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IMPLICATIONS OF RANCHER DECISION-MAKING PATTERNS IN DOUGLAS  
COUNTY, WASHINGTON FOR INCENTIVE-BASED CONSERVATION OF SAGE-  
GROUSE

By

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B.S., Colorado State University, Fort Collins, Colorado, 2013

Thesis

presented in partial fulfillment of the requirements  
for the degree of

Master of Science  
in Resource Conservation

The University of Montana  
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## ABSTRACT

Jandreau, Clancy, M.S., Spring 2017

Resource Conservation

### Implications of Rancher Decision-making Patterns in Douglas County, Washington for Incentive-based Conservation of Sage-grouse

Chairperson: Jill Belsky

Conservationists are increasingly recognizing the importance of private land for the conservation of imperiled wildlife species while at the same time acknowledging the controversies with seeking Endangered Species Act protections. Recent and ongoing government-led efforts to conserve the greater sage-grouse (*Centrocercus urophasianus*) through the Sage Grouse Initiative (SGI) provide an illustrative experiment in applying incentive-based conservation to private lands. However, whether the SGI program works because it provides an alternative to listing has not been empirically researched. In this study I apply a qualitative, exploratory approach to examine SGI participation among ranchers in Washington, a state with high percentage of core sage-grouse habitat existing on private ranches and concerted efforts of SGI to promote grazing planning as a means to protect sage-grouse. Through interviews and analysis of both participating and nonparticipating ranchers, I found the most important factors in determining ranchers' decision processes are their different regulatory risk perceptions, knowledge claims, stewardship values, and anticipated costs/benefits. Analysis of the interactions among these factors revealed five decision patterns among the ranchers in my sample. These include two patterns revealing why ranchers participate in SGI and three which explain nonparticipation. I refer to the first two as: (1) *risk mitigators* who participate in SGI to mitigate the threat of possible regulations to protect sage-grouse in addition to other anticipated benefits such as infrastructure improvements; and (2) *capacity builders* who participate in SGI because it further enables them to improve their stewardship goals. The three that pertain to nonparticipation are: (3) *capacity maintainers* who do not see SGI as providing any additional management benefit; (4) *skeptical pragmatists* who doubt the utility of the practices or protections prescribed by SGI; and (5) *sovereign stewards* who desire to be autonomous and self-reliant. Significantly, three of the five decision patterns are not incentivized by the presumed importance of reducing regulatory risk, and ranchers' stewardship values deterred participation in SGI as much as they enabled it. Based on my findings, I suggest implications where further investigation is needed to fully understand the complex political, cultural, and economic dynamics that shape land managers' support of incentive-based conservation efforts.

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LIST OF ABBREVIATIONS

|        |  |
|--------|--|
| C.F.R. | United States Code of Federal Regulations        |
| CCAA   | Candidate Conservation Agreement with Assurances |
| CRP    | Conservation Reserve Program                     |
| CSP    | Conservation Stewardship Program                 |
| EQIP   | Environmental Quality Incentives Program         |
| ESA    | Endangered Species Act                           |
| F.R.   | Federal Register                                 |
| FSA    | Farm Service Agency                              |
| HCP    | Habitat Conservation Plan                        |
| IRB    | Institutional Review Board                       |
| MSGCP  | Multi-species General Habitat Conservation Plan  |
| MZ     | Management Zone                                  |
| NCW    | North-central Washington                         |
| NRCS   | Natural Resource Conservation Service            |
| PAC    | Priority Area for Conservation                   |
| SAFE   | State Acres for Wildlife Enhancement             |
| SGI    | The Sage Grouse Initiative                       |
| U.S.C. | United States Code                               |
| USFWS  | United States Fish and Wildlife Service          |
| WDFW   | Washington Department of Fish and Wildlife       |



## 1.0 INTRODUCTION

Conservationists are increasingly recognizing the importance of private land for the conservation of imperiled wildlife species, those seen as threatened, endangered, or in danger of becoming threatened. The importance of private land to imperiled species conservation is highlighted by studies showing the dependence of wildlife on privately owned habitat. In the United States, one study found that as many as two thirds of legally threatened or endangered species depend on private lands for the majority of their habitat needs (U.S. General Accounting Office 1995). In the Intermountain West, private ranch lands have been shown to harbor high biodiversity even in comparison to protected areas (Maestas, Knight, and Gilgert 2001). Recognizing the importance of private lands for imperiled species also requires acknowledging the role of private land managers in conservation efforts. A portfolio of policy options exists to include private land managers in species conservation (Doremus 2003). These policy options range from strict regulations on private land managers' actions to programs in which their participation is encouraged through incentives. This thesis explores the latter approach; an approach which strives to include private land managers as essential partners in the conservation of imperiled wildlife.

Recent and ongoing government-led efforts to conserve the greater sage-grouse (*Centrocercus urophasianus*), hereafter sage-grouse, throughout the western United States present an illustrative experiment of the application of wildlife conservation to private lands; specifically, the use of incentives for so-called voluntary conservation. Completed and continuing conservation efforts on private lands specifically through the Sage Grouse Initiative (herein SGI), were featured prominently in the U.S. Fish and Wildlife Service's (USFWS) decision not to list the sage-grouse as threatened or endangered on the Endangered Species Act

(ESA) in 2015 (USFWS 2015). The sage-grouse case, as claimed by the Secretary of Interior and others, shows how “voluntary” conservation activities can preempt the need for drastic regulatory action, enacted through the ESA in past species conservation efforts (U.S. Department of the Interior 2015). Yet, the voluntary nature of SGI can be questioned when participants face a threat of regulation and questions remain as to if these actions will adequately protect the sage-grouse in the long-term.

The SGI is a federal program administered by the Department of Agriculture’s Natural Resource Conservation Service (NRCS). The NRCS launched SGI in 2010, in response to growing concern among biologists and environmental advocates for sage-grouse population declines (USFWS 2010). The vision of SGI is to achieve, “Wildlife Conservation Through Sustainable Ranching” (SGI 2016). It is predicated on the presumed notion that, “there is a significant link between conditions required to support sustainable ranching operations and habitat characteristics that support healthy sage-grouse populations” (USFWS 2010:5). Sage-grouse and productive livestock operations both depend on high quality healthy rangeland, large intact expanses of range, and range without the encroachment of conifers and invasive species (NRCS 2011a).

The SGI approach, the focus of much praise and excitement from both federal agencies and private land managers, has been referred to as the ESA’s biggest experiment (Peterson 2015). In the wake of the USFWS’s decision not to list the sage-grouse, some have argued it has been a successful experiment. In her remarks announcing the ESA decision, Secretary of the Interior, Sally Jewell, indicated that this “epic collaboration” represents the “future of American conservation” (Jewell 2015). A participating rancher in SGI from Nevada also spoke at the announcement ceremony explaining how SGI helped break down his distrust for the federal

government so that he now feels they can be partners in conserving sage-grouse (The Associated Press 2015). Some wildlife organizations have agreed with Secretary Jewell that efforts to conserve the sage-grouse demonstrate a new approach to using the ESA (Environmental Defense Fund 2016; Peterson 2015). The NRCS has hailed the success of SGI (NRCS 2015c) and has expanded this approach to other imperiled wildlife species in a broad program they call Working Lands for Wildlife (NRCS 2012). However, despite the excitement and sense of accomplishment accompanying the program, there are few in-depth and especially longitudinal studies validating grounds for such celebration. If SGI is accomplishing its objectives, in the short- and especially long-term, what is accounting for its success? On the other hand, what barriers and/or challenges are also operating that may be inhibiting some ranchers from participating in SGI? What, if any, trade-offs or unanticipated consequences are operating that need to be recognized and possibly reconciled; and lastly, what changes to the program could make its sage-grouse conservation efforts more durable into the future?

The excitement for the SGI approach is predicated on many conditions. These include the tension between protecting species on private lands and private land owners' real as well as perceived property rights (Freyfogle 2006). Incentive-based conservation is also part of a broader effort to match the objectives, practices, and socioeconomic needs of land managers with the conservation of not just one species – here the sage-grouse – but more broadly (and challengingly) the continued supply of ecosystem services that their ranch lands support (Brunson and Huntsinger 2008). In that challenge there is also opportunity. The emergence of incentive-based, non-regulatory conservation mechanisms, including SGI, should be seen as an attempt and opportunity for wildlife conservation to move beyond historic battles that framed livelihoods against conservation. This conflict is illustrated in past imperiled species

conservation efforts such as, the northern spotted owl or gray wolf. In these instances, the framing was for one or the other (i.e., logging/jobs versus the preservation of old growth/spotted owls). An incentive-based approach attempts to reframe the perceived conflict to include space for both wildlife and livelihoods. At least for some people, the SGI program seems to have struck the balance quite well.

The conservation approach of SGI is based on a multitude of conservation practices, believed by the program's proponents to benefit both ranchers and sage-grouse. Participants must agree to follow the practices in their conservation plans to be in the program. There is some scientific evidence that SGI practices do support sage-grouse populations. For instance, studies have shown that targeted removal of conifers (Baruch-Mordo et al. 2013), reduction of habitat conversion to cropland (Smith 2016; Smith et al. 2016), and placement of easements (Copeland et al. 2013) can increase the likelihood of sage-grouse persistence. There have also been studies which indicate that SGI practices may be benefiting other species, such as mule deer (Copeland et al. 2014) and sagebrush obligate songbirds (Holmes, Maestas, and Naugle 2017).

With SGI-related science focused on the biological response of sage-grouse and other species, critically important questions remain about how SGI may be successfully partnering with ranchers, what barriers or unanticipated consequences are operating to inhibit greater participation, and what, if any, changes may be needed for SGI to better meet its objectives. Notably absent is research addressing these critical social questions about who (i.e., which and what type of rancher) is participating in SGI and why. These are questions which will contribute to an informed understanding of how the program is operating, its potential for long-term success, and its contribution to broader efforts to reframe wildlife conflict. If the SGI program is meant to reconcile sage-grouse conservation with ranching livelihoods, then the experiences,

tensions, and motivations of ranchers in regards to the program should be examined. Ultimately, it is the ranchers themselves who will determine if the SGI approach to conservation on private lands is effective, lasting, and meaningful in the long run. Thus, the concerns and perspectives of ranchers should be considered and incorporated into an adaptable program design and implementation. Research exploring the concerns and perspectives of ranchers can offer the SGI program, and other policy makers, important information on how to improve programs seeking to include private land managers as partners in conservation efforts.

The objectives of this study are to contribute to in-depth understanding of private ranch managers operating in important sage-grouse habitat and, most pointedly, why particular ranchers participate in SGI and why others do not. I use the context of Washington State to explore why ranchers do and do not participate in SGI, factors influencing their decisions, their experiences in or out of the program, and what implications these findings have on advancing our understanding of rancher participation in SGI. My goal is to understand the views, experiences, and perspectives of ranchers and how these influence their decisions and behavior. I do not evaluate the implementation of SGI, the various claims of ranchers, nor the potential impact of SGI on sage-grouse in Washington; rather, I seek to understand these considerations through the perspectives of the ranchers who are the intended participants of SGI. My desire is that exploring these important questions will help inform a more thorough understanding of the SGI approach and its potential to achieve its objective of reconciling sage-grouse conservation with ranching livelihoods.

### *1.1 Research Questions*

This research addressed three central questions:

- (1) Why did certain ranchers participate in SGI and what characteristics, concerns, or experiences contributed to their decisions?
- (2) Why did other ranchers in the same geographic region not participate in SGI and what characteristics, concerns, or experiences contributed to their decisions?
- (3) Based on the insights from answers to the above, what are the implications of these findings for future research on rancher participation in SGI?

The answers to these questions were developed through a multidimensional process, paying attention to social, political, economic, and environmental forces that influence ranchers' decisions to participate or not in SGI. Understanding these decisions is a complex undertaking. Thus, this study approaches the undertaking by first recognizing that the SGI program is nested within multiple overlapping dimensions. Chapter Two of this thesis reviews three bodies of literature that together form the dimensional context of the SGI program as well as the research conducted in this study. These include literature on wildlife conservation on private land, ranching in the Intermountain West, and incentive-based wildlife conservation approaches. At the broadest scale, the SGI program has emerged within the context of threatened and endangered species policies that struggle to achieve conservation on private lands. The program is also nested within a culturally, politically, and ecologically rich context of ranching in the Intermountain West with implications for rancher participation in conservation programs. Furthermore, the program has emerged from and seeks to build upon a broader incentive-based approach to biodiversity conservation which strives to reconcile the needs of wildlife and people.

Chapter Three describes the data collection and analysis procedures and rationales used to capture ranchers' decision patterns. Situating SGI within these broader dimensions enables deeper, multi-scalar analysis of the individual decisions that ranchers make. These individual

decisions are also influenced by multiple interrelated and interacting factors. In-depth, detailed documentation of ranchers' decisions and experiences regarding SGI, followed by rigorous and meticulous qualitative analysis allowed me to find patterns in the decisions of ranchers. Chapter Three also sets the research context and setting of north central Washington where the study took place.

Chapters Four and Five provide the primary findings of the study. Chapter Four describes the several key factors that emerged from data analysis that help explain ranchers' decisions and experiences regarding SGI. These factors are understood in relation to the regulatory, ranching, and program dimensions that I establish in Chapter Two. Reflecting these dimensions, I describe key decision factors such as regulatory risk perceptions, experiential knowledge, stewardship values, costs, and benefits through the perspectives of ranchers I interviewed. These factors begin to form the basis on which I identified patterns in ranchers' decisions. I argue that understanding why a particular rancher participates in SGI requires first understanding how that rancher perceives regulatory risk, whether they desire to mitigate that risk, how well their knowledge about sage-grouse and grazing practices aligns with SGI's prescriptions, how they see their own stewardship of rangeland, and what benefits and costs they perceive from participating in the program. All these factors interact and manifest in complex ways which result in non-linear decision-making processes. Throughout the chapter, I use direct quotations of ranchers to support my interpretations.

Chapter Five then returns to directly answer the main research questions stated above. In this chapter, I discuss ranchers' decision patterns, formed by the interaction of multiple factors and situated within multiple dimensions. I suggest these decision patterns are what ultimately explain why ranchers did or did not participate in SGI. I specifically describe five distinct

decision patterns, which I term: risk mitigators, capacity builders, capacity maintainers, skeptical pragmatists, and sovereign stewards. Participating ranchers in this study followed the risk mitigator or capacity builder patterns and participated in SGI to mitigate the risk of regulations or to make improvements in their operations. Nonparticipating ranchers followed the patterns of capacity maintainers, skeptical pragmatists, or sovereign stewards and did not participate because they saw no need to change, doubted the utility of the program, or rejected government involvement in their operations.

