against the content of each rancher’s whole life-history interview, following Lielblich, Tuval-Mashiach, & Zilber, (1998). I then tested these patterns against the data again, looking for cases that did not fit the patterns or where I needed to narrow or broaden theme definitions to understand the complexity of women’s experiences in ranching over their lifetimes. Figure 1 depicts this process, which was broken into several rounds of analysis. Research memos recorded the

research process and were reviewed and discussed by members of my thesis committee. Feedback was used to modify subsequent rounds of analysis.

The methodological quality of the research processes was maximized using Lincoln & Guba's framework (1985). I enhanced the credibility of the data by interviewing ranchers at their homes or in the community, by recording the interviews with a digital recorder, transcribing the interviews verbatim and providing copies of the transcripts to the research subjects for their feedback. I triangulated the data with field-notes from participant observation on ranches in the communities and from notes taken during social or industry gatherings. The researcher's interpretations of concepts and ideas were checked with the subjects during the interviews. I enhanced confirmability by providing a thick description of the ranchers' responses through detailed quotes, which allow readers to check interpretations of the data themselves.

### **Findings**

The results of the narrative analysis revealed 8 common themes in the interviews related to how women experienced and enacted change in ranching over the course of their lifetimes. These themes follow women's life stages and included: 1) learning from older generations, 2) finding a personal career path, 3) ranch management, 4) breaking gender barriers, 5) leading communities, 6) aging and going on alone, 7) living close to the land and 8) passing the ranching tradition to the next generation.

These 8 common themes provide insight into women's experiences with changes in ranching. They also highlight the challenges that the women interviewees faced as changes in economic, community, governance and ecological circumstances posed new technical, managerial and social problems for ranch operations. While the women in this study were

often challenged and constrained by these changes, they also took steps to address them. These women were teachers and students, bridging generations, communities and cultures. They were cowboys and ranchers, land managers and business operators. They worked as part of complex family systems, but often went solo. Some were activists, others were collaborators or co-managers, and all held that the ranching way of life was important and should continue. Together the 8 themes described below highlight the women's roles in maintaining the ranching way of life by supporting both material and cultural needs. Although some themes were more frequent than others, I have presented each theme as a life stage in the general sequential order in which it appeared across the life-history narratives of the ranching women, with supporting excerpts from the narratives and analytic commentary.

### **1) Learning from older generations: narratives of mentors**

To illustrate the theme of *learning from older generations*, which was described in 17 of 208 narratives, I present two narratives from Lucy's interview. At the time of the interview, Lucy was a ranch owner/operator on a cow-calf operation. Lucy was born to what she described as modern ranchers, parents who emphasized self-sufficiency and stewardship.

*"It was to me one of the greatest things that they gave us was learning to be self sufficient on a ranch. We had a milk cow, chickens, sometimes we had hogs, we had gardens every year, fruit trees. Our mother was just awesome, she could take care of all that, and take care of all of us, and feed us all and work on the ranch and help Dad with everything. We all worked in the garden, we all helped with the butchering, the processing of chickens so we could have them to eat in the winter. Of course we had hunting and we participated in that, all of this was so we could eat. We were pretty self-sufficient. We didn't go to town a lot, and we just learned to be frugal, work with the land and let the land take care of us. Dad spent a lot of time clearing the un-needed brush and improving his carrying capacity and improving his grasses [...] At this point he's still ranching. And he has a wonderful ranch, it's just a great example for all of us kids and other people to see it."*

Lucy described her post-secondary education, marriage and learning a different style of ranching from her father-in-law:

*“So I enjoyed animal science, I didn’t enjoy being in the city and I didn’t enjoy some of the other things you had to take, but I convinced myself that I could learn everything I needed to know on a ranch, so I didn’t finish college. And ah, I ended up getting married and living on a ranch and I learned a lot there. That type of ranching was totally different from what a more modern approach that my parents had taken but I did learn a lot about how old timers thought and how they got through the weather and how they made it. It had a big impact on how I think now. So it was more the maybe I would say from 1940, the 50s, early 60s mindset of ranching at that time, that was kind of what I was exposed to by my father-in-law and some other ranchers out there that were, they ranched big ranches and they had huge pastures and the cattle ran and wherever they kind of wanted to.”*

Lucy’s discussion illustrates the role of older generations in shaping many of these women’s skills as ranchers. She described experienced ranchers passed along a set of cultural values, including self-sufficiency and hard work. But her parents and father-in-law also had a role in shaping her skills as a ranch operator. Throughout her interview, Lucy described life stages where she gathered knowledge of different areas of agriculture as she built networks and relationships across the country with experienced producers. Across the interviews describing this theme, women told of learning specific livestock husbandry skills, ranch business management and philosophies from older ranchers. In this first theme, narratives of learning from older generations, the ranchers shared their experiences in learning both the social and technical aspects of ranching.

## **2) Finding a place on this place: Narratives of self-purpose**

Out of a total of 208 narratives analyzed in the study, 30 described the process of finding a personal career path, or a purpose and identity in ranching. These narratives provided insight into how women found meaning, purpose and moral strength in their way of life. Personal career path narratives were stories of personal development and adaptation to economic, ecological, social and personal shocks and stressors. Some

women, finding themselves in a ranching lifestyle because of the decisions of family members, struggled to find a place or purpose in the family ranch business. Others juggled numerous responsibilities. Cara, quoted below, described her journey to develop her own interests and business skills on the ranch, and also how she developed habits of self-care, which she called taking 'sanity-time.' Once stressed by the pressures of daily life as a mother, off-ranch wage earner and ranch operator, she started to slow down and enjoy the natural world around her:

*"I don't leave [the ranch] and I don't go to the spa and get a facial or whatever, obviously, I [do not] spend a lot of time on my hair. But just [to] be out there and say, you know what, this is a beautiful and I'm just going to sit here and watch these clouds for 20 minutes. And maybe that's all it is, is 20 minutes. But it's sanity time, and I enjoy it and then when I think, oh, I'm going to go on to the next pasture now, then I'm better. And when I come back [to the house], then I'm better [...] I would feel so much pressure and so many demands and so many different directions that I felt like I could never say no. And that has been the hardest and the slowest process for me."*

Other women described finding pride in managing their own herds or operations or helping others find a place and sense of purpose on the family ranch. Jane, quoted below, described helping her grandson decide if he was going to stay on the family ranch or whether he was going to leave and pursue other opportunities:

*"...you know everybody in my family has died except my grandson and I so we have a 2 generation gap. But now if I got, he got mad at me not too long ago, and I said, if you don't and I've always told him, if you do not want to ranch this is not where you need to be because it is this way, you know it is this way. It's never going to be big dollars. And he got mad at me he said I'm going to leave. And he left once before and went to [another state] and got a job on a ranch calving heifers, but riding up on the mountain, and doing great, and I thought he was going to stay there, but he came back home. But [later] he got mad and he said 'I'm thinking about leaving,' and I said 'That's fine if this isn't what you want, that's fine. But let me tell you when you leave, you're not coming back[...]' You have to look at it as your place, where your place, where your place is in this place.' And I said, 'If you're going to take over, you have to do so.' "*

Finding this place, or personal career path, was a process of self-purpose for women who described this theme. Personal and family aspirations of many of the women factored into negotiations about family ranch businesses, including ranch labor distribution, business strategy and succession decisions. An individual's personal career path or personal aspirations did not always coincide with the goals or motivations of the ranching family or ranching business, but many of the women's individual skills and interests broadened opportunities for the family ranch business.

### **3) Supporting material needs: Narratives of ranch management**

Narratives related to ranch management are divided into three sub-categories. These include a) daily ranch operations; b) ranching as a life-long learning process; and c) "doing everything" to support material needs.

#### ***a.) Daily ranch operations***

Narratives relating women's roles as ranch managers, laborers and owners shed light on how these women played a role in maintaining viable ranching livelihoods that supported material needs. Twenty-six of the narratives I labeled with the "*running a ranch*" theme described day-to-day decision-making processes and labor responsibilities such as communication strategies, decision roles, indicators for decision-making and methods of time prioritization. These day-to-day decision-making processes were diverse across interviews, but often involved discussion, observation and prioritization based on the urgency of a task, prior planning, seasonality and priorities for financial stability. For example, one rancher used a wagon wheel metaphor to describe how she dealt with her many roles in child-care, off-farm business management, ranch marketing and ranch business operation. In the metaphor, the family ranch business was a wagon wheel, and each spoke of the wheel was an individual responsibility, role or practice, such as her role

in the farming component of their operation. The spokes collectively supported the overall operation of their family ranch business, or the turning of the wheel. If one spoke broke, perhaps when a source of income fell through or a plan collapsed, the wheel could keep turning until the broken spoke was repaired.

***b.) Ranch management as a life-long learning experience***

To illustrate how ranch management as a life-long learning experience for these women, I revisit Lucy's interview. Lucy honed her knowledge and skills in ranch management for years on a number of different ranches then applied this knowledge to ranch operation when she and her husband purchased a ranch near her home-town. She described her philosophy for rangeland management: a rancher's footsteps are the best fertilizer for her land. That is, Lucy believed that a rancher is best able to make good decisions if she spends time on the ground observing and discussing ecological and production changes.

Below is an excerpt from Ellen's interview. This narrative is part of a group of narratives (13 in all) under this theme that detailed the historical context of current ranch management practices or changes in ranch management. Ellen shared how she was addressing water infrastructure on her family's ranch to better manage cattle distribution:

*"But times have changed as far as managing cattle and as far as even just the way you manage your ranch. My parents had the ranch and they had springs, they had wells and they had dirt tanks, and I remember my dad putting in several dirt tanks, having them, my mom and dad having several of them put in and it was in order to have water for the cattle, and we found that the other part of our range, up towards the top of the mountains, we're pretty well stocked for water, but the lower part of the range was not. So, it was good in the wintertime but in the summer time you couldn't utilize the range as well, of course. It was hard because of not having water down, down low. So that was one of the major problems that the ranch as a whole had, that it didn't have enough water to take care of the cattle from one end of the range to the other, there was a, probably half of it that was short on water."*



Other narratives in this theme described changes in animal genetic or health management or innovations such as artificial insemination. They also described adaptations to long-term changes in rainfall and different approaches to ranch or grazing management philosophies including the introduction of Holistic Resource Management, rest-rotational grazing, beginning to manage for wildlife or other general statements about changes in range management. In sum, this theme explores how women take leadership roles in ranching businesses as ranch decision makers and ranch laborers.

**c.) “Doing everything” to support material needs**

The women interviewed in this study described learning and practicing a diverse set of ranch management, career and personal skills. Seven narratives that detailed women’s roles in ranching in a broad spectrum of material responsibilities, from horseshoeing to home-schooling. A quote from interview with JoAnne, a woman in her late 20’s, illustrates her experience as the first woman hired to a guest ranch, which required employees to be able to shoe horses:

*“[I] got in touch with [the ranch owner] to see if he would hire me to guide down here, which was a little dicey because beyond his sister they’d never hired a woman to be in the barn. There’s a requirement that you learn how to shoe horses, and there’s not tons of women farriers and there’s not tons of women who volunteer to learn and probably there’s not tons of women that [the rancher] trusts to learn. That would also be a fair part of it [...] I would say actually that there was less sort of segregation by sexes down here than there was [at another ranch I worked on where I was not the only woman], because with more girls on the barn crew up [at the other ranch], it was easier to sort of send us off to do the easier jobs or that kind of stuff, not that there weren’t times when we got sent off with everybody else and in the thick of things, being the only one down here I sort of got swept along into whatever was going on, and so in some ways there was more equality, I guess.”*  
Like JoAnne’s account of working on a guest ranch, these 7 narratives of “doing it all”

revealed experiences in ranching labor and ranch decision-making responsibilities. The women described a broad range of technical skills and knowledge, from managing genetics

to developing long-term natural resource management plans and raising independent, capable children. Though she later had to balance her role as a mother with her employment, Lucy spent a portion of her 20s “cowboying” on large ranches in her home state:

*“...I would go work cattle in the fall and the spring on big ranches all over [the state]. I got into the cowboying end of it, it was nice. A lot of ranchers were nice enough to let me work like a cowboy. And I tried my darndest to. And I’ve been blessed that they thought that I was a top hand and I tried real hard for them. So we just worked. I worked just like the cowboys. And we had some pretty tough times, you know, long days, we’d camp in some places and gather big pastures, brand then I’d gather a lot of maverick cattle and roped them and tied them down. I had a cowgirl life like a cowboy, which is exactly what I wanted to do.” [laughing]. But I learned a lot, going on different ranches and seeing how they do things, and just kind of stored it in my mind and I loved it. I could have just done the wild cowboying always. But it wasn’t sensible. I guess, and then it doesn’t get you anywhere just to be able to go handle wild cattle or however whether you’re horseback and they’re running off or you can get in control of them or whether you can rope ‘em and bust ‘em and tie ‘em down. It’s a wonderful thing. Doesn’t happen much anymore, but I was one of the few women that ever got to do that. “*

Narratives in this category also included examples of dual roles on and off the ranch, as women worked full or part-time off-ranch to maintain financial security and sometimes health insurance for their families, all the while maintaining an identity as a “rancher.” This theme also included stories of mothers or grandmothers who lived with contradicting material obligations. These women performed roles inside, such as cooking or cleaning, but preferred to be outside riding, working cattle or otherwise conducting ranch operations. One woman described that her mother “worked two shifts” for years, cooking and making a home while taking a role in animal husbandry and riding, even into mid-term pregnancy. These ranching women, could, and often had to, develop a diverse set of skills to maintain the ranching way of life.

In sum, this third theme, *supporting material needs: narratives of ranch management* highlights the ranch management roles of the women interviewees in the family-ranch business. Fulton and Vanclay (2011) develop the concept of the family-farm-business as a complex interaction between a farming (or in this case, ranching) family, the land, and the family business (pg. 99). They note that the common conceptualization of a farmer or rancher as only the eldest male head of household fails to account for the decision-making roles, needs and aspirations of individual members, both men and women, of that family-ranch-business (Fulton and Vanclay, 2011). In this study, many of the women's roles as ranch managers shaped their personal contributions to business, land management and family goals.

#### **4) Breaking the grass ceiling: Narratives of agency**

In an interview conducted on the front-porch of the recently restored adobe house that was once her grandmother's, Wendy described her path to becoming a rancher. As single young woman, the fact that she was a third generation rancher raised horseback and capable of backing a semi-trailer in neat figure-eights did little to convince the bank that she knew how to ranch:

*"The first time I met with [the bank] I drove a truck, I drove a cattle truck for my father and I had been hauling cattle all day and all night and I came in and took a shower of course and those were the days of, the starched [jeans] and the boots that matched and whatever and I went to [the bank] there in [town] and the guy just looked at me and said, 'Ranching on your own, young lady, is not like sitting on the fence watching your daddy.'"*

Women in this study overwhelmingly described experiencing great agency in ranch, family and community decision-making and leadership. Many of them said they had never experienced barriers in the livestock industry because of their gender and described working beside, as well as managing and mentoring, the men in their lives. Others dealt

with patriarchal succession planning or discrimination from people outside of their immediate ranch-management community. Throughout eight narratives of gendered power dynamics, ranching women relayed how they defied gender barriers and directly addressed gender discrimination. Wendy continued her story:

*"I got mad, because I had been horseback since I was 2 years old. And my dad very seldom made any concessions to me because I was a girl, once in a while he would but you know not much, not much, and in those days, I don't know we didn't know what we know now. We left and we didn't take water with us and we were gone all day and we sucked on little rocks when we got thirsty and we ate peanut butter and crackers and we did I mean, and we worked from daylight, literally, came in at dark, and generally took Sunday off because we went to church.*

*"I can't rope. I can't rope, I never learned how to rope and I never did learn how to ride anything that bucked, but other than that, I can do about everything there is to do out here, so I was mad. And my dad, he did laugh, and that made me mad at him. And he said, 'You're doing it wrong. If you came in off of that truck with cow manure all over you, they would say you know how to ranch. You went home, took a shower, make-up, starched pants, and they're going yeah right.' And he said, 'You know I appreciate always that you don't look like a girl that drives a truck, and I [laughing] appreciate that you don't necessarily look like something that's been drug through the corrals, but you are going to have to look like a cowgirl to get a cowgirl loan.'"*

When Wendy was finally offered an operating loan, the credit was extended under the stipulation that a loan officer be allowed to count her cows monthly. She described her interactions with the loan officer:

*"And he came out, he made me gather the cattle, he didn't make anybody else that I ever heard of but he made me, this guy from [the bank], gather the cattle once a month so he could count them. And he harassed me. And he showed up and counted cattle until the day, and this is one of my happier memories in life, I was out there, I didn't know he was coming, wouldn't have mattered. Anyway I had a cow that had rotten after-birth in her. And I mean rotten after-birth. Get in there, drag it out, and I had two sticks together and you know the deal, it's very... you don't want to break it off again, you don't want to have to, and my arm was already... so I was, messing with it. And that idiot came walking up and he said, he stood on the outside of the fence of the chute, obviously. And he said, 'Well I'll be damned, maybe you do know something about ranching.*

*"And I pulled the afterbirth out and put it through the fence, and dropped it on his boot. And he threw up. [Laughing.] And he never came back and harassed me ever again and I was so happy, I just walked around for like 3 days just going, like,*

*woohoo! [Laughing.] Because that was just, that was so cool, the minute that hit his boot, he just up-chucked a lot. Yes, yes, yes. "*

Wendy's narrative provides insight not only into the institutional barriers that she faced as a ranching woman, but also how she navigated this gendered experience and took agency in the situation. As with all of the narratives presented here, this is not a representative narrative across the interviews, but is an example of an overt gender power dynamics theme from a single interview. Other narratives in this theme included stories of taking on material roles in ranch labor and buying and operating ranches despite barriers or constraining discourses about the appropriate role of women on ranches and in the community. Other women described making a greater effort to ensure that their voices were heard in ranch and community management contexts.

The connection between gender norms and the agricultural labor contribution of women in the Western United States has been a well-explored area of interest for gender literature. Historically, the homesteading or ranching woman was often held as the agrarian feminist ideal. Empowered by her contribution to the family claim, free from the gender issues that constrained women of the East, she was seen as the predecessor of the modern career woman (Fink, 1992; Stefanco, 1987; Peñaloza, 2001). However, historical and more recent empirical examinations of the connection between gender empowerment and agricultural livelihoods have countered this vision of the Western ranching/farming woman, documenting the demanding physical, rural and patriarchal conditions of life in the livestock industry (Fink, 1992; Schackel, 2011; Pileram, 2007). This fourth theme in the study, *breaking the grass ceiling: narratives of agency* highlights some women's experiences in breaking gender barriers in a male-dominated agricultural sector. But the theme does not suggest that ranching women experience empowerment simply because of their roles

as ranch laborers, mothers or wives, as the agrarian ideal would imply (Fink, 1992). Again, the women interviewees' experiences were diverse and highly localized. Other narratives analyzed from the data set supported the concerns of scholars and thinkers (Fink, 1992; Schackel, 2011; Pileram, 2007) around the rural, economic, and physical challenges women face in ranching life.

### **5) Leading Communities: Narratives of advocacy and collaboration**

While narratives of *running a ranch* detail how ranching women took leadership roles on the ranch, women's roles in the community were also prominent in the data. Narratives of women's community leadership provided insight how these public lands ranchers described their roles and philosophies regarding public lands or community resource management. The frequency of the theme of *activism and advocacy*, which labeled 11 narratives, 8 of which were in one community, suggested that these women were involved in leadership roles that supported political activity. For example, consider this excerpt from Shannon's interview:

*"Well. It, why do I do it is because well what my, my passion is this activism, it's really not the ranching itself. My husband likes the ranching. When we bought the ranch, I didn't want cattle. [My husband] likes having his friends over and we work a few cattle, you know, it's a very western-ey experience. But what attracts me to this industry is it is really the heart of America. It is the heart of our culture and our heritage. You see the urban people going off and doing their own thing, and losing their connection with where their food comes from, and they, they lose their connection with their values, their moral values [...]"*

Shannon described herself as being "drug into ranching, kicking and screaming," from a corporate career when she and her husband purchased a ranch in a remote part of Arizona. But her activism, which she described in more detail below, was how and why she found a purpose in ranching:

*"My interest lies a lot in the Endangered Species Act, in it's abuse. It is a weapon against people. Maybe it was written with the best of intentions. It was certainly*

*passed with the best of intentions. But, it has become, through the flaws in it, has become a weapon to use to shut down people. To shut down their business. If somebody owns a ranch, well that's no good, because that's capitalism. You'd better shut that down, so they come up with these species, and these species may not be endangered at all. These species may be just a species that there's just a little, not very much research on. These people, these groups that I call environmental litigation factories—I didn't coin the term, but that's what they are—they come in and the sue and, they put this phony-baloney science report together and they petition to list."*

Like Shannon, other women in the study described activism or engagement with their communities as important to both their personal lives and to the viability of ranching communities and businesses. In contrast to Shannon, a self-described activist, 8 women in the study described their own collaborative leadership roles in public lands management. Two quotes from the same interview, below, illustrated how one rancher built relationships in her community by working with a diverse management team on the public-lands ranch that she and her husband manage:

*"[The ranch management team members] were still creating those relationships with our neighbors that were so essential. And so we didn't have that natural larger landscape. I think we pretty well have it now which is where my passion is for the next ten years of my life. But the relationship that we established with the agencies and with interested people that have come and gone on our team have been hugely supportive of letting the land do what it's going to do. And learn some different things."*

This rancher also described her vision of finding common ground with those who would disagree with rancher's public lands for grazing:

*"If we [in the public-lands ranching community] could just, we could have a PR campaign. If we would change our paradigm, if we would change our focus on how we, what we can do for those people who don't like us, and tell 'em about it and show 'em, they'd be on our team in a heartbeat. Instead, we send money to 'em so we can fight 'em in court. I don't understand, and it worries me."*

These narratives emphasized the importance of involving, understanding and collaborating with non-ranchers in decision-making on public lands for this individual rancher. Three ranchers described both activism and collaboration roles in public land

resource management. For example, at one time one of the interviewees served in a collaborative role on a state board while at other times she was involved in litigation over issues of public lands management.

Community engagement activities also extend to outreach activities and agricultural education or agriculture literacy promoting activities, which included 15 narratives. These roles included teaching agriculture in the classroom lessons, volunteering in local extension activities such as 4-H, hosting farm tour days for local children, and taking college-level interns. These 15 narratives demonstrated women's roles in promoting agriculture as an industry and way of life for the sake of ranching's future.

In sum, this fifth theme explores how the women interviewees described their advocacy and collaborative roles in leading communities and the ranching industry. These descriptions stand in sharp contrast to scholarly work that has described women producers in other regions of the nation and world as "invisible farmers" whose voices are not often heard in extension programming, or on the level of community and industry decision-making (Williams, 1992; Alston, 2000; Trauger, 2008). The overall prevalence and depth of this theme suggest that many of these women developed prominent roles as community, regional and industry level leaders and decision makers. This theme also suggests that many of the women interviewed in this study took a proactive approach to interacting with and educating non-ranchers about their views of the cultural, economic and ecological value of their livelihood.

#### **6) Going on alone: Narratives of aging**

*"My dad died at 42 when I was 17 and my uncle immediately informed me that girls didn't inherit ranches. And that immediately pulled a red flag on my forehead. And I said, 'You watch, I'm not leaving.' The mentality was for years that men were in control. You know and when I was, I was secretary for the [State] Cowbelles for a*



*year, and in the process of doing that I called Colorado to talk to the National Cattlemen. And I asked them, I said, how many, what percentage of ranches are owned by women? Well they didn't know. I said there are a lot of ranchlands that are owned by the rancher's daughter but when she got married she put it in her husband's name, but the deed still says, you know, it's so-and-so [husband's name] ranch but belongs to [the wife's family], you know.*

*"And I happen to be the only one left in our family, and it was a very large ranch, and I'm the only one that has any of it left. And it's not something that I take lightly. Times can get hard and you just suck up and hang with it. Because there is no tomorrow for it if you walk away, that's it. There is no replacement value. And you struggle with it, and I have struggled a lot, and nothing makes my heart feel better than to see a banker that has tried to close me down at a meeting that comes up and says, do you remember me, and I say, yes, call him by name, and I said I'm still on the ranch. You asshole."*

During thematic analysis, I identified 10 narratives that dealt with women's experiences as aging ranchers. The above excerpt is from Jane's narrative of being the *last one left*, a sub-set of these narratives that were described by three of the women in the study. Jane described how she came to be the last member of her generation to inherit and manage a large family ranch under a stewardship ethic she learned from her grandfather. Despite being told that she would not inherit the ranch because of her gender, she lived longer than members of her own and her children's generation. Like Jane, all three "last ones left" were women living on their family's ranches, not on their husband's family's ranches, and all three women took seriously the role of being the "last one left".

This theme explores the experiences of women who lived longer than the men in their lives and managed to maintain their ranching livelihood on their family's ranch even when the odds seemed stacked against them. It is important to note that none of the three women who described being "the last one left" were actually the only person in their family alive or involved in the ranch. Rather, all three described the experience of initially being left out of inheriting the ranch and then out-living everyone in their generation and taking over the management of at least some of their family's ranch. Two of these women were

the primary decision makers on the ranch, and one owned her ranch with her husband. All three women had children or grandchildren who were involved with the ranch. This sixth theme explores how three of the women described a specific stage at the end of their careers in ranching. This life-stage brought new challenges and rewards to individual ranch women, their families, their businesses, and the land they ranched.

### **7) Living close to the land: Narratives of a way of life**

Many of the women's narratives described the complex financial, resource management and social decision-making processes that ranchers dealt with on a daily basis as stressful and sometimes heart-breaking. Maintaining the ranching livelihood was always a challenge. Financial constraints, ongoing conflict with government land management agencies, litigation, regulations and broader social changes were major concerns for the women in the study. Many of these women took on activist or collaborative leadership roles in the community to interact with "outsiders" (non-ranchers and "urban people" sometimes involved with public lands management). For some women, the stresses of financial hardship, serving as family peace-keepers or dealing with broader social changes were overwhelming. But for the majority of women interviewed in this study, (as described in 22 narratives) living on the land was a "wonderful" way of life, as it was for Lucy:

*"I think it's the most wonderful way of life, there's so much reward just going out there and seeing the land and watching your cows as they raise calves or as they fatten up or you know working them, being able to gather them and brand. So I guess it's just I couldn't think of anything else that would be as rewarding. We really enjoyed the horses, and showing the horses. That's really rewarding. If everything goes well. It's a challenge and it's really hard to learn, we learned it it. All the little babies I think [are] probably the best part. And watching. Watching them grow and making sure they do well."*

Despite worries over climate, markets, animal health and the seemingly ever-rising costs of operation, 11 narratives described ranching as an essentially important life-way.

Consider Fay's description of the blessings of living off the power grid:

*"...we raised our kids through their whole lives without even a phone, really, because we were in such a remote area. Of course now we have everything, you know, internet, phone, everything. But, but we still only have a generator. But, we cut it off at night, even in the heat of the summer. And it's a. Well, it's a blessing. Because, it helps you maintain your family life and communication with your husband, you know. My husband and I, all these years, we've been married 40 years this year, when that generator goes off...There's no TV, no computer, no telephone, you know. So we always get up early, and we sit and have coffee in the dark, and talk, and set the tone for the day."*

This theme gives a voice to women ranchers who maintained non-economic motivations to go into and stay in ranching, including ranching lifestyle amenities and tradition, as have been documented by a body of economic research (Smith and Martin, 1972, Tanaka et al, 2005). In Fulton and Vanclay's conceptualization of the family-ranch-business, as well as in research by Farmar-Bowers (2010), the motivations of individuals and ranching families have key implications for both business operation and natural resource decisions. The importance of the ranching lifestyle is one such motivation in Fay's narrative (above). Fay cherished her lifestyle and explained that the freedom and family-oriented culture of ranching helped her deal with financial, physical and ecological challenges she encountered as a rancher. Other women who described this theme strove to maintain ranching's value system, culture, lifestyle, community and family-centeredness.

The experience of maintaining this lifestyle and a core tie to the land was an essential, even primal, motivation for women in all three communities in which I conducted interviews. While two women described this tie to the land as a uniquely gendered experience, that is an experience that was connected with the experience of women

ranchers specifically, others, like Fay, described this theme as an experience shared by all members of a ranching family.

#### **8) Sustaining a tradition: narratives of the next generation**

*"My daughters had the opportunity to learn to shoe horses and brand calves and they got their own brands and their own calves early on. They had possessions, their own horse, their own saddle, things like that, that they had to work for[...] Early on, so, it's such a precious thing. But it takes that mix of knowledge of the world and still that love of the country life, and basic things. Really is. Because life does come down to the basics. You've got to eat, drink, love your family, depend on each other."*

And what of the future of ranching as a way of life? The above excerpt from Fay's narrative introduces the final theme of the study: the importance of passing on the way of life to the next generation. Like Fay, Lucy relayed hopes that she could build a ranch that her children could take over, if they wished to do so, in the future. During our interview at her kitchen table, she took a short break to instruct two children, relatives she was watching for the day, on their barn cleaning chores. I asked her if she thought the ranch made better kids. She replied, *"Better grown-ups."*

Ranching women play an important role in nurturing "better grown ups." Another woman in the study started a number of her narratives related to her role in ranching with the phrase, *"So, I packed a lunch."* She was describing how, by packing a lunch for her children, she turned long work days into family picnics. She made ranch work an every-day part of life for her children, all three of whom were grown and involved in ranching at the time of the interview. She said:

*"My mom always said, you're going to work all of your life, and so if it's fun, it's not work, it's not as much work as if it's just a chore. And so we tried to just bring a little bit of that into what had to get done."*

And while women help develop "better grown ups," on ranches, younger generations provide hope and inspiration during hard times. Another woman, whose children were all

in school at the time of the interview, explained the role of future generations in the ranch this way:

*"Younger generations play, now I'm going to cry. I think that the biggest role that they play is just giving us the strength to do it another day. You know? There's a lot of things that aren't easy when you're in agriculture. A lot of outside influences that happen that you can't control. But I get up and look at the kids and I know that we can do it again. You know? It'll, it'll be okay. Somehow, someway, it'll all work out."*

Together with the first theme in described in the findings of this study (*learning from older generations*), this final theme contextualized the education of ranchers as an important life-long issue for ranching women. It was described in 26 narratives of the study. Mechanisms of formal knowledge transfer of agricultural systems literacy, and women's roles therein, have been well explored (Frick, 1991; Kleihauer, Stephens, Hart& Stripling, 2013; Martin and Kitchel, 2013). However, this work has not specifically described the informal knowledge transfer of rangeland and ranch management skills in the face of current economic and climatic challenges in the Southwest. Together the first theme, *learning from older generations*, and final theme, *sustaining the tradition*, suggest that the women interviewees played important roles in the transfer of both cultural and technical knowledge across generations.

### **Discussion and Implications**

Narrative inquiry, like rangeland management, is a blend of art and science. The narrative methodology precludes statistically generalizable findings about women's roles in ranching or their common experiences of change on rangelands. However, narratives reveal, in a way that statistics cannot, the cultural, social and gendered contexts of decision-making processes in rangeland systems. This study examines women's experiences as ranch managers, community leaders, mentors, students and decision makers on family-

ranch businesses. The 8 themes I have described also suggest that these women may have distinct research and extension needs related to their evolving roles as they move through life-stages characterized by changing personal relationships to family, ranch businesses and natural systems. The overall point here is that rangeland researchers cannot easily understand the motivations and roles of rangeland stakeholders, or the material and cultural value of rangeland resources to ranchers, if we see ranching communities or family ranches as unitary social groups (Fulton & Vanclay, 2011). Below, I make three recommendations for how women's voices might be incorporated further into rangeland research and extension.

The first recommendation is that rangeland research, outreach and policy consider the distinct contributions and needs of women ranchers, both of which stem from women's diverse roles, responsibilities and skills in ranching systems. In terms of contributions, the 8 themes identified by this study illustrate women's varied economic, cultural and land-management decision-making roles and aspirations. These women balanced their resources and time between income generating activities, ranch management, and advocacy or collaborative roles. They took on leadership roles to solve social, economic and resource-based problems. They also thrived in teaching and mentoring roles that developed technical and cultural ranching skills in younger generations.

At the same time, the findings of this study suggest that women ranchers have diverse material constraints. For the women interviewed for this study, these constraints emerged from women's broad-ranging roles as wage-earners, care-givers, family members and ranch operators, and that there is a discourse that women can "do everything" to support successful family-ranch-businesses. While acknowledging women as leaders of adaptive

change, I recognize that women may be disproportionately burdened by such broad demands upon their time. Ranching women are a great resource of energy and skill in solving natural resource management problems, but we must consider the lessons learned by the field of development: greater involvement of diverse stakeholders in participatory or community-based projects is not a soft alternative to directly addressing inequality (Mayoux, 1995). That is, drawing upon women's knowledge and skills in rangeland research or outreach projects should not be used as a way of avoiding politically sensitive discussion of gender inequality or feminism (Mayoux, 1995).

My second recommendation is that rangeland researchers and extension professionals consider the significance of ranching women's life-stages in women's decision-making roles and motivations. The analysis of ranching women's life-histories serves to contextualize ranch decision-making as a life-long process requiring ranching women to develop a broad set of management and technical skills. Ranching is not only a profession, it is a process of personal and professional development that unfolds differently for different members of a family-ranch-business.

For example, early in their careers, women ranchers may depend more heavily upon mentorship and guidance from experienced producers related to ranch management decisions (theme 1). Women in later life-stages can, in part, provide that mentorship. Those experiencing theme 6, *going on alone*, may be making rangeland management decisions alone for the first time or may be in need of information related to long-term estate or financial planning resources. Women ranchers involved in collaborative or advocacy roles (theme 5) may also be partners for researchers and extension professionals interested in connecting with ranching community social networks. The needs and

contributions of women rangeland stakeholders change as they move through different roles and life-stages, as do their approaches to rangeland management, community involvement, and family business operation.

My third recommendation is that the field of rangeland ecology and management continue to connect with gender and other areas of social theory and methodology that can inform our understanding of manager decision-making processes. This study offers one of many possible approaches to applying with gender theory and methodologies. The gendered context of rangeland management and the ranching lifestyle is complex, and involves a broad set of experiences in which women develop their own career paths, connect with multiple generations and develop technical and social skills to respond to economic and ecological changes. This context cannot be understood by universalizing women's experiences or by examining master categories of men and women because gender is a serial and localized experience. I have not sought to understand this gendered context by comparing women's experiences to men's. Instead, I have presented women's own voices related to how they experienced change in ranching over their life-times, and developed 8 themes that describe women's common experiences. Some of these themes, such as *breaking through the grass ceiling*, and *aging: going on alone*, relate more overtly to the differences between men and women in ranching. But even those themes that describe experiences that were shared by men and women, or that were not essentially feminine, situate the knowledge, experiences and decisions of women ranchers within the context of gender because they were developed from women's voices.

Methodology is also an important component of social theory. Research methods like narrative inquiry that gather and analyze voices of ranching women align with efforts to



develop post-normal rangeland science that bridges cultural, epistemological and political gaps between stakeholders in rangeland systems (Sayre et al., 2012; Sayre, 2004).

Narrative inquiry's emphasis on documenting subjective experiences and socially constructed knowledge reverses the usual researcher-interviewee power dynamic. It empowers participants to shape the meaning of the data instead of viewing them as subjects of research. This agency may be an important component of future efforts to include diverse rangeland stakeholders as partners in research and in crafting the resulting policy recommendations.

The field of rangeland ecology and management should continue to connect with gender and gender studies not because issues of sustainable rangeland stewardship are specifically "women's issues" but because they are issues that ranching women are concerned with, issues that women work to address every day. The lack of research on women's roles in sustainable rangeland management in the Western United States mirrors a gap in other natural resources fields in the Western Hemisphere, though gender has been a "critical variable" in assessing equality, resource access and resource management and conservation in the developing world for years (O'Shaughnessy & Krogman, 2011). This gap is perhaps based on the assumption that women in ranchers or farmers do not have a specific stake in natural resource management, or that gender is an urban concept that is not applicable to the strong, empowered ranching women of the Southwest. This study suggests otherwise, that women's experiences can help us understand the positions of rangeland decision makers in ranching and rural contexts. The women ranchers interviewed in this study were active managers, advocates, leaders and collaborators in the

social, ecological and economic aspects of rangeland systems, deserving of specific attention by researchers, educators and policy-makers.

## REFERENCES

- Agarwal, B. (2010). *Gender and green governance: The political economy of women's presence within and beyond community forestry*. Oxford: Oxford University Press.
- Ahlborg, H., & Nightingale, A. J. (2012). Mismatch between scales of knowledge in Nepalese forestry: Epistemology, power, and policy implications. *Ecology and Society*, 17(4), 16.
- Alesina, A., Giuliano, P., & Nunn, N. (2013). On the origins of gender roles: Women and the plough. *The Quarterly Journal of Economics*, 128(2), 469–530.  
doi:10.1093/qje/qjt005
- Alston, M. (2000). *Breaking Through the Grass Ceiling: Women, Power and Leadership in Agricultural Organisations* (reprint.). Harwood Academic Publishers.
- Anderson, C. L., Locker, L., & Nugent, R. (2002). Microcredit, social capital, and common pool resources. *World Development*, 30(1), 95–105.
- Arndt, C., Benfica, R., & Thurlow, J. (2011). Gender implications of biofuels expansion in Africa: The case of Mozambique. *World Development*. Retrieved from <http://biofuelsandthepoor.com/gender-implications-of-biofuels-expansion-in-africa-the-case-of-mozambique/>
- Bamberg, M. (2006). Biographic-narrative research, quo vadis? A critical review of “big stories” from the perspective of “small stories.” In K. Milnes, C. Horrocks, N. Kelly, B. Roberts, & D. Robinson (Eds.), *Narrative, memory and knowledge: Representations, aesthetics and contexts*. (pp. 63–79). Huddersfield, UK: University of Huddersfield Press.

- Barbieri, C., Mahoney, E., & Butler, L. (2008). Understanding the nature and extent of farm and ranch diversification in North America. *Rural Sociology*, 73(2), 205–229.
- Beratan, K. K. (2007). A cognition-based view of decision processes in complex social–ecological systems. *Ecology and Society*, 12(1), 27.
- Bestelmeyer, B. T., & Briske, D. D. (2012). Grand challenges for resilience-based management of rangelands. *Rangeland Ecology & Management*, 65(6), 654–663. doi:10.2111/REM-D-12-00072.1
- Bestelmeyer, B. T., Estell, R. E., & Havstad, K. M. (2012). Big questions emerging from a century of rangeland science and management. *Rangeland Ecology & Management*, 65(6), 543–544. doi:10.2111/REM-D-12-00112.1
- Biggs, D., Abel, N., Knight, A. T., Leitch, A., Langston, A., & Ban, N. C. (2011). The implementation crisis in conservation planning: could “mental models” help?: Mental models in conservation planning. *Conservation Letters*, 4(3), 169–183. doi:10.1111/j.1755-263X.2011.00170.x
- Bradford, D., Reed, F., LeValley, R. B., Campbell, C., & Kossler, S. (2002). Livestock grazing on the National Forests: Why continue to do it? *Rangelands*, 3–11.
- Briggeman, B. C., Gray, A. W., Morehart, M. J., Baker, T. G., & Wilson, C. A. (2007). A new U.S. farm household typology: Implications for agricultural policy. *Review of Agricultural Economics*, 29(4), 765–782. doi:10.1111/j.1467-9353.2007.00386.x
- Briske, D. D., Sayre, N. F., Huntsinger, L., Fernandez-Gimenez, M., Budd, B., & Derner, J. D. (2011). Origin, persistence, and resolution of the rotational grazing debate: Integrating human dimensions into rangeland research. *Rangeland Ecology & Management*, 64(4), 325–334. doi:10.2111/REM-D-10-00084.1

- Brunson, M., & Huntsinger, L. (2008). Ranching as a conservation strategy: can old ranchers save the new west? *Rangeland Ecology and Management*, 61(2), 137–147.
- Brunson, M. W. (2012). The elusive promise of social-ecological approaches to rangeland management. *Rangeland Ecology & Management*, 65(6), 632–637.  
doi:10.2111/REM-D-11-00117.1
- Cheney, J. (2008). Eco-feminism and deep ecology. *Environmental Ethics*, 9(2), 115–145.
- Coppock, D. L., & Desta, S. (2013). Collective action, innovation, and wealth generation among settled pastoral women in Northern Kenya. *Rangeland Ecology & Management*, 66(1), 95–105. doi:10.2111/REM-D-11-00211.1
- Coppock, D. L., Fernández-Giménez, M. E., & Harvey, J. (2013). Women as change agents in the world's rangelands: Synthesis and way forward. *Rangelands*, 35(6), 82–90.
- Cote, M., & Nightingale, A. J. (2011). Resilience thinking meets social theory: Situating social change in socio-ecological systems (SES) research. *Progress in Human Geography*, 36(4), 475–489. doi:10.1177/0309132511425708
- Crane, T. A. (2010). Of models and meanings: cultural resilience in social-ecological systems. *Ecology and Society*, 15(4), 19.
- Cruikshank, J. (2001). Glaciers and climate change: Perspectives from oral tradition. *Arctic*, 54(4), 377–393.
- Daly, K. J. (2007). *Qualitative methods for family studies and human development*. Thousand Oaks, CA: Sage.
- Didier, E. A., & Brunson, M. W. (2004). Adoption of range management innovations by Utah ranchers. *Journal of Range Management*, 57(4), 330–336. doi:10.2307/4003855

- Farmer-Bowers, Q. (2010). Understanding the strategic decisions women make in farming families. *Journal of Rural Studies*, 26(2), 141–151.
- Farmer-Bowers, Q., & Lane, R. (2009). Understanding farmers' strategic decision-making processes and the implications for biodiversity conservation policy. *Journal of Environmental Management*, 90(2), 1135–1144.
- Fink, D. (1992). *Agrarian women: Wives and mothers in rural Nebraska 1880-1940*. Chapel Hill, North Carolina: The University of North Carolina Press.
- Folbre, N. (1984). Household production in the Philippines: A non-neoclassical approach. *Economic Development and Cultural Change*, 32(2), 303–330.
- Frick, M. (1991). A definition and the concepts of agricultural literacy. *Journal of Agriculture Education*, 32(2), 49–57. doi:10.5032/jae.1991.02049
- Fulton, A., & Vanclay, F. (2011). Enabling change in family farm businesses. In *Changing land management* (pp. 95–106). Collingwood, Victoria, Australia: CSIRO.
- Habron, G. B. (2004). Adoption of conservation practices by agricultural landowners in three Oregon watersheds. *Journal of Soil and Water Conservation*, 59(3), 109–115.
- Hansen, A. J., Rasker, R., Maxwell, B., Rotella, J. J., Johnson, J. D., Parmenter, A. W., ... Kraska, M. P. V. (2002). Ecological Causes and Consequences of Demographic Change in the New West. *BioScience*, 52(2), 151. doi:10.1641/0006-3568(2002)052[0151:ECACOD]2.0.CO;2
- Hussa, L., & Blake, M. G. (2009). *The family ranch: land, children, and tradition in the American West*. Reno: University of Nevada Press.
- Järviluoma, H., Moisala, P., & Vilkkö, A. (2003). *Gender and qualitative methods*. Thousand Oaks, CA: Sage.

- Johnson, K. M. (2011). The continuing incidence of natural decrease in American counties. *Rural Sociology*, 76(1), 74–100. doi:10.1111/j.1549-0831.2010.00036.x
- Kassam, K.-A., & Soaring Eagle Friendship Center. (2001). So that our voices are heard: Forest use and changing gender roles of Dene women in Hay River, Northwest Territories. CIDA-Shastri Partnership Project. Retrieved from <http://hdl.handle.net/1880/43546>
- Kennedy, C. A., & Brunson, M. W. (2007). Creating a culture of innovation in ranching. *Rangelands*, 29(3), 35–40. doi:10.2111/1551-501X(2007)29[35:CACOI]2.0.CO;2
- Kiptot, E., & Franzel, S. (2011). Gender and agroforestry in Africa: a review of women's participation. *Agroforestry Systems*, 84(1), 35–58. doi:10.1007/s10457-011-9419-y
- Kleihauer, S., Stephens, C., Hart, W., & Stripling, C. (2013). How six women deans of agriculture Have attained their leadership role: A qualitative study. *Journal of Agricultural Education*, 54(3), 15–27. doi:10.5032/jae.2013.03015
- Knapp, C. N., & Fernandez-Gimenez, M. E. (2009). Knowledge in Practice: Documenting Rancher Local Knowledge in Northwest Colorado. *Rangeland Ecology & Management*, 62(6), 500–509. doi:10.2111/08-175.1
- Knapp, C. N., Fernandez-Gimenez, M., Kachergis, E., & Rudeen, A. (2011). Using participatory workshops to integrate state-and-transition models created with local knowledge and ecological data. *Rangeland Ecology & Management*, 64(2), 158–170. doi:10.2111/REM-D-10-00047.1
- Lieblich, A., Tuval-Mashiach, R., & Zilber, T. (1998). A new model for classification of approaches to reading, analysis and interpretation. In *Narrative Research: Reading,*

- Analysis and Interpretation (Vol. 47, pp. 1–20). Thousand Oaks, CA: Sage Publications.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. New York: Sage.
- MacDonald, G. M. (2010). Water, climate change, and sustainability in the southwest. *Proceedings of the National Academy of Sciences*, 107(50), 21256–21262. doi:10.1073/pnas.0909651107
- Marriott, A. L. 1910-1992. (1953). *Hell on horses and women*. Norman: University of Oklahoma Press.
- Martin, M., & Kitchel, T. (2013). Agrarianism: An ideology of the National FFA Organization. *Journal of Agricultural Education*, 54(3), 28–40. doi:10.5032/jae.2013.03028
- Mayoux, L. (1995). Beyond naivety: women, gender inequality and participatory development. *Development and Change*, 26(2), 235–258.
- Meinzen-Dick, R., & Zwarteveen, M. (2001). Gender dimensions of community-based natural resource management: The case study of water users' associations in South Asia. In A. Agrawal & C. Gibson (Eds.), *Communities and the environment: Ethnicity, gender and the state in community-based conservation* (pp. 89–110). New Brunswick: Rutgers University Press.
- Moore, N. (2008). Eco/feminism, non-violence and the future of feminism. *International Feminist Journal of Politics*, 10(3), 282–298. doi:10.1080/14616740802185486
- Moser, C. M., & Barrett, C. B. (2006). The complex dynamics of smallholder technology adoption: The case of SRI in Madagascar. *Agricultural Economics*, 35(3), 373–388.
- Musacchio, L. R. (2009). The scientific basis for the design of landscape sustainability: A conceptual framework for translational landscape research and practice of designed



- landscapes and the six Es of landscape sustainability. *Landscape Ecology*, 24(8), 993–1013. doi:10.1007/s10980-009-9396-y
- O'Shaughnessy, S., & Krogman, N. T. (2011). Gender as contradiction: From dichotomies to diversity in natural resource extraction. *Journal of Rural Studies*, 27(2), 134–143. doi:10.1016/j.jrurstud.2011.01.001
- Pannell, D. J., Marshall, G. R., Barr, N., Curtis, A., Vanclay, F., & Wilkinson, R. (2006). Connect with us. *Australian Journal of Experimental Agriculture*, 46(11), 1407–1424.
- Peñaloza, L. (2001). Consuming the American West: Animating cultural meaning and memory at a stock show and rodeo. *Journal of Consumer Research*, 28(3), 369–398. doi:10.1086/323728
- Petersen, G. (2007). How to shovel manure and other life lessons for the country woman. St. Paul, MN: Voyageur Press.
- Pilgeram, R. (2007). “Ass-kicking” women: Doing and undoing gender in a US livestock auction. *Gender, Work & Organization*, 14(6), 572–595.
- Pini, B. (2005). The third sex: Women leaders in Australian agriculture. *Gender, Work & Organization*, 12(1), 73–88.
- Pruitt, L. R. (2007). Toward a feminist theory of the rural. *Utah Law Review*, 2007(2), 421–488.
- Pugh, M. (2012). Are federal livestock grazing permittees and endangered species? The future of public lands grazing in Montana under the Endangered Species Act. *Public land and resources law review*, 33(143), 143–174.
- Radel, C. (2009). Nature/Environment: Natures, Gendered. In *International Encyclopedia of Human Geography*. Elsevier.

- Robbins, P., Meehan, K., Gosnell, H., & Gilbertz, S. J. (2009). Writing the New West: A critical review. *Rural Sociology*, 74(3), 356–382.
- Rocheleau, D., Thomas-Slayter, B., & Wangari, E. (1996). Gender and environment: a feminist political ecology perspective. In D. Rocheleau, B. Thomas-Slayter, & E. Wangari (Eds.), *Feminist political ecology: global issues and local experience* (pp. 3–26). New York, NY: Routledge.
- Rodriguez, D., Cox, H., deVoil, P., & Power, B. (2013). A participatory whole farm modeling approach to understand impacts and increase preparedness to climate change in Australia. *Agricultural Systems*, *In press*. doi:10.1016/j.agsy.2013.04.003
- Rowe, H. I., Bartlett, E. T., & Swanson, L. E. (2001). Ranching motivations in two Colorado counties. *Journal of Range Management*, 54(4), 314–321.
- Sachs, C., & Alston, M. (2010). Global shifts, sedimentations, and imaginaries: An introduction to the special issue on women and agriculture. *Signs: Journal of Women in Culture and Society*, 35(2), 277–287. doi:10.1086/605618
- Salvo, M. N. (1998). The declining importance of public lands ranching in the West. *Public Land and Resources Law Review*. 19, 103-112.
- Sayre, N. F. (2004). Viewpoint: The need for qualitative research to understand ranch management. *Rangeland Ecology & Management*, 57(6), 668–674.
- Sayre, N. F., deBuys, W., Bestelmeyer, B., & Havstad, K. M. (2012). “The range problem” after a century of rangeland science: New research themes for altered landscapes. *Rangeland Ecology & Management*, 65(6), 545–552. doi:10.2111/REM-D-11-00113.1

- Sayre, N. F., McAllister, R., Bestelmeyer, B., Moritz, M., & Turner, M. D. (2013). Earth stewardship of rangelands: coping with ecological, economic, and political marginality. *Frontiers in Ecology and the Environment*, 11(7), 348–354.  
doi:10.1890/120333
- Schackel, S. (2011). *Working the land: Stories of ranch and farm women in the modern American west*. Lawrence: University Press of Kansas.
- Smith, A. H., & Martin, W. E. (1972). Socioeconomic behavior of cattle ranchers, with implications for rural community development in the West. *American Journal of Agricultural Economics*, 54(2), 217–225.
- Squire, C. (2008). Experience-centered and culturally-oriented approaches to narrative. In M. Andrews, C. Squire, & M. Tamboukou (Eds.), *Doing narrative research* (pp. 41–63). Thousand Oaks, CA: Sage.
- Stefanco, C. (1987). Networking on the frontier: The Colorado women's suffrage movement, 1876-1893". In S. Armitage & E. Jameson (Eds.), *The women's west* (pp. 265–276). Norman, Oklahoma: University of Oklahoma Press.
- Tanaka, J. A., Torell, L. A., & Rimbey, N. R. (2005). Who are public land ranchers and why are they out there? In *Western Economics Forum* (Vol. 4).
- Torell, L. A., & Bailey, S. A. (2000). Is the profit motive an important determinant of grazing land use and rancher motives? *Journal of Agricultural and Resource Economics*, 25, 725–725.
- Trauger, A., Sachs, C., Barbercheck, M., Kiernan, N. E., Brasier, K., & Schwartzberg, A. (2010). The object of extension: agricultural education and authentic farmers in Pennsylvania. *Sociologia Ruralis*, 50(2), 85–103.