After I establish a framework for understanding of ranchers' decision patterns, I suggest where these findings compliment, challenge, or change our understanding of incentive-based conservation and rancher decision-making established in previous research. I argue understanding participation in incentive-based programs requires recognizing the complex role that regulation plays in both encouraging and discouraging participation. One key empirical contribution is the nuanced way in which ranchers in this study use the term stewardship that I argue has not been fully captured in previous studies. In particular, I argue for a more multidimensional understanding of ranchers' stewardship orientations in light of my research findings.

I discuss the third research question regarding implications for future research, in light of my findings and insights from previous research. Due to the limitations of this study, I suggest the need for expanded research to include larger sample sizes and more diverse contexts. I also suggest important considerations where further investigation is needed to determine if the findings of this study are relevant elsewhere in the SGI program. In particular, I argue for the importance of recognizing the multidimensionality of rancher perspectives and circumstances, paying attention to potential concerns of ranchers, and understanding whether and why certain



prescriptions might be contested or challenged by ranchers. I conclude the chapter and this thesis with a brief discussion on the promise and challenge of an incentive-based approach to reconcile the needs and interests of ranchers with those of the sage-grouse.

## 2.0 LITERATURE REVIEW

There are three principle bodies of literature that influence this study's questions, research design, and which guide my analysis. In the next sections, I elaborate on each of these literatures in turn. These entail literature on the Endangered Species Act (ESA) and wildlife conservation on private lands, ranching in the Intermountain West, and the incentive-based approach of SGI itself. These three bodies of literature are not mutually distinct, but I argue are rather nested within each other. The application of the ESA to wildlife conservation on private lands affects all types of imperiled species and all types of land uses. Ranching in the Intermountain West is a land use that is especially widespread in sage-grouse habitat. The intersection of ranching and wildlife conservation is nested, in my view, in the larger context of private land and the ESA. The SGI program itself is nested in the broader context of ranching and the social, political, economic, and environmental factors that shape ranching today. The SGI is also nested in a broader context of an incentive-based approach to wildlife conservation, born itself out of the context of wildlife conservation and the ESA.

These broad bodies of literature contribute to an analytical framework that I use to understand ranchers' experiences and decisions regarding participating in SGI. This framework allows me to draw on insights from the intersections of multiple scales, contexts, concepts, and dimensions. In the context of the ESA, I overview the mechanics of the law that apply to private lands, review arguments on the shortcomings of the ESA's effectiveness on private lands, and, in light of these shortcomings, present the emergence of an incentive-based approach to conservation as a potential solution. In the context of ranching in the Intermountain West, I establish what ranching is and who is doing it, review the important cultural aspects of ranching, outline the changing conditions for ranchers, and present incentive programs as a potential bridge

connecting ecosystem services and biodiversity conservation with the maintenance of livelihood practices. Finally, in the context of incentive-based conservation, I review the social research on landowner participation in incentive-based programs, overview the unique incentive structure of SGI, and show how SGI attempts to bridge sage-grouse conservation with economically and ecologically sustainable ranching using specific conservation practices. I pay particular attention to prescribed grazing.

### *2.1 Conserving Wildlife on Private Lands in the Context of the Endangered Species Act*

The conservation of wildlife and habitat that exists on private land is a necessary, yet underdeveloped, objective in the conservation of biodiversity (Bean and Wilcove 1997; Charnley, Sheridan, and Nabhan 2014). The importance of private land to conservation is highlighted by a substantial proportion of biodiversity that is not captured in protected areas (Scott et al. 2001), and by studies that show as many as two thirds of threatened and endangered species depend on private lands (Government Accountability Office 1994). Efforts to conserve wildlife on private lands in the U.S. have incited considerable controversy, especially in regards to the Endangered Species Act (ESA). On its face, the ESA seems to provide an adequate regulatory framework to provide for the protection of imperiled wildlife, even on private lands; however, as I explain in this section, many scholars have argued that the ESA has been ineffective at, even detrimental to, conserving wildlife on private land and/or is unfair to the private land managers who harbor imperiled species.

Before presenting these arguments, it is instructive first to briefly review the regulatory mechanics of the ESA as they apply to private lands. Next, I will discuss the shortcomings of the ESA on private lands that have been identified and continue to motivate innovative efforts to

include private land managers in wildlife conservation. Finally, I review some of these “second generation approaches” (Bean 2006), focusing on incentive-based and proactive approaches.

### 2.1.1 *The ESA applied to private land.*

Congress passed the ESA with broad bi-partisan support in 1973 for the purpose of providing, “a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved” (16 U.S.C. Section 2(b)). The USFWS, as well as the National Marine Fisheries Service (hereafter the Services), are the agencies tasked with the administration of the ESA. Sections 9 and 10 of the ESA form the principle regulatory framework governing the protection of imperiled wildlife on private lands (Thompson 2002). Section 9 of the Act prohibits any person from “taking” any listed species, defined as, “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 U.S.C. Section 3(19)). The term harm was further defined by regulation to mean, “an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering” (50 U.S.C. Section 17.3). This definition of harm, that includes significant habitat modification, was upheld by the Supreme Court in *Sweet Home Chapter of Communities for a Great Oregon v. Babbitt* (515 U.S. 687 1995).

The combination of the broad application of Section 9 of the Act to include all persons and the broad definition of “taking” to include habitat modification gives the impression of sweeping power for the ESA to control the behavior of private landowners. However, successive amendments to the Act since its passage have weakened this outright prohibition on taking of

listed species (Goble 2006). Section 10 of the Act allows for certain exceptions and permits to grant the lawful taking of listed species. Amendments to Section 10 in 1982, authorized non-federal landowners to apply for incidental take permits, allowing landowners to conduct certain agreed upon practices that take listed species without the threat of regulatory penalty (Donahue 2005). These permits are granted only if the authorized take is, “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity” (16 U.S.C. Section 10(a)(1)(B)). For an incidental permit to be issued, the non-federal party and the Services have to agree on a conservation plan, called a Habitat Conservation Plan (HCP), that minimizes and mitigates the impact of the taking on the species of concern (Goble 2006). Additional policies promulgated in 1999, created further options and incentives for landowners to enhance or maintain habitat for imperiled species (Donahue 2005). These included the creation of Safe Harbor Agreements and Candidate Conservation Agreements with Assurances (CCAA). Both agreements can result in the issuance of an Enhancement of Survival Permit that assures landowners that they will not face future restrictions for actions they take now that may promote the survival or recovery of imperiled species (Donahue 2005). Safe Harbor Agreements apply to listed species, while CCAAs apply to candidate species that are not yet listed, but have been determined to warrant protection.

In most cases, Sections 9 and 10 are the only provisions of the ESA which will apply directly to actions undertaken on private land. However, some discussion of Section 7 is needed, as, in fact, the regulatory mechanism used by SGI is provided through Section 7 consultation and not Section 10 permitting. Section 7 requires that all federal agencies consult with the Services to, “insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in

the destruction or adverse modification of habitat such species” (16 U.S.C. Section 7(a)(2)). Any private action that requires a federal permit, such as a permit to fill a wetland under the Clean Water Act, or an action that is funded, partially or wholly, by a federal agency is subject to the Section 7 provisions (Freyfogle and Goble 2009b). In 2010, NRCS, following its own policy of treating candidate species as if they were listed (7 C.F.R. 650.22), consulted with the USFWS on practices that may impact sage-grouse. The result was a Conference Report that analyzed 40 NRCS practices and determined the reasonable and prudent conservation measures to avoid and minimize the impacts of said practices on sage-grouse (USFWS 2010). This conservation report is ultimately what allows NRCS to offer some manner of regulatory certainty to landowners without issuing a Section 10 incidental take permit.

#### 2.1.2 *Shortcomings of the ESA on private land.*

Many scholars have argued that the ESA has been ineffective at, and even detrimental to, conserving wildlife on private land. Furthermore, scholars have argued, and private landowners insist, that the provisions of the ESA are unfair to those private landowners who are (un)lucky enough to harbor imperiled species. The results of these critiques have been increased calls by scholars, legislators, and landowners to reform the ESA, or at least to rethink its implementation, and limited development of novel approaches to improve both the effectiveness and perceived unfairness of the ESA on private lands.

One of the more frequently cited shortcomings of the ESA is that the strong provision against harming listed species in any fashion offers little incentives to landowners to protect imperiled species and may, in fact, incentivize landowners to do the opposite (Adler 2011). In effect, the prohibition on take, it is argued, creates perverse incentives for private landowners to

thwart conservation efforts rather than face economic liability or risk regulatory penalty for harboring imperiled species (Bean and Wilcove 1997). The perverse incentives for landowners has been characterized as taking three different forms (Wilkins 2011). First, anecdotal accounts and limited empirical evidence have demonstrated landowners destroying habitat that might attract threatened and endangered species in order to avoid the punitive regulatory measures of the ESA (Brook, Zint, and De Young 2003; Lueck and Michael 2003; Norris 2004). The proverbial saying “shoot, shovel, and shut up” is often associated with land managers’ fear of this regulatory hammer of the ESA. Second, landowners may be incentivized to organize politically to delay species listings when benefits of species conservation are shared broadly by society while the costs are concentrated onto certain landowners (Ando 1999, 2001). Lastly, private landowners can prevent regulator and scientific access to their properties to conduct necessary baseline information gathering when such information could be used against landowners in the form of establishing critical habitat needed to recover imperiled species (Polasky and Doremus 1998). The combined effect of these arguments is a concern that perverse incentives make imperiled species conservation on private land more difficult and may even have a net negative impact of the very species the ESA attempts to protect (Adler 2011).

While the perverse incentive argument is often cited as an indication of the ESA’s failure on private lands, empirical evidence showing preemptive habitat destruction motivated by the fear of regulations/restrictions is in fact limited. What may be equally important in preventing the ESA from achieving its goals are questions of the ESA’s enforceability, effectiveness, and fairness. As it is written, Section 9 should be one of the most important provisions protecting imperiled species on private lands but, in practice, the prohibition on take is difficult to enforce (Cheever and Balster 2004). Since the Supreme Court’s decision in *Sweet Home* (515 U.S. 687

1995), courts have relied on the concept of “proximate causation” to determine Section 9 legal cases dealing with harmful modification to imperiled species habitat. As argued by Cheever and Balster 2004, this focus on how proximate habitat modification is from actual harm to a particular species pulls the courts attention away from the long-term impact actions may have on species as a whole and towards the foreseeable harm caused to individual members of a species. The individualized focus of the courts calls into question the effectiveness of Section 9 in achieving the broader purpose of the Act of preventing the extinction of entire species, not just the harm of individual animals. Moreover, Section 9 is politically contentious to strictly enforce and economically improbable for the Services to adequately monitor (Bean and Wilcove 1997).

Potentially even more problematic, the ESA as a whole has very little authority to require affirmative actions which, instead of merely not harming species, actually benefit imperiled species or improve their habitat (Freyfogle and Goble 2009a). This is especially apparent on private lands where even when a species is listed, Section 9 provisions are only meant to prevent further harm, not improve conditions for the species (Wilcove and Lee 2004). A lack of affirmative conservation is a major limitation of the ESA because the prevention of harm may simply not be enough to recover many imperiled species. Recovery is already challenging when most imperiled species are facing dire conditions by the time they are listed (Wilcove, McMillan, and Winston 1993). This challenge merely increases for many species, particularly those considered “conservation-reliant”, which need ongoing conservation management action simply to maintain their populations (Scott et al. 2005). Thus, without mechanisms to encourage or compel sustained affirmative conservation duties, the ESA alone is unlikely to lead to the recovery of hundreds species considered reliant on concerted affirmative conservation efforts.



Furthermore, the effectiveness of the ESA's species-specific, "emergency room" approach is questioned in light of current understanding and recognition of complex ecosystem problems (Boyd et al. 2014), dynamic social-ecological systems (Benson 2012), and unprecedented threats to species conservation such as climate change (Rohlf 2014). In sum, a more complex understanding of ecosystems, society, and systematic threats to biodiversity are shaping a recognition that the ESA is completely necessary, but not fully sufficient to conserve biodiversity (Freyfogle and Goble 2009a).

Beyond its effectiveness, the application of the ESA to private land is also discussed as a question of fairness; the most basic question being, who should pay the cost of conserving imperiled wildlife species? Different scholars address this same question using economic, political, and cultural terms. In economic terms, many have argued that it is unfair to concentrate the cost of providing a public good on select landowners who are (un)lucky enough to harbor imperiled species (i.e., private costs versus public benefits) (Alder 2011; Gibbons 2001; Shogren 1998). In political terms, the basic problem is rooted in a perceived tension between property rights of individual land managers and the public's interest and power to curtail those perceived rights (i.e., individual property rights versus popular sovereignty) (Freyfogle 2006; Olive and Raymond 2010; Peterson et al. 2004). In cultural terms, individuals and entire communities who are dependent on the same natural resources that imperiled wildlife depend on, feel national interests for species conservation threaten their cultural identities (i.e., individual versus national interests) (Meyer 2001; Stauder 2016). For instance, a historical view of the federal subsidies and policies aimed at taming the West led Meyer (2001:161) to ask, "If government natural resource policies created these communities and nurtured the values and interests that define them today, does government have an obligation to assist these communities in the transition when policies

change?” The cultural perspective argues for more attention to how identities, knowledge, and experiences are built from landowners’ livelihoods and how those connections shape reactions to imperiled species conservation (Knobloch and Cawley 2005). See Section 2.2 for more details on the livelihood perspective in a ranching context.

### 2.1.3 *Conserving species on private land: Emergence of incentive-based conservation.*

The shortcomings of the ESA as it applies to private lands have led to widespread calls to reform or rethink the ESA. There are two primary needs that these various arguments seem to call for: (1) There is a need to more creatively balance the incentives that landowners face to not just avoid harm but to improve habitat conditions for imperiled species (Yaffee 2006); and, (2) There is a need to provide more opportunities for, and incentives to promote, proactive conservation of imperiled species before protective measures of the ESA are necessary (Donlan and Rothacker 2015).