- Vanclay, F. (2011). Social principles for agricultural extension in facilitating the adoption of new practices. In D. Pannell & F. Vanclay (Eds.), *Changing land management* (pp. 51–67). Collingwood, Victoria, Australia: CSIRO.
- Warren, K. J. (2008). Feminism and ecology. *Environmental Ethics*, 9(1), 3–20.
- White, E. M., Morzillo, A. T., & Alig, R. J. (2009). Past and projected rural land conversion in the US at state, regional, and national levels. *Landscape and Urban Planning*, 89(1–2), 37–48. doi:10.1016/j.landurbplan.2008.09.004
- Williams, J. (1992). *The invisible farmer: A summary report on Australian farm women*. Canberra: Commonwealth Department of Primary Industries and Energy.
- Young, I. M. (1994). Gender as seriality: Thinking about women as a social collective. *Signs*, 19(3), 713–738.

## CHAPTER 3

### SOME YEARS YOU LIVE LIKE A COYOTE:

#### NARRATIVES OF RESILIENCE FROM THE RANCHING WOMEN OF THE SOUTHWEST

##### Introduction

*"[Women persevere.] You know, the women do. I mean the women are the ones that figure out 14 ways to cook beans and 19 different ways to serve hamburger, because you got to have a trailer or you get one pay check a year, or two, we do two on our operations. But you know I remember when [my husband] and I got married and I was telling him what he was getting into because I knew and he didn't. You know he had a little more of a romantic, he doesn't have it now. [laughing] But he did have more of a romantic view of what ranching was going to be. And [my husband] told me, he said I refuse to live like a coyote. And I said, no. When you ranch there are some years you live like a coyote. "And this last year, he said I don't know, he was kind of emotional, [my husband's] not an emotional man, and he said I don't think that we can make it. And I said we can. We're going to live like coyotes. We are in our third processes of cutting our expenses in half. You know the days of having new pick-ups, we never did do a new pick-up every year but we did about ever 3 or 4 years. Those are over, those are over. We're going to the government sale next week or whatever to get a good pick-up because our pickups are just in the shop all the time. But my husband has changed in that he, you know, it's more important to him now to have the ranch than it is to not live like a coyote, but mainly because we have a granddaughter who has what I call the dirt in her blood."*

The above is an excerpt narrative from an interview with Wendy (a pseudonym), a cattle ranch owner in New Mexico. Throughout her interview Wendy described her career in ranching as more than a livelihood. Ranching was a vital way of life, a core part of her identity; it was "in her blood." When she recorded this narrative in June of 2013 on the front porch of the recently restored adobe ranch home that once her grandmother's, New Mexico was desperate for rain. In the clutches of the hottest drought on record many ranchers across the Southwest were wondering, as Wendy's husband had, whether they would make it through to the next monsoon season. Even for those who could make it, regional and national demographics and economic opportunities for young people were

shifting. Whether would-be ranchers like Wendy's granddaughter could viably take the reins of the family ranch remained a question to be answered.

This paper addresses the theme of resilience as it was presented in the 19 life-history interviews I conducted with ranchers like Wendy in New Mexico and Arizona. These interviews were filled with stories of women's ability to recover from difficulties, to bounce back, to fashion creative and skillful means of sustaining the economic, ecological and social aspects of their ranching lives. Social-ecological researchers have recently turned their focus toward understanding social resilience, or "the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change" (Adger, 2000 p. 347; Brown, 2013). However, social resilience is often examined at arms length, from an outsider's perspective, without examination of how community insiders view resilience and change in SES systems.

This paper seeks to examine resilience from ranching women's points of view, to hear their voices. How ranching women experience resilience is tied to both their daily practices as operators and the ideologies about the ranching way of life. In this study I examine resilience as a personal and subjective experience that has both economic and cultural significance in ranching women's lives and, in many cases, across generations in ranching families. Ranchers often maintain a staunch independence and discourse of self-sufficiency, but shifts in communities and regulations in state and federal land management and endangered species (Bradford, Reed, LeValley, Campbell, & Kossler, 2002; Pugh, 2012; Sorice, Conner, Kreuter, & Wilkins, 2012) are pulling ranchers away from their herds into greater community engagement and advocacy roles (Clark & Wallace, 2002). Ranching is a livelihood, but like Wendy, many ranchers have slim profit margins and many rely heavily

on off-ranch employment. Because the value of ranch lands, many take a large opportunity cost to stay in ranching (Smith & Martin, 1972; Torell & Bailey, 2000). The voices quoted in this study provide an opportunity to explore how much a rancher can change, how far she can stretch her ideologies and her actions and still see herself as a 'rancher.'

In this paper I address the following three questions: First, how do women ranchers in the Southwest experience resilience? That is, what is their perspective of how they construct and maintain livelihoods that support both a living and a way of life in ranching when they face social, ecological and economic change? Second, can examining the intersection between women's material practices in ranching (related to physical or technical practices such as family-ranch labor divisions) and the discourse around how ranchers should act (related to socio-cultural meanings and ideologies) help us understand how women experience resilience? Third and finally, do contradictory discourses in ranching reveal changes in women's beliefs about technical and cultural ranching practices?

### **Resilience: Connecting an ecological idea to social questions**

Remarkable changes in Western US social, ecological and economic landscapes pose great challenges to the field of rangeland science and to the ranching communities and families that rely on rangeland systems for their livelihoods. While the effects of severe drought through 2012 and much of 2013 weighed heavily on the minds of ranchers in the Southwest, long-term shifts in rural demographics, economic opportunities, climate and land management regulation loomed in the background (Briggeman, Gray, Morehart, Baker, & Wilson, 2007; Clark & Wallace, 2002; Johnson, 2011; MacDonald, 2010; White, Morzillo, & Alig, 2009). Market forces, changing government support policies, pressure to

adopt production technologies and more diverse competition have increased the size, reduced the number and altered the structure of American family farms and ranches (Barbieri, Mahoney, & Butler, 2008). Rangeland researchers are interested in understanding the social processes that enact change in rangeland ecosystems through a focus on resilience, the capacity of a system to absorb disturbance and retain its basic structure and function (Walker and Salt, 2006). This concern with resilience is nested in social-ecological systems (SES) theory, a framework for understanding and managing integrated social and ecological systems (Ostrom, 2009).

In contrast to anthropocentric and eco-centric theories of the relationship between human and natural systems, social-ecological systems theory conceptualizes the human-nature relationship as an integrated system comprised of human and natural dynamics. It seeks to understand the source and role of change in integrated, adaptive social-ecological systems and to “live with,” rather than control, system complexity through adaptive, experimental management and social learning (Glaser, 2006; Holling & Meffe, 1996). Resilience is a key aspect of system complexity because it helps us understand how systems recover after a disturbance or episodic change events (Walker and Salt, 2006).

In SES scholarship the use of the term resilience in a ecological sense has its origins in the work of ecologists who use it to understand how ecological systems respond to change events and transition between multiple stable ecological states (Holling & Meffe, 1996). Holling and Meffe (1996) emphasize that ecological change is irregular and non-linear, and that cycles of adaptive change, nested within each other, function on different spatial and organizational scales and at different speeds (Gunderson, 2000). The application of these ideas is embedded in the field of rangeland ecology and management. Range science



conceptualizes dynamic vegetation-soil responses to environmental and management disturbances through state-and-transition models (Briske, Fuhlendorf, & Smeins, 2005).

But in the ranching communities in the West, social resilience is as pressing an issue as ecological resilience, as the viability of the ranching way of life is uncertain. SES researchers have struggled to find tools to integrate social and cultural knowledge from the members of ranching communities with ecological and technical models of rangeland ecosystem change (Brunson, 2012; Cote & Nightingale, 2011; Crane, 2010). Resilience thinking has been applied to understanding the interdependent and complex interactions of social-ecological systems in a broader sense for management purposes (Walker, 2006) and to conceptualize social resilience, (Adger, 2000) but questions of what resilience means for ranchers and how ranchers build resilience to support the long-term viability of ranching as a way of life have gone unexamined.

Linking a theory with its roots in ecology to social experiences is challenging. Social-ecological researchers are increasingly interested in understanding social resilience (Adger, 2000; Brown, 2013). But much of this work has had limited reference to social science theory (Cote & Nightingale, 2011) and has failed to explore diversity within social systems. Despite the wide-spread rise of “bottom-up” approaches to research, policy and governance (Berkes, 2007; Campbell & Vainio-Mattila, 2003; Crane, 2010; Musacchio, 2009b) there is a disconnect between the academic field of rangeland ecology and actual rangeland managers (Briske et al., 2011; Crane, 2010; Sayre, deBuys, Bestelmeyer, & Havstad, 2012). This disconnect suggests a need to better understand and incorporate the historical, cultural and subjective contexts of decision-making of diverse stakeholders in rangeland systems.

Although rangeland scientists have taken strides to incorporate local knowledge into rangeland ecology and management, current efforts have focused on documenting local knowledge content rather than focus on its social and cultural contexts. In recent years, rangeland research has seen an emphasis on generating dialogue between scientists and local land managers (Sayre, deBuys, Bestelmeyer, & Havstad, 2012) and documenting locals' technical or ecological knowledge of rangeland ecosystems (Knapp & Fernandez-Gimenez, 2009; Knapp, Fernandez-Gimenez, Kachergis, & Rudeen, 2011). This approach incorporates the content of local knowledge into rangeland research and management, but the context of this knowledge is also important (Fernandez-Gimenez, Huntington, & Frost, 2007).

By context I refer to the subjective, historical, social and cultural meaning of knowledge from the perspective of those who create and apply knowledge (Cote & Nightingale, 2011). Resilience theory has been criticized for ignoring the context of ecological knowledge and for failing to explore internal social dynamics and power asymmetries while emphasizing institutional design and rule-making (Brown, 2013; Cote & Nightingale, 2011). Cote and Nightingale (2011) question the effectiveness of analyzing social resilience by simply "capturing" local or indigenous knowledge. They argue for the contextualization of knowledge, for an exploration of the multidimensional social processes, relationships and identities that impact decision-making in these systems (Cote & Nightingale, 2011; Cruikshank, 2001). In the next sections I will explain how I seek this contextualization by considering resilience from an emic approach (or from the perspective of those being studied), and through women's life-history narratives.

**Cultural resilience: Contextualizing local knowledge**

A review of the recent literature in social-ecological systems (SES) and resilience theory supports the need to better understand the social aspects of SES systems, and to do so by placing the perspectives and knowledge of land managers within subjective, historical and/or cultural contexts. Cultural resilience (Crane, 2010) provides a conceptual framework to understand how, from a subjective perspective internal to a specific place and community, individuals maintain rangeland livelihoods that support both material and moral needs in the face of multiple stresses and shocks. An emic approach allows Crane to conduct an internal analysis of the socially constructed meanings and normative values around resilience from the perspective of local people, in this case with Marka and Fulani agropastoralists in Mali. He recognizes the cultural value of agropastoral livelihoods: people's lives have meaning to them, and this meaning is important in developing SES research and policy that is legitimate to local land managers. In this study I borrow several facets of Crane's approach. I take his emic approach and his assumption that peoples' way of life has meaning to them. Additionally, I borrow his examination of resilience as a matter of sustaining livelihoods that support both material and cultural needs. In contrast to Crane, I examine resilience as a subjective, or personal experience, rather than taking Crane's cultural approach.

**Analyzing contradictions in ranching practices to understand change**

To explore women's experiences with resilience in ranching, I modified an analytical framework developed by (O'Shaughnessy & Krogman, 2011). This analytical framework was developed to analyze gender in extractive natural resource industries. It rests on an extensive review with literatures from eco-feminist and feminist political ecology, and follows the recent focus of feminist research of exploring the contradictions between

gendered practices. This emphasis on contradictions stems from a shift in gender research away from employing master categories for men and women and universalizing women's experiences toward a focus on analyzing the everyday meaning of women's lives by exploring gendered practices (p. 135). These practices are at once material (related to such practices as household labor divisions) and discursive (related to socio-cultural meanings and ideologies). O'Shaughnessey and Krogman explore changes in gendered practices by looking for contradictions between these practices, that is where material practices and discourse are disjointed as a result of changes across multiple levels of social organization.

The examination of contradictions between discourses and material practices is an analytic tool to understand resilience. These contradictions help us understand how individuals and communities adapt to changes in broader economic, cultural or individualized material forces. Material-discursive contradictions illustrate how women adapt to material changes such as ecological, financial or labor roles. Discursive-discursive contradictions reveal how long-standing beliefs about the ranching livelihood respond to shifting socio-economic realities and dynamics in public lands ranching. An example of a material-discursive contradiction would be if women's formal employment or roles in political activism were viewed as competing with cultural expectations of their community and household roles. Contradictions between discourses are more abstract but by definition have real impact in people's lives. An example of a discursive-discursive contradiction would be the polarizations between cultural expectations of how individuals should behave, such as the debate whether women can be "good mothers," and "good workers" simultaneously.

I modified O'Shaughnessy and Krogman's framework so as to analyze material and discursive ranching practices rather than gendered practices. Throughout the study I maintain that ranching, like gender, involves material and discursive practices. Previous studies have explored or commented on the connection between discourse around how ranchers should act and their actual ranching practices. These studies include practices such as innovation adoption, engagement with general conservation or wildlife conservation practices and non-economic motivations for ranch ownership and operation, but have not examined ranching practices of ranching women in the Southwest using a narrative methodology (Abel, Ross, & Walker, 1998; Farmar-Bowers & Lane, 2009; Farmar-Bowers, 2010; Rowe, Bartlett, & Swanson, 2001; Sorice et al., 2012; Tanaka, Torell, & Rimbey, 2005).

#### **Women ranchers: Under-explored stakeholders in rangeland systems**

While Crane considered resilience from the perspective of two ethnic groups, this exploration of resilience as a subjective experience is framed by gender. Gender is one category of social identity through which rangeland scholars can explore the heterogeneous social context of rangeland system change. Defined as the social, rather than biological, difference between men and women, gender is an under-examined, complex and deeply personal experience with implications for broader social power asymmetries. Thus, it provides an important starting point in the effort to contextualize the social processes driving change on rangeland systems.

Women are important but under-examined stakeholders in rangeland systems. There is noticeable absence of research on gender in the American West and women's role in the Western US in both SES and rangeland science literatures. Much of the distinct work

exploring women as leaders or the impact of policy or climate upon women has been done in developing nations (Coppock et al., 2011; Kleinbooi, 2013; Brockington, 2001), Australia (Farmer-Bowers, 2010; Williams, 1992) or in farming systems in the United States (Barbercheck et al., 2009; Trauger, 2001; Trauger et al., 2008). There been some attention to gender in the livestock industry (Pilgeram, 2007) and to women as agriculture educators and clients of extension (Kleihauer, Stephens, Hart, & Stripling, 2013; Young, 1994).

There is also mounting evidence that women are drivers of change on rangeland systems (Coppock & Desta, 2013) and that the impact of change in social-ecological systems is gendered. Women may be disproportionately impacted by global climate change (Alston, 2010; Arora-Jonsson, 2011; Nelson, Meadows, Cannon, Morton, & Martin, 2002), but researchers have little understanding of the diverse perspectives, labor responsibilities and needs of ranching and pastoralist women in the face of these changes. Additionally, there is concern that women in rangeland management in the Western U.S. are often invisible, that they are brushed over in the literature or lumped into the “household” (Fulton & Vanclay, 2011) and do not receive recognition or distinct consideration in rangeland research or policy.

### **Methodology**

Given the complexity and diversity of ranching women’s experiences and the interest in exploring change across long time scales, I chose a narrative framework of data collection. Life-history interviews gather and present women’s voices as they relate their own lives and the events and characters within their stories. Narrative inquiry also allows researchers to explore research questions alongside participants in the research as it reverses the usual researcher-subject power dynamic inviting greater participant agency in

the research experience (Daly, 2007; Geiger, 1986; Lielblich, Tuval-Mashiach, & Zilber, 1998; Squire, 2008).

Narratives are a way that humans make sense of the world; they are a reconstruction of stories across time and place and show transformations on many levels (Squire, 2008). As a research methodology, life-histories narratives have an important location in feminist methodologies to link this meaning-making to events, locations and characters through sequential stories (Daly, 2007, Järviluoma, Moisala, & Vilkkö, 2003). Narrative inquiry is also congruent with Crane's (2010) emic approach to examining resilience as the methodology subscribes to the idea that there is no "wrong" narrative. It allows the researcher to recognize that the data from interviews are an interpretation of women's experiences and actions, and that many interpretations of the same experience or social situations may exist (Daly, 2007).

### **Study Sites and Sampling**

Participants in this study were all cattle ranchers who lived along a precipitation gradient throughout Arizona and New Mexico. Because these states are populated by a small number of close-knit ranching families and communities and because I have a responsibility to maintain participant confidentiality, I have omitted the names of the communities and ranches where the women live and used pseudonyms.

I contacted participants through a snow-ball sampling technique. I reached out to community gatekeepers, including Forest Service and Natural Resource Conservation Service staff and known ranchers in the areas, for introductions to ranching women (See Appendix B). I sought contacts across a spectrum of socio-economic backgrounds, ages, and ranching practices. I then gathered contacts from these initial participants, again

seeking diverse participation. Although all participants in the study serve in some decision-making capacity on a ranch that would qualify as a “farm” under the U.S. Agriculture Census, they described themselves across a spectrum from primary or co-operator to having limited input into daily decisions on the ranch. (Two of the ranchers in this study described themselves as retired, though they still had some connection to ranching through their children.)

I focused on recruiting individuals who were considered to be “ranch women” on public lands ranches by their communities and peers. It is important to note here that by seeking public lands ranchers, I conducted my study with ranchers whose livelihoods were tied to public lands grazing permits, and placed this study within a specific management context and political environment. While grazing on public land in the Western United States began well before first efforts for regulation at the turn of the 20<sup>th</sup> century, permit grazing continues today in a highly contentious political environment. Most federal lands grazing has occurred on Bureau of Land Management and USDA-Forest Service lands, and the ranchers I interviewed in New Mexico and Arizona also grazed state-held lands. Historically, ranches and ranching communities across much of the West have been established in connection the public lands grazing programs, though individual ranchers I interviewed had varying levels of dependence upon public grazing permits and the forage they provide (Tanaka, Torell, & Rimbey, 2005). Various interest groups have pressured for the elimination or reduction of grazing permits because of concerns for the ecological and social impacts of grazing and ranching practices, particularly related to endangered species (Tanaka et al., 2005; Pugh, 2012), while arguing that the economic importance of public lands ranching is declining (Salvo, 1998). Advocates of the practice and governmental



agencies that maintain permit systems cite economic, socio-cultural and ecological benefits of public lands grazing (Bradford, Reed, LeValley, Campbell, & Kossler, 2002; Pugh, 2012).

### **Data Collection**

To triangulate interview data, I conducted participant observation in New Mexico and Arizona ranching communities during the summers of 2012 and 2013. Participant observation included involvement in ranching and social activities. I also attended industry group meetings and read articles, websites, and papers, written about or by the research participants or their ranches. This stage of data collection was important in selecting an appropriate theoretical framework and narrative inquiry method.

Interviews were conducted and audio-recorded with 19 ranching women in homes, during ranch work or in a public place of convenience during the summer of 2013. These women were between the ages of 28 and 85. To prompt the narrative, participants were asked to narrate their life as a ranching woman and the changes in rangelands and ranching they had experienced over the course of their lifetimes. The participants were encouraged to start their narrative at any point in their life story. I provided a sheet of paper with a list of questions covering early life, family and ranch history, ranching practices, changes on the ranch and views of the future and asked clarifying or prompting questions where necessary (See Appendix A). If participants asked about the researcher's background and knowledge of ranching systems, I answered that I had a blue-collar, rural background from my upbringing in Montana and that I had worked as an agriculture teacher before studying rangeland ecology. The interviews were transcribed verbatim, and I checked a sample of six transcripts against the audio records for accuracy. A sample of

twelve interviews was emailed to the participants for member checking, and four women responded with corrections or additions to their transcripts or additional information.

### **Data Analysis**

During narrative analysis, I took an experience-centered approach (Squire, 2008) to analyzing the data for narratives that revealed material-discursive and discursive-discursive contradictions. I used what narrative researchers often refer to as “big stories” as my unit of analysis, or long, complete stories that were broken by a change of subject, character or timeline in the interview. For each interview I checked the patterns I was seeing in these individual “big stories,” or narratives against the content of the entire interview transcript following Lielblich, Tuval-Mashiach, & Zilber (1998). After I had I identified contradictions in the data for each interview, I looked for patterns across all the interviews. I then sorted contradictions into thematic groups. During this process, I engaged in prolonged immersion in the data: reading and re-reading the transcripts, research notes and correspondence with participants, (Lincoln & Guba, 1985) each time examining patterns, inconsistencies and themes related to the perspectives of women’s roles in system resilience. The results are presented below with supporting data and analytical comments from across the 19 interviews.

## **Results and Discussion**

### **Material-Discursive Contradictions**

Material-discursive contradictions show relationships between a set of practices and a set of beliefs and discourses about those practices. Identifying these contradictions revealed the influences of material changes (such as changes in climate or market shifts, sources of income and ranching operation labor needs) on the rancher’s discourse (their beliefs, values, meanings and perceptions of the practices associated with those changes)

(O'Shaughnessy & Krogman, 2011). The contradictions identified in the narratives showed how these women adapted to changes despite contradicting beliefs about their actions. The interview data yielded 46 separate material-discursive contradictions from the interviews of all but two women interviewed.

When I looked for patterns in these contradictions, material practices that contradicted discursive practices fell into the following categories: practices related to community involvement (7 narratives), financial decisions (11 narratives), ranch management decisions (9 narratives) and ranching roles (17 narratives). Some women were very involved in their communities despite the belief that ranchers should be independent and self-sufficient, others took on ranch management and labor roles, defying the cultural belief that women cannot be ranch managers or "cowboys." Many adjusted their standard of living or level of financial security to maintain the ranching way of life. I define and describe the contradictions in each category in the discussion below.

### ***Financial hardship vs. Ranching as a livelihood***

The material-discursive contradictions provided an interesting method for understanding conflicts that occur between ranchers' beliefs about ranching practices and what they are able to do within the context of financial, natural resource and social constraints. The conflict between discourses of ranching as a wonderful, and sometimes vital, way of life with material practices related to financial decisions was a basic and essential contradiction in the lives of these women.

Several narratives described the importance of the future of the ranching way of life but highlighted concern that future generations of ranchers may not have any realistic financial route into the industry. For example Carol, a multi-generational rancher, described being

uncertain that her children could all support themselves on the ranch. Other narratives described the contradiction between the need to make money on the ranch and the need to conserve or otherwise improve the rangelands. Here, concerns for ecological function were at odds with business goals. This careful balance played out over ranchers' lifetimes. For example, Ellen described setting conservation goals on her ranch and living off of her retirement from an off-ranch career so that she could de-stock while the rangeland recovered from a degraded state:

*"Right now it's pretty much, we move the cattle as we need to move them, and we started out with a very small herd, like about 40 head of cattle, that was all. And this is a ranch that will run 300, 350 cattle. But, the way that I looked at it was, it had been over-grazed by the leasee that had leased it, and that's exactly what, I'm not condemning him at all, because that's what he leased it for. Was to run cattle on. But in my mother's case there wasn't much she could do. She needed, if she's going to keep it and pay the taxes on it, she needed to, and so that's what she did. But we have seen in 2 years time how much the range has come back. ...[The fences] were awful, they had not been worked on for probably 40 years. So, even the perimeter fences were bad...After Mom died, and my other brother died, and I talked to the kids and I said, you know, what do we want to do with the ranch? Do we want, and by this time, I'm retired, and I can put time in on the ranch, and I said, I would like to see if we can't get it to become a profitable venture for us, because all we were doing was paying the taxes and the leases. That was it, we were breaking even but we weren't making any headway and we weren't maintaining anything. So what we decided to do was see if we couldn't run the ranch by hiring people to help us out and see what we could do."*

Like Ellen, three other women described material practices based on financial constraints that conflicted with what they would like to do with their ranch, or what other ranchers might suggest they do. In the case of Lucy, this involved taking less of a profit because she believed in spending more on feed to have healthier cattle. For Jane, this involved selling a large area of land on her family's ranch when a nutrient deficiency devastated her calf crop and profitability. The loss of a large part of her family's land was

more than a financial loss; it went against the discourse of perseverance that had carried her through tough times—hang on at all costs.

*“You do what you think you can do, and it didn’t pan out, so then, you know, where do you stand? Then we sold part of it, and I told my husband, I said, ‘I can sell this land.’ I said, ‘It’s a well known ranch’, I said, ‘I can sell this land. To neighbors.’ And that’s what I did. And I tell you it hurt my soul. It did, I ache because this is my grandfather’s land, you know. And here I am, lost it.*

*“And I would go through it and I would tie up floats and I would pull out weeds and it took forever for me to go through that piece of land, and I still, the other day, I called the fellow that owns it. And I said, ‘If you see tracks on the south end, that’s me.’ There was a dead silence and I thought he’s wondering what are you doing.*

*“And I said, ‘You’re wondering what I’m doing.’ He said, ‘Yeah.’ I said, ‘I’m just mosey-ing around, checking it out.’ And he said, ‘What do you think?’ I said, ‘It looks like Hell.’ ”*

The women also described a contradiction between the discourse around what it means to be a rancher and the material practices related to off-ranch income earning. Five women described working or attending university off-ranch to fill gaps in ranch income or pursue personal career paths while maintaining an identity as a rancher or as being involved in production agriculture. Even when these women were spending most of their day off-ranch in other roles, they still identified with ranching culture. This discourse maintains that ranching is an important way of life, even when women’s lives are tied to other careers or practices.

The financial hardship vs. ranching as a livelihood contradiction (again, a material-discursive contradiction) illustrates how the women in this study responded to specific changes in financial circumstances in ranching. As Jane and her neighbor Wendy, (quoted in the introduction) described, this essential financial material-discursive contradiction ran deep into what it means to be a ranching woman, sometimes through generations. It is well understood that ranchers face an opportunity cost to go into ranching, and scholars have documented the non-economic motivations of ranchers, including lifestyle and heritage

(Smith & Martin, 1972; Tanaka et al., 2005). But little is understood about the meaning of choosing a lifestyle that often provides little more financial stability than, as Ellen described it, breaking even. This contradiction in the narratives highlights the willingness of women to change their material practices, that is to seek off-ranch income, or to “tighten the belt a few notches and eat more beans” or to “live like a coyote” in order to maintain a livelihood and way of life that was vital to their identity.

### ***Community involvement vs. Independence***

Practices of community involvement included off-ranch roles such as involvement with government agencies, non-profit organizations, advocacy or activist groups, collaborative management groups, and industry organizations. In seven cases I identified narratives where these community involvement practices conflicted with discourses about ranchers' independence, autonomy and self-sufficiency. Edith described that she and her husband emphasized self-sufficiency and performed all of ranch labor by themselves without hired help. They lived off the power grid and declined to participate in conservation grant programs. They believed in being independent and keeping government influence out of their lives. But this discourse of self-sufficiency conflicted with several community involvement practices, including a tie to the scientific community and involvement in industry groups and agricultural outreach activities. Edith identified and resolved this conflict in her narrative, citing the benefits of involvement in the community while emphasizing the importance of self-sufficiency and, to some extent, isolation from the fast-paced outside world. Edith discussed the importance of staying connected to the academic world and the role of her husband's off-ranch career in their family life. She acknowledged that time spent off-ranch at meetings, outside careers or advocating for the livestock

industry had taken a toll on the time she had available for ranch infrastructure maintenance or cattle work. Community involvement was important to her, and she described frustration that other ranchers were not as involved in this work:

*"We do get disgusted with our own industry. There are so many people, like every facet, that would just rather go about their business, and never show up for a meeting and never, well they've got cattle work to do, they've got cows to move. Well, so do I. But we still come. We still put the work in, you know, we manage to survive, and we don't believe in doing that, we've just tried to stay active."*

Narratives with this material-discursive contradiction provided greater insight into the political ecology of women's roles in rangeland systems (Harding, 1986; Rocheleau, Thomas-Slayter, & Wangari, 1996). Community leadership is an area of ranching life where women described taking agency in the face of a social change. Like Edith, the women who resolved this conflict in their narratives cited the importance of community engagement in the viability of their ranching way of life, suggesting that a change in discourse may be appearing in some ranching communities and families related whether isolation from the broader community or non-ranchers is appropriate. Women's industry groups have long been important to social and political experiences of ranching women in New Mexico and Arizona, but this apparent increase of women's political consciousness merits further study specifically examining how women's industry groups or advocacy roles shape resource access, control and management of American rangelands (Alston, 2000; Rocheleau et al., 1996).

### ***Ranching responsibilities vs. Gender discourses***

Ranching roles conflicted with discourses around gender roles in 8 narratives. These stories cast a light on how ranching women defied gendered barriers during their lifetimes. A set of these narratives involved a discourse that women are not ranchers- that is, women are not decision makers, they do not inherit ranches, and they do not operate their own

ranches. For example, two women were involved in ranch work as children but were told that they would not inherit their family's ranch because they were female. In another story, Wendy was denied a bank loan; the bankers had never loaned money to a woman rancher and were unconvinced that she knew that there was a difference between running a ranch and "sitting on the fence and watching your daddy." When she was finally granted an operating loan it was under stipulation that a loan officer be permitted to come to the ranch and count her cattle once a month. Wendy eventually put an end to these unwelcome visits when, busy caring for a post-partum cow, she responded to the officer's comment that she 'might actually know a thing or two about ranching' by dropping rotten after-birth on his boot. He was never seen again.

Four women described a contradiction between the discourse that women should not or cannot do ranch work, referred to as "cowboying." This work was outside work, often horseback, with cattle or other livestock. Lucy was one of few women to work the big ranches in her state, roping and tying down wild cows. Emily described her mother's "traditional" views that women should be inside, not out working the ranch but described that her mother gave up on keeping Emily and her sister out of the corrals after they both took a great interest in animals. Another woman, the eldest in the study, filled a gap as the "cowboy" on her father's ranch when her brothers were away at boarding school and serving in World War II.

An interesting divergent case should be noted here. Two women in the study described less concern for gender difference and more barriers to success because of their youth. JoAnne, in her late 20s, described a contradiction between the practices of young people going into the industry, and the discourse that ranching as a way of life is ending and that



no young people will be available to take over ranches in the future. She described concern that census data or statistics may not fully describe the instances of young couples living on multi-generational ranches.

This analysis reveals a contradiction between discourses around what is appropriate for women ranchers and the actual daily tasks and responsibilities of ranching women. The women in this study broke the “grass ceiling” and defied gendered discourses with their material practices when these gendered discourses became barriers to maintaining ranching livelihood. This idea raises the question as to the connection between ranching practices, skills and roles and relative access to power and access to rights over resources or resource decision-making. Many of the ranching women in this study said that they did not feel that barriers had been placed upon them because of their gender in the ranching industry or in their families, and many described acting as mentors or co-managers with the men in their lives (See Chapter 2). However, the connection between this empowerment and women’s material practices is not well understood in ranching. More research is needed to examine how diverse material roles in ranching are a source of empowerment or how they might further burden women with managerial and physical labor roles in addition to women’s roles in childcare and schooling, food preparation and household resource management.

### ***Response to ecological disturbance vs. Ranching paradigms***

Another material-discursive contradiction occurred when changes in the material circumstances around natural resources or climate contradicted ranching paradigms. These contradictory narratives helped me understand how some women managed during change events or disturbance, such as drought, herd-health crises or range condition

issues, and how they reconciled those management decisions with the discourse over how they should manage. An example is found with Charlotte, a ranch manager. During our discussion, we framed our conversation with the analogy of managing a ranch by dealing with what issues “bubble up in a pot,” or appear at the forefront of management at different times. During drought, Charlotte’s management changed from this focus on sustainability to “old habits” in range management that emphasized dealing with the crisis and a narrow focus in management:

*“I think what I would have to say is that the last ten years of drought we are totally focused on what’s popping in the pot. But the overarching thing is sustainability, profitability, being here. Hang on one minute. That can be [static] or it can be dynamic and I think we choose dynamic. Ok, but in times of turmoil and people warned us that have whether they’re recovering from addiction or they’re completely retooling their family business to whatever it is, in times of crisis however that’s dimensioned and I will say it’s the drought, you revert to your old habits and boy did we. So, that is a very big danger and for my style it’s really easy to catch the bubbles. But it’s also the only- the long term, nurturing a long-term benefit is seeing the bigger picture and working toward that. We have to start thinking what we learned in holistic management we can not step aside, we have a huge obligation to get a bigger picture and start acting that way. Which is beyond the bubbles.”*

This material-discursive contradiction connects changes in the physical world of ranching to ranchers’ management paradigms. Here, the paradigm discourses were used to understand and adapt to ecological disturbance. This is seen in the narrative from Charlotte’s story, above. Her material practices related to changes in climate were temporary, and a discourse around how she should manage (i.e. Holistic Management) guided the long-term goals she has for the social, economic and ecological landscapes of the ranch she manages. While the other contradictions examined in this study deal with changes in community, gender, and finances, this contradiction is the only one that specifically deals with ecological disturbance events such as drought. This contradiction is

a starting point for future research that examines rancher's management paradigms or decision-making processes as SES researchers seek to explore adaptive approaches to rangeland management in the face of climate change.

In this section I have reviewed four material-discursive contradictions from the narratives of women ranchers. These contradictions provide important insight into the experiences of these women ranchers with resilience because they illustrate how the tangible realities of ranching sometimes conflict with the culture. The examples of these contradictions in ranch women's narratives reveal how the women defied ranching discourse around gender, ranch management, and ranching roles. The contradictions also illustrate how discourses can serve as important guiding ideologies in the face of drought or other ecological disturbance. In the next section I address contradictions between discourses to examine the implications of conflicting notions of what is possible and appropriate in ranching culture.

### **Discursive-Discursive Contradictions**

Discursive-discursive contradictions were more nuanced than the material-discursive contradictions. However, this set of themes provides important insight to some of the unresolved contradictions in women rancher's experiences. Below I analyze a total of 25 narratives and provide discussion as to their implications for ranching women's experiences with resilience. I also suggest how these contradictions may inform future research. I discuss discursive-discursive contradictions in the following categories: contradictions between epistemologies of ranching and scientific communities, between management paradigms, and between the belief that the ranching way of life should continue and the belief that each individual and generation should have the right to choose

to enter or exit ranching. While the material-discursive contradictions illustrated how the women adapted to material changes, the discursive-discursive contradictions reveal how long-standing beliefs about the ranching livelihood face challenge from shifting socio-economic realities and cultural dynamics in ranching.

### ***Epistemologies***

*"I get very frustrated because many times you will see farmers and professors interacting and I wish there was more of it. We, right here in [our area] we don't have a very active Extension Service. But, the information that the farmer, or the rancher has is not, it is called [anecdotal]. And there's no real research in that. Well actually there is, because if that farmer or rancher, has he not, is he not still in business? And, after generations, or even, even 20, 30 years, he is still in ranching. And so his information is not necessarily, it's not credible."*

Kay's narrative described her frustration when she observed scientists dismissing rancher knowledge as anecdotal. Kay cited the ability of ranchers or farmers to stay in business for many years as evidence of the legitimacy of their professional knowledge to understand and manage ecological and social systems over long time-scales.

Contradictions between epistemologies included 2 narratives that described a conflict between the knowledge of land managers or ranchers and the knowledge of the scientific community. Though a relatively small number of narratives described this contradiction, it provides insight into how differences in theories of knowledge can create tensions between stakeholders in rangeland systems. The idea that rancher knowledge is valid and based on legitimate knowledge-gathering often conflicts with positivist scientific epistemologies, and these conflicts play out in the interactions and relationships between ranchers, scientists and agency professionals.

By identifying this contradiction between epistemologies this study supports calls for greater attention to multiple theories of knowledge and local ecological knowledge in research and extension on Western rangelands (Bestelmeyer & Briske, 2012; Briske et al.,

2011; Sayre et al., 2012). The challenge to incorporate multiple theories of knowledge in rangeland social-ecological systems research mirrors transformations in and theoretical challenges to Western knowledge systems that have emerged from postmodernist and feminist theory (Harding, 1986; Rocheleau et al., 1996; Weiler, 1991) and the resultant approaches to inquiry (Charmaz, 2006; Guba & Lincoln, 1994; Kuhn, 2012; Schwandt, 1994; Ültanır, 2012). How scientists measure and study the world has implications for how power is exercised in natural resource management (Ahlborg & Nightingale, 2012). Ahlborg and Nightingale (2012) note that different stakeholders in a natural resource system have different stories, or explanations, of ecosystem change based on different temporal and spatial scales. Rather than seeking one coherent version of a “story”, we can better explore the gaps between world-views and epistemologies if researchers seek to understand the many stories of others based upon situated, or contextualized, and partial knowledge.

### ***Management Paradigms***

Contradictions between management paradigms fell into two sub-categories, those dealing with paradigms for resource conservation and those addressing more specific ranching management paradigms.

***a.) Production as Conservation vs. Preservation as Conservation.*** Seven narratives described contradictions between public land management paradigms that emphasize production and those that excluded production or emphasized preservation. It is important to note that many of the narratives in this case emphasized production as congruent with conservation goals, rather than a paradigm of public land management that would replace or eliminate conservation. The first narrative I present here highlighted the discourse that

production provides important conservation benefits to public land that preservation cannot. In this narrative, a ranching woman used the examples of ranchers providing water for wildlife, range developments and membership to conservation groups as evidence of this point.

*"All these places on the ranch where water's been running, and there's been storage of water making it available for the wildlife, you know we're in the driest part of the desert. We get like, 8-10 inches of rain a year, and if it weren't for the water there wouldn't be any wildlife, we've got mule deer. I mean, they made it a national monument because there are 670 species, and most of them are right in the pasture where we have our cattle. So. It's a power play against people who are just trying to do what they do. And these [ranching] people do love the land because you look at the Natural Resources Conservation District, who's in it? It's all ranchers. And what's it about? It's about getting this water out here, and here and here, so that your cow herd isn't all bunched up here."*

In second narrative of the conservation vs. preservation paradigm contradiction, below,

a woman described the impact of wilderness and other designations that limit recreational or hunting access to the public on lands on more accessible areas, often those public lands leased for grazing:

*"I can safely say, well more than 3 quarters [of our state] is federally managed. A high percentage of that is limited access, either because it's military or it's Indian reservations, or it's wilderness designation, or it's wilderness study area, or it's primitive area, or it's a national conservation area, or it's a wildlife refuge, and all of those have restrictions on access. What happens when you restrict, you call off limits, this and that and this, a high percent is, you are ever shrinking the accessible area. The impact on the accessible areas becomes excessive. And the result is there's clamor for shutting off the over-impacted area which further shrinks the pool and as you shrink it and as [the city] grows, which it did, massively, in the 90s, you increase the desire for recreational opportunity, and you decrease the available space. Well, that's a big problem, because [public lands with grazing permits are] part of the ever-shrinking pie that has access."*

**b.) Contradictions between rangeland management traditions.** Ten other narratives described contradicting discourses about the management practices of ranchers. In the data from two of these narratives (presented below) two women explain different ranch management paradigm contradictions. One describes the contradiction between two traditions of

rangeland management, the Holistic Resource Management school of thought, and the more traditional rangeland management paradigm associated with the mainstream rangeland ecology academic community:

*“And we have, we continue to this day to keep up to point on the changes that are going on in Holistic Management and some of the outlying groups that are picking up on [Alan Savory’s] work and I will tell you I continue to be so saddened that it’s so hard for the universities to just step over here and say let’s really embrace this and look at it. And I think for that reason in my family even though we were all [students of the land grant university]. The Extension Service and what they had to offer has come a long way from when I first was married and when we were first doing this. Because they were so irrelevant. They were so far behind the times. They couldn’t offer you anything...But anyway so that’s been a big change over time but back to the holistic management I mean it’s so simple, it’s just mind bogglingly huge.”*

The second narrative described the dichotomy between independently-minded ranchers and the interviewee’s vision for the future of range management. This rancher’s idea was to organize community scale pasture rotations that would take place from year to year on a landscape scale:

*“No I think ranches will have to get bigger. I mean I would love to be able to have this ranch with absolutely livestock free for probably two years. And then come back with a big bunch of cattle. But that is going to be very hard to do until ranches get bigger which I think they will, and you get rid of that independence of like, well, he won’t take care of my cows well enough to have them. You know, that kind of mentality is still out there.*

*“[When we put several ranches together into a community rotation] then [each ranch] gets to rest for the next two years and you’ve got the cattle and so say you pick five ranches and out of the five ranches one of them’s going to sit at least for a full year. And then you start to build a, you start to build a [community rotation]. It comes back to the personality deal. You got to really, you got to really trust somebody to take care of your cows and calves, and so they wind up, how do you form that kind of business?”*

In the narrative analyzed in this study, these discourses around conservation paradigms and ranching traditions illustrate important changes and how these changes are perceived in ranching culture. The “preservation as conservation” discourse threatens the ranching way of life for ranchers who are dependent upon public lands grazing leases in

the Southwest. At the same time, ranchers maintain that economic and social ties to these public rangelands are a greater incentive for conservation, and that production goals align well with conservation goals on public lands. The second set of contradictions illustrate the how innovation and management changes practiced by ranchers may be inhibited by more some of the more traditional ideologies of ranching culture.

### ***Future of the way of life vs. Choice***

Finally, two conflicting discourses about the future of the family ranch emerged in 6 narratives. The women described the importance of the way of life and that it should be preserved, but also explained that future generations should have the freedom to make decisions about going into or staying in the industry, and so the future of the ranching way of life is left unresolved. Women took great strides to ensure that future generations were included in both the technical and cultural aspects of ranching. Sandra summarized the cultural knowledge as follows:

*"It involves the fact that ranching is not a job. It's a culture. Some urban kid cannot say, hey, I'd like to be a rancher. It's absorbed, how you move those cows, how do you know where to move when the gates open and the herd is, it's almost a 6<sup>th</sup> sense, and an instinct. Our kids learned more [than our grandchildren have learned]. Will our grandkids learn it? They won't learn it from their parents, their parents are in Los Angeles.*

*"You don't go get a book on ranching and say, you know... You don't just learn what chaps and spurs and cow are, there's a whole way of how you deal with people you pass on the road, with how you interact with your neighbors. What you celebrate, what you ask about. What you don't ask about. How many cows do you have? You think, no no, but it's the first thing that comes out of the mouth of an urban person, [but] you do not say how many do you have. I would not go to you and say, how much [money] do you have in your bank account?"*

This theme of passing the ranching way of life on is further explored in Chapter 2, but in short, this technical and cultural knowledge was linked to a discussion of the importance of the future of ranching in the interviews I analyzed. In her interview, Sandra also



maintained that her children should be able to choose to come back to the ranch, and that she and her husband did not expect or pressure them to return to the ranch. She described the off-ranch careers of her grown children and speculated whether they might chose to come back to the ranch in the future.

Fay's interview provided another example of this contradiction. Fay explained what she and her husband had done to instill ranching technical and cultural knowledge in their children, then expressed concern for the future of young people in ranching:

*"I am worried that there are so few young people coming along. That's a big worry to me. I want... but I understand it, too. Because it's tough. I worry about the mentality of maybe some of the older people in ranching. I want them to be like us and think more about passing your ranches down, and hanging on to that culture rather than selling out when they get old."*

Fay also described the importance of choice, and the importance of the freedom to choose to be in ranching. She described why she and her husband were not interested in putting the development rights of their private land in a conservation easement. She wanted their heirs to have the option to sell the ranch for development if they one day chose to leave ranching:

*"And that I think is a big thing that faces ranching families is that, you know, if you put anything in a conservation easement for perpetuity, you don't know if you're doing what your kids are going to want done, or not."*

These women's concern that few young people were starting out in ranching is supported by United States Agricultural Census data (2007), which has recorded a steady increase in the age of primary operators of American farms since 1978 and a 14% decrease in the primary operators under the age of 45 between 2002 and 2007. The fastest growing group of operators is those who are 65 and older, and New Mexico and Arizona have the highest percentages of this eldest group of operators (Ag Census, 2007). As farm operators age the choice of the next generation to leave or stay on the family ranch will have

implications not just for the operation of specific ranches but for the continuity of ranching's technical and cultural knowledge. This contradiction suggests that further work is needed to understand how ranching knowledge is transferred and created across generations. We also need to explore ranch career decision processes and from where new ranch operators originate.

### **Summary and Recommendations**

I have asked how women ranchers in the Southwest experience resilience. To do this, I examined women's life-histories for material-discursive contradictions and described three such contradictions--between community involvement and independence, financial hardship and ranching as a livelihood, and ranching responsibilities and gender discourses. The material-discursive contradictions illustrate that women adapt to changes in material realities, despite contradicting beliefs in ranching cultures about those practices. Throughout their lives, the women described taking on roles, developing skills and seeking financial opportunities to adjust to the uncertain material realities of ranching. Sometimes, as in the case of the contradiction between the financial realities of ranching versus the way of life, the beliefs and values of the ranching culture were a driver of the change in women's material practices. But when women found gendered discourses out of sync with their material needs, they took agency and defied the discourse.

I have also sought to examine women's experiences with resilience by examining discursive-discursive contradictions that reveal changes in social and cultural meanings in ranching. The analysis describes three such contradictions between epistemologies, management paradigms and visions of the future of the ranching way of life. These contradicting discourses in ranching reveal changes in women's beliefs about ranching

practices. The women also faced contradicting discourses about what is appropriate in the face of socio-economic, cultural and broader social change. These discursive-discursive contradictions reveal that there are still many unresolved issues at hand for the ranching way of life.

### **Rangeland SES resilience?**

Whether these ranching women, and the rangeland social-ecological systems in which they live, are resilient depends upon the perspective of the analysis. From an objective arm's length, one might see the unresolved and conflicting beliefs about ranching livelihoods found in the discursive-discursive contradictions as evidence that ranching systems are not resilient because the ranchers failed to adapt to scientific epistemologies or changing land management paradigms or to take greater action to ensure the permanence of ranching land use or their family businesses. These failures could reflect an inability or unwillingness to adapt to broader social changes in land management and conservation ideas. But from an emic perspective, contradictions in ranching practices (both material and discursive) reveal how change potentially threatens the ranching way of life. Consider the example of contradiction between range management paradigms identified in this study. From an emic view, changing management paradigms might also change the ranching way of life beyond recognition. The preservation-as-conservation paradigm is a threat that would put ranchers out of business, while ranchers maintain that being on the land-economically, emotionally and even spiritually tied to a specific place and ecosystem might be the best incentive for sustainable management. What an outsider might see as non-innovative behavior is, from rancher's point of view, an effort to maintain a livelihood that has great meaning to individuals, families and communities.

However, this approach does not justify land manager maladaptation or failure (or refusal) to innovate. Instead, by exploring the contradictions in ranching practices I seek to understand system dynamics from the rancher's perspective. This approach specifically indicates how, to whom, and through which material and discursive practices ranchers respond to broader biophysical, social and economic forces. In the contradiction of ranch management paradigms and those contradictions around gendered discourses, we see where ranchers navigate changes in broader social and scientific management realities while maintaining ranching tradition and culture. Ranching women described creating adaptive change in gender discourses and management paradigms, though this change was sometimes slow and difficult. The contradictions also illustrate what these changes mean to stakeholders in rangeland systems and where changes in practices may meet cultural or individual resistance. Below I discuss how these findings inform resilience research, policy and extension that foster resilience in social-ecological systems.

#### **Implications for SES research and extension**

By adopting Crane's (2010) emic approach, a narrative methodology and a feminist analytical framework, I was able to document and analyze the contexts of rancher's decision-making and experiences with resilience that would not be accessible through an external analysis (an etic approach) or survey research. This study supports the need to gather the voices of a wide range of rangeland stakeholders in resilience research and to do so with methodologies that help researchers build partnerships with local land managers. This includes seeking perspectives from individual members of ranch families rather than gathering the voice of a single primary operator or a male head-of-household to understand land manager decision-making (Fulton & Vanclay, 2011). Diverse perspectives,

epistemologies and world-views challenge social-ecological researchers to incorporate experiences of difference in research and outreach recommendations as we seek to wed ecological and social theory to understand and manage change in social-ecological systems.

The contexts of women's experiences of resilience have implications for resilience management in rangeland SES systems because these contexts mediate how local knowledge and decision-making are applied by those who earn their living on the rangelands of the Southwest. While SES scholars have been interested in understanding cognitive, institutional and broader social decision-making processes, context is under-explored. Specifically, a major emphasis in resilience literature related to human decision-making and adaptation has been on the design and function of institutions (Bestelmeyer & Briske, 2012; Brown, 2013; Jackson et al., 2012). At the same time, decision-making studies in rangeland and agricultural science have largely focused on innovation adoption behaviors, including rangeland research that examines which demographic groups of ranchers make which innovation-adoption decisions and on what timescales relative to one another (Lacey, Wight, & Workman, 1985; Coppock & Birkenfeld, 1999; Kelley, 2010; Rogers, 1995). Both the institutional and innovation-adoption approaches have a limited capacity to explain rangeland resource management and decision-making patterns (Cote & Nightingale, 2011; Coppock & Birkenfeld, 1999; Kelley, 2010; Rogers, 1995). Cote & Nightingale, (2011) and Adger, (2000) argue that an analysis of the capacity to adapt to change should be framed with an understanding of cultural and historical contexts (Cote & Nightingale, 2011, pg 480) and that gender is an important lens through which to understand the power dynamics, subjective experiences and world-views that contextualize the decision-making of SES stakeholders (483). By examining the

experiences of more diverse, poorly understood or marginalized stakeholders in rangeland SES systems, resilience scholars can better understand the social processes that shape how institutional rules are applied because managers' adaptive action is situated within specific geographical, historical, cultural and gendered contexts.

The rationalities of different stakeholders in rangeland social-ecological systems may be complex and contradictory, as they were in the narratives analyzed for this study. Outreach and extension programming for resilience management efforts should consider diverse epistemological positions and world-views, contexts of resource management that have not gained much attention in resilience literature (Cote & Nightingale, 2011). The context of land managers' knowledge and their world-view may be as much of a barrier to innovation and adaptation as lack of knowledge (Cote & Nightingale, 2011). Consider the discursive-discursive contradictions in which ranchers expressed concern that their local knowledge was not considered to be legitimate to scientists, or in which emerging shifts in range management paradigms created tensions between individual ranchers or ranchers and rangeland professionals. These contradictions may inform rangeland extension programming as to which discourses create barriers to innovation and where changes are emerging in ranching's technical and cultural practices relevant to current research innovations.

The contradictions may also provide an opportunity to bridge gaps between rangeland system stakeholders when disagreement occurs between epistemologies, or theories of academic, professional and local knowledge. Outreach programing that gives attention to these discourses and emerging changes in ranching will be better attuned to the processes with which land managers approach decision-making. Finally, to shape less prescriptive

resilience management extension informed by gendered contexts, outreach efforts should support women rangeland decision-makers in adaptive management at specific stages in their lifetimes and around localized material-discursive or discursive-discursive contradictions.