Beginning with the 1982 amendments creating Incidental Take Permits, several programs have developed in an attempt to create more flexibility in the ESA and to balance incentives for private landowners (Doremus 2006). So called “second generation” approaches include, Habitat Conservation Plans, Safe Harbor Agreements, Candidate Conservation Agreements, and other incentive-driven conservation initiatives (Bean 2006). These programs consist of agreements made between land managers and state or federal agencies that utilize various forms of incentives in exchange for certain conservation activities meant to benefit imperiled species. In other words, these programs supplement the threat of regulation (the stick) with positive incentives to protect imperiled species (the carrot). Both rewarding incentives to care for species

and punitive incentives not to harm species are thought to set the conditions that lead to a more collaborative way to implement the ESA (Nie 2008; Yaffee 2006).

Incentive-based conservation programs attempt to redefine imperiled species from a liability to an asset for private land managers by incentivizing conservation efforts. Different initiatives employ various incentive structures including: financial incentives such as cost-share to help land managers implement conservation activities, technical incentives in the form of assistance in designing and implementing conservation activities, and regulatory incentives which give landowners certainty or assurance that actions they take as part of the agreement comply with the ESA. The SGI employs all three of these incentives (see Section 2.3).

Incentive-based programs to conserve wildlife are often called voluntary conservation initiatives because they are non-regulatory and do not mandate participation. However, the word “voluntary” is somewhat problematic in the fact that it obscures the role that regulatory coercion may play in motivating participation (Nie 2008). The emergence of these programs are best understood in the context of the legal and institutional hammers (most importantly the ESA’s Section 9 prohibition of take) that they were formed, in part, to avoid (Nie 2008). This context is especially important for programs that offer assurances against regulatory penalty, when landowners are driven to participate in order to alleviate regulatory risk (Langpap and Wu 2004).

Despite a looming threat of ESA regulations, it has long been recognized that the federal government lacks the capacity to completely enforce the take prohibition on private lands (Bean and Wilcove 1997). Enforcement is especially absent in the day-to-day operations of farmers and ranchers, who, according to Thompson (2006:104), have never been prosecuted for a Section 9 violation. Therefore, incentive-based conservation programs should also be understood in the context of a federal authority that may be uneven, overestimated, incoherent, or inconsistent

(McCarthy 2002). In SGI and other “voluntary” programs, land managers are free to choose to participate but must conform to the prescribed activities of the particular program. Although not outright coercive, the implicit intent of these programs is to guide participants’ actions “in an improved direction” (Li 2005:384). In fact, private landowners may perceive such programs as “a set of golden handcuffs” that limit their control and autonomy (Shogren 2005:11). In this light, SGI and other federal incentive programs are understood to be an extension of government authority where the regulatory agencies had little enforcement capacity before (Colburn 2011). It is important to recognize this context to fully understand how individual land managers perceive the incentives that these programs offer. Due to the concerns over the word voluntary, I refer to such programs as incentive-based in the remainder of this document.

Concern over the lack of rewarding incentives within the ESA also extends to concerns about the lack of incentives to conserve species before they are listed. Programs such as Candidate Conservation Agreements with Assurances (CCAA) and the SGI are explicitly designed to encourage conservation actions for species that do not yet have statutory protections through the ESA and which will possibly prevent the need to list such candidate species. Encouraging and implementing more pre-listing conservation, or conservation that happens “upstream” of the ESA, is thought to make the ESA “less complex, less contentious, and more effective” (Donlan and Rothacker 2015:5) due to its proactive rather than reactive approach and its use of incentives to create partners rather than adversaries in species conservation (Fankhauser 2015).

Proponents of pre-listing conservation recognize that regulatory incentives in the form of assurances or certainty are critical to generating engagement from landowners, industries, and agencies (Gartner et al. 2015). In the pre-listing environment, it is the risk of regulation and the

opportunity to proactively mitigate that risk that is expected to motivate participation rather than regulation itself (Male and Donlan 2015). The USFWS has recognized the importance of connecting pre-listing conservation efforts with regulatory protection for participating entities through its CCAA program. In 2012, the USFWS first proposed developing new incentives for “the voluntary conservation of candidate species” (77 F.R. 15352). The Policy Regarding Voluntary Prelisting Conservation Actions was finalized in January of 2017 by Director Dan Ashe (Director’s Order No. 218). This policy allows landowners to generate mitigation credits by participating in State-sponsored habitat conservation programs. Rather than regulatory assurance, landowners can earn mitigation credits that could be traded in a mitigation market in the event that an imperiled species is listed. To date, the CCAA program is still the only USFWS program that offers regulatory assurances to participants for their pre-listing conservation efforts. The SGI is unique in that sense because it is a pre-listing conservation program that offers regulatory predictability but is not administered by the USFWS.

In sum, the presence of imperiled wildlife species on private property poses a doubled-edged sword for the private landowner: existing and potential regulations protecting imperiled species burden private landowners, however, incentive programs mean that the landowner has an opportunity to benefit from wildlife (Huntsinger, Sayre, and Wulforth 2012). Exploring the decisions of ranchers to participate in proactive sage-grouse conservation can, therefore, provide insight into transforming imperiled wildlife species from a liability to an asset for private landowners. The next section will explore the aspects of ranching in the Intermountain West that make ranching a unique situation to pursue conservation on private lands.

## 2.2 *Ranching in the Intermountain West*

Across the entire range of sage-grouse habitat in the Intermountain West, livestock grazing is the most widespread land use (Knick and Connelly 2011). Improper grazing management, grazing that leaves too little grass cover for nesting sage-grouse or is inconsistent with “local ecological conditions”, is considered a threat to sage-grouse populations (USFWS 2013:44). In order to ameliorate this threat, SGI seeks to work with private ranchers to promote grazing that leaves more grass cover and improves or maintains ecological functions. SGI also works to sustain working rangelands to reduce the potential of conversion to agriculture (SGI 2017). In doing so, SGI is embedding itself within a land use practice with deep historical roots, significant cultural meaning, and extensive socio-political and economic transformations.

Understanding this context of ranching in the Intermountain West is necessary to analyze how ranchers respond to SGI. In this section, I begin with a brief review of the complexity in defining what ranching is and who ranchers are. Next, I review the cultural aspects of ranching including the knowledge, stewardship, and values that characterize ranching as a livelihood. I then detail the socio-political and economic transformations that are shaping ranching today and review arguments for sustaining ranching that attempt to merge ecological, social, and economic goals on rangelands. Finally, I review some of the research that has attempted to understand ranchers’ decision-making in rangeland management.

### 2.2.1 *What (and who) is ranching.*

Defining ranching is a surprisingly complex task. The production of livestock has been an income generating activity in the western U.S. since the 1500s (Sayre 1999); however, the form of ranching that we know today did not come about until much later. From its earliest days to the

mid-1800s, livestock production largely resembled a pastoral livelihood, relying on the natural production of grass and common access to rangelands (Sayre 1999). Greater integration with national and international markets throughout the latter half of the nineteenth century, combined with the passing of the Taylor Grazing Act in 1934, completed a transition to the type of ranching that exists today (Sayre 1999). Today, ranching in much of the Intermountain West is dependent on grazing public lands provided by use permits that allow grazing on specific grazing allotments (Sullins et al. 2002). As discussed below, ranching involves a complex mix of intersecting processes, including economic (markets, commodity prices, etc.), biophysical (climate regimes, nutrient cycles, hydrologic cycles, ect.), and social (legal institutions, political powers, societal values, etc.) forces (Brogden and Greenberg 2003; Knight, Gilgert, and Marston 2002).

Similarly, the term ranching or rancher hides substantial complexities in determining who the “real” rancher is (Huntsinger 2002:80). Ranching operations in the West differ remarkably in terms of land tenure rights, size, ownership, and the proportion of household income derived directly from ranching. One typology of ranch ownership utilized the following categories: traditional ranchers who received a significant portion of their income from the ranch, part-time ranchers who received more income off-ranch than on, amenity buyers who hire ranch managers or lease their property, and corporate ranchers who have a large network of several ranches with one or more ranch managers (Gosnell and Travis 2005). Another study grouped ranchers into large scale operations, traditional ranchers, and hobby ranchers but also distinguished between ranchers who largely depend on public lands and those that do not (Coppock and Birkenfeld 1999). These distinctions in ranchers are important because SGI works with land managers no matter if they own land and graze it themselves, lease their grazing lands, or if they are managing

land that they lease and do not own themselves. In this paper, I use the term rancher to refer to all types of ranchers, and the word land manager to refer to both those who might be the landowner as well as those who merely lease or manage property.

### 2.2.2 *The culture of ranching.*

Ranching is a highly romanticized livelihood practice in American society (Starrs 2002). From the earliest days, the cowboy has been imbued with mythic idealism (Sayre 1999). The rugged individual conquering the West encapsulated American values during the homesteading era, and still captures American romanticism (Starrs 2002). However, this mythic quality, though eroding to some degree (see Section 2.2.3), occludes a more nuanced and realistic view of ranching including the ranchers themselves (Sayre 1999). Ranching has been described as a subculture by anthropologists, owing to the strong identities that ranchers form and value (Grigsby 1980). This identity is built on the values of self-sufficiency, individualism, self-autonomy, honesty, and hard work (Grigsby 1980). Often, ranchers are described as being deeply attached to their land and lifestyle, so much so that they even sacrifice profits to maintain a specific lifestyle (Grigsby 1980; Huntsinger 2002). In other words, ranchers' claim their deep attachment to their cultural identities and lifestyle values (autonomy, self-sufficiency, hard work) keep them ranching long after the purely profit-maximizer would (Butler 2002).

Based on research, ranchers often hold a more utilitarian worldview, seeing natural resources for their human value, "without apology" (Stauder 2016:127). While this worldview is certainly self-fulfilling as their livelihood depends at least in part on the use of natural resources, many ranchers also see their use of natural resources as good for society (Huntsinger 2002). Moreover, this worldview does not see human use as diametrically opposed to the conservation



of natural resources; in fact, many ranchers pride themselves in stewarding their land and resources (Budd 2002). These ranchers' stewardship claims are based in both economic and moral arguments. Economically, ranchers argue they have the incentive to properly steward their resources to continue to support the economic production of their lands (Knapp and Fernández-Giménez 2008; Sayre 2002). Certain ranchers have also been described or describe themselves as having an emotional connection to their land and a moral obligation to take care of it (Budd 2002; Jackson-Smith, Kreuter, and Krannich 2005; Knapp and Fernández-Giménez 2008).

In an academic sense, the word stewardship is understood as a relationship in which a steward cares for the property of another (Wunderlich 2004). It can be thought of as an ethic which extends moral consideration to the interests of society, other species, or future generations; and accepts "significant answerability to society" (Worrell and Appleby 2000:269). In examining ranchers' perceptions of stewardship, Ellis (2013), however, finds that rather than transcending human-centric notions to control nature, stewardship further obscures acceptance of dominion and power over livestock through a narrative of harmony. Relying on ethnographic study of ranchers in the West, Ellis (2013) argues that ranchers use stewardship to create a narrative of balance, or symbiotic ideology, which justifies capitalist production and neglects production's costs to the environment and livestock. This study emphasizes the need to understand stewardship from ranchers' perspectives and to not make simple assumptions regarding stewardship's role in ranchers' livelihoods.

Related to ranchers' sense of stewardship and core values are their views regarding property rights. The connections between ranchers' values, stewardship identities, and property rights orientations are complex. Popular perception may be that rural landowners are ardent defenders of absolute individual property rights (Jackson-Smith et al. 2005), and that traditional

core values of ranchers predispose them to anti-cooperation and anti-government intervention views (Grigsby 1980). Jackson-Smith and others (2005; Yung and Belsky 2007) demonstrate, however, that ranchers' property rights orientations are more nuanced, situational, and multidimensional. Jackson-Smith et al. (2005) found that ranchers in Texas and Utah were not universally concerned with individual rights, but some held property rights orientations that were constrained by societal values, limited by a stewardship ethic, or defined by a perception of threatened rights; and, at the same time, the vast majority of ranchers do not agree that society has a right to restrict land uses that cause harm to natural resources.

In their research on the Rocky Mountain Front in Montana, Yung and Belsky (2007) also highlight dimensions of managing private property for public goods. These ranchers were not concerned only with individual rights, but recognized an obligation to a localized community and negotiated property relations amongst their neighbors that supported their ranching livelihoods (Yung and Belsky 2007). The combination of these two studies suggests that ranchers have complex understandings of property rights; many recognize obligations to the environment (Jackson-Smith et al. 2005) and a broader community (Yung and Belsky 2007). In these studies, private property rights, as viewed by ranchers, are largely tied to their ability to make a livelihood, therefore a threat to perceived property rights can be interpreted as a threat to livelihoods.

Another key to the cultural dimensions of ranching is the knowledge that ranchers gain from the daily interactions with their livestock, rangelands, and environment. Ranching as a land use is somewhat unique in the long history that ranchers often have with a particular piece of land (Knapp and Fernández-Giménez 2008). Ranchers with such a history accumulate locally-relevant, place-based knowledge that incorporates understanding of change through years of

experience working with the land (Knapp and Fernández-Giménez 2008). This knowledge is, thus, situated in a particular place and time (Hasselstrom 2002). Ranchers' knowledge often integrates social, economic, and ecological factors as opposed to the reductionist approach used in formal scientific knowledge production (Knapp and Fernández-Giménez 2009b). Knapp and Fernández-Giménez (2009b) characterize ranchers' knowledge as both active, relating to the management of natural systems for productive gain, and as embedded, coming from experiences and observations living on the land. Practical experience may be ranchers most important source of knowledge (Hasselstrom 2002), but family, other ranchers, organizations, and informal experimentation also serve as important sources of information and learning (Knapp and Fernández-Giménez 2008, 2009b; Wilmer and Fernández-Giménez 2015).

Increasing recognition of experiential knowledge as a legitimate way of knowing in the broader conservation field (Berkes 2012) is very much present in the ranching context of the West. Calls to recognize the rich knowledge of ranchers and for the co-production of knowledge (i.e., between ranchers and professional range scientists and managers), in the western rangeland context have been increasing (Briske 2012; Knapp and Fernández-Giménez 2009b; Knapp et al. 2013; Lubell, Niles, and Hoffman 2014; Sayre et al. 2012b; Stauder 2016). Of particular relevance to this study, ranchers' knowledge of wildlife needs, threats, behaviors, and management strategies are important for understanding both potential conflict and cooperation in imperiled species management (Knapp et al. 2013). Knapp and colleagues (2013) found that the narratives describing the decline of the Gunnison sage-grouse (*Centrocercus minimus*) in Colorado diverged significantly between those who held experiential-based knowledge and those with scientifically-trained knowledge. They argue that there is value in integrating this

knowledge for a more holistic understanding and collaborative approach to conserving Gunnison sage-grouse moving forward (Knapp et al. 2013).