In sum, the complex, contradictory and gendered experiences of resilience examined in this study can help inform resilience management of rangeland social-ecological systems by providing insight into the social processes and experiences that guide rancher decision-making. Research, policy and extension efforts that explore and incorporate the context of decision-maker knowledge are better positioned to support land manager adaptation and social-ecological system resilience. Rather than seeking to create and manage one coherent “story” of social-ecological system resilience from a single perspective (Ahlborg & Nightingale, 2012), attention to women’s life-histories situates resilience within the context of the many stories of women’s experiences within ranching lives and livelihoods.

## REFERENCES

- Abel, N., Ross, H., & Walker, P. (1998). Mental models in rangeland research, communication and management. *Rangeland Journal*, 20, 77–91.
- Adger, W. N. (2000). Social and ecological resilience: Are they related? *Progress in Human Geography*, 24(3), 347–364.
- Ahlborg, H., & Nightingale, A. J. (2012). Mismatch between scales of knowledge in Nepalese forestry: Epistemology, power, and policy implications. *Ecology and Society*, 17(4), 16.
- Alston, M. (2000). *Breaking Through the Grass Ceiling: Women, Power and Leadership in Agricultural Organisations* (reprint.). Harwood Academic Publishers.
- Alston, M. (2010). Gender and climate change in Australia. *Journal of Sociology*, 47(1), 53–70. doi:10.1177/1440783310376848
- Arora-Jonsson, S. (2011). Virtue and vulnerability: Discourses on women, gender and climate change. *Global Environmental Change*, 21(2), 744–751.  
doi:10.1016/j.gloenvcha.2011.01.005
- Barbercheck, M., Brasier, K., Kiernan, N. E., Sachs, C., Trauger, A., Findeis, J., ... Moist, L. (2009). Meeting the extension needs of women farmers: A perspective from Pennsylvania. *Journal of*, 47(3).
- Barbieri, C., Mahoney, E., & Butler, L. (2008). Understanding the nature and extent of farm and ranch diversification in North America. *Rural Sociology*, 73(2), 205–229.
- Berkes, F. (2007). Community-based conservation in a globalized world. *Proceedings of the National Academy of Sciences*, 104(39), 15188.



- Bestelmeyer, B. T., & Briske, D. D. (2012). Grand challenges for resilience-based management of rangelands. *Rangeland Ecology & Management*, 65(6), 654–663. doi:10.2111/REM-D-12-00072.1
- Bradford, D., Reed, F., LeValley, R. B., Campbell, C., & Kossler, S. (2002). Livestock grazing on the national forests: Why continue to do it? *Rangelands*, 24(2), 3–11.
- Briggeman, B. C., Gray, A. W., Morehart, M. J., Baker, T. G., & Wilson, C. A. (2007). A new U.S. farm household typology: Implications for agricultural policy. *Review of Agricultural Economics*, 29(4), 765–782. doi:10.1111/j.1467-9353.2007.00386.x
- Briske, D. D., Sayre, N. F., Huntsinger, L., Fernandez-Gimenez, M., Budd, B., & Derner, J. D. (2011). Origin, persistence, and resolution of the rotational grazing debate: Integrating human dimensions into rangeland research. *Rangeland Ecology & Management*, 64(4), 325–334. doi:10.2111/REM-D-10-00084.1
- Briske, David D., Fuhlendorf, S. D., & Smeins, F. E. (2005). State-and-transition models, thresholds, and rangeland health: A synthesis of ecological concepts and perspectives. *Rangeland Ecology & Management*, 58(1), 1–10.
- Brockington, D. (2001). Women's income and the livelihood strategies of dispossessed pastoralists near the Mkomazi Game Reserve, Tanzania. *Human Ecology*, 29(3), 307–338.
- Brown, K. (2013). Global environmental change I: A social turn for resilience? *Progress in Human Geography*. doi:10.1177/0309132513498837
- Brunson, M. W. (2012). The elusive promise of social-ecological approaches to rangeland management. *Rangeland Ecology & Management*, 65(6), 632–637. doi:10.2111/REM-D-11-00117.1

- Campbell, L. M., & Vainio-Mattila, A. (2003). Participatory development and community-based conservation: Opportunities missed for lessons learned? *Human Ecology*, 31(3), 417–437.
- Charmaz, K. (2006). *Constructing grounded theory*. Los Angeles: Sage.
- Clark, T., & Wallace, R. L. (2002). Understanding the human factor in endangered species recovery: An introduction to human social processes. *Endangered Species Update*, 19(4), 87–94.
- Coppock, D. L., Desta, S., Tezera, S., & Gebru, G. (2011). Capacity building helps pastoral women transform impoverished communities in Ethiopia. *Science*, 334(6061), 1394–1398.
- Coppock, D. Layne, & Desta, S. (2013). Collective action, innovation, and wealth generation among settled pastoral women in Northern Kenya. *Rangeland Ecology & Management*, 66(1), 95–105. doi:10.2111/REM-D-11-00211.1
- Coppock, D.L., & Birkenfeld, A. H. (1999). Use of livestock and range management practices in Utah. *Journal of Range Management*, 52(1), 7–18.
- Cote, M., & Nightingale, A. J. (2011). Resilience thinking meets social theory: Situating social change in socio-ecological systems (SES) research. *Progress in Human Geography*, 36(4), 475–489. doi:10.1177/0309132511425708
- Crane, T. A. (2010). Of models and meanings: cultural resilience in social-ecological systems. *Ecology and Society*, 15(4), 19.
- Cruikshank, J. (2001). Glaciers and climate change: Perspectives from oral tradition. *Arctic*, 54(4), 377–393.

- Daly, K. J. (2007). *Qualitative methods for family studies and human development*. Thousand Oaks, CA: Sage.
- Farmer-Bowers, Q. (2010). Understanding the strategic decisions women make in farming families. *Journal of Rural Studies*, 26(2), 141–151.
- Farmer-Bowers, Q., & Lane, R. (2009). Understanding farmers' strategic decision-making processes and the implications for biodiversity conservation policy. *Journal of Environmental Management*, 90(2), 1135–1144.
- Fernandez-Gimenez, M. E., Huntington, H. P., & Frost, K. J. (2007). Integration or co-optation? Traditional knowledge and science in the Alaska Beluga Whale Committee. *Environmental Conservation*, 33(04), 306.  
doi:10.1017/S0376892906003420
- Freilich, J. E., Emlen, J. M., Duda, J. J., Freeman, D. C., & Cafaro, P. J. (2003). Ecological effects of ranching: A six-point critique. *BioScience*, 53(8), 759.
- Fulton, A., & Vanclay, F. (2011). Enabling change in family farm businesses. In *Changing land management* (pp. 95–106). Collingwood, Victoria, Australia: CSIRO.
- Geiger, S. N. G. (1986). Women's life histories: Method and content. *Signs*, 11(2), 334–351.
- Glaser, M. (2006). The social dimension in ecosystem management: Strengths and weaknesses of human-nature mind maps. *Human Ecology Review*, 13(2), 122.
- Guba, E., & Lincoln, Y. (1994). Competing paradigms in qualitative research. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). Thousand Oaks, CA: Sage.
- Gunderson, L. H. (2000). Ecological resilience—in theory and application. *Annual Review of Ecology and Systematics*, 31, 425–439.

- Harding, S. (1986). *The science question in feminism*. Ithaca, NY: Cornell University Press.
- Holling, C. S., & Meffe, G. K. (1996). Command and control and the pathology of natural resource management. *Conservation Biology*, 10(2), 328–337.
- Jackson, L. E., Pulleman, M. M., Brussaard, L., Bawa, K. S., Brown, G. G., Cardoso, I. M., ... Lavelle, P. (2012). Social-ecological and regional adaptation of agrobiodiversity management across a global set of research regions. *Global Environmental Change*, 22(3), 623–639.
- Järviluoma, H., Moisala, P., & Vilkkö, A. (2003). *Gender and qualitative methods*. Thousand Oaks, CA: Sage.
- Johnson, K. M. (2011). The continuing incidence of natural decrease in American counties. *Rural Sociology*, 76(1), 74–100. doi:10.1111/j.1549-0831.2010.00036.x
- Kelley, W. K. (2010). *Rangeland managers' adoption of innovations, awareness of innovations, awareness of state and transition models, and management of bromus tectorum: A survey of ranchers and natural resource professionals in Wyoming and Colorado*. Colorado State University, Fort Collins, Colorado.
- Kleihauer, S., Stephens, C., Hart, W., & Stripling, C. (2013). How six women deans of agriculture have attained their leadership role: A qualitative study. *Journal of Agricultural Education*, 54(3), 15–27. doi:10.5032/jae.2013.03015
- Kleinbooi, K. (2013). Reshaping women's land rights on communal rangeland. *African Journal of Range & Forage Science*, 30(1-2), 17–21. doi:10.2989/10220119.2013.797027

- Knapp, C. N., & Fernandez-Gimenez, M. E. (2009). Knowledge in practice: Documenting rancher local knowledge in northwest Colorado. *Rangeland Ecology & Management*, 62(6), 500–509. doi:10.2111/08-175.1
- Knapp, C. N., Fernandez-Gimenez, M., Kachergis, E., & Rudeen, A. (2011). Using participatory workshops to integrate state-and-transition models created with local knowledge and ecological data. *Rangeland Ecology & Management*, 64(2), 158–170. doi:10.2111/REM-D-10-00047.1
- Kuhn, T. S. (2012). *The structure of scientific revolutions* (Fourth.). Chicago: University of Chicago Press.
- Lacey, J. R., Wight, J. R., & Workman, J. P. (1985). Investment rationale for range improvement practices in eastern Montana. *Journal of Range Management*, 38(1), 2–6.
- Lielblich, A., Tuval-Mashiach, R., & Zilber, T. (1998). A new model for classification of approaches to reading, analysis and interpretation. In *Narrative Research: Reading, Analysis and Interpretation* (Vol. 47, pp. 1–20). Thousand Oaks, CA: Sage Publications.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. New York: Sage.
- MacDonald, G. M. (2010). Water, climate change, and sustainability in the Southwest. *Proceedings of the National Academy of Sciences*, 107(50), 21256–21262. doi:10.1073/pnas.0909651107
- Musacchio, L. R. (2009). The scientific basis for the design of landscape sustainability: A conceptual framework for translational landscape research and practice of designed

- landscapes and the six Es of landscape sustainability. *Landscape Ecology*, 24(8), 993–1013. doi:10.1007/s10980-009-9396-y
- Nelson, V., Meadows, K., Cannon, T., Morton, J., & Martin, A. (2002). Uncertain predictions, invisible impacts, and the need to mainstream gender in climate change adaptations. *Gender & Development*, 10(2), 51–59.
- O'Shaughnessy, S., & Krogman, N. T. (2011). Gender as contradiction: From dichotomies to diversity in natural resource extraction. *Journal of Rural Studies*, 27(2), 134–143. doi:10.1016/j.jrurstud.2011.01.001
- Ostrom, E. (2009). A general framework for analyzing sustainability of social-ecological systems. *Science*, 325(5939), 419–422. doi:10.1126/science.1172133
- Pilgeram, R. (2007). “Ass-kicking” women: Doing and undoing gender in a US livestock auction. *Gender, Work & Organization*, 14(6), 572–595.
- Pugh, M. (2012). Are federal livestock grazing permittees and endangered species? The future of public lands grazing in Montana under the Endangered Species Act. *Public Land and Resources Law Review*, 33(143), 143–174.
- Rocheleau, D., Thomas-Slayter, B., & Wangari, E. (1996). Gender and environment: a feminist political ecology perspective. In D. Rocheleau, B. Thomas-Slayter, & E. Wangari (Eds.), *Feminist political ecology: global issues and local experience* (pp. 3–26). New York, NY: Routledge.
- Rogers, E. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.
- Rowe, H. I., Bartlett, E. T., & Swanson, L. E. (2001). Ranching motivations in two Colorado counties. *Journal of Range Management*, 54(4), 314–321.

- Salvo, M. N. (1998). The declining importance of public lands ranching in the West. *Public Land and Resources Law Review*, 19, 103-112.
- Sayre, N. F., deBuys, W., Bestelmeyer, B., & Havstad, K. M. (2012). "The range problem" after a century of rangeland science: New research themes for altered landscapes. *Rangeland Ecology & Management*, 65(6), 545-552. doi:10.2111/REM-D-11-00113.1
- Sayre, N. F., McAllister, R., Bestelmeyer, B., Moritz, M., & Turner, M. D. (2013). Earth stewardship of rangelands: coping with ecological, economic, and political marginality. *Frontiers in Ecology and the Environment*, 11(7), 348-354.  
doi:10.1890/120333
- Schwandt, T. (1994). Constructivist, interpretivist approaches to human inquiry. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 118-137). Thousand Oaks, CA.
- Smith, A. H., & Martin, W. E. (1972). Socioeconomic behavior of cattle ranchers, with implications for rural community development in the West. *American Journal of Agricultural Economics*, 54(2), 217-225.
- Sorice, M. G., Conner, J. R., Kreuter, U. P., & Wilkins, R. N. (2012). Centrality of the ranching lifestyle and attitudes toward a voluntary incentive program to protect endangered species. *Rangeland Ecology & Management*, 65(2), 144-152. doi:10.2111/REM-D-10-00144.1
- Squire, C. (2008). Experience-centered and culturally-oriented approaches to narrative. In M. Andrews, C. Squire, & M. Tamboukou (Eds.), *Doing narrative research* (pp. 41-63). Thousand Oaks, CA: Sage.

- Tanaka, J. A., Torell, L. A., & Rimbey, N. R. (2005). Who are public land ranchers and why are they out there? In *Western Economics Forum* (Vol. 4).
- Torell, L. A., & Bailey, S. A. (2000). Is the profit motive an important determinant of grazing land use and rancher motives? *Journal of Agricultural and Resource Economics*, 25, 725–725.
- Trauger, A. (2001). Women farmers in Minnesota and the post-productivist transition. *The Great Lakes Geographer*, 8(2), 53–66.
- Trauger, A., Sachs, C., Barbercheck, M., Kiernan, N. E., Brasier, K., & Findeis, J. (2008). Agricultural education: Gender identity and knowledge exchange. *Journal of Rural Studies*, 24(4), 432–439.
- Ültanır, E. (2012). An epistemological glance at the constructivist approach: Constructivist learning in Dewey, Piaget, and Montessori. *International Journal of Instruction*, 5(2), 195–212.
- Walker, B. (2006). *Resilience thinking sustaining ecosystems and people in a changing world*. Washington: Island Press.
- Weiler, K. (1991). Freire and a feminist pedagogy of difference. *Harvard Educational Review*, 61(4), 449–475.
- White, E. M., Morzillo, A. T., & Alig, R. J. (2009). Past and projected rural land conversion in the US at state, regional, and national levels. *Landscape and Urban Planning*, 89(1-2), 37–48. doi:10.1016/j.landurbplan.2008.09.004
- Williams, J. (1992). *The invisible farmer: A summary report on Australian farm women*. Canberra: Commonwealth Department of Primary Industries and Energy.



Young, I. M. (1994). Gender as seriality: Thinking about women as a social collective. *Signs*, 19(3), 713–738.

## CHAPTER 4

### CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RANGELAND SOCIAL- ECOLOGICAL SYSTEMS RESEARCH

Women are important but under-explored decision-makers in Western rangeland social-ecological systems which they depend upon for their livelihoods and way of life. The aim of this thesis is to address a gap in the scientific literature related to women's roles in rangeland management decision-making and rangeland SES resilience. Neither gender nor range scholars have explored the role American ranching women play in sustainable rangeland management, in ranching and agricultural social systems, or how those gendered experiences impact ranching practices. By combining theories from rangeland ecology and SES theory with feminist methodologies, this thesis addresses two research questions: 1) how do ranching women experience change on rangelands over the course of their lifetimes?; and 2) how do ranching women experience resilience in ranching? I recorded life-history interviews of 19 women ages 28 to 85 who live and ranch in three communities in Arizona and New Mexico and analyzed narratives, or large stories from the transcripts, for insights into the research questions.

In Chapter 2, I discuss the results of the narrative analysis based on the first research questions, which provide insight into how women experience change, exploring 8 common themes: 1) learning from older generations, 2) finding a personal career path, 3) operating livestock businesses, 4) breaking gender barriers, 5) leading communities, 6) aging and going on alone, 7) living close to the land, and 8) passing the ranching tradition to the next generation. These findings suggest that women contribute to rangeland resilience through their leadership and diverse life-long career paths in ranching in the face of economic

hardship and ecological challenges. These 8 common themes provide details as to the context of rancher's local ecological knowledge and decision-making processes. This context is important because it mediates rangeland decision-making, and makes the ranching way of life meaningful to ranching women.

Chapter 3 examines the same life-history interview transcripts to understand three questions: First, what are ranching women's perspectives of how they construct and maintain livelihoods that support both a living and a way of life in ranching when they face social, ecological and economic change? Second, can examining the intersection between women's material practices in ranching (related to physical or technical practices such as family-ranch labor divisions) and the discourse around how ranchers should act (related to socio-cultural meanings and ideologies) help us understand how women experience resilience? Third and finally, do contradictory discourses in ranching reveal changes in women's beliefs about technical and cultural ranching practices?

The results of this analysis comprised 46 narratives detailing contradictions between material and discursive practices in ranching, including contradictions between practices related to community involvement, financial decisions ranch management decisions and gendered ranching roles. These contradictions demonstrate how material changes (such as changes in climate or market shifts, sources of income and ranching operation labor needs) relate to ranchers' discourse (their beliefs, values, meanings and perceptions of the practices associated with those changes).

Chapter 3 also presents discursive contradictions from the narratives. These contradictions were described in 25 narratives from the interviews. Discursive-discursive contradictions were sorted into the following categories: contradictions between

epistemologies of ranchers and scientists, between management paradigms, and visions of the future of ranching. While the material-discursive contradictions illustrate how the women adapted to material changes, the discursive-discursive contradictions reveal how long-standing beliefs about the ranching livelihood are challenged by shifting socio-economic realities and cultural dynamics in ranching. Examining these contradictions as indicators of change sheds light on how women experience resilience because they reveal the context of change in ranching practices and identify where ranching culture and discourse may resist change. Context is important because it frames how management rules and knowledge are applied to SESs by local land managers. Understanding of context can inform and improve research, extension and policy that support adaptive decision-making, and communication across stakeholder groups in rangeland SESs.

This thesis serves to open a dialogue between the field of rangeland science and the often under-examined social positions or identities within rangeland communities. This dialogue is critical to increasing our understanding of social change in rangeland social-ecological systems and to bridging the gap between researchers and locals in rangeland systems. The issues of sustainable rangeland management discussed in this thesis are not specifically “women’s issues,” but are matters about which women are greatly concerned and on which they take action in their personal and professional lives. Continued engagement with women and with diverse rangeland stakeholders may provide an important contribution to SES theory and research. Further research is needed to examine the impact of specific climatic and social disturbances on women ranchers. Additional research is also needed to understand decision-making processes related to ranchland succession and how cross-generational learning might foster adaptation and resilience. We

also need to explore how research institutions and public land management agencies can best support the decision-making roles of women ranchers throughout their lives, whether these women are starting out in ranching, at the peak of their careers, or managing a ranch alone for the first time in their later years. The qualitative methodology used in this study provided theoretically, rather than statistically, generalizable results but did provide a unique opportunity to bridge social and ecological concepts in SES research and explore nuanced perspectives of SES system resilience (Squire, 2008).

This study's findings suggest that future research in this area should continue to work with social theory. Rangeland researchers can benefit from greater engagement with social theory because critical and feminist theory and related qualitative and feminist methodologies challenge us to see the world in a different way and to consider whose ways of knowing and which knowledge we privilege in our work. Social theory also helps researchers question our understanding of social power, cultures of domination and the role of research in every-day life (Anzaldua, 2012). For example, consider the contradiction discussed in Chapter 3 related to the conflict between rancher and scientific epistemologies. Feminist theory, pedagogy and methods of inquiry, including critical feminist and race theory, provide an opportunity to explore diverse identities, theories of knowledge and knowledge systems and to move beyond the dualism of this contradiction. This includes the multiple "stories" of ecosystem change discussed by (Ahlborg & Nightingale, 2012; Anzaldua, 2012; hooks, 2003; Pruitt, 2007; Rocheleau et al., 1996). This theory is important to an existing body of literature examining the connection between women and natural resource system management and education (Fortmann & Rocheleau, 1985; Liepins & Schick, 1998; Rocheleau & Edmunds, 1997).

Finally this thesis suggests that we need more exploration of the gendered perspectives of people in the livestock and rangeland management fields. This study focused on ranching practices, but the women in this study described taking on a number of specific material practices in ranching that may be linked to gender norms, which I describe in Chapter 2. We know that agricultural innovations, like the plow, impact gender norms (Alesina, Giuliano, & Nunn, 2013). The ranching women interviewed in this study described their roles as empowered leaders and decision-makers in their communities, industry and within their families. Future research might explore the connection between norms about gender in ranching cultures and women's skilled labor such as horseshoeing, heavy equipment operation or training horses. We need to explore the connection between women's material practices and their access to social and economic power at a greater depth (Jackson, 2001). Analysis of contradictions may be a useful framework for exploring how gender discourses relate to the power women obtain in the material aspects of their daily lives.

## REFERENCES

- Ahlborg, H., & Nightingale, A. J. (2012). Mismatch between scales of knowledge in Nepalese forestry: Epistemology, power, and policy implications. *Ecology and Society*, 17(4), 16.
- Alesina, A., Giuliano, P., & Nunn, N. (2013). On the origins of gender roles: Women and the plough. *The Quarterly Journal of Economics*, 128(2), 469–530.  
doi:10.1093/qje/qjt005
- Anzaldúa, G. (2012). *Borderlands/La frontera: The New Mestiza* (4th ed.). Online: Aunt Lute Books.
- Convery, I., & O'Brien, V. (2012). Gypsy-Traveller narratives: Making sense of place. *Narrative Inquiry*, 22(2), 332–347.
- Fortmann, L., & Rocheleau, D. (1985). Women and agroforestry: Four myths and three case studies. *Agroforestry Systems*, 2(4), 253–272.
- hooks, b. (2003). *Teaching community: A pedagogy of hope*. New York, NY: Routledge.
- Jackson, S. (2001). Why a materialist feminism is (still) possible—and necessary. In *Women's Studies International Forum* (Vol. 24, pp. 283–293). Retrieved from <http://www.sciencedirect.com/science/article/pii/S027753950100187X>
- Liepins, R., & Schick, R. (1998). Gender and education: Towards a framework for a critical analysis of agricultural training. *Sociologia ruralis*, 38(3), 285–302.
- Pruitt, L. R. (2007). Toward a feminist theory of the rural. *Utah Law Review*, 2007(2), 421–488.
- Rocheleau, D., & Edmunds, D. (1997). Women, men and trees: Gender, power and property in forest and agrarian landscapes. *World Development*, 25(8), 1351–1371.

- Rocheleau, D., Thomas-Slayter, B., & Wangari, E. (1996). Gender and environment: A feminist political ecology perspective. In D. Rocheleau, B. Thomas-Slayter, & E. Wangari (Eds.), *Feminist political ecology: global issues and local experience* (pp. 3–26). New York, NY: Routledge.
- Sayre, N. F. (2004). Viewpoint: The need for qualitative research to understand ranch management. *Rangeland Ecology & Management*, 57(6), 668–674.
- Squire, C. (2008). Experience-centered and culturally-oriented approaches to narrative. In M. Andrews, C. Squire, & M. Tamboukou (Eds.), *Doing narrative research* (pp. 41–63). Thousand Oaks, CA: Sage.



## APPENDIX A:

### BIOGRAPHICAL INTERVIEW QUESTIONS

Hello, my name is Hailey Wilmer. I am a graduate student at Colorado State University and am working with several range scientists on a research project to understand how ranchers make decisions about adopting innovations on their ranches. For example we are interested in understanding the decision-making process and roles of family members in deciding whether or not to adopt targeted grazing. Targeted grazing is a management system that uses grazing of domestic animals to improve ecosystem services provided by rangelands. As part of this project, we are conducting interviews to record the biographies of ranch women. We are using biographies in order to better understand the roles that women play in enacting change on ranchlands and how those roles have changed over the course of their lifetimes.

You have been asked to participate in this interview to share your thoughts and perceptions of your role in ranching and how decisions are made on your ranch. You will also be asked what changes you have observed related to women's roles in decision-making over the course of your lifetime.

Before we begin, would it be okay if I voice record our discussion? Do you have any questions before we begin?

#### **Biographical Interview Questions:**

This interview is designed to gather your biography as a ranching woman. We are particularly interested in learning about your roles in decision-making on the ranch, what changes you have observed with your family, the ranch, and the ranching business throughout your career and lifetime.

Suggested guiding questions:

### **Early Life and Background**

1. When were you born and where did you grow up?
2. Describe your parents and siblings.
3. How did you come to be a rancher, and when?
4. Why did you become a rancher?
5. Have you always wanted to be a rancher?
6. Are you married? Tell me about your spouse?
7. Do you have children? How old are they? Are they involved in the ranch?
8. Did you go to school? If so what did you study?
9. Tell me about your ranching operation.
10. What is the history of this family on this ranch?

### **Decision-making Roles and Changes**

11. How would you describe your experience as a ranching woman?
12. What is your daily life like here? What role do you play on the ranch?
13. How do you deal with the uncertainties you face in ranching, such as the weather and the markets?
14. What are your goals for your own careers?
15. What are your goals for you family?
16. What are you goals for your ranch?
17. What impact do goals for your family have on the ranch?
18. What is your role in decision-making on the ranch on a daily basis?
19. What is your role in decision-making on the ranch on a long-term basis?
20. Tell me about how your family communicates about ranching roles and decisions.
21. Who makes decisions on the ranch?
22. Can you provide an example of a major change that happened on the ranch? What happened? Who was involved? What was the impact of this change?
23. What major changes have you noticed in terms of rangeland management during your career?
24. What other major ranch management changes have you been part of?
25. Has your ranch adopted any important innovations or technologies during your career?
26. What “rules of thumb” or philosophies help you manage your livestock and rangelands?
27. What role do older generations play in the ranch? How?
28. What role do younger generations play in the ranch? How?