As a testament to the growing recognition of experiential knowledge, various experiments in the integration of knowledge have been emerging in different contexts of the West. Examples include Collaborative Adaptive Rangeland Management (Wilmer 2016) and participatory development of rangeland State and Transition Models, as summarized by Kachergis and others (2013). Research has demonstrated attempts to integrate multiple sources of knowledge have improved the accuracy and management relevancy of knowledge, formed the basis for adaptive management, and improved communication between multiple stakeholders (Kachergis et al. 2013; Knapp and Fernández-Giménez 2009a). These authors document how local knowledge and ecological data can complement each other to improve understanding of complex rangeland systems, create new knowledge, and contribute options for social-ecological resilience to changes within the system (Kachergis et al. 2013; Wilmer 2016).

Despite these potential benefits, significant challenges remain in how to validate different knowledge claims and how to successfully integrate paradigms which evaluate management risks and tradeoffs differently (Knapp and Fernández-Giménez 2009a; Wilmer 2016). Rather than one form of knowledge replacing or being favored over another, the challenge is in determining how they might complement each other, where there is significant agreement, where there is disagreement, and where there are gaps in overall understanding which can inform future investigation. Significant challenges also include a willingness and ability for participants on all sides of the process to accept different ways of knowing (Black Elk 2016) and accept all forms of knowledge, even scientifically-derived knowledge, as contextually defined by aspects of

culture, world-views, social differentiations, and economic and political interests (Bixler 2013; Cote and Nightingale 2012; Robbins 2006).

### 2.2.3 *Socio-political and economic transformations.*

Cultural ideas about ranching in the U.S. have changed over ranching's long history. The combination of economic booms and busts with widespread shifts in social values has kept popular cultural ideas about ranching in flux (Starrs 2002). Through much of the twentieth century, ranchers held significant value in American society, aided by romanticized notions of the ranching livelihood, as noted above (Sayre 2002). Sayre (2002) refers to this value as symbolic capital and notes that as a result of these values, ranchers were supported by government actions (e.g., government funded predator control, exclusive access to public grazing leases, and rangeland scientists largely partnering with ranchers to improve rangeland productivity). Ranchers' symbolic capital also translated to substantial political power to assert their interests at the national policy level (Brogden and Greenberg 2003).

This status for ranchers began to decline in the sixties with the rise of the environmental movement which directly challenged ranchers (and loggers) political power (Sayre 2002; Stauder 2016). The resulting shift has been described as a, "legal, political, economic, and cultural sea change," (Sheridan and Sayre 2014:7) as ranching became, "the object of increasingly rigorous and complex state regulations, economically marginalized, and ecologically criminalized" (Sayre 2002:228). The passage of environmental statutes such as the National Environmental Policy Act in 1969, and the ESA in 1973, shifted power to privilege wildlife protection over grazing to a point which threatened and decreased grazing access traditionally given to ranchers (Sayre 2002; Sheridan 2007; Stauder 2016). Ranchers were losing their symbolic capital, while endangered

species were gaining symbolic importance and bureaucratic attention (Sayre 2002; Sheridan 2007). Through tactful political and legal maneuvering, public interest groups asserted values of wildlife habitat, recreation, and wilderness preservation over the productive use of rangelands (Brogden and Greenberg 2003). The ensuing ‘rangeland wars’ oversimplified complex natural and social processes, polarized the grazing debate, and pitted environmentalists and ‘nature’ on one side, and ranchers and jobs on the other in a perceived zero-sum game (Brogden and Greenberg 2003; Sayre 2002; Sheridan and Sayre 2014). This debate drove constituents to the extremes, contributing to dichotomous essentialisms in worldviews: defined by pristine, untouched, and harmonious nature on one side and nature made for man and meant to be productive on the other (Sheridan 2007).

At the same time that ranchers were losing political and cultural power, economic forces were also trending out of favor for ranchers. Today, ranchers face considerable economic challenges including rising land prices, uncertain land tenure regimes, suburban sprawl, and increasing landowner turnover (Sheridan 2007). One of the biggest threats to ranching is a rapidly shrinking available land base (Sheridan 2007; Sullins et al. 2002). Brogden and Greenberg (2003) refer to two forces contributing to what they refer to as “reterritorialization of grazing”: the political forces that marginalize grazing on public land mentioned previously and urban sprawl converting former rangelands into housing developments. The rapid conversion of rangelands into housing developments in certain parts of the West, such as in Arizona, Colorado, and Montana where population is increasing and amenity values are high, is being driven by a perfect storm of economic forces (Charnley, Sheridan, and Sayre 2014; Sheridan 2007). The economic viability of ranchers is threatened by increasing opportunity costs as interest in mechanization and vertical integration of the industry increases (Sayre 2002). Already, the

feedlot and packing industries are consolidated to the point that four companies own 82% of the industry (Greider 2000). This consolidated power means the industry can dictate prices, enabling them to hold prices low and leaving ranchers with little negotiating power as price-takers (Field 2002; Huntsinger 2002; Sheridan 2007). Furthermore, revenues are decreasing as consumers demand cheaper food (Field 2002). Moreover, land values in many areas are skyrocketing as private lands are valued more for real estate development than agricultural production (Sayre 2002). Rising land prices give ranchers both a tempting (and lucrative) out by selling to developers at the same time that they make intergenerational transfer more difficult because of excessive estate taxes (Sheridan, Reeves, and Charnley 2014).

The combination of economic hardship with socio-political changes has driven some ranchers out of business (Field 2002; Stauder 2016). Other ranchers hold on because of their attachment to the ranching culture and way of life (Grigsby 1980; Knight et al. 2002; Sayre 2002). But, as rancher Jim Chilton puts it, “a point can be reached when culture can not hold out against economics” (cited in Sayre 2002:xxi). High rates of ranchland conversion in parts of the U.S., especially Colorado, Arizona, California, and Montana, have piqued the concern of ranchers as well as conservationists who fear the resulting loss in biodiversity and ecosystem services as cows are replaced with condos (Brunson and Huntsinger 2008; Maestas et al. 2001; Sheridan 2001). The next section explores the growing convergence between ranchers and conservationists in greater detail.

#### 2.2.4 *Ranching as a conservation strategy?*

Even as ranchers lost symbolic capital, the broader public, including environmental protection constituents, still strongly value the large, un-fragmented, and “open” landscapes that

ranches provide (Brogden and Greenberg 2003). At the very height of the rangeland conflict in the 90s, people exhausted by conflict on both sides of the debate began searching for a new approach by shifting the polarized conversation back towards the vacated middle-ground (Charnley, Sheridan, and Nabhan 2014). What the Quivira Coalition, a non-profit striving to build capacity for working rangelands, now calls the ‘radical center’ was born out of highlighting common values for healthy, productive land shared by both ranchers and environmental advocates (White 2014). While critics of ranching for its ecological devastation clearly remain, an increasingly large body of research now points to the biodiversity and ecosystem services that particular types of ranching attentive to ecological processes can help to maintain (Knight et al. 2002). Maintaining these undeveloped, open or “working landscapes” is a goal explicitly stated by SGI (SGI 2016), and encouraged by conservationists who recognize their value explicitly for biodiversity protection (Knight 2007; Maestas et al. 2001; Thompson 2006).

The argument for maintaining ranching is based primarily on the ecosystem services that large, un-fragmented, healthy, and intact rangelands sustain, including fostering biodiversity (Brunson and Huntsinger 2008; Knight 2007). The principle role that ranching plays in maintaining diverse ecosystem services provisioned by rangelands has led some researchers to argue that “resource-based owners should be more acknowledged as principle stewards of working forests and rangelands because they are the ones who perform on-the-ground management of biodiversity and ecosystem services” (Plieninger et al. 2012:438). Support for this argument is based upon countering the assumption that grazing universally degrades ecosystems. Rangeland ecosystems are adapted to periodic but continual change or “disturbance”, and grazing is one kind of disturbance (Knight 2002; Sayre 2001). Grazing is not antithetical to biodiversity, but, if moderate and attentive to key ecological processes such as the



hydrologic cycle, maintains the essential biophysical processes that support biodiversity, especially in comparison to alternative land uses like cultivation or residential development (Havstad et al. 2007; Knight 2002; Maestas et al. 2001; Sayre 2001). Some research has used the intermediate disturbance hypothesis to argue that anthropogenic disturbance, including moderate grazing, can actually increase biodiversity by creating and maintaining habitat heterogeneity (Huntsinger 2002; Perevolotsky and Seligman 1998; Sayre 2001; Siebert and Belsky 2014).

Private lands may also generally harbor more biodiversity in the first place as they tend to be located in areas with more productive soils, at lower elevations, nearer to water sources, and in more diverse habitat types than traditional protected areas which tend to be in high elevation “rock and ice” locations (Maestas et al. 2001, 2003; Nabhan, Knight, and Charnley 2014; Scott et al. 2001). The impact of grazing on wildlife is species-specific (Brunson and Huntsinger 2008; Budd 2002; Huntsinger et al. 2012), but grazing is generally not the most pressing threat to imperiled species (Huntsinger et al. 2012; Stauder 2016). The threat of alternative land uses to biodiversity has led some researchers to wonder whether ranchers are really a ‘keystone species’ (Knight 2007) managing core conservation areas of the West (Nabhan et al. 2014).

Ecosystem services provided by working rangelands are not only limited to biodiversity. Working rangelands support a variety of goods and services, including food, fiber, clean water, recreation, minerals, medicines, and carbon sequestration (Havstad et al. 2007). Sustaining these services for the benefit of the ecosystem and society, given the shifting economic, socio-political, and demographic structures of ranching, is a difficult task (Brunson and Huntsinger 2008). It requires recognizing that ecosystem services are a product of both ecological and social processes (Huntsinger and Oviedo 2014), and that ranching is, “at once a bundle of ecological processes and interactions, and an expression of human community” (Huntsinger and Hopkinson

1996:167). Understanding rangelands as social-ecological systems calls for an appreciation for the biophysical and social factors that interact and intersect at coarse and fine scales (Brunson 2012).

This section raises an important question: who shall pay the costs for maintaining the ecosystem services that ranches provide? On the one hand, it can be argued that ranchers who wish to continue ranching will have to absorb those costs and adapt their management to reflect changing socio-political, economic, and demographic conditions (Brunson and Huntsinger 2008; Didier and Brunson 2004). However, placing the burden on ranchers comes with tradeoffs. Ranchers without the material capacity to absorb those costs and risks may not be maintained, raising the questions, what alternative land uses will replace ranching and what ecological impacts will result in the absence of ranching? On the other hand, what role, and through what mechanisms, should the state play in convincing or assisting ranchers to maintain ecological functions, including providing habitat for imperiled species? The appropriate policy approach to take is an ongoing question that society will continue to face. Incentive-based programs like the SGI seem to accept some role for the state to assist ranchers in maintaining ecological functions, but who decides what sustainable ranching is and what “assistance” ranchers really need? Research on the decision making of ranchers can offer some insights into these questions. I review this body of research next.

### 2.2.5 *Understanding rancher decision-making.*

Much of the research on rancher decision-making in the U.S. has focused on understanding ranchers’ adoption of management techniques developed and promoted by professional rangeland scientists, managers, and extension agents. Greatly influenced by Rogers’

(1962[2010]) diffusion of innovations theory, much of the scholarship on rancher-decision making has attempted to understand the adoption of innovations that are promoted as both socially-desirable in terms of conserving natural resources and thought, by proponents, to improve economic sustainability for ranchers. More recently, studies have paired ideas about adoption of innovations with the concepts of resiliency and adaptation, suggesting that ranchers' participation in various state- and agency-led conservation programs may be part of an adaptive decision-making process (Lubell et al. 2013; Roche et al. 2015). However, there continues to be little attention paid to a larger range of socio-political variables, including ranchers' material abilities to adapt as well as to questions of power, knowledge, and legitimacy inherent in the adoption model (Wilmer 2016; Wilmer and Fernández-Giménez 2015).

Management practices promoted as innovations include efforts to intensify production by investing in range and infrastructure improvements or more intensive grazing plans; diversifying operations by seeking additional income sources; or extensively seeking more access to grazing land (Peterson and Coppock 2001). Research has attempted to identify factors that can be used to predict ranchers' adoption of these extension practices and improve extension agencies outreach efforts. Ranchers that are more dependent on income from ranching, work full time on the ranch, and manage large operations are expected to be more willing and likely to have the means to adopt extension agencies' suite of innovations (Didier and Brunson 2004; Kennedy and Brunson 2007; Peterson and Coppock 2001). This research suggests that full time ranchers, dependent on ranch income, have both the incentive to take up new practices and more time to experiment with innovations compared to ranchers who are too busy with off-ranch jobs (Didier and Brunson 2004; Coppock and Birkenfeld 1999); however, these ranchers must also have the material resources to absorb the risks if new practices fail to produce needed benefits. The adoption of

new practices has also been shown to be more likely when ranchers have access to social networks with valuable information, have a desire to show their stewardship, and when their management goals plan for a longer-term horizon (Didier and Brunson 2004; Kennedy and Brunson 2007).

Core values and beliefs of ranchers have also been found to influence willingness to adopt new management practices, though their influence has not always been consistent. Kreuter and others (2006) related ranchers' property rights orientations with their willingness to adopt a variety of what they determined were socially-desirable management objectives such as providing habitat for threatened and endangered species. They found that ranchers with stewardship or social responsibility orientations were more likely to adopt compared to ranchers who felt their property rights are eroding (Kreuter et al. 2006). Following work done by Cearley Sanders (2005) that indicated the importance of land attachment for landowners, Sorice and colleagues (2012) investigated the relation between lifestyle centrality and willingness to participate in endangered species conservation in Texas. In apparent contradiction to earlier work, they found that ranchers more strongly tied to their ranching identities, ranch income, and to their land were less likely to participate in conservation programs (Sorice et al. 2012). This finding is more in line with Grigsby's (1980) assertion that traditional ranching values discourage rancher engagement in organizations, diversification, cooperation, and government intervention. Explanation for why some studies find dependence of ranch income as supporting adoption (Didier and Brunson 2004; Kennedy and Brunson 2007) and another did not (Sorice et al. 2012) may come from what seems to be stronger individual property rights orientations for Texas landowners, where this study took place (Jackson-Smith et al. 2005; Krueter et al. 2006). Another possible explanation is Didier and Brunson's (2008:333) claim that some ranchers,

despite traditional ranching values, may accept innovations as a, “lifestyle maintenance strategy in today’s changing socio-political environment.”

In an attempt to advance the framework for understanding rancher decision-making, Lubell and colleagues (2013) investigated ranchers’ participation in conservation programs in an integrated model. Much like Didier and Brunson (2008), the authors argue that conservation programs are best understood as adaptive strategies ranchers can use to sustain livelihoods and ecosystem services (Lubell et al. 2013). They argue that, state and federal conservation programs (e.g., conservation easements, landowner incentive programs, regulatory assurance programs, etc.) can be understood as components in a suite of tools which private ranch managers may use to diversify their operations and increase their capacity to sustain ranching operations (Brunson and Huntsinger 2008; Lubell et al. 2013; Sayre et al. 2012a). The integrated adaptive decision-making model includes variables related to operation and operator characteristics, ranchers’ time horizons, social networks, and social values to explain ranchers’ decision-making (Lubell et al. 2013). Review of ranchers’ participation in 18 different conservation programs revealed larger operations, orientations towards the future, opinion leaders, and government trust were key variables related to participation (Lubell et al. 2013). Later research using the adaptive model identified government regulations, environmental policies, and economic viability as the most highly rated concerns ranchers had for the future (Roche et al. 2015). Thus, effectively partnering with ranchers to achieve economic viability and ecosystem function may be complicated when some ranchers see government agencies as a barrier to their management capacities (Roche et al. 2015). Focusing on potential ‘win-win’ scenarios that emphasize production goals as well as cultural values has been advocated as the most effective strategy to

encourage rancher adoption of management practices that sustain ecosystem functioning (Plieninger et al. 2012; Roche et al. 2015).

While the innovation adoption research has highlighted important factors that describe the characteristics of ranchers who may be predisposed to adopting new management actions, deeper understandings of ranchers' decision-making processes have not been well-studied (Wilmer 2016; Wilmer and Fernández-Giménez 2015). Wilmer and Fernández-Giménez (2015), for instance, argue that more complex understanding demands paying attention to ranchers' socio-cultural experiences, identities, and different ways of knowing. Using a grounded qualitative methodology, the authors found ranchers in Colorado, New Mexico, and Arizona who make decisions in a complex, non-linear process involving multiple core concepts, including different system dynamics, ways of knowing, actions, and timescales (Wilmer and Fernández-Giménez 2015). Drawing on different interrelated facets of each core concept, ranchers made decisions related to drought and succession planning in a complex and nonlinear process, what the authors call decision-stories. Wilmer and Fernández-Giménez's most recent work (2016a, 2016b) pushes our understanding of rancher decision-making even further by examining the under-appreciated role of women ranchers. These studies demonstrate women's essential roles in sustaining and maintaining ranching families, learning and passing on practical knowledge, performing actions of resilience, and safeguarding cultural values.

The innovation paradigm, in classifying ranchers' as either actively adapting or passively not, misses an important understanding of ranchers as neither fully capable of adapting to, nor fully controlling, the circumstances in which they operate but rather, constantly learning and balancing adaptation with variables they can control (Wilmer 2016). Furthermore, a paradigm that essentially asks how can the scientific or professional community convince rural resource

users to participate in conservation and adopt recommended ‘innovations’ risks overlooking important questions about whether these practices benefit the resource users and whose knowledge informs their development and implementation (Robbins 2006). Understanding ranchers’ decisions, especially in regards to a contested wildlife issue like the potential listing of the sage-grouse, requires attention to the complex mix of social factors at play, including recognizing various forms of political contests that may be operating. Knowledge in wildlife conflicts is often contested (Breslow 2014; Essen 2010; Knapp et al. 2013; Robbins 2006), stemming from and leading to different political propensities, assertions of legitimacy, and levels of trust among different groups (Breslow 2014; Lubell 2007; Patterson, Montag, and Williams 2003).

McCarthy (2002) uses the example of the Wise Use movement in the late 80s through the 90s, to demonstrate the inherent political struggle for legitimacy, resource access and control, and knowledge that rural producers, including ranchers, were calling for even as powerful economic interests sought to profit from the same narrative. He argues that research often fails to realize the moral elements in rural commodity producers’ economic motivations, such as their desire to maintain livelihoods, community stability, and social relations (McCarthy 2002).

Wilmer’s (2016) work with ranchers in Wyoming and Colorado seems to add a desire to sustain family ranches over multiple generations to the moral economy of the ranchers in her study.

As ranchers increasingly face changing socio-political and environmental changes and seek ways to maintain their livelihoods in the changing West, incentive-based programs like the SGI may be helping them to do so (Brunson and Huntsinger 2008). One of SGI’s explicit goals is to sustain ranching operations (NRCS 2011a); however, whether it provides assistance that ultimately benefits different types of ranchers needs to be addressed. Assessing this question will

require paying attention to ranchers as heterogeneous in their views, values, characteristics, context-specific knowledge, and their material circumstances and related capacity for absorbing costs and risks. Understanding both the characteristics of ranchers as well as their decision-making processes will help in determining how SGI can contribute to sustaining both imperiled species and ranchers; in particular, the views and concerns of ranchers which SGI will need to attend to in order to achieve this success.

### *2.3 Incentive-Based Conservation and the Sage Grouse Initiative*

The SGI is an incentive-based approach to conservation that is part of a broader emergence of programs that attempt to incentivize private land manager participation in government-sanctioned conservation. As the preceding sections suggest, the rationale supporting incentive-based conservation is multifaceted. In the context of the ESA and conserving imperiled wildlife on private lands, incentive-based programs attempt to remedy perverse incentives (Shogren 2005), incentivize greater proactive conservation (Donlan and Rothacker 2015), and extend conservation efforts beyond the ESA (Freyfogle and Goble 2009a). In the context of ranching and private land use in the West, incentive-based programs serve as one approach to pay land managers for sustaining the ecosystem services supplied by undeveloped rangelands (Brunson and Huntsinger 2008), or to adopt management practices that support ecological goals such as the protection of biodiversity (Kreuter et al. 2006). However, the potential for incentive-based approaches to achieve ‘win-win’ outcomes as promoted by its proponents, needs to be assessed on a case by case basis. While the approach offers multiple potential advantages in terms of lessening adversarial wildlife conflicts, it has also been critiqued as serving powerful



economic interests, overly compromising on environmental goals, and even hegemonic (MacDonald 2010; Schwartz 2013).

In this section, I will focus more specifically on the incentive-based approach to conservation. Scholars of these programs have used many different names for this approach, including voluntary conservation programs, private lands conservation, and non-regulatory conservation (Cooke et al. 2012; Lubell et al. 2013; Sorice et al. 2011). In this thesis I will use the term incentive-based conservation. Incentive-based conservation programs can be administered by state, federal, or non-governmental agencies and encourage conservation, mainly on private lands, using incentives. Incentives can be both monetary (such as direct payments) or non-monetary (such as regulatory assurance). At first, I briefly review the relevant research that has focused specifically on landowner participation in incentive programs. This review will remain broad, unified by its focus on incentives and wildlife conservation, but diverse in its many disciplinary approaches, different incentive programs, and distinctive landowners under study. I will then narrow my focus to SGI, reviewing its incentive structure and specific conservation practices with a particular emphasis on prescribed grazing.

### 2.3.1 *Landowner participation in incentive-based conservation.*

Changing behavior through incentives has been a topic of social science inquiry for decades. Indeed, incentive-based conservation programs have been the subject of study in diverse disciplines such as economics, social psychology, human dimensions of natural resources, and sociology. The shift to ever more incentive-based, non-regulatory conservation programs has been called a ‘quiet revolution’ in environmental policy away from binding, top-down regulations that epitomized the approach in the late 60s and 70s (Schwartz 2013). Due to

its non-regulatory approach, the conservation success of incentive programs depends, in part, on the participation of private landowners in sufficient numbers to achieve conservation objectives. For this reason, research on incentive-based programs has been principally focused on how to encourage landowner participation. However, another measure of success is the degree to which these programs provide assistance to do management activities that are in the best interest of the participants themselves. In this section, I first review the literature on the many factors that have been theorized to influence participation in incentive-based conservation programs. These factors can be broken into the following categories: cognitive determinants, land and landowner characteristics, the social context, economic costs and benefits, and program attributes. I finish the section highlighting important assumptions that are often overlooked in the current research on incentive-based conservation, including underlying political factors that may define whether programs are accepted or contested by different intended participants.

Scholarship on human behavior related to natural resources includes attention to cognitive determinants of behavior, such as attitudes, beliefs, social norms, and values. As such, these cognitive determinants have also been the core area of study in incentive-based research. Several authors have used the Reasoned Action Approach or its precedent theories (Fishbein and Ajzen 2010) to test relationships between landowners' attitudes, perceived social norms, and their subsequent behavioral intentions to participate in various real and hypothetical conservation programs. Multiple studies show that landowners with positive attitudes toward a particular program are more likely to intend to participate in the program (Sorice and Conner 2010; Sorice et al. 2011; Sorice et al. 2012; Willcox, Giuliano, and Monroe 2012). A positive attitude toward the targeted wildlife species is also expected to increase intentions to participate in a program to conserve it (Rodriguez et al. 2012). Beliefs that the program will improve the survival of the

targeted species (Sorice 2012; Cooke et al. 2012), or that the program will improve one's own land (Sorice 2012; Dayer et al. 2016) may be driving attitudes towards participating in conservation initiatives. Social norms perceived as either encouraging participation in conservation or discouraging participation can also have a significant influence on landowners' intentions (Willcox et al. 2012). The adaptive decision making model suggests that opinion leaders within the landowner community are particularly influential (Lubell et al. 2013).

In analyzing the cognitive factors of attitude and social norms in combination with incentive preferences, Sorice and colleagues (2011) begin to theorize which landowners are likely to respond to incentives. Landowners who perceived social pressure to participate and held strong positive attitudes needed the fewest incentives to motivate intentions to participate; whereas, no level of incentives were likely to convince landowners to participate if they held strong negative attitudes and perceived negative social pressures for joining (Sorice et al. 2011). Landowners with weakly held attitudes and no perceived social norms needed the strongest incentives to be willing to participate.

Studies have found that certain values and value-orientations influence willingness to participate, notably aesthetics (Langpap 2004). Additional research complements the adoption literature that strong private property-rights value orientations often discourage participation (Cearley Sanders 2005; Lubell et al. 2013; Rodriguez et al. 2012; Womack 2008). Many participants in conservation programs feel that conservation is an important part of their management either for ethical reasons, economic goals, or for ensuring a positive public image (Jackson-Smith et al. 2005; Womack 2008).

Apart from the psychological characteristics of landowners, researchers have also looked towards land ownership and landowner characteristics that correlate with participation and

intentions to participate in incentive programs. Landowners who are older and own more acres for longer periods of time have been shown to be less likely to intend to participate in incentive programs (Langpap 2004); however, in another study participation across many different initiatives increased with increasing acres owned (Lubell et al. 2013). Other characteristics associated with increased likelihood of participation include membership in a conservation/natural resource organization (Dayer et al. 2016; Langpap 2004), previous participation in a similar program or activity (Dayer et al. 2016; Rodriguez et al. 2012; Sorice and Conner 2010), strong tenure rights (Cook et al. 2012), increased education, and diversified income sources (Lubell et al. 2013).

Researchers have also addressed factors within a broader social context that influence landowner decision-making. Probably the most important of these factors is trust (Cooke et al. 2012; Lubell et al. 2013). The relationship that landowners have with the administering agency is critically important in determining if sufficient trust exists to motivate participation (Lubell et al. 2013). Stern and Coleman (2015) suggest four different dimensions of trust which all can influence relationships in natural resource management. They describe dispositional trust as the inherent propensity for a person to be trusting; rational trust based on expectations for benefits to result from the relationship; affinitive trust based on shared identities and values; and procedural trust in the structural controls that limit risk in the relationship (Stern and Coleman 2015). In a landowner-agency relationship, there are different factors which might underlie these dimensions of trust, including perceptions of agency competency (Leahy and Anderson 2008), past experiences with the agency (Stern and Coleman 2015), dissimilar values or differing core political beliefs (Lubell 2007), and perceptions of legitimacy in policies and institutional mechanisms (Cvetkovich and Winter 2003; Raymond 2006).

Trust is especially evident at the personal level between landowners and particular agency staff (Cearley Sanders 2005; Womack 2008). Whether landowners perceive the agency as respecting their personal or experiential knowledge and whether prescribed practices are seen as “reasonable” or make common sense relate to how legitimate or competent landowners feel agency actions are (Cearley Sanders 2005; Womack 2008). Lachapelle and McCool (2005) argue that successful natural resource management increasingly hinges on citizens feeling a sense of ownership in the planning process. They argue that ownership is based on a shared framing of the problem and equitable engagement in finding solutions in terms of the voices heard during the process, the voices privileged in the outcome, and the distribution of impact from the action taken.

While incentive-based conservation programs can offer participants benefits, they can also pose costs and risks to landowners. This is especially important when recognizing that landowners are not homogenous in their relative socioeconomic or political statuses, for instance, differences in income, financial stability, capacity to absorb risk, tenure rights, or even geographic location and land capacities. Landowners often perceive costs and benefits in terms of the different incentives they are offered, including regulatory, financial, and technical incentives. Regulatory incentives in the form of assurances against future regulatory sanction are often part of conservation programs for imperiled species. Regulatory assurances are important for encouraging participation (Langpap and Wu 2004), but are likely not sufficient to ensure participation in isolation (Langpap 2006; Wilcove and Lee 2004). Landowners’ perceptions of regulatory incentives depend, in part, on the salience of the particular wildlife species targeted by the program and whether landowners perceive a high risk of regulation stemming from the

targeted species (Langpap and Wu 2004; Nie 2008). When landowners do not perceive a high risk, they are not motivated to participate (Womack 2008).

Financial incentives to help cover the costs of conservation, as well as technical assistance in designing and implementing conservation projects, are used to supplement regulatory incentives and may be critical for some landowners' involvement. How landowners respond to these incentives will depend on their attitudes towards the program and perceived social norms (Sorice et al. 2011) as well as the trade-offs they perceive between costs and benefits. Technical assistance has been shown to be important in encouraging participation in incentive-based conservation programs (Wilcove and Lee 2004), especially if the administering agency is a trusted source for information (Cooke et al. 2012). One cost that landowners face regardless of the incentives offered is the transaction costs of complicated, often esoteric, bureaucratic formalities (Cearley Sanders 2005; Womack 2008).