### **The experience of being a rancher**

29. What is the hardest part about being a rancher?
30. What is the best part about being a rancher?
31. Describe your community. What involvement do you have in the community?
32. What are your hopes for the future of this ranch?
33. What challenges do you face as a women rancher?
34. Are there any other concerns or thoughts you would like to share about your role as ranch woman?

APPENDIX B:  
GATEKEEPER RECRUITMENT LETTER



*Knowledge to Go Places*  
Department of Forest and Rangeland Stewardship  
Fort Collins, Colorado 80523-1472 USA  
Telephone (970) 491-6911  
FAX (970) 491-6754  
<http://www.warnercnr.colostate.edu/frs/>

Dear \_\_\_\_\_,

My name is Hailey Wilmer and I am a graduate student at Colorado State University in the Department of Forest and Rangeland Stewardship. In cooperation with Dr. Derek Bailey of New Mexico State University and Dr. Larry Howery at the University of Arizona, my advisor, Dr. Maria Fernandez-Gimenez, and I are working on several related research projects addressing development and adoption of innovative rangeland and livestock management practices. The purpose of this research is to understand how ranchers and agency professionals make decisions to adopt innovative rangeland management techniques, and how rangeland management knowledge is transferred throughout ranching communities in Colorado, New Mexico and Arizona. I am contacting you because I hope to interview ranchers and agency employees in your area to better understand rancher decision-making about rangeland management innovations. I will be in the area \_\_\_\_\_(dates) and would like to work with you to identify and contact ranchers in the community who would be willing to participate in an interview.

This research will give ranchers an opportunity to share their knowledge and provide insight into how to improve development and adoption of new rangeland management techniques. Interviews usually take 1-2 hours, are confidential, and are conducted at a time and place convenient for the interviewee.

We would like to begin interviews in your area \_\_\_\_\_, and would like to talk to you as soon as possible about the feasibility of working with you on the project. Please contact me directly on my cell phone (406) 223-9271 or by email, [hailey.wilmer@colostate.edu](mailto:hailey.wilmer@colostate.edu). You may also contact the Principal Investigator on the project, Dr. Maria Fernandez-Gimenez by phone (970-491-0409) or by email ([maria.fernandez-gimenez@colostate.edu](mailto:maria.fernandez-gimenez@colostate.edu)).

Best Regards,  
Hailey Wilmer  
Graduate Research Assistant

Dr. Maria Fernandez-Gimenez  
Associate Professor

APPENDIX C:  
RESEARCH MEMO, ANALYSIS AND RESULTS FOR COMMON THEMES AND  
CONTRADICTIONS

Data from 19 interviews were analyzed in two rounds. The first interrogated the narratives (big stories) for the common themes. The second round interrogated the same data for contradictions between material and discursive practices and between discursive practices in ranching. The 19 interviews were each given a number. Numbers in the 300s (Arizona), 500s (New Mexico) and 700s (Arizona) each corresponded to separate ranching communities. Interviews are referred to by these numbers in this memo. The results of each step are recorded here, along with least common or deviant cases in the data. Supporting quotes from the data presented here may have been edited for length or grammar if they were copied into a manuscript in the thesis. In the thesis numbers were replaced with pseudonyms for each interview.

**Step 1: Looking for common themes in narratives**

The frequency analysis and the grouping of themes helped me understand which themes were most common in which communities. Themes are denoted in *italics*. Themes were labels assigned to common groupings of similar narratives. Let me explore some patterns from the frequency analysis. Keep in mind that this was the first round of analysis designed to find common themes across the narratives of the interviews. The second round of analysis looked more closely at the data for contradictions in the interviews and dug deeper into each interview. The second round of analysis was more helpful to understand large or very complex themes, such as the most common themes.

Out of a total of 208 narratives identified, 26 narratives described *running a ranch*, or the day-to-day ranch or broader management practices or philosophies of ranching or land management. This theme was the most frequent narrative and within the top 3 most frequent narratives for women in the 300 and 700 communities. The second most frequent theme, *personal career*, included narratives of women's personal career development or interests and labeled 17 narratives. The *pack a lunch*, a theme describing women's roles in passing ranching on the next generation and it included 14 narratives. These frequency rankings suggest that despite a diverse range of ranching backgrounds and roles, women in this study most often told narratives involving ranching activities, the development of their own personal career paths and their roles in passing the culture and values of ranching on to the next generation.

### ***Running a ranch and Changes in Range and Ranch Management***

The significance of the *running a ranch* themed narratives goes beyond the theme's obvious place in the study as the common experience of all women who participated. This theme described ranch management and decision-making narratives that were not caught in other, perhaps more complex, narrative themes, including the theme that describes major changes in range or ranching practices. A look across the interview data suggests the significance of ranching as more than a business for these women, but also an identity, a career, and a family activity that continued all hours of the day and all days of the year. This activity was connected economically, socially and emotionally to range landscapes. Ranching was not a job, it was not only a means of making a living, it was a lifestyle and way of life from which these ranching women were never fully separated, even when they found themselves living or working away from a ranch. For example, consider 501, whose

life took her away from ranching and back to it several times, or 304 who seemed unable to break free of the stresses ranching brought to her and her family. The women in this study were inextricably linked to the physical, financial, social and ecological processes and practices of ranching.

Of the 26 narratives under the *running a ranch* theme, 15 of them were in the interviews of women in the 300 community. All of the *running a ranch* narratives in the 500 community, 6, were labeled in one interview- 500. While several other women talked about how they managed rangelands or ranching, these narratives were similar to other themes I used in the study. 703 described her rangeland management goals, but did so in order to explain from whom she had learned those philosophies and how she was carrying on her family's ranch, so I labeled her narratives as *learning from experience or past generations*. Finally, 5 *running a ranch* narratives were expressed by 3 ranchers in the 700 community (703, 706 and 707).

Because *running a ranch* was such a large and important theme, I broke the group into sub-groups.

I recognized 4 of the 26 narratives that described one-time events. For example, in the 500 interview, a narrative explained the story of 500 and her husband buying a ranch in her home-area. 706 described a story of several mortalities in her herd after several cows grazed a toxic plant dumped illegally on public land.

Twelve of the *running a ranch* narratives described day-to-day decision-making processes and labor responsibilities, including communication strategies, decision roles, indicators for decision-making, and methods of time prioritization. These day-to-day decision-making processes were diverse across interviews, but often involved

discussion, observation and prioritization based on the urgency of a task, prior planning, seasonality and priorities for financial stability. For example, rancher 303, who juggled child-care, off-farm business management, ranch marketing, and ranch decision-making roles, used a wagon wheel metaphor to describe ranch decision-making. In the metaphor, the family ranch business was a wagon wheel, and each spoke of the wheel was an individual responsibility, role or practice. The spokes collectively support the turning of the wheel, or the operation of their family ranch business, and if one spoke broke, perhaps when a source of income fell through or a plan collapsed, the wheel kept turning until the broken spoke was repaired.

Of the 26 *running a ranch* narratives, 11 described management philosophies, statements of stewardship, and longer-term aspects of ranch management. For example, 303 and her husband are young ranchers who went into ranching with a young family. She described the land as their livelihood; her rangeland management plans were part of a philosophy to leave a sustainable ranch that supports healthy ecosystems, (grass, wildlife and water included), for their children. Rancher 500 made many of the operating decisions on her ranch, and described a philosophy for rangeland management that a rancher's footsteps are the best fertilizer for her land. That is, she believed a rancher is best able to make good decisions if she spends time on the ground, observing and discussing the ecological and production changes and possible outcomes of her decisions. As a final example, rancher 305 described a philosophy of managing public land with trust and learning, rather than operating under the assumption that the ranch management will not make mistakes. She said,



*“And so I always kind of laugh at the [Public Agency] because they're always so worried about how you going to manage your livestock, when that is easy country to manage. Down here [on our private land] is the hard country to manage because you're trying to grow your hay for the winter. And they are just crazy about that. We throw more feed away up there than we can grow down here in a year. And it gets to the point where it's grey and nothing will eat it but we've saved it and, for what for and, you know I don't quite understand all that madness. So I think some of those issues are going to have to be sorted out. That, an on date can be December 31st if you want to, it's got snow on it, but if you want to go up there- I mean, we need to change some of those regulations...that come in the little green book, and it says, right here, it doesn't say why it says it, it just says so, so we're going to follow that stupid rule. You know, so I think some of that's going to have to change. We're going to have to become better, better land managers than we were before and we also are going to have to be able to say, okay, give it a try, we'll see if we make a mistake or not. And I think the whole NEPA process and the whole process the [Agency] goes through is to try to make sure, absolutely make sure we're never going to make a mistake. Well that's impossible. But that's how they look at it.... Instead of learning.”*

The most frequent theme, *running a ranch*, and the fourth most frequent theme, *changes in range and ranch management* were large and complex, and the merited deeper analysis (which was performed in the second round of analysis, see “Round 2”). However, their appearance during this round of analysis is interesting because it helped me understand similarities between narratives across the data set and to note which ranchers did not construct narratives focused on the change in rangeland and ranch management despite the emphasis I placed on change in the prompt and recruitment material for the study.

During analysis, I labeled 13 narratives with the *changes in range and ranch management* theme . The 13 narratives under this theme detail the historical context of current ranch management practices. 4 of these narratives described changes in animal genetic or health management or innovations such as artificial insemination. Two, from 703, described a long-term change in rainfall and one focused on a change in politics. Eleven of these narratives described changes in approaches to ranch or grazing management approaches including the introduction of Holistic Resource Management,

rest-rotational grazing, beginning to manage for wildlife, or other general statements about changes in range management. For example, rancher 702 described broad community and political changes in her area as an urbanizing population puts less emphasis on production land-use:

*"Yeah, there's very few ranchers, especially in this part of the country, not many ranches left, it's all gone to real estate or something else, to mines, or something, it's kind of hard, it's kind of sad to see it happen. But someday the public's going to wake up and they're going to say, oh well what happened to the farmer and the rancher, you know. Here well, how come we don't have food on our table? Well where is it? You know. They don't realize that."*

Another example of a narrative that describes major changes discusses change within the context of a specific ranch. 707 provides a succinct summary of the changes her family's ranch has experienced in rangeland infrastructure and management:

*"But times have changed as far as managing cattle and as far as even just the way you manage your ranch. My parents had the ranch and they had springs, they had wells and they had dirt tanks, and I remember my dad putting in several dirt tanks, having them, my mom and dad having several of them put in and it was in order to have water for the cattle, and we found that the other part of our range, up towards the top of the mountains, we're pretty well stocked for water, but the lower part of the range was not. So, it was good in the wintertime but in the summer time you couldn't utilize the range as well, of course [...] it was hard because of not having water down, down low. So that was one of the major problems that the ranch as a whole had, that it didn't have enough water to take care of the cattle from one end of the range to the other, there was a, probably half of it that was short on water."*

The changes in rangeland management theme was most frequent in the 300 community, where it was the second most common theme after running a ranch and appeared early in the narratives of 300, 302, 202, 305, 701, 702 and 500. This important theme is notably absent from the narratives of several women who emphasize activism (704, 705), and the single interview that expressed a great deal of frustration over ranching's hardships and other barriers to success (304). It was also noticeably absent from the 500 community, with the exception of rancher 500, who emphasized the changes

in rangeland management early in her interview as she described the differences between her parent's modern methods of ranching and the more old fashioned methods of ranching she learned about after college while working for a relative.

### ***Life stages***

During the first round of analysis I split narratives of the rancher's life stages into individual themes, including *personal career path, in the beginning, finding a place, spouses, aging*

I labeled 17 *personal career path* narratives. The *personal career path* narratives have implications for understanding the importance of individuals in a ranching social system. An example would be 504's narratives that describe her work on and off-ranch, including herd management and the operation of a rangeland restoration business.

I split another theme, *finding a place*, from the career path theme when I identified a group of narratives going into more specific detail about rancher's individual interests and their journeys to find a niche in their way of life. This theme was illustrated in 503's interview which described the process that her grandson went through in deciding if he was going to stay on the family ranch and take over management from her, or whether he was going to leave and pursue other opportunities. She described an episode when, upset and frustrated with his grandmother and ranch, he drove off of the ranch only to return a half of an hour later:

*"...you know everybody in my family has died except my grandson and I so we have a 2 generation gap. But now if I got, he got mad at me not too long ago, and I said, if you don't and I've always told him, if you do not want to ranch this is not where you need to be because it is this way, you know it is this way. It's never going to be big dollars. And he got mad at me he said I'm going to leave. And he left once before and went to [another state] and got a job on a ranch calving heifers, but riding up on the mountain, and doing great, and I thought he was going to stay there, but he came back home, but the he got mad and I said he said I'm thinking*

*about leaving and I said that's fine if this isn't what you want, that's fine. But let me tell you when you leave, you're not coming back. And he left for about 30 minutes and came back on the tear, I mean ranting and raving, how dare you try to run me off of this place. I said no, You have to look at it as your place, where your place, where your place is in this place. And I said if you're going to take over, you have to do so."*

This narrative highlights the process of finding a purpose and identity in ranching, and how that individual career paths are sometimes constructed through the interactions of family members with a place or landscape that has emotional, economic and historical implications. Taking 503's description of finding "where your place is in this place" as an *in vivo* theme, I labeled 13 narratives with the *finding a place*. These were narratives that described finding a role, niche, responsibility or place in the ranching way of life. An example of a *finding a place* narrative was 504's journey to learn to engage in self-care activities, what she called 'sanity-time.' Once stressed by all the pressures of daily life, she started to slow down and enjoy the natural world around her:

*"I don't leave [the ranch] and I don't go to the spa and get a facial or whatever, obviously, I [do not] spend a lot of time on my hair, too. But just be out there and say, you know what, this is a beautiful and I'm just going to sit here and watch these clouds for 20 minutes. And maybe that's all it is, is 20 minutes. But it's sanity time, and I enjoy it and then when I think, oh, I'm going to go on to the next pasture now, then I'm better. And when I come back here, then I'm better."*

*"I would feel so much pressure and so many demands and so many different directions that I felt like I could never say no. And that has been the hardest and the slowest process for me, and really just in this last year since I haven't been full time elsewhere have I been able to say, ok. You know, I can go out, sometimes I'll do stupid stuff, like I had some heifers calve up on top of this [hill], you know they were supposed to not be there but [I said] I'll go get them, just hike up over the ridge and get them. But I'd be looking at rocks on my way up there, once I found [the heifers], then I'd bring them home, but on the way up there I'd be looking at rocks and looking at trees, and wow, look at that view, that's so amazing."*

Another example of *finding a place* was 700's story of moving to her husband's family ranch and taking on a role with a non-profit in their area. While decision-making roles were sometimes unclear on the multi-generational ranch, her employment provided an

opportunity for her to take leadership in the community and contribute with a clearly defined role. She said,

*"I think, it, it helps to have the [organization] job because then I have a role that is mine and I don't really need to take other, I mean, take other direction in terms of the broad [ranch operation], but then it is it is somewhere that I feel I kind of have my little box kind of set up of, and it's been a nice way to be able to meet neighbors. [It is] just sort of easier to have, easier to have a role."*

I also labeled 2 narratives in the beginning. In the beginning narratives told how women's lives began or descriptions of their birth and early childhood years.

Across the interviews I labeled 6 spouse narratives, 5 of which were in the 500 community and 1 of which was in the 300 community. These narratives described married life or decisions that followed the career or personal goals of spouses. For example, 504 described how a vehicular accident that injured her husband changed her own life for the long-term as well as on a daily basis. And rancher 304 described a striking level of frustration with ranching but carried on because ranching was her husband's priority:

*"For me, like I said I was not raised into ranching and a lot of the frustrations, trying to maintain it with the financial and all the bureaucracy and, I've done it, the priority is, my husband wanted it. And I've kind of always put him first. I've had to be the mediator. So I kind of let some of those decisions go to him when he goes to the annual meetings and now my boys, you know. And I'm constantly on the computer doing research for them. Um the like I said I probably, if it had been my decision, my decision alone, when it was costing us financially and health-wise, I was, I would have given it up."*

Finally, three aging narratives described the experience of getting older. For example 702, 85 years old at the time of the interview told a narrative of her last ride on a horse, and described her daily life at the time of the interview as "boring" because she could no longer ride or work outside as much as in her younger years.

I grouped 5 themes, in the beginning, personal career path, finding a place, spouses, and aging into a group describing life stages. This large group of narrative themes provided

insight into how the experiences of individual ranchers form the basis of their roles and perspectives on ranching. This idea was articulated by 703, a rancher who was born into a ranching family, married a rancher and scientist, and has helped her daughters grow up in the industry. When I sat down with 703, the first thing she pointed out was that in order to understand a rancher, one should examine the context of a rancher's life experience:

*"But there are such diverse people interest on our committee, from environmentalists, to ranchers, to even more extreme people, and they are having this banter, they just can't understand each other. You know, the environmentalals can't understand us, why we're mistrusting of some of the agencies and all that, they can't understand. You know, it all goes back to this whole-life experience that you've had."*

This "whole-life" approach contextualizes ranching as an experience and social process.

Taken together, this group of themes related to life stages suggested that social range scientists would fail to understand the complexity of decision-making on rangelands if we assume that decision-making is removed from the context of individual manager's lives. Ranching families are not unitary decision-making bodies; the women in this study described making decisions and taking on roles based upon a foundation of past learning experiences, personal struggles, joys, and interests, adjustment to spouses and family, and other social dynamics. The decision-making and ranching responsibilities of these women was influenced by their individual personal career aspirations and skills and by their interactions with the personal aspirations, limitations, and skills of their spruces.

### **Life Stages: Contextualizing Ranch Management**

This section provides an example of the life-stages presented through the themes of the analysis. 500 was born to what she described as modern ranchers, parents who emphasized self-sufficiency and stewardship:

*"It was to me one of the greatest things that they gave us was learning to be self sufficient on a ranch. We had milk cow, chickens, sometimes we had hogs, we had gardens every year, fruit trees, our mother was just awesome, she could take care of all that, and take*

*care of all of us, and feed us all and work on the ranch and help dad with everything. We all worked in the garden, we all helped with the butchering the processing of chickens so we could have them to eat in the winter. Course we had hunting and we participated in that, all of this was so we could eat. We were pretty self-sufficient. We didn't go to town a lot, and we just learned to be frugal and let the work with the land and let the land take care of us, dad spent a lot of time clearing the un-needed brush and improving his carrying capacity and improving his grasses to where he had from one type of grass now at this point he's still ranching and he has a wonderful ranch, it's just a great example for all of us kids and other people to see it."*

Throughout her interview, she described life stages where she gathered knowledge and experience in different areas of agriculture and built networks and relationships across the country. She describes her post-secondary education, marriage, and learning a different style of ranching from her father-in-law:

*"So I enjoyed animal science, I didn't enjoy being in the city and I didn't enjoy some of the other things you had to take, but I convinced myself that I could learn everything I needed to know on a ranch, so I didn't finish college. And ah, I ended up getting married and living on a ranch out north of Roswell, and I learned a lot there. That type of ranching was totally different from what a more modern approach that my parents had taken but I did learn a lot about how old timers thought and how they got through the weather and how they made it. It had a big impact on how I think now. So it was more the maybe the maybe I would say from 1940, the 50s, early 60s mindset of ranching at that time, that was kind of what I was exposed to by my father-in-law and some other ranchers out there that were they ranched big ranches and they ah had huge pastures and the cattle ran and wherever they kind of wanted to.*

500 described many of her experiences as learning opportunities and blessings. She talked about working as a "cowboy" on large ranches in her 20s and described passing through this stage of her life with an appreciation for its lessons but an understanding that she could not do that type of work forever:

*"So, I was on that ranch a while and then during that time my husband and I would go work cattle in the fall and the spring on big ranches all over [the state]. I got into the cowboying end of it, it was nice. A lot of ranchers were nice enough to let me work like a cowboy. And I tried my darndest to. And I've been blessed that they thought that I was a top hand and I tried real hard for them. So we just worked. I worked just like the cowboys. And we had some pretty tough times, you know, long days, we'd camp in some places and gather big pastures, brand then I'd gather a lot of maverick cattle and roped them and tied them down. I had a cowgirl life like a cowboy, which is exactly what I wanted to do [laughing]. "*

*"But I learned a lot, going on different ranches and seeing how they do things, and just kind of stored it in my mind and I loved it I could have just done the wild cowboying always. But it wasn't sensible. I guess, and then it doesn't get you anywhere just to be able to go handle wild cattle or however whether you're horseback and they're running off or*

*you can get in control of them or whether you can rope em and bust em and tie em down. It's a wonderful thing. Doesn't happen much anymore, but I was one of the few women that ever got to do that.*

After having a son and divorcing her first husband, she balanced employment opportunities with her role as a mother. She met her second husband and quickly formed a management team; he took the role as the “cowboy” and she took management responsibilities, laughingly calling herself “the cow mama.” They operated and owned other ranches, and watched their children mature. Three years prior to the interview, 500 and her husband were able to purchase a ranch where she applied her knowledge to ranch and range management:

*“And we had saved our money, and we jumped on it and bought this 22 sections. And that was the I think the final wonderful thing that was a blessing from God because it fit our life to a T. It's big enough and rough enough that we can we can you know we've got lots of good horses still, and we love to be horseback. And we moved up here and got it had some cows on it, they were brangus cows and that wasn't our idea of what we wanted to raise, so we began to, ah, plan on slowly working towards angus cows. We got a really great opportunity in I think the second year we were here to buy I think 100 and 30 something head of angus heifers from our neighbor so we jumped on that.”*

500 described her specific genetic, marketing, nutrition and rangeland management practices. For example,

*“Then you know it got a little dry and hot and it started raining a little bit and we grew some grass that had a lot of strength to it, and I always get it tested by the way so we know kind of how to plan how to feed the cattle and then I've been feeding the 32% when I have when we have plenty of grass and this year we tried the cubes that have their mineral in the cubes. So that we know these cows are getting their mineral. I also keep out, come spring, I put out a mineral tub with a high phosphorus content so that of course all the other minerals they need. This is for reproduction. I think that that has helped us a lot. We've had a pretty good breed-up last year but you now I know the good spring helps. This year we had a very very dry spring, absolutely no moisture from September through about two weeks ago, then we got 7/10ths inch of rain, so, then I had to re-evaluate, which is the way I do things.”*

She also described accomplishments and long-term goals she and her husband have for the ranch. This includes building Angus genetics into the Brangus herd that came with the ranch at the time of sale, managing feed costs and rangeland, developing water systems, dreaming of putting in stock water heaters, and working towards range improvements. She also detailed her grazing decision-making processes and strategies for marketing her calves. She reflected upon the ranching experience:

*“But, you know that's I think it's the most wonderful way of life, there's so much reward just going out there and seeing the land and watching your cows as they*



*raise calves or as they fatten up or ah, you know working them, being able to gather them and brand[...]so I guess it's just I couldn't think of anything else that would be as rewarding. We really enjoyed the cutting horses, and showing the cutting horses. That's really rewarding...If everything goes well. It's a challenge and it's really hard to learn, we learned it[...]All the little babies I think [is] probably the best part. And watching. Watching them grow and making sure they do well. And another things is when it does rain, watch that grass grow, oh my goodness. And water. The first day you have a rain that actually water kind of runs somewhere. That would be one of my top favorite things, just seeing some water standing, just here and there, and the feeling, the freshness of it.*

To check the above analysis of the importance of the life stage theme group in understanding ranching not as a role or a profession, but as a life-experience, I present a summary of an entire life history in Box 2 (below). 500's interview explored the life stages themes through narratives of her personal, professional and family life. She told the tale of a cowboy who grew to be a rancher, a personal career path that was the foundation of experience, skill and the professional and life knowledge that guides the management of her current operation. These interactions build and constrain a frame of reference from her experiences in ranching.

### ***Understanding least frequent themes***

The least frequent themes in the frequency analysis provide insight into rare narratives, and into the limitations of the narrative analysis approach as I performed it on these data. *Kids*, a theme describing general narratives about children, (often descriptions of the interviewee's children's life courses or careers), *money* which labeled concerns with finances, and *ranching community*, or narratives about the community of ranchers, were the least frequent themes in this round of analysis. The limited appearance of these themes in the data is interesting because this outcome of the analysis highlights the manner in which this method of analysis incorporates and deconstructs the complexity of some

issues. For example, stories of children were often labeled with other themes, and the *kids* theme has very limited applications.

Likewise, the *money* theme was likely too narrowly defined to draw out the complexity of ranching financial concerns and decision-making. Financial concerns are a major issue with the women in the interviews, but few women made financial worries the major point of an individual narrative or their entire interviews. The example of a narrative that was labeled with the “money” theme was a narrative that described one rancher’s efforts to improve the rangeland on her (704) family’s ranch by de-stocking to the point where she was barely “breaking even,” until she could see some changes in the vegetation. However, money was a secondary theme in many of the narratives, including narratives from the theme *future of ranching as a way of life*, which describes many narratives concerned with the financial challenges future ranchers will face in getting into the industry or staying in the industry.