Attributes of each program can also influence landowner views towards it and decisions whether to participate or not. Agreements with longer contracts have been shown to discourage participation (Sorice et al. 2013). Landowners also prefer contracts that compensate their costs rather than merely partially reimburse them through cost-share (Langpap 2006). Landowners show a preference for payments that reward them later in the contract rather than upfront (Sorice et al. 2013). Programs that include a greater perceived level of autonomy for the landowner to make land management decisions were also preferred (Sorice et al. 2013; Sorice 2012).

This discussion on factors influencing participation in incentive-based conservation has, thus far, largely overlooked the broader political context in which an incentive-based approach to conservation exists. The approach represents a somewhat drastic shift away from command and control regulations to protect natural resources, epitomized by Section 9 of the ESA, towards

more collaborative, voluntary, participatory, and market-based mechanisms (MacDonald 2010). This shift has essentially opened new political spaces for rights and interests to be negotiated amongst different stakeholders in natural resource management. Recognizing this shift calls for a case-by-case look at how rights and interests are negotiated in each conservation effort. In these new political spaces, formally marginalized voices can be empowered when given the opportunity to participate and own the process, but in other cases, existing power asymmetries can be exacerbated when powerful interests successfully appropriate the process (MacDonald 2010).

Schwartz (2013) describes an apparent contradiction presented by the non-regulatory approach. On the one hand, it has the potential to align with normative stances to recast landowners as partners in conservation rather than villains, recognizing and legitimizing their knowledge, livelihoods, and identities. On the other hand, this approach reflects free-market, free-choice, and deregulatory ideology that can serve powerful interests in compromises and capitulations. Schwartz (2013) uses the case study of panther conservation in Florida to demonstrate how the development of conservation mechanisms for an HCP served the interests of powerful housing developers, marginalizing environmental advocates more than valorizing rural livelihoods. This case study closely matches other cases where an HCP process was driven primarily by powerful housing interests in Nevada (Raymond 2006) and where rural producers' claims of marginalization and legitimacy aligned with powerful resource extraction interests in the Wise Use movement (McCarthy 2002).

The focus of this thesis is on the first of Schwartz's (2013) contradictions: the potential for incentive-based conservation to recast ranchers as partners in the conservation of sage-grouse. My intention is to understand why particular ranchers participate and do not participate

in SGI to gather insights into the incentive-based, yet still prescriptive, approach of SGI, focusing on Prescribed Grazing and ranchers in Washington State. In seeking this understanding, I draw from the diverse factors that past research has theorized to influence participation in incentive-based conservation, recognizing the political context in which these factors exist; particularly, the knowledge, livelihoods, and identities that ranchers seek to maintain. I describe the SGI approach in greater detail next.

### 2.3.2 *The Sage Grouse Initiative: Wildlife conservation through sustainable ranching*

The SGI program is a unique example of the incentive-based approach. Its stated vision is to achieve wildlife conservation through sustainable ranching (NRCS 2011a); suggesting a goal to reconcile biodiversity conservation with ranching livelihoods called for by critiques of conventional conservation that pitted livelihoods against environmental protection and increasingly pursued today by some conservationists (see Section 2.2.4). A review of both the incentives and practices that SGI offers will help to reveal this unique approach in detail. I will also review the limited research that has been completed specifically on the SGI program and its practices to date.

The origin of the SGI program is illustrative for understanding the program's intent of reconciling wildlife conservation with agricultural production (Peterson 2015). In an article for High Country News, Jodi Peterson (2015) documented how the SGI began. After personal experience with the heated conflict that pits endangered salmon against farmers using irrigation in the Klamath basin, biologists with the NRCS in Montana decided to try a new approach. For the first time, NRCS dedicated general wildlife funds for a specific wildlife project, helping to protect the Arctic grayling, a candidate species on the ESA. Success with that project led to an



expansion of the program to sage-grouse in Montana and eventually morphed into the SGI program serving all 11 states containing sage-grouse habitat.

A discussion of SGI's specific incentive structure further reveals how it attempts to reconcile sage-grouse conservation with the ranching livelihood. The SGI uses a unique three-pronged approach: using a combination of financial, technical, and regulatory incentives (USFWS 2010). Financial incentives consist of cost-share payments to help participants with the associated costs of implementing conservation practices. These are allocated through contracts within programs such as the Environmental Quality Incentives Program (EQIP) authorized by the Farm Bill (USFWS 2010).

SGI participants also receive technical assistance for implementing their conservation plans. For instance, technical assistance for designing and implementing a Prescribed Grazing plan would involve NRCS's professional assistance in conducting a rangeland inventory, calculating forage production and forage demand of livestock, developing a grazing plan with periods of rest and/or deferment, installment of appropriate infrastructure to complement the grazing plan, a contingency plan in the case of unforeseen problems (such as fire) and a monitoring plan (NRCS 2013).

Third, participants in SGI receive regulatory incentives in what is called "ESA Predictability" (U.S. Department of Agriculture 2014). The ESA Predictability is an assurance issued to the SGI participant that the practices they implement through their conservation plan are in compliance with the ESA should the sage-grouse be listed. This assurance, unlike a CCAA, does not result in a Section 10 incidental take permit but rather is based on a Section 7 consultation process between the NRCS and USFWS (USFWS 2010). The consultation process resulted in a Conference Report that reviewed 40 different NRCS conservation practices that are

used in SGI conservation plans. The report outlines specific conservation measures to be included with these practices to avoid, minimize, or mitigate impacts to sage-grouse (USFWS 2010).

In addition to its incentives, SGI's approach also includes prescriptions which define how an SGI conservation plan is designed and practices are implemented. Land managers are able to participate with NRCS to co-develop their conservation plans. Resource inventories are conducted primarily by NRCS employees and identify the resource concerns or habitat threats which the conservation plans must be designed to address. Participants choose which practices to include in their conservation plans, but the plans must include a core practice, such as Prescribed Grazing, and they must include the umbrella practice of Upland Wildlife Habitat Management (NRCS 2014) in order to ensure all practices are "implemented specifically to benefit sage-grouse populations and their habitats" (USFWS 2010:10). In Washington, participants have the option to choose a deferred-rotational grazing system, where grazing is delayed through the growing season in certain pastures, or a rest-rotational system where grazing is removed for an 18-month period on some pastures each year (NRCS pers. comm.). The conservation measures identified in the Conference Report must be followed in the plans in order for participants to receive ESA Predictability (USFWS 2010). Some examples of conservation measures include avoiding installment of practices during the sage-grouse nesting season (generally March-June), marking fences to reduce deadly sage-grouse collisions, and installing wildlife escape ramps in water troughs (USFWS 2010). As long as the conservation plan is followed, predictability lasts through the year 2040 (U.S. Department of Agriculture 2014). Participants are also bound to follow the standards and specifications of the practices within their plans when they sign the contract that authorizes the schedule of cost-share payments.

Beyond the formal incentive structure of SGI, the broader structure and implementation of the program can be incentives in and of themselves (Sorice and Abel 2015). Participation in incentive-based programs may suffer if land managers feel that specific prescriptions within the program are unreasonable or that the program threatens their management competency or autonomy (Sorice and Abel 2015; Womack 2008). Therefore, it is important to take an in-depth look at the specific prescriptions of any incentive-based conservation program to understand how participation in the program is influenced.

### 2.3.3 *SGI rangeland practices.*

There are four core practices SGI utilizes to reduce threats to sage-grouse across its 11-state operating region: (1) conifer removal to restore shrub-steppe ecosystems, (2) conservation easements to secure important habitat for sage-grouse or to prevent the conversion of rangeland for development or cultivation, (3) fence flagging to prevent deadly sage-grouse collisions with fences, and (4) prescribed grazing to increase grass cover for sage-grouse and promote healthier rangelands to, in turn, reduce the risk of invasive weeds, maintain rangelands in grazing rather than cultivation, and conserve important wet meadow habitat (SGI 2011; 2017). While several practices have well established scientific support for their benefits to sage-grouse populations, research on the ecological effects and biological effectiveness of these practices is an on-going area of study and some relationships remain untested.

Research on conifer removal has shown that no active sage-grouse leks<sup>1</sup> exist after conifer canopy cover reaches 4% or more, suggesting the benefits of a targeted approach to

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<sup>1</sup> A lek is a breeding site where male sage-grouse congregate to display and court female sage-grouse. Lek activity is a key demographic variable used by biologists to estimate sage-grouse population abundance, trends, sensitivity to threats, and viability analyses.

remove encroaching conifers while they are still at low density (Baruch-Mordo et al. 2013). Research has also demonstrated ancillary benefits of conifer removal such as improved water storage and release (Kormos et al. 2017) and increased abundance of sagebrush-obligate songbirds (Holmes et al. 2017). The targeted implementation of conservation easements can help reduce multiple threats to sage-grouse and other species like mule deer (Copeland et al. 2014). In combination with other conservation policies, modeling of targeted easements have shown reductions in anticipated sage-grouse losses by 50% from energy development (Copeland et al. 2013), and 87% from cultivation of rangeland (Smith 2016; Smith et al. 2016). Easement could also help protect the essential wet meadow habitat for sage-grouse, which is found primarily on private lands (Donnelly et al. 2016). Research has shown that marking fences with visible markers can reduce deadly fence collisions by 83% (Stevens et al. 2012).

The study presented in this thesis focused one core practice of SGI –the practice of prescribed grazing. Prescribed grazing is defined simply as, “managing the harvest of vegetation with grazing and/or browsing animals” (NRCS 2013a:1). The practice has many intended purposes, including to maintain or enhance desired plant species composition, plant vigor, forage quality and quantity, water quality and quantity, soil condition, or wildlife food and/or cover (NRCS 2013a). Understood as an ecological disturbance, grazing can be managed in terms of its timing (related to grass growth stages), intensity (a function of the number of livestock, grazing duration, and size of pasture), and frequency (intervals between grazing events) (NRCS 2013a; Sayre 2001). Prescribed grazing plans through SGI primarily involve implementing a rotational grazing plan (SGI 2016). Periodic resting (no grazing for an entire grazing season) or deferment (no grazing through the growing season of grasses) is promoted by the NRCS as benefiting both

plant and animal production by improving vegetation recovery and forage harvest efficiency (Briske et al. 2008; Butler et al. 1997; Hormay 1970).

Well-managed grazing systems, according to prescribed grazing plans, are also expected to benefit sage-grouse in both direct and indirect ways. Briefly, improper livestock management is widely considered a threat to sage-grouse (USFWS 2013). Hypothesized impacts of grazing on sage-grouse include both direct and indirect effects in both positive and negative directions (Beck and Mitchell 2000). Grazing pressure that is inconsistent with local ecological conditions, driving ecological changes in habitat conditions that indirectly affect sage-grouse (such as invasive species invasion), is probably the most imperative concern (USFWS 2013). While, SGI promotional material does not usually mention direct threats to sage-grouse from grazing, studies have hypothesized negative effects of grazing on sage-grouse nest success. Hypothesized mechanisms of decreased nest success include nest trampling, sage-grouse abandoning nests after being flushed by livestock, and reduced grass height that conceals nests from predators (Beck and Mitchell 2000; Doherty et al. 2014).

Much less research has been conducted on assessing the effectiveness of SGI rotational grazing practices for sage-grouse. The only such study to test the relationship between sage-grouse and grazing management systems was recently completed in Montana (Smith 2016). This study specifically tested sage-grouse nest selection, nest survival, and vegetation characteristics of grazed pastures in SGI rest-rotational grazing systems compared to pastures not in SGI (Smith 2016). Contrary to expectations, neither nest selection nor nest survival were related with herbaceous vegetation measurements, livestock variables (use or presence), or grazing variables (SGI/nonSGI or rested/nonrested pastures) (Smith 2016). The study concluded:

We found no evidence that variation in livestock grazing influenced the nesting ecology of sage-grouse, contrary to oft-cited literature relating nest site selection and survival to herbaceous vegetation influenced by livestock herbivory... Our findings suggest the importance of good grazing management may lie in maintaining the functioning components of intact native sagebrush ecosystems on which grouse rely rather than managing for microhabitat conditions found at nests. P. 73-74

Furthermore, the study adds additional evidence supporting an earlier finding by Gibson, Blomberg, and Sedinger (2016) that questions the relationship between grass height and sage-grouse survival reported in other studies (Doherty et al. 2014). Gibson et al. (2016) found earlier studies that measured grass heights surrounding successfully hatched sage-grouse nests later in the growing season, on average, than failed nests included inherent bias by not controlling for the growth of grass during that time. Thus, the resulting positive relationships reported between grass height and sage-grouse nest success is explained by simple grass phenology rather than increased nest success due to grass cover (Gibson et al. 2016; Smith 2016). Smith (2016) corroborates this finding by re-analyzing four previous studies and showing that the reported relationship completely disappears in all studies when accounting for grass phenology.

Finally, Smith (2016) also found only marginal vegetation differences, over a five-year span, between pastures in SGI versus pastures not in SGI and pastures rested from grazing versus those not rested. These findings are consistent with over 60 years of empirical evidence finding that rotational grazing does not offer superior benefits to vegetation or livestock production compared to continuous grazing (Briske et al. 2008). Despite such a preponderance of experimental evidence, rotational grazing remains a widely used and promoted grazing strategy (Briske et al. 2011a), including in SGI. Research explaining this tension between experimental scientific knowledge and experiential management knowledge is increasingly pointing to experimental limitations in accounting for adequate spatial and temporal scales, complex adaptive systems, and the human dimensions involved in managing grazing systems (Briske et

al. 2008, 2011a). An emerging hypothesis is that rotational systems benefit management effectiveness via increased adaptive capacity and cumulative knowledge of the manager rather than directly improving ecological variables per se (Briske et al. 2011a, 2011b). Recent research of ranchers in California and Wyoming confirms that ranchers perceive benefits that have not been documented in experimental studies (Roche et al. 2015). The authors relate ranchers' practice of rotational grazing to adaptive decision-making variables such as the number of livestock they manage and their dependence on public land, risk tolerance, management goals, and social networks.

In sum, the scientific evidence supporting benefits for sage-grouse from prescribed grazing is mixed at best. Evidence that refutes the relationship between grass height and sage-grouse nesting success is growing, potentially questioning policies that promote managing grass height for sage-grouse conservation. Justifying SGI grazing practices through benefits to sage-grouse nesting success should, likewise, be questioned; however, other benefits to sage-grouse and management effectiveness should not be ruled out. The potential for rotational grazing systems to increase ranchers' adaptive capacity and knowledge fits within broader calls for maintaining the social and ecological processes that support ecosystem functions and services, and remains within SGI's broad goal of conserving sage-grouse through economically and ecologically sustainable ranching. This is an outcome, however, that must be assessed through context-specific and detailed analysis, not simply assumed. As such, this thesis focuses on understanding why ranchers do or do not follow rotational grazing standards as prescribed in SGI plans. My intention is that the results can help inform additional research and ultimately the design of SGI to better enable it to achieve its objectives. In the next chapter, I outline my

research methodology and methods, including rationales and procedures for conducting the study in Douglas County, Washington.



### 3.0 METHODS

This study used a qualitative research approach to understand the factors that contribute to why cattle ranchers in Douglas County, Washington participate or not in SGI. Qualitative approaches are particularly well suited to phenomena that have not been well studied, and hence hypothesis-testing is difficult; and which an in-depth understanding of behaviors and rationales are sought (Creswell 2014). Consistent with the strengths of a qualitative methodology, the research presented here is the first, to my knowledge, to explore the social dimensions of SGI and is particularly interested in a detailed, nuanced understanding of cattle ranchers' participation in SGI. In this chapter, I describe my overall qualitative approach and detail the methods I used to collect and analyze data.

The chapter begins by describing the research context that was important to shaping the development of this study's design. Next, I synthesize the essential aspects of the research setting needed to understand the research approach. I then turn to detailing my data collection methods. Major data collecting methods included extensive literature review, program and policy analysis of SGI, interviews with key agency personnel, and a major emphasis on personal interviews with both ranchers participating in SGI as well as ranchers not participating in SGI using a semi-structured questionnaire. I further explain the standard qualitative techniques I used to analyze data and answer the primary research questions of this study which are: (1) why do certain ranchers participate in SGI, (2) why do other ranchers in the same region not participate in SGI, and (3) what are the implications of these findings for future research on rancher participation in SGI? I conclude the chapter with discussions on the limitations of this study's design and methods as well as procedures for ensuring human subjects' protection.

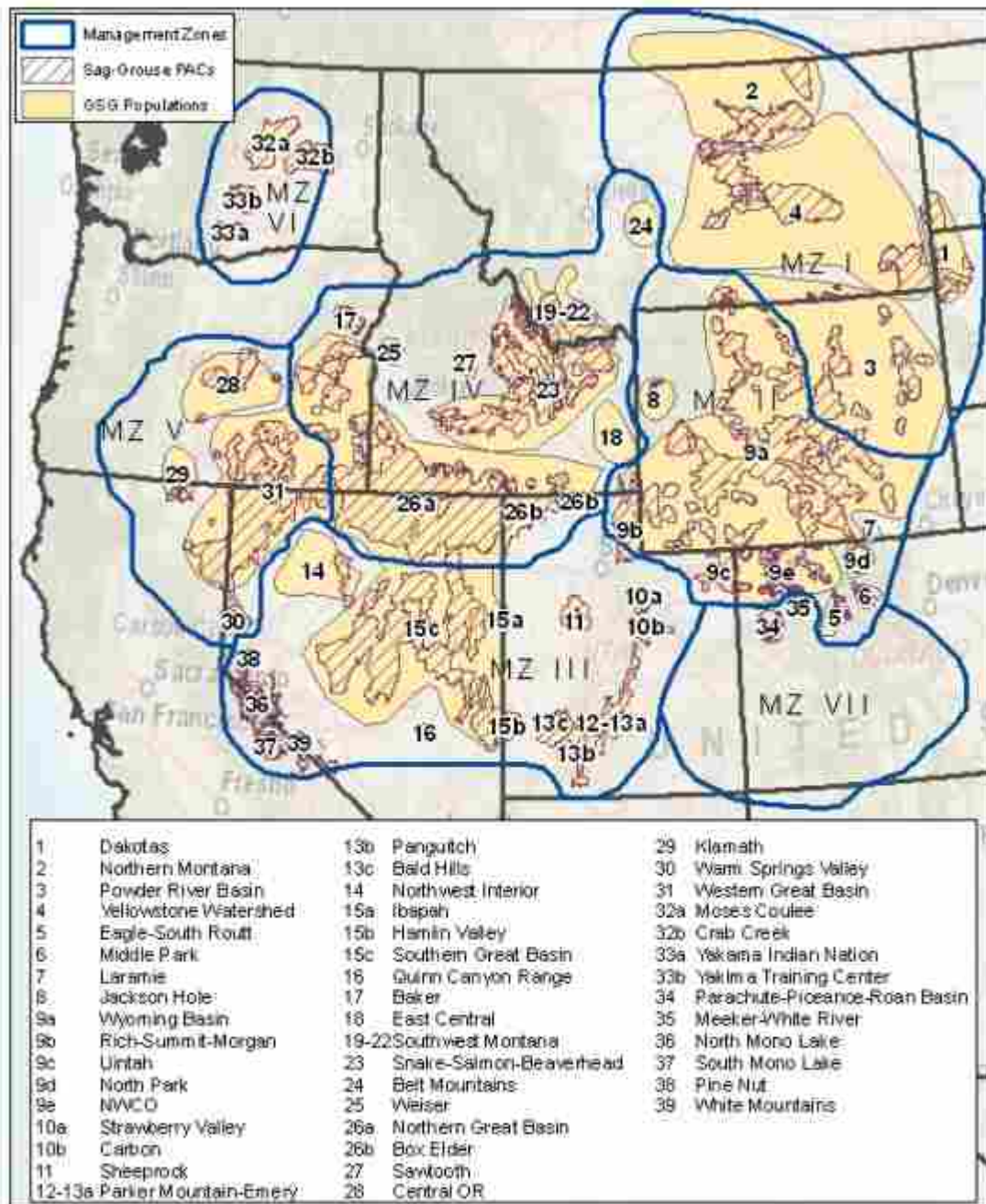
### 3.1 *Research Context*

The SGI program operates in all 11 Western states where sage-grouse are found (see Fig. 1). Across this region, SGI has worked with more than 1,100 ranches to develop and implement conservation plans to improve or maintain 4.4 million acres of sage-grouse habitat (NRCS 2015a). The overall focus of SGI's efforts vary regionally as part of SGI's targeted and science-based approach (NRCS 2013b). Because threats to sage-grouse vary by region (USFWS 2010), SGI's practices vary as well. For example, in Oregon a major focus of SGI is on removal of conifers that have encroached into shrub-steppe environments and displaced sage-grouse (Baruch-Mordo et al. 2013). In contrast, sage-grouse in Eastern Montana see little conifer encroachment, but conversion of native shrub-steppe to agriculture is a major threat (Smith et al. 2016). Correspondingly, SGI focuses on conservation easements and habitat restoration through grazing management (i.e., prescribed grazing) in Eastern Montana. These regional differences in the focus and ultimate implementation of SGI complicate the comparisons that can be made across regions through research. Partly for these reason, this study focuses on one area, Washington, and one practice, prescribed grazing to fully capture the perceptions of a particular group of ranchers.

I chose Washington as the state to conduct this study for several reasons. First, Washington has a combination of high percentage of core sage-grouse habitat existing on private ranches and concerted efforts by SGI to promote grazing planning (as a primary way to protect sage-grouse). Second, I have extensive personal experience working with SGI in Washington from a 16-month internship in 2014 and 2015. Through this experience, I have gained intimate knowledge of SGI in Washington, maintained personal contacts with Washington State NRCS employees, and have had first-hand experience working with several SGI participants. This

experience has enabled me to approach the research with a deeper familiarity with the unique context of ranching in Douglas county, including awareness of salient recent events in the county such as wildfires, exposure to the complex mix of ranching and farming enterprises, the ubiquitous presence of government Farm Bill programs, and some of the political issues existing in the county. Finally, I also gained significant familiarity with the SGI program in Washington, its activities, its planning procedures, its goals, and its place in the broader bureaucratic context. Ultimately, this experience brought a depth and intimacy to the data analysis that enabled me to see connections that I would not have likely seen without.

Although the Columbia Basin Management Zone (MZ VI - see Fig. 1), which encompasses all sage-grouse populations in Washington, only accounts for 0.33% of the sage-grouse population across its entire range (Doherty et al. 2010), the management zone is unique in other ways which make it instructive for exploring SGI's attempts to conserve sage-grouse through grazing management. Across the entire 11-state range of sage-grouse, about 39% of land ownership is private, whereas as much as 86% of sage-grouse habitat in Washington is privately owned (Doherty et al. 2010). As a result of the amount of private land, sage-grouse in Washington are threatened by habitat fragmentation, agricultural conversion, and an overall lack of habitat stability (USFWS 2013). The efforts of SGI in Washington State reflect these threats by choosing to emphasize prescribed grazing. From 2010 to 2014, SGI contracted 83,000 acres of grazing systems on private rangelands in Washington State (NRCS 2015a); they plan on contracting another 50,000 acres by 2018 (NRCS 2015b).



**Figure 1.** Map of sage-grouse Management Zones (MZ), Priority Areas for Conservation (PACs), and current greater sage-grouse (GSG) population distributions. This research's study site was located within MZ VI, PAC 32a. Source: USFWS 2013

While this study broadly engages the question of why ranchers participate or not in SGI in Washington, it has a focus on only one of SGI's care programmatic practices: prescribed grazing. A focus on prescribed grazing is, in a large degree, a consequence of the choice of

Washington State as the study area, as SGI in Washington is primarily implementing grazing management (NRCS 2015a). Among the practices that SGI implements at a national scale, SGI in Washington is focused on prescribed grazing in order to address the threat of particularly high habitat fragmentation in Douglas County. However, there are other aspects of prescribed grazing which make it a particularly instructive practice in which to focus a study that seeks to understand complex social and ecological interactions that influence ranchers' decision-making.

Among the four core practices SGI utilizes to reduce threats to sage-grouse (see Section 2.3.3), prescribed grazing stands out as the one requiring the longest prolonged change in management effort by the rancher to achieve the purported benefits to sage-grouse. The NRCS practice standard for prescribed grazing requires a minimum of three years to complete the practice (NRCS 2013a). Briske et al. (2008:5) argue that "management commitment and ability are the most pivotal components of grazing system effectiveness," suggesting that long term commitment is necessary to achieve desired goals, especially in the face of variable precipitation regimes. Prescribed grazing is also, arguably, the least studied and supported practice in terms of directly linking SGI practices to benefits for sage-grouse populations (see Section 2.3.3). In sum, the practice of prescribed grazing may require the most effort on the part of participating ranchers, but is also the least studied practice, making it a particularly rich condition in which to explore ranchers' motivations to participate or not in SGI.

Given the limited research on rancher's views towards and participation in SGI, this study is well-suited to qualitative methodology. This study is the first –to my knowledge –to specifically explore the SGI program through a social dimension's lens. As such, the study is exploratory, lending itself to qualitative methods capable of capturing potentially unknown or previously unstudied factors (Corbin and Strauss 2015; Creswell 2014; Didier and Brunson

2004). Qualitative methods are also appropriate for gaining in-depth understanding of complex phenomenon, in this case, the complexity of rangeland management (Didier and Brunson 2004; Sayre 2004) and the socially constructed decisions of ranchers (Wilmer and Fernández-Giménez 2015). Rangeland management involves interwoven social and ecological factors operating at different scales across time and space (Huntsinger and Hopkinson 1996). A multi-scalar approach is necessary but further complicates the phenomenon under study. Other authors have also made the case for studying ranching through a multi-scalar, qualitative approach, especially involving historical analysis paying attention to political, economic, and cultural forces (Sayre 2004). While the present study does attempt to integrate multiple forces and spatial scales, I was not able to take a particularly historical perspective given time and other constraints.

### 3.2 *Research Setting*

This study focuses on the largest population of sage-grouse in the state of Washington, the Moses Coulee population (see PAC 32a in Fig. 1). The Washington SGI program has focused its efforts on the Moses Coulee population because it contains more than half of the state's estimated sage-grouse population and the sage-grouse habitat within the Moses Coulee population is predominately privately managed. There are four recognized sage-grouse populations in Washington: Moses Coulee, Yakima Nation, Crab Creek, and Yakima Training Center (USFWS 2013). In 2015, the state population of sage-grouse was estimated to be 1,004 birds with nearly 70% of those in the Moses Coulee population (Stinson 2016). Another 247 of those exist on the Yakima Training Center, owned by the U.S. Department of Defense (Stinson 2016). The Yakima Nation population exists largely on tribally owned land and the Crab Creek population is a small re-introduced population that currently resides mostly on state and federally

owned land (Stinson 2016). Therefore, because SGI only works with private land managers, the Moses Coulee population remains the primary target for SGI conservation activities.

Historically, sage-grouse in Washington have declined dramatically due to conversion of native shrub-steppe to agriculture and other forms of habitat degradation, leaving sage-grouse to occupy only an estimated 8% of their historic range (Stinson, Hays, and Schroeder 2004). From 1970 to 2012, state biologists estimate that the sage-grouse declined by 50% in Washington (Schroeder et al. 2014). Today, sage-grouse habitat across Washington, but in the Moses Coulee population in particular, is highly fragmented by private property and agricultural production mostly in dryland wheat cultivation. The population estimates for sage-grouse in Washington fluctuate annually; the 2015 estimate represented a slight increase from 2014, but followed declines since 2010 (see Fig. 2) (Stinson 2016).



**Figure 2.** Statewide population estimate of sage-grouse in Washington from 1980 through 2015. Source: Stinson 2016

Douglas County, Washington, which makes up the majority of the Moses Coulee population, is nearly 85% private land and has about 70% of its land in agricultural production, including livestock production (Headwaters Economics 2016). Most cropland acres are in

dryland wheat production while cattle make up most of the livestock production (National Agricultural Statistics Service 2012). In 2012, a total of 79 farms reported raising cattle and calves in Douglas County (National Agricultural Statistics Service 2012).