Financial concerns and women’s descriptions of how they addressed and reconciled prolonged financial hardship and uncertainty during ranching careers are also addressed in the large theme *ranching: wonderful life*.” This theme described 11 narratives of ranching as an enjoyable and important lifestyle including 1 in the 300 community, 6 in the 500 community, and 4 in the 700 community. These narratives detail how ranching’s value system, culture, lifestyle, community and family environment, and freedom override hardships, including financial and natural resource challenges and physical limitations, in these women’s lives. 703 articulated this theme as she described how she and her family lived very basically, but cherished the ranching lifestyle:

*"Well, we only had a phone, we raised our kids through their whole lives without even a phone, really, because we were in such a remote area. Of course now we have everything, you know, internet, phone, everything. But, but we still only have a generator. But, we cut it off at night, even in the heat of the summer. And it's a. Well, it's a blessing. Because, it helps you maintain your family life and communication with your husband, you know. My husband and I, all these years, we've been married 40 years this year, when that generator goes off... There's no TV, no computer, no telephone, you know. So we always get up early, and we sit and have coffee in the dark, and talk, and set the tone for the day[...]*

*"My daughters had the opportunity to] learn to shoe horses and brand calves and they got their own brands and their own calves early on. They had possessions, their own horse, their own saddle, things like that. That they had to work for... Early on, so, it's such a precious thing. That, that, but it takes that mix of, knowledge of the world and still that love of the country life, and basic things. Really is... Because life does come down to the basics. You've got to eat, drink, love your family, depend on each other. You know what I mean?"*

From the *ranching: a wonderful life*, I split out a secondary theme that described a deep connection to land, or a determination to stay in ranching even during desperate times. The narratives were labeled with another *in vivo* code, *core tie to the land*. This theme labeled 11 narratives that encompassed a rancher's, often women's, connection to the landscape and way of life that supersedes a need for financial stability. 502 describes the *core tie to the land* that drives ranchers to preserve even with limited finances, a skill that she has taught her husband:

*"[Women persevere]. You know, the women do. I mean the women are the ones that figure out 14 ways to cook beans and 19 different ways to serve hamburger, because you got to have a trailer or you got to have a well or you gotta have, you know, back to the one pay check a year, or two, we do two on our operations, but ah, you know I remember when [my husband] and I got married and I was telling him what he was getting into because I knew and he didn't. You know he had a little more of a romantic, he doesn't have it now [laughing]. But he did have more of a romantic view of what ranching was going to be. And [my husband] told me, he said I refuse to live like a coyote. And I said, no. When you ranch there are some years you live like a coyote."*

Because issues with money, concerns for children and stories of how women got into ranching filled a logical gap in the narratives of women ranchers but did not occur very frequently based on this round of analysis, I grouped similar themes during this round of

analysis, and took a closer look at some of the complexities surrounding finances and future generations in the next round of analysis dealing with contradictions in the narratives. Therefore, *kids* joined a group of themes concerned with the future of the ranch. Money joined *danger danger*, a theme of physical dangers in ranching (only found in 304's narratives) and *major hardships* which describes other hardships such as drought, in the theme group labeled *this is tough*. This theme describes the ever-present but sometimes extreme physical, financial and emotional conditions that ranchers work under on a daily basis.

***Other common themes: Pack a Lunch, Future of Ranching and Lessons of the Past***

The third most frequent theme was called *pack a lunch*. It described the experience of passing ranching on to the next generation. The importance for these women to share ranching values, skills and culture with the next generation cannot be understated. Whether the women described sharing management decisions with grown children, or packing a lunch and turning ranch work days into family picnics, women ranchers in all 3 communities identified a social reproductive role in agriculture. In the data set, one interview, (304) stood out as an interview that focused on the hardships and disappointments of ranching. 304 was frustrated with ranching, with dealing with governmental land management agencies and the public, and afraid of ranching's physical and financial risks. However, the opportunity ranching provided her to spend time with her family and teach the next generation a set of values related to self-sufficiency and social responsibility were the single positive aspect of the industry that she emphasized in her narratives.

Lumping themes into groups helped me understand which narratives and which interviews supported the patterns I was seeing in the first round of analysis, where smaller thematic analysis made pattern-finding challenging. I combined *pack a lunch* with 3 other themes, *kids*, narratives describing *the future of ranching as a way of life*, and those that discussed the issue more narrowly, or *the future of this ranch*. I labeled this group the *future of ranching*” theme group. I looked across these narratives to for commonalities, differences and outliers, or narratives that didn’t fit the patterns I identified in the groups. In the *future of ranching* group I saw a pattern around the uncertain future of ranching, and the importance of bringing up children that have skills and knowledge in ranching as a mechanism for ensuring not just the future of their own family ranch and of ranching as a way of life. For example is found in a narrative where 303’s talks about her children, all 4 are under 15:

*“Younger generations play, now I’m going to cry. I think that the biggest role that they play is just giving us the strength to do it another day. You know? There’s a lot of things that aren’t easy when you’re in agriculture. A lot of outside influences that happen that you can’t control. But I get up and look at the kids, and I know that we can do it again. You know? It’ll, it’ll be okay. Somehow, someway, it’ll all work out. I don’t know how a lot of times. Sometimes I don’t even know why. But I know that eventually it’ll all work itself out and we just got to have faith and hold on and go through another day. And um, yeah. So I think that’s the generational thing that they do. Um, and then it’s always when you see them, they bring their friends out and the things that they want to show their friends about the ranch. You know they want to go down and show them the babies. They want to go down and show them hay jumping you know? And they want to go down and show them, um show them the horses. Or go out and play in the mud. They’re out playing in the manure. And they thought that was the greatest thing and I’m just like oh, that’s crazy. So kids, they’re funny. But, just interesting to see what they want shared with their friends and what they want to teach people about being out here.”*

The role of future generations was also a mechanism for bringing up children who could contribute to society and carry on ranching values even if the children do not build

careers in agriculture. For example, during the my interview with 500, she stopped to send two young girls, relatives she was watching for the day, outside to clean horse stalls, and then 500 described the joys of watching babies of all kinds, animals and humans, grow on the ranch. I asked her if ranches made better children. She responded, “better grown-ups.”

Another group of narratives, the *lessons from the past* theme group, which included narratives of the experiences women had in learning about ranching, often from older generations. This theme helps draw connections between the *future of ranching* to a larger pattern in the experiences of these women. Narratives describing the *future* of ranching maintain a tradition and heritage for the next generation that was experienced for the interviewees through the *lessons of the past* narratives. Lessons of the past included 13 narratives involving past generations or major life lessons related to ranching. 303 described calling her grandfather on the phone when she pulled her first calf. 502 described learning to understand the ranch’s finances using the value of a calf as a unit of measure from her father, who explained how many calves it would take to buy a pick-up or pay a specific bill. During the interviews, stories of past generations sometimes brought tears to the women, and in one case, to a husband who was passing through the kitchen to answer a phone call and sat down to hear his wife’s story about a member of the family. He said, “*I told my dad I wanted to get back into production agriculture and he said well that’s admirable but you have to know you’ll have a hard time making a living. And I figure I spent 40 years proving him right.*”

703 described how she learned her stewardship ethic from her grandfather:

*“[When I was 10 or 12] I went with [my grandfather] everywhere he went. And so I learned a lot from him, I liked the sheep so he thought I was ok. And one of my favorite things... was [my grandfather] would stop and get out, we’d drive around,*

*look and I'd say, about the third or fourth time, I said Granddad what are we looking for? He said you see these open spaces? We've got to fill them in with grass. Well that has stuck with me. For all these years. Because when you see a piece of land out there and there's big open bare spots, there is no grass there, you know when you get it all together for whether it needs to be more rain, or whether it needs to be grazed differently, handled differently, but still, the object is to fill in those spaces."*

The complexity of the *future of ranching* and its connection to the *lessons of the past* theme merits more analysis, as it is not common across all interviews and has deeper meanings for some of the women. For example, 702 doubted that ranching in her area will continue because of weather, urbanization and political changes, though she proudly described the cowboy skills of her grandsons. 504 loved the ranching way of life and involved her children in daily operations, but her children did not have an interest in ranching. Again, these complexities and contradictions are further explored in the second round of analysis, or might merit additional analysis with other qualitative methods. If I were to move beyond the narrative methodology, I might look at the frequency of words or phrases in the data related to these themes.

### ***Gender***

Two themes labeled narratives women used to explain gender power dynamics (a total of 8 narratives, 3 in the 500 community, 3 each in the 300 and 700 communities). As with the other themes, there may have been instances of gender dynamic being described by the interviewees, but if they were not identified as gender power dynamic narratives by the interviewees, they were not labeled as such. Likewise, there may have been cases where women identified gender power dynamic or role issues during the interviews but when these issues were not the major conceptual theme of the narrative, the narrative was not labeled as a gender issue. Gender power dynamic narratives involved concerns over gender discrimination issues, gender power dynamics or general gender narratives.

Narratives labeled with this theme illustrate the complex gendered ranching experience for women in all three communities, ranging from women who said they did not experience gender barriers to women who described gender based discrimination in their families or the community. Two interviews were especially focused around gender power dynamics, 502 and 503, both ranch managers and owners who were neighbors and life-long friends. 502 carefully described her path to becoming a rancher, including a narrative that described being denied an operating loan on her own to buy cattle and lease rangeland.

*"The first time I met with [the bank] I drove a truck, I drove a cattle truck for my father and I had been to Texoma hauling cattle all day and all night and I came in and took a shower of course and those were the days of, the starched [jeans] and the boots that matched and whatever and I went to [the bank] there in [town] and the guy just looked at me and said, 'Ranching on your own, young lady, is not like sitting on the fence watching your daddy. '*

*"I got mad, because I had been horseback since I was 2 years old. And my dad very seldom made any concessions to me because I was a girl, once in a while he would but you know not much, not much, and in those days, I don't know we didn't know what we know now. We left and we didn't take water with us and we were gone all day and we sucked on little rocks when we got thirsty and we ate peanut butter and crackers and we did I mean, and we worked from daylight, literally, came in at dark, and generally took Sunday off because we went to church.*

*"I can't rope, I can't rope, I never learned how to rope and I never did learn how to ride anything that bucked, but other than that, I can do about everything there is to do out here, so I was mad and my dad, he did laugh, and that made me mad at him. And he said, 'You're doing it wrong. If you came in off of that truck with cow manure all over you, they would say you know how to ranch. You went home, took a shower, make-up, starched pants, and they're going yeah right.' And he said, 'You know I appreciate always that you don't look like a girl that drives a truck, and I [laughing] appreciate that you don't necessarily look like something that's been drug through the corrals, but you are going to have to look like a cowgirl to get a cowgirl loan."*

When 502 was finally offered an operating loan, the credit was extended under the stipulation that a loan officer be allowed to count her cows monthly. She described her interactions with the loan officer:

*"And he came out, he made me gather the cattle, he didn't make anybody else that I ever heard of but he made me, this guy from [the bank], gather the cattle once a*



*month so he could count them. And he harassed me. And he showed up and counted cattle until the day, and this is one of my happier memories in life, I was out there, I didn't know he was coming, wouldn't have mattered. Anyway I had a cow that had rotten after-birth in her. And I mean rotten after-birth. Get in there, drag it out, and I had two sticks together and you know the deal, it's very, you don't want to break it off again, you don't want to have to, and my arm was already, so I was, messing with it. And that idiot came walking up and he said, he stood on the outside of the fence of the chute, obviously.*

*And he said, 'Well I'll be damned, maybe you do know something about ranching.' And I pulled the afterbirth out. And put it through the fence, and dropped it on his boot. And he threw up. [Laughing.] And he never came back and harassed me ever again and I was so happy, I just walked around for like 3 days just going, like, woohoo! [Laughing.] Because that was just, that was so cool, the minute that minute hit his boot, he just up-chucked a lot. Yes, yes, yes. "*

This narrative provides insight not only into the institutional barriers that 502 faced as a ranching woman, but how her father played a role in how she navigated this gendered experience, and perhaps more importantly, her capacity to take agency in the situation and even find humor in the narrative of gendered power dynamics in ranching. Again, this is not a representative narrative across the interviews, but is an example of an overt gender power dynamics theme from a single interview.

A second gender theme, that of *women: doing everything* labeled 7 narratives, including 4 in the 500 community, 3 in the 700 community, but none in the 300 community. These narratives detail women's roles in ranching in a broad spectrum of material responsibilities, including tasks that are rarely performed by women or tasks that require great physical strength. An example of this was horseshoeing. 705 and her daughters are skilled in shoeing. (In a narrative labeled under *the women: power dynamics* theme she described never having faced gender discrimination in the ranching industry, being able to learn and perform a variety of ranching management and labor skills, and cited shoeing as an example of these skills). A quote from interview with 700, a woman in her late 20's,

illustrates her experience as the first woman hired to a guest ranch which required employees to be able to shoe horses:

*"[I] got in touch with [the ranch owner] to see if he would hire me to guide down here, which was a little dicey because beyond his sister they'd never hired a woman to be in the barn. So... There's a requirement that you learn how to shoe horses, and there's not tons of women farriers and there's not tons of women who volunteer to learn and probably there's not tons of women that [the rancher] trusts to learn. That would also be a fair part of it... I would say actually that I was that there was less sort of segregation by sexes down here than there was [at another ranch I worked on where I was not the only woman], because with more girls on the barn crew up[at the other ranch], it was easier to sort of send us off to do the easier jobs or that kind of stuff, not that there weren't times when we got sent off with everybody else and in the thick of things, being the only one down here I sort of got swept along into whatever was going on, and so in some ways there was more equality, I guess."*

Another rancher, 701, who is 700's mother-in-law, noted during a narrative labeled under this theme that everyone on a ranch has to be able to do "everything," and that it is not only women but men and often children who must be skilled across a broad spectrum of physical and management skills. This includes attending meetings as well as completing tasks on the ranch.

This theme also illustrated how ranching roles have changed across generations, as many women told narratives involving mothers or grandmothers performing roles "inside", such as cooking or cleaning, but preferring to be outside riding, working cattle or otherwise helping with ranch operations. One woman, 502, described her mother as "working two shifts," for years, cooking and making a home, and riding often into mid-term pregnancy.

This round of analysis shed light on the multiple roles that women take on in ranching, and the diversity of those roles across interviews and within lifetimes. But this depth of analysis has a limited ability to explore the detail of this diversity. The major limitation

here is the unit of analysis- or the narratives and associated themes and groups defined as major narratives in the interviews separated by a change of subject or transition by the speaker. How women juggled multiple, and sometimes, conflicting material roles is further explored in the second round of analysis, where I took a deeper look at material practices of ranching women and narratives that resolved or failed to resolve these sometimes conflicting material practices.

### ***Last one left***

An intriguing theme emerged from three interviews (707, 702 and 502) I defined as “the last one left. These three women were living on their family’s ranches, not on their husband’s family ranches. While this theme notes the experiences of women who live longer than men in their lives, it is important to note that none of the three women who described being “the last one left” were actually the last person in their family alive or involved in the ranch. Rather, all three described a the experience of initially being left out of inheriting the ranch and then out-living everyone in their generation and taking over the management of at least some of their family’s ranch. Two of these women are the sole decision-makers on the ranch, and one owns her ranch with her husband. All three women had children or grandchildren that were are involved with the ranch.

First was 707, who was born and raised on a cattle ranch, but did not expect to inherit a ranch because she knew it was intended to go to her brothers. She left home for college and became an elementary school teacher. She married, had several children, and obtained a masters degree. She stayed away from the ranch, which her mother managed after her father had died, and built a successful home-life and career in a nearby city. After the death 704’s mother, two brothers and sister, she became the legal decision-maker for the

ranching partnership that included the family members of her children's generation. She was tasked with re-building a profitable business that could be passed to her children or grandchildren. She learned about rangeland management and conservation techniques and applied her collaborative management style, honed during years as a classroom teacher, to managing a family business.

702 was always a "cowboy," and had a passion for ranching from her early years spent working with her father while her brothers were at school or serving in World War II. She describes sneaking off to ride with "the cowboys" early in the morning and being thrilled to be given her first bed-roll in her pre-teen years. While she was planning to take over the ranch with her brother, her brother suffered an untimely death, and her despondent father sold most of the ranch to a third party. 702 and her husband bought the north end of the ranch and have been ranching there with her family's brand since the early 1960's. During her interview, 702 described the community's lack of knowledge that their brand is a working brand. She describes an encounter with a politician who did not understand that her brand was not a dead brand that could be used as symbol of the area that, once 702's family ranch, had become a sprawling suburb.

The final woman with this narrative theme, 503, was proudly the last member of her family to inherit and manage a large family ranch under a stewardship ethic she learned from her grandfather.

Despite being told that she would not inherit the ranch because of her gender, she lived longer than members of her own and her children's generation. She took the role of being the "last one left" very seriously, managing the ranch alone when her husband was incapacitated and then deceased. Her narratives describe her holding on to ranch through

economic and emotional hardship. At the time of the interview, she was working to pass the ranch to her single grandson. Excerpts from her interview, below, demonstrate this theme:

*“And I happen to be the only one left in our family, and it was a very large ranch, and I’m the only one that has any of it left. And ah, it’s not something that I take lightly. Times can get hard and you just suck up and hang with it. Because there is no tomorrow for it if you walk away, that’s it. There is no replacement value..... Tell me about it, you know. You either like where you are and you struggle with it, and I have struggled a lot, and nothing makes my heart feel better than to see a banker that has tried to close me down at a meeting that comes up and says, do your remember me, and I say, yes, call him by name, and I said I’m still on the ranch. You asshole.*

*“[.....]My dad died when at 42 when I was 17 and my uncle immediately informed me that girls didn’t inherit ranches. And that immediately pulled a red flag on my forehead. And I said, You hide and watch I’m not leaving. And ah, but, the mentality was for years, that men were in control. You know and when I was, I was ah, secretary for the [State] Cowbelles for a year, and in the process of doing that I called Colorado to talk to the National Cattlemen. And I asked them, I said, how many, what percentage of ranches are owned by women? Well they didn’t know. I said there are a lot of ranchlands that are owned by the rancher’s daughter but when she got married she put it in her husband’s name, but the deed still says, you know, it’s so-and-so [husband’s name] ranch but belongs to [the wife’s family], you know.....*

*“Ah, my grandson, we’re in a situation where my husband died, and my son died, and my daughter died, my mother died when my brother was born, my, you know everybody in my family has died except my grandson and I so we have a 2 generation gap....You have to look at it as your place, where your place, where your place is in this place. And I said if you’re going to take over, you have to do so. And he has come up with a lot of new things that I and I tell him quite honestly I have never heard of that kind of deal, but I have sent him to older men and had him talk to them and they said, you know, this will work.”*

### **Activism, Frustrations with Outsiders, Working with the Community**

This theme of activism merits deeper analysis because all of these ranchers are public lands ranchers and many of them described their roles and philosophies regarding public lands or community resource management. The frequency of the theme of activism, which labeled 11 narratives, 8 of which were in the 700 community, suggests that these women are activist leaders. The frequency of activism narratives, and to some extent the

importance of activism, in the lives of women ranchers in the 700 community surpasses its importance in other communities. For example, consider this excerpt from 704's interview where she described her specific focus in activism:

*"Well. It, why do I do it is because well what my, my passion is this activism, it's really not the ranching itself. My husband likes the ranching. When we bought the ranch, I didn't want cattle [...][My husband] likes having his friends over and we work a few cattle, you know, it's a very western-ey experience. But what attracts me to this industry is it is really the heart of America. It is the heart of our culture and our heritage. You see the urban people going off and doing their own thing, and losing their connection with where their food comes from, and they, they lose their connection with their values, their moral values.*

*"My interest lies a lot in the Endangered Species Act, in it's abuse. It is a weapon against people. Maybe it was written with the best of intentions. It was certainly passed with the best of intentions. But, it has become, through the flaws in it, has become a weapon to use to shut down people. To shut down their business. If somebody owns a ranch, well that's no good, because that's capitalism. You'd better shut that down, so they come up with these species, and these species may not be endangered at all. These species may be just a species that there's just a little, not very much research on. These people, these groups that I call environmental litigation factories—I didn't coin the term, but that's what they are—they come in and the sue and, they put this phony-baloney science report together and they petition to list."*

A look across the data suggests that this theme is complex within and among the interviews. Six of women in the 700 community (700, 701, 703, 704, 705 and 707) as well as two women in the 300 community (300 and 305) describe collaborative leadership roles that deal with the same public lands issues, many of them described in the theme *agency woes* or *outsiders or urban people* that inspired their own or other women's pronounced activism. The theme *agency woes* labeled narratives with concerns with public land agencies, while *outsiders-urban people* labeled narratives of the divide between urban and rural people. As with the example above, the narratives of 704 were primarily focused on activism, 703 and 705 were engaged in both activism and more collaborative approaches to change-making and leadership in resource management.

Across the interviews, some ranching women found a passion in activism for the ranching way of life or in state or national politics (see 704), some women (see: 300 and 305) see collaboration as an alternative to conflict in resource management. Two quotes from 300's interview illustrates how she built relationships in her community and how she envisions the possibilities of finding common ground with those who would disagree with rancher's production use of public lands:

*"[The ranch management team] were still creating those relationships with our neighbors that were so essential. And so we didn't have that natural larger landscape. I think we pretty well have it now which is where my passion is for the next ten years of my life. But the relationship that we established with the agencies and with interested people that have come and gone on our team have been hugely supportive of letting the land do what it's going to do. And learn some different things.*

*"We [in the public ranching community] could just, we could have a PR campaign. If we would change our paradigm, if we would change our focus on how we, what we can do for those people who don't like us, and tell em about it and show em, they'd be on our team in a heartbeat. Instead, we send money to em so we can fight em in court with the [Environmental Organization]. I don't understand. Worries me."*

Here 300 emphasized the importance of involving, understanding and collaborating with non-ranchers in decision-making on public lands. Other ranchers (see 701, 703 and 705) described engagement in both activism and collaboration in public land resource management. For example, at one time 705 served in a collaborative role on a state board, at other times she was involved in litigation over issues of public lands management. Community engagement also extends to outreach activities and agricultural education or agriculture literacy promoting activities, which included 15 narratives. These roles included teaching agriculture in the classroom lessons, volunteering in local extension activities such as 4-H, hosting farm tour days for local children, and taking interns. These narratives demonstrated women's roles in promoting agriculture as an industry and way of

life for the sake of ranching's future. The motivation of one rancher for these activities were described by 305:

*"Recently we've started taking some interns from [the local state university] because [this] university is a very green school cause there's no production around [the town] really. The timber industry is kind of gone...they're trying to desperately trying to get it back. And they're trying like Hell to find somebody to even bid on these little timber sales. You know there's very little livestock here and there's no farming. So the environmental part of [this university] is all the environmental preservation type education. So we kind of got to thinking well the best thing we can do is work with [this university], take some interns, and try to show them a little bit other than just lock it down. That it can actually function just fine with all these things going on out there."*

305 described the joys of sharing ranching life-lessons with her children and with children in the community. 704 describes incorporating ranching into her classroom and professional work as a teacher:

*"And there is cowgirl side of me, I mean I used to tell my stories, I was really instrumental in putting together a committee of ranchers up here and starting a program where they had a lot of ideas about just, get the idea across of what ranching and cowboy-ing and cowgirl-ing is really like and, and so people who were really interested in that, we brought it into the schools [...] I always did a Western cowboy unit in my class. I taught both, first at the middle school and then I switched to kindergarten."*

The thematic narrative analysis illustrated the complexity of women's activism roles, and the contrasting views and roles in activism of different individuals, and the changes in these roles in the industry across life-times. As 705 put it,

*"I think to summarize, women are largely very involved [in ranching], their involvement depends on their own personal specialties, their own, some are really knowledgeable about one thing and others are really knowledgeable about others, and that's the direction they go, like all humans. Maybe the women are strongly involved in the community outreach organizations. And these days that is absolutely an essential part of ranching. Whereas previously it might be that you were involved with your church group, or you were involved with the 4-H, or something, that was directly...home based. Now we're still involved with those, but, [now these roles are] much farther out [in the community]."*



## **Step 2: Contradictions**

### ***Material-Material Contradictions***

I identified 23 material contradictions in 17 interviews (all but 702 and 707). Material-material contradictions illustrate two or more roles, responsibilities or physical tasks in the women's lives that contradict with one another. A look at these contradictions helped me understand how women faced constraints on their time, how they managed multiple responsibilities and obligations, and how they moved through social realms, cultures and identities throughout their lifetimes.

This group of contradictions gives insight into the diverse range of skills and responsibilities of ranching women. The first group of material-material contradictions was a large group of contradicting material practices between personal life, care-giving for family and children and ranching practices. This contradiction also helps me dig into the gendered theme of *women: doing everything*, which described women performing a broad range of tasks, including tough physical labor and roles considered traditional female roles. These contradictions were often difficult to divide into two simple contradictory practices—women described juggling roles in several realms at once on a daily basis or over the course of their lifetimes.