Due to high fragmentation of habitat, sage-grouse in the Moses Coulee population have become adapted to a variety of different habitats, including grazed shrub-steppe, active croplands, and fallowed croplands enrolled in federal conservation programs (Schroeder et al. 2014). Evidencing supporting such adaptation comes from the fact that despite habitat fragmentation, the sage-grouse population in Moses Coulee has remained relatively stable since the early 1990s (see Fig. 2). This relative stability is attributed to sage-grouse use of private cropland enrolled in the federal Conservation Reserve Program (CRP) (Stinson 2016). CRP is an incentive-based conservation program that started in 1985. It is funded through the Farm Bill and administered by the federal Farm Service Agency. CRP contracts last for 10-15 years. The program pays farmers a yearly rent for environmentally sensitive cropland that they have taken out of cultivation and planted into vegetation cover to improve water quality, prevent soil erosion, or maintain wildlife habitat (Farm Service Agency 2017).

Habitat enrolled in CRP in Douglas County has already been shown to support a substantial proportion of sage-grouse breeding in the Moses Coulee population (Schroeder and Vander Haegen 2011). Looking to build on the conservation of this habitat, the Washington Department of Fish and Wildlife (WDFW) partnered with the federal Farm Service Agency in 2010 to create another program called State Acres for Wildlife Enhancement or SAFE. The SAFE program works much like CRP, but is focused solely on providing upland bird habitat and is, thus held to a higher standard for vegetation cover and diversity (Farm Service Agency 2010). Currently, Douglas County has 63,000 acres in SAFE (Stinson 2016) and close to 180,000 acres



in CRP (Farm Service Agency 2016). One goal of the SGI program is to further secure stable habitat by enrolling rangeland outside of CRP and SAFE lands into grazing systems (NRCS 2015b). Many cattle ranchers in Douglas County are also involved in the cultivation of wheat either directly or indirectly. Consequently, the topics of CRP and SAFE arise often in Douglas County, even amongst ranchers and especially when talking about sage-grouse.

### 3.3 *Data Collection Methods*

This study involves several sources of data and data collection techniques. These include extensive literature review, program and policy analysis of SGI, interviews with key agency personnel, and face-to-face interviews with both ranchers participating in SGI and those not participating in SGI. Consistent with a qualitative methodology, the multiple sources of data in this study seek to construct a holistic understanding of the complex relations between ranchers and efforts to conserve sage-grouse (Creswell 2014; Sayre 2004). Each data source reveals different factors related to ranchers' participation in SGI; later integrated into a unified understanding through cross cutting, multi-scalar analysis (see Section 3.4).

Below I describe the rationales and procedures of each data collecting method. The first entailed extensive literature review. The purpose of reviewing diverse bodies of literature related to wildlife conservation and ranching (see Chapter 2), was to set the context for an extensive understanding of ranchers' responses to SGI through different lens. This included gathering and synthesizing literature on the regulatory environment that private land managers face when harboring imperiled wildlife species, the characteristics and livelihood facets that make ranchers unique, and the specifics that characterize the SGI approach to wildlife conservation on private lands. I also reviewed some of the scientifically established, and potential, biological outcomes

of SGI and its practices for sage-grouse. These literatures provide a wealth of data that I used to constantly compare and incorporate with other sources of data. In particular, the literature review offered a framework from which to organize and interpret the main findings of this study.

The second data collection method involved reviewing SGI program and other policy analysis to understand the institutional context within which SGI operates. More specifically, I reviewed content (including documents, videos, and presentations) from diverse sources to understand SGI's origins, goals, objectives, activities, planning procedures, practice prescriptions, and role in broader efforts to conserve sage-grouse in Washington State. This included gathering and reviewing content and public records from SGI, NRCS, USFWS, and WDFW. The SGI content I reviewed comprised of published reports, promotional materials, fact sheets, implementation plans, and training materials. In addition to SGI content, I also reviewed NRCS practice standards and guidelines, USFWS policies, decisions, and actions; and WDFW status reports, management plans, and studies related to sage-grouse.

My experience working with SGI in Washington State also meant I was privy to information on the inner workings of how SGI operates in Washington that I could not have gained merely through the review of the public materials mentioned above. For instance, I have intimate knowledge of the mechanics of a grazing plan, having personally assisted in the development and writing of several SGI grazing plans. I have no doubt that this experience has deepened my contextual understanding of SGI and contributed valuable data to this study in its own right.

The third technique involved interviews with key agency personnel associated with Washington's SGI program. These interviews were conducted near the end of my time in the field after I had completed nearly all interviews with ranchers. The agency personnel were

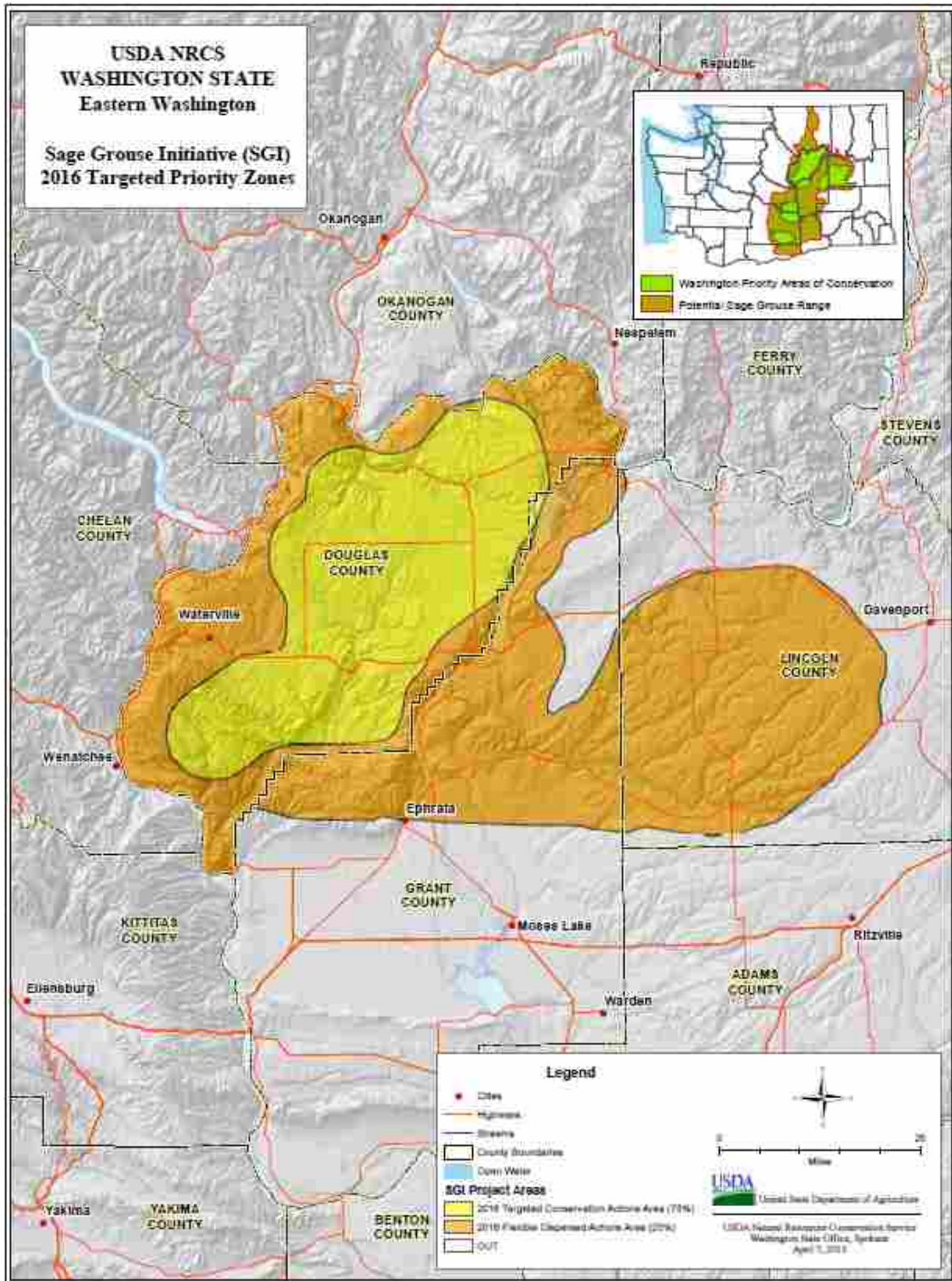
selected for their expertise in the subject matter and integral involvement in sage-grouse conservation efforts. The purpose of these interviews was threefold: (1) to build a more detailed, contextualized understanding of sage-grouse conservation in Washington through agency perspectives, (2) to gain further insight into, and improve interpretation of, ranchers' perspectives by comparing them to agency perspectives, and (3) to gain insight into agency-rancher relationships by listening to agency personnel's responses to some of what I had heard from ranchers in the field.

The final data collection method was face-to-face interviews with ranchers. To a large degree, these data constituted one of the most critical resources for answering the thesis' major questions. The next two subsections detail the steps taken to sample and collect data from personal interviews with ranchers in Douglas County, Washington followed by a section on how these data were analyzed.

### 3.3.1 *Interviews with ranchers: Sampling design.*

To develop the sample for conducting interviews, I defined ranchers as those making ranch management decisions whether they are the actual ranch owner or manager and whether they participate in SGI or not. My sampling technique proceeded in an iterative fashion starting with random sampling within a defined sampling area, followed by purposeful sub-sampling to increase the numbers of SGI participants in the study. I describe these steps in detail below.

In order to focus the study on the most important habitat for sage-grouse and where SGI has been most active, I drew up a list of ranchers operating within NRCS's 2016 Targeted Priority Zone (hereafter Targeted Zone), which is a tool used by the NRCS to prioritize SGI projects (see Fig. 3). The Targeted Zone for SGI is a buffered map of all known active sage-



**Figure 3.** Map of NRCS Targeted Priority Zones. The Priority Targeted Zone (shown in light yellow) includes all known active lek sites in Douglas County. Sampling for the study was conducted within this targeted zone. Source: NRCS 2015

grouse lek sites in Douglas County (NRCS, pers. comm.). Since sage-grouse often nest within

1.1 to 6.2 kilometers of lek sites and initially rear young within 100 meters to 1 kilometer from nesting sites (Braun, Connelly, and Schroeder 2005), the Targeted Zone is thought to capture the most important breeding, nesting, and early brood-rearing habitat for sage-grouse in Douglas County (NRCS, pers. comm.). This is also the area in which ranchers' applications for participating in SGI are now, and have been, prioritized for funding by the NRCS.

Due to this relatively small targeted habitat area, it was possible to compile a list of known ranchers operating within the Targeted Zone. This list was compiled using county property records in combination with information on individuals who currently held public grazing leases on Bureau of Land Management and the Washington Department of Natural Resources public property. Both the property owner and lease owner datasets were spatially explicit and could, therefore, be limited to only include owners within the Targeted Zone.<sup>2</sup> The names and addresses of the property owners within the targeted habitat were then sent to five different local experts to determine which property owners (individuals or corporate entities that are listed as property owners) were known to either graze cattle themselves or lease their land to be grazed. These local experts included individuals from both federal and state agencies and had extensive experience working with private land managers in Douglas County and, thus, familiarity with ranching operations in the area. In addition to these experts, I also used my own experience and awareness of ranchers in Douglas County from the time I have spent working in this area to identify known ranchers. This process ultimately compiled a list of 68 probable ranchers (including individuals and entities). I refer to this list as probable ranchers as I could not, at that point, be sure if all individuals or entities on the lists met my criteria of being the

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<sup>2</sup> Datasets were clipped using GIS software with assistance from the WA Department of Fish and Wildlife, and with publically available QGIS software accessed via <http://www.qgis.org/en/site/>.

ranch owner or manager, or the suitable person to interview to learn about ranch management decisions.

Next, I used publically available databases to identify individuals involved in corporate entities and looked up phone numbers to develop a list of contacts for all probable ranchers. Knowing that I would not likely be able to interview or contact each of the 68 contacts, I randomized the list and contacted probable ranchers in batches. For the first batch, I selected the first 25 contacts on the randomized list and individually mailed letters to each. The letter introduced myself and the objectives of the study and said that I would attempt to contact them in the next week to determine if they would be willing to participate in an interview. One week from when I mailed the letters, I began calling phone numbers to inquire about willing participants for interviews. I left messages for calls that went unanswered and included a phone number for contacts to return my call. I also took notes of the time of day I attempted calling and varied those times when I returned calls several days later and periodically throughout my time in the field. After two weeks, I sent letters to the next ten or so contacts on the randomized list and repeated the process for a total of five different communication batches. Throughout the process, I would periodically re-call contacts from earlier batches that I had not, up to that point, been able to reach and left additional phone messages.

Although the order of communication with contacts was random, this sampling technique is not meant to produce a random sample for statistical significance (Creswell 2014). For the purposes of this study, randomizing the order of communication was done to reduce any possible bias in the final sample of ranchers even in the event that I was not able to contact all probable ranchers (Patton 1990). I recognize that this procedure does not lend itself to making statistically representative generalizations to a larger population of ranchers. This is consistent with a

preliminary study on new phenomenon that seeks in-depth understanding of a particular group of ranchers (Creswell 2014; Didier and Brunson 2004). I randomized communication with contacts to increase the likelihood that my final sample of ranchers included a diversity of perspectives, characteristics, and circumstances; and again, to reduce any potential bias. Later, after conducting a majority interviews, I purposefully attempted to increase the number of ranchers in the study who were participating in SGI by relying on my own knowledge of participants in SGI and re-calling those individuals more than others. This purposeful sampling contributed to my objective of sampling diverse perspectives, as I was able to purposefully rather than randomly, select more participating ranchers to include in the study sample.

### 3.3.2 *Interviews with ranchers: Data collection.*

Of the 68 probable ranchers or ranching entities determined by the sampling methods described above, 13 were later determined not to be cattle producers or the primary decision-makers for their properties. Another 19 never answered repeated phone calls or returned phone messages. Of the remaining 38, 11 said they were too busy to participate in the study, 4 said they were not interested in participating, and I ultimately interviewed 21 ranchers. The relatively high number of ranchers who claimed to be too busy to participate in the study (11) may be driven by the timing of my field research which overlapped the wheat harvest season which began in mid-July and continued through August. As many cattle ranchers in Douglas County are involved in the cultivation of wheat to some degree, several potential participants in this study indicated to me that they were too busy to take time to be interviewed. It is likely that this conflict with the harvest season also contributed to some of the 19 probable that never returned my calls. I made attempts later in the fall to contact some of these ranchers via telephone, but was unsuccessful.

After ranchers agreed to participate in the study, they chose the time and place for the interview to be conducted. Interviews were most often conducted at the residences of ranchers and generally lasted from 45 to 90 minutes. Four interviews were conducted