The complexity and depth of these contradictions is hard to summarize without the full text of the narratives, and while these contradictions were so common across interviews, individual women had diverse means of understanding and resolving these contradicting obligations. Some, like 504, 706, 300, 703 and 204 seemed to 'do it all' and enjoy the challenge—picking up different material practices based on their own aspirations, relationships, the life stages of their children, or when time allowed them to pursue a goal. In these cases, 304's metaphor of ranching life as a wagon wheel (See Round 1 results above) seems fitting, as the women took on a diverse set of roles in order to keep their

family ranch business moving forward. For 706 and 705, the diverse set of material practices, while sometimes producing conflict in time obligations, seemed to making ranching life interesting and worth-while. 706 noted that since an early age, *"I've been my dad's right-hand man, riding, working, the only two things I'm really not good at is shooting guns and changing oil. I told him I must have missed those 2 days on the ranch."*

Other women, such as 502, described these contradicting material practices as a challenge for women. She described a classic material-material contradiction for ranching women: the contradiction between roles outside on the ranch, such as working cows, and inside with family and home. 502 described this contradiction in a tale about her mother, who, she said, worked two shifts, filling gaps in animal husbandry roles and her husbands impatient temperament, and rising early to cook for the crews on the ranch. 502 narrates her mother's story with a keen appreciation for the older woman's love of working outside and an understanding that this love was often superseded by her obligations to home-making:

*"My mother rode horseback with me until she was 6 months pregnant and she quit then only because the saddle horn was rubbing such a sore on her belly that it got too sore for her to do that. Then she rode in an endurance race when she was 3 or 4 months pregnant with my sister. She was much more, my mother was much more the cowboy than my dad was and maybe always. You know, my dad was a business person. My mother didn't understand business.*

*"But by the same token, my Dad was not a patient man. Not a patient man ever. Not a patient man ever. And my mother did all the mammying, and she did all the following the tight-bagged cow, and she did all the doctoring and all the doogies and you know she hauled in the wood and she made the fires and she cooked and she cleaned. I always felt sorry for my mother, although she loved it. You know she got up before the cowboys did and made breakfast. And you know we left the house at 4, 4:30. So she was up early. And then everybody went to bed while she was washing dishes. You know, nobody offered to help her, my dad never said somebody needs to get in there and help. So she's been tired all of her life. And you know, darn right you're tired, you've been working two shifts all of these years. She really hated*

*and to this day she doesn't ride much anymore, but she really hates being on kitchen duty, she wants to be out horseback."*

Like 502's narrative above, 501 described juggling obligations as a care-giver, ranch wife, mother, and ranch decision maker throughout extended periods of her life, but the tone of her interview was not begrudging of these responsibilities. She focused on a pride in her children, now grown, and the conclusion that they had become, as she had hoped for them, "good citizens, good Christians and great cowboys and cowgirls." The question of whether women can, or women would like to, illuminate these material contradictions cannot be concluded from this diverse data set, but the patterns in the data do indicate that material contradictions are important to women's experiences in ranching, and often follow them throughout their lives.

### ***Material-Discursive Contradictions***

The interview data yielded 46 separate material-discursive contradictions from the interviews of every woman interviewed except for 504 and 302. This group of narratives covers a deep and diverse set of experiences where women described a contradiction between their material practices, or what they do as ranching women, and their ideologies, or the discourse around what they "should" do. To analyze these data, I separated the 46 narratives by patterns I found in the material practices and then analyzed what discursive practices emerged in conflict to material roles. While dividing the contradictions into several groups I highlighted narratives in the data that illustrate these patterns and those that did not support the patterns I found.

Material practices that contradicted discursive practices fell into practices around community involvement (7 narratives), financial decisions (11 narratives), ranch

management decisions (9 narratives) and ranching roles (17 narratives). I will define and describe the contradictions in each category below.

### ***Community involvement.***

Practices of community involvement covered material practices of social interaction off-ranch, such as involvement with governmental agencies, non-profit organizations, activism groups, collaborative management groups, or industry organizations. In 7 cases I identified narratives where these community involvement practices conflicted with discourse around rancher's independence, isolation, self-sufficiency, or other practices related ranching culture. For example, 703 and her husband emphasize self-sufficiency, and performed all of ranch labor by themselves. They never lived on the power grid or participated in grant programs through the NRCS. They believe on being independent and keeping governmental grants or influence away from their operation. But this discourse of self-sufficiency conflicts with several community involvement practices, including a tie to the scientific community, and involvement in industry groups and agricultural outreach activities. 703 identifies and resolves this conflict in her narrative, citing the benefits of involvement in the community while emphasizing the importance of self-sufficiency and to, some extent, isolation from the fast-paced outside world:

*"[Our connection to the University] was a huge benefit, it made all the sacrifice for his, to travel to the [University] and be gone, and it's been a huge sacrifice. His degrees, working for the district, working at the [University] and all this other stuff, has been a huge sacrifice for the ranch. The only thing we've ever, we've really been able to keep up were our kids and our cattle. The rest of the infrastructure has really suffered because of that, but it certainly is paying off benefits in that it exposed our kids, [our daughter has] got her career out of natural resources. "But anyway, I was telling you my husband is, we're working on converting to solar. And of course, he has to build the room to house the batteries, the solar house, we have to do this, this this this, do almost all the work involved in it, so because he wants it done well, and he's just used to having that guiding hand, you see what I mean. It's probably not a bad thing.*

*“...And we’ve tried to help expose kids like them to this by having ranch field days, and bringing out the agency people, and some of the most renowned professors, my husband was so lucky when he went to school that he had [great professors]. Scientists. And so he got such a good education, a really diverse education. We want to expose kids, to, and not be frightened of people like that. You know how you are when you get out of high school and you’re going to college and those big professors.*

While 703 discussed the importance of staying connected to the outside world and the role of her husband’s education in their family life, she acknowledges that time spent off-ranch at meetings, outside careers or advocating for the livestock industry did take a toll on the time she had available for ranch infrastructure maintenance or cattle work. However, this community involvement was important to her, and she described frustration that other ranchers were not as committed to outreach or community work:

*“We do get disgusted with our own industry. There are so many people, like ever facet, that would just rather go about their business, and never show up for a meeting and never, well they’ve got cattle work to do, I’ve got cows to move. Well, so do I. But we still come. We still put the work in, you know, we manage to survive, and we don’t believe in doing that, we’ve just tried to stay active.*

This tension between the practice of engaging with the community and the discourse around the self-sufficiency and life-long dedication to the family ranch business also took form when some women (701, 704, 705, and 502) discussed interactions with public land agencies. In these narratives, the women described the discourse that ranchers should be left alone to deal with their own businesses and the material practice of interacting with public agencies out of necessity. For 704 and 502 in particular, the frustration over this contradiction was pronounced in their interviews.

### ***Finances***

The material-discursive contradictions provide an interesting method for understanding conflicts that occur between what ranchers would like to do, or what they think they should do in ranching, and what they are able to do within the context of

financial, natural resource and social constraints. The conflict between discourses of ranching as a wonderful, and sometimes vital, way of life that should continue with material practices related to financial decisions in the narratives is a basic and essential contradiction in the lives of these women. While it has been well understood that ranchers face a large opportunity cost to go into ranching, ranching women's voices have not yet been heard as to how they balance this contradiction throughout their lives and carry on in an industry where making money sometimes means, as it does for 707, barely "breaking even."

Within the narratives that described the practices that cope with financial realities vs. ranching as a way of life discourse, several addressed the contradiction in terms of the future of ranching. These narratives described the importance of the future of the ranching way of life, and the importance of participating in that way of life, but highlighted the ever-present concern that future generations of ranchers may not have any realistic financial route into the industry. For example, 303, a multi-generational rancher, describes having several grown children and being uncertain that they could all be supported by the ranch.

This category of narratives also includes those that described the contradiction between the need to make money on the ranch and the need to conserve or otherwise improve the rangelands. Here, the balance between concerns for ecological function are at odds with business practices and decisions. This careful balance plays out over rancher's lifetimes. For example, 707 described setting conservation goals on her ranch and living off of her retirement so that she could de-stock, therefore limiting the profitability of the ranch, while the rangeland improved:

*"Right now it's pretty much, we move the cattle as we need to move them, and we started out with a very small herd, like about 40 head of cattle, that was all. And this is a ranch that will run 300, 350 cattle. But, the way that I looked at it was, it had been over-grazed by the lease that had leased it, and that's exactly what, I'm not condemning him at all, because that's what he leased it for. Was to run cattle on. But in my mother's case there wasn't much she could do. She needed, if she's going to keep it and pay the taxes on it, she needed to, and so that's what she did. But um, we have seen in 2 years time how much the range has come back.*

*"...[The fences] were awful, they had not been worked on for probably 40 years. So, even the perimeter fences were bad...But then, whenever, after Mom died, and my other brother died, and I talked to the kids and I said, you know, what do we want to do with the ranch? Do we want, and by this time, I'm retired, and I can put time in on the ranch, and I said, I would like to see if we can't get it to become a profitable venture for us, because all we were doing was paying the taxes and the leases. That was it, we were breaking even but we weren't making any headway and we weren't um, maintaining anything. So what we decided to do was see if we couldn't run the ranch by hiring people to help us out and see what we could do. They were on board, yeah. They were all interested, as long as I would do the decision-making, and be the go-getter, go get EQUIP grants and to work with people to do it, which, I, in that, I can do that now, you know. That's another thing that didn't hurt to start out with a very few cattle, and what we are doing is taking it very slow, and some people say, oh you've got to put a layout the money and buy you a herd of cattle before you receive anything back, and my idea is, I think we need to get our feet wet gradually and understand what we're doing. And yes, I do have a background, but it was years ago, so now I'm catching up to date on all the information, or trying to, I'm not up to date yet. I'm still working at it, it's a work in progress.*

Like 707, 703, 503 and 500 described material practices based on financial constraints that conflicted with what they would like to do with their ranch, or what other ranchers might suggest they do. In the case of 500, this involved taking less of a profit because she believed in spending more on feed to have healthier cattle. For 503 this involved selling a large area of land on her family's ranch when a nutrient deficiency devastated her calf crop and her profitability. The loss of a large part of her family's land was more than a financial loss; it went against the discourse of perseverance that had carried her through tough times—hang on at all costs.

*"You do what you think you can do, and it didn't pan out, so then, you know, where do you stand? Then we sold part of it, and I told my husband, I said, I can sell this*

*land. I said it's a well known ranch, I said I can sell this land. To neighbors. And that's what I did. And I tell you it hurt my soul. It did, I ache because this is my grandfather's land, you know. And here I am, lost it. And ah I would go through it and I would tie up floats and I would pull out weeds and it took forever for me to go through that piece of land and I still, the other day, I called the fellow that owns it, and I said if you see tracks on the south end, that's me. There was a dead silence and I thought he's wondering what are you doing. And I said you're wondering what I'm doing. He said, yeah, I said I'm just mosey-ing around, checking it out. And he said what do you think? I said it looks like Hell."*

As 503 and her neighbor 502 described, this essential material-discursive contradiction

runs deep into what it means to be ranching woman, sometimes for generations. 502

described great family tragedies related to financial worries in her childhood, but then

realized that ranching was what made her happy. Her narrative, below, plays out over the

course of two generations:

*"One of the financial things that ah, not just financial but lifestyle that changed my whole life, and I still think about it and it still enters into business and finances and stuff is when um I was 13, which was in 1973, the world was going great, everybody's hot, and Daddy's banker, a guy named [...] from the bank in [...], convinced him to put all of his calves into the feedlot. And my dad didn't want to do that and he didn't have a good feeling about it. And he talked to my grand dad, I mean they always ran business by each other. And my grad dad had done it on a limited basis, and he'd had good luck, my grand dad told my dad just do it, you know on half of your cows and John C. Johnson the banker said, no go for it, and he told my father if it all goes to pot I'll finance you until you get your, you know, get back on your feet.*

*"Which he didn't. So my dad put all of his cattle in a feedlot in Texas. And the market fell, the temperatures fell, the price of feed went up, and then they got pneumonia, and then they died, they died faster than we could drag them out of the corrals, my dad went to the school, in [...], and he pulled us out. The principle or superintendent says, you can't do that, you can't just take your kids out of school, my dad said, by-golly I can, they belong to me. I need some help, I'm takin' em. (L). So we went up into Texas and I lived 3 years in North Dakota and I still think those feedlots in Texas was colder than anytime I spent in North Dakota and I don't remember my dad sleeping. He'd put us in a motel room and lock us in and then he'd go back and I guess he slept in his pick-up, and he'd come at daylight and when it was all said and done then they couldn't sell the calves and when it was all said and done his entire calf crop would not pay the feed bill at the feedlot, had nothing to do with our line of credit, our mortgages.*



After high school, 502 left her family ranch and sought employment in another state. When she returned to the ranch to help with family obligations, she realized that ranching, despite its intrinsic financial hardship, was where she wanted to spend her life.

*"I came back when I was 27 ...And so I moved back from Lubbock, for only a year. [I] never left, to put my sister through her senior year of high school, and so I worked for my dad then for four years and I was at the ranch I'm on now and I dug up a pipeline and I fixed it, and I was sitting on the hill, drinking a warm Coke, eating a purple onion and some beanie-weanies out of the can and I thought, I'm as happy as I've ever been. You know, I'm going to stay."*

### ***Ranching Decisions and Ranching Roles***

Material practices of decision-making and role distribution on the family farm ranch emerged with interesting contradictions to discourses around ranching practices and gender. Ranching roles conflicted with discourses around women's roles in 8 narratives with complex discourse around gender. A set of these narratives involved a discourse not that women are not ranchers- that is, they are not decision-makers, they do not inherit ranches, and they do not operate their own ranches. For example, 501 and 707 were involved in ranch work as children but were told that they would not inherit their family's ranch because they were female. 502 was denied a bank loan because the bankers had never loaned money to a woman rancher.

305, 502, 500 and 702 described a contradiction between the discourse that women should not or cannot do ranch work and their actual ranch work, termed by many as "cowboying." This was outside work, often horseback, with cattle or other livestock. 500 was one of few women to work the big ranches in her state, roping and tie-ing down wild cows. 305 described her mother's "traditional" views that women should be inside, not out working the ranch, but described that her mother gave up on keeping 305 and her sister out of the corrals after they both took a great interest in animals. Finally 702 filled a gap as

the “cowboy” on her father’s ranch when her brothers were away at boarding school and serving in World War II.

700, in her late 20s, described a contradiction between the young people, like herself, going into the industry, and the discourse that ranching as a way of life is ending and that no young people will be available to take over ranches in the future. She described concern that census data or statistics may not catch young couples living on multi-generational ranches, and also discussed the importance that young couples with decision-making capacity and experience in the field to the future of the industry as ranch ownership shifts in her generation.

The women also described a contradiction between the discourse around what it means to be a rancher and the material practices related to off-ranch income earning and practices related to children and the next generation. 701 described teaching her children to be ranchers, but placed this instruction within the context of generations of her family who had worked off the ranch if they needed income. Likewise, 502, 703, 501, 503, 300 described working or attending university off-ranch to fill gaps in income or personal career paths while maintaining an identity as a rancher or in production agriculture. Even when these women were spending most of their day off-ranch in other roles, they still carried a discourse of what a rancher is, and what it means to enjoy the life-style and identify with ranching culture. This discourse maintains that ranching is an important way of life, even when women’s lives are tied to other careers or practices.

One of the last women I interviewed, 706 described a unique narrative in this set of contradicting practices. She was the only woman in the study managing her own registered herd within the realm of a larger ranch with other herds. So while other women

in the study (707, 501, 502, 305) were co-managers or managers of their own ranches, 506 managed a specific portion of the ranching operation. The ranch she lives on now operates with managers and hired hands, while the ranch she grew up on operated under a discourse of rancher self-sufficiency and togetherness. In running her own herd, 506 describing *finding a place* within the larger ranching operation, but also described running her own herd as a practice very different from the discourse that ranch families work together and that ranches are family operations:

*"So, like one summer, when I was growing up we always had one cowboy, and sometimes we had 2, but when I turned 14 or 15, I must have been 14 or 15, we didn't have any cowboys and it was just us. And so it was myself, my dad, my brother, so he was 12, my other brother was 10. And my dad ran the ranch just with us. And so, we basically never ran, we never left the ranch the whole summer, just because we couldn't, and but I think those couple summers where we didn't have any workers that were, were probably the best binding summers we've ever had. Just because, I mean, we were a true part of the machine, we had to be there, there was no choice. We'd get up in the morning, we'd catch our horses, we'd ride through the cattle on the farm, then we would go do whatever Dad had to do. We'd fix fence, I mean, because the summer's the monsoons, so God willing, you have running water, so you have to fix fence. We branded, we gathered. We moved cattle. We also moved cattle quite a bit in the summer.... And so, Mom would cook us an early lunch and we would ah, take off at noon and go to the waters, grab those cattle there and push them to the next pasture[...]. Um, what I love about ranching is just the family, the family structure that it makes, the bonding that you do."*

706's interview gave insight into how women negotiate different ranching practices and roles throughout their lifetimes, finding a place on different ranches as they marry or change careers. Her narrative demonstrates the life-long process of ranching, as she carried the lessons and values of her early years forward in their ranching practices she developed as an adult. 706's narrative helped me explore narratives of contradictions between the discourse of being a rancher and the practice of ranching.

Ranching decisions also occur beside discursive contradictions about what it means to be a rancher, or how ranchers should operate. These contradicting narratives helped me understand how some women manage during change events or disturbance, such as drought, herd-health issues or range condition issues, and how they reconciled those management decisions with the discourse over how they should manage. Consider 300's narrative, below. During our discussion, we framed our conversation with the analogy of managing a ranch by dealing with what issues "bubble up in a pot," or appear at the forefront of management decision-making at different times. 300 describes how she would like to manage for a bigger picture in range management, thinking more long term than just managing whatever issues rise to the surface during difficult times or crisis. But during drought, her management changed from this focus on sustainability to "old habits" in range management that emphasized dealing with the crisis and narrow focus in management:

*"I think what I would have to say is that the last ten years of drought we are totally focused on what's popping in the pot. But the overarching thing is sustainability, profitability, being here. Just and so- Hang on one minute. That can be, that can be stasis or it can be dynamic and I think we choose dynamic. Ok, but in times of turmoil and people warned us that have whether they're recovering from addiction or they're completely retooling their family business to whatever it is, in times of crisis however that's dimensioned and I will say it's the drought, you revert to your old habits and boy did we. So, that is a very big danger and for my style it's really easy to catch the bubbles. But it's also the only- the long term, nurturing a long term benefit is seeing the bigger picture and working toward that. The only- the long term, nurturing the long term benefit is seeing the big picture and working toward that[...]we have to start thinking what we learned in holistic management we can not step aside, we have a huge obligation to get a bigger picture and start acting that way. Which is beyond the bubbles."*

The depth of the ranching decisions material contradiction merits greater study, as it allowed me to explore how the physical realities of ranching meet the culture, and the contradictions within that culture. These contradictions unfold daily for ranchers who must make difficult decisions in the face of resource and financial uncertainties, great change,

and issues of gender. The examples labeled with these contradictions in the data illustrate that ranching women often defy ranching discourse around gender, ranch management, and ranching roles. But they also carry some discourses forward as mechanisms for understanding and adapting to change in the ranching industry. This is seen in the narrative from 300 above. There is an understanding in her narrative that the material practices she engages in because of changes in climate are temporary, and that a discourse around how she should manage is important to thinking about the long-term goals she has for the social, economic and ecological landscapes of the ranch she manages.

### **Discursive-Discursive Contradictions**

25 Contradictions between discourses described by the ranching women in these interviews were identified and sorting into 4 broad categories. These categories help us deconstruct the common themes I identified in the first round of analysis related to major changes in range management, the future of the way of life, and ranching practices. Data supporting each of these contradictory categories is displayed in the table displayed at the end of this section.

Contradictions of epistemologies included 2 narratives that described a conflict between the knowledge of land managers or ranchers and the knowledge of the scientific community. The idea that rancher knowledge is valid and based on legitimate experience often conflicts with positivist scientific epistemologies, and these conflicts play out in the interactions and relationships between ranchers, scientists and agency professionals. Consider the example of 701's narrative of her frustration when rancher knowledge is not acknowledged as credible . In this narrative, 701 noted the ability of ranchers or farmers to stay in business for many years as evidence of their professional, working knowledge.

Seven narratives described contradictions between public land management paradigms that emphasize or included production and those that excluded production or emphasized preservation. It is important to note that many of the narratives in this case emphasized production as congruent with conservation goals, rather than a paradigm of public land management that would replace or illuminate conservation. These narratives reveal the contradiction between productionist and preservationist public land management paradigms. The first, from 704's interview, highlights the discourse that production provides important conservation benefits to public land that preservation would not. She uses the examples of ranchers providing water for wildlife and infrastructure and their involvement with conservation work as evidence of this point. The second, from the interview of 705, describes her perspective on the impact of wild land preservation in wilderness and other designations that limit access to the public on lands on more accessible areas, often those public lands leased for grazing.

Similar to this group was a group of 10 narratives describing contradicting discourses around ranching practices, though these contradictions existed within the ranching community, rather than between the ranching community and the broader public as did those in the public land management paradigm group. In the data from two of these narratives, presented in the Table 1, below, 300 and 305 describe two narratives of the ranching paradigm contradictions. The first illustrates 300's perspective on the conflict between the school of range management she and her husband ascribe to, following the Holistic Resource Management ideas of Allan Savory and range management as it is taught and studied in main-stream academic institutions. Another member of 300's community, 305, describes the conflict between the discourse that ranchers are independent and

collaborative, community scale range management practices she sees as the future of range management in her area. Though quiet different, each ranching paradigm contradiction illuminates a conflict between different paradigms of ranching or ways of thinking about rangeland and ranch management.

Finally, two very intimate discourses around the future of the family ranch emerged in 6 narratives. The first holds that ranching is a way of life that should be preserved, and the second hold that future generations should have the independence to make decisions about going into or staying in the industry. The narrative presented from 707 in Appx C, Table 1 presents this conflict within the context of the option to put a ranch into a conservation easement, which 707 was concerned would take important options away from future generations. 703 described a very similar narrative of this conflict. Both women emphasized the discourse that ranching should continue while describing concern that future generations have the freedom to chose to be in ranching or to leave the industry.

The diversity of these narratives should not be understated despite the straight-forward patterns I found in the data when compared to material-material and material-discursive contradictions, which were scattered across a number of diverse practices and expressed through diverse narratives.

Contradiction	Contradiction Summary
Epistemologies – 2 narratives	Epistemological contradictions between theories of knowledge that the ranchers and land managers and the scientific or regulatory communities.
Supporting Data	“I get very frustrated because many times you will see um, like farmers and professors interacting and I wish there was more of it. We, right here in [our area] don’t have a very active um, ah, Extension Service. Um, but, but, the information that the farmer, or the rancher has is not, it is called [anecdotal]. And there’s no real research in that. Well actually there is, because if that farmer or rancher, has he not, is he not still in business? And, after, after generations, or even, even 20, 30 years, he is still in ranching. And so his information is not necessarily, it’s not credible.”
Contradiction	Contradiction Summary

Public Land Management Paradigms – 7 narratives	These narratives describe a conflict between production and preservation priorities for public land management.
Supporting data	<p>“All these places on the ranch were water’s been running, and there’s been storage of water making it available for the wildlife, you know we’re in the driest part of the desert. We get like, 8-10 inches of rain a year, and if it weren’t for the water there wouldn’t be any wildlife, we’ve got mule deer. I mean, they made it a national monument because there are 670 species, and most of them are right in the pasture where we have our cattle. So. It’s a power play against people who are just trying to do what they do. And these [ranching] people do love the land because you look at the Natural Resources Conservation District, who’s in it? It’s all ranchers. And what’s it about? It’s about getting this water out here, and here and here, so that your cow herd isn’t all bunched up here.”</p> <p>-----</p> <p>“I can safely say, well more than 3 quarters [of our state] is federally managed. A high percentage of that is limited access, either because it’s military or it’s Indian reservations, or it’s wilderness designation, or it’s wilderness study area, or it’s primitive area, or it’s a national conservation area, or it’s a wildlife refuge, and all of those have restrictions on access. What happens when you restrict, you call off limits, this and that and this, a high percent is, you are ever shrinking the accessible area. The impact on the accessible areas becomes excessive. And the result is there’s clamor for shutting off the over-impacted area which further shrinks the pool and as you shrink it and as [the city] grows, which it did, massively, in the ‘90s, you increase the desire for recreational opportunity, and you decrease the available space. Well, that’s a big problem. Yes, because [public lands with grazing permits] part of the ever-shrinking pie that has access.”</p>
Contradiction	Contradiction Summary
Ranch management paradigms- 10 narratives	These narratives describe a conflict between paradigms in ranch management, often between practices of the past, “old ways,” and new or different practices, or “new ways.”
Supporting data	<p>“And we have, we continue to this day to keep up to point on the changes that are going on in Holistic Management and some of the outlying groups that are picking up on [Alan Savory’s] work and I will tell you I continue to be so saddened that it’s so hard for the universities to just step over here and say let’s really embrace this and look at it. And I think for that reason in my family even though we were all [students of the land grant university]. The extension service and what they had to offer has come a long way from when I first was married and when we were first doing this. Because they were so irrelevant. They were so far behind the times. They couldn’t offer you anything...But anyway so that’s been a big change over time but back to the holistic management I mean it’s so simple, it’s just mind bogglingly huge.”</p> <p>-----</p> <p>“No I think ranches will have to get bigger. I mean I would love to be able to have this ranch with absolutely livestock free for probably two years. And then come back with a big bunch of cattle. But that is going to be very hard to do until ranches get bigger which I think they will, and you get rid of that independence of like, well, he won’t take care of my cows well enough to have them. You know, that kind of mentality is still out there.”</p> <p>Researcher: “You’re saying you’re going to need to work with your neighbors and the community and put cows somewhere else for two years so your place can rest and then maybe you can have his cows?”</p> <p>“Right, that can put them together. Right, and then they get the rest for the next two years and you’ve got the cattle and so say you pick five ranches and out of the five ranches one of them’s going to sit at least for a full year. And then you start to build a, you start to build a [community rotation]. Exactly. It comes back to the personality deal. you got to really, you got to really trust somebody to take care of your cows and calves, and so they wind up, how do you form that kind of business?”</p>



Contradiction	Contradiction Summary
Future of the way of life-6 narratives	These narratives describe a conflict between discourses around preserving the ranching way of life and discourses around the importance of independent life choices. It is important for ranching to continue, but ranching families have to let future generations make their own decisions about continuing in ranching.
Supporting data	<p>“So it couldn’t, and still, it’s set up that way right now, and then probably we’ll take it on for another 50 years, I would say, for the next generation, and let them decide what they want to do with it, because I guess the biggest fear, not with my children so much but my brother and sister’s children is, they have no, one of them does, has an interest in maybe going back to the ranch, but the rest of them have their own [interests].</p> <p>And that I think is a big thing that faces ranching families is that, you know, if you put anything in a conservation easement for perpetuity, you don’t know if you’re doing what your kids are going to want done, or not.”</p>

Appx C, Table 1: Discursive-discursive contradictions in three categories with supporting quotes from interviews with ranching women in New Mexico and Arizona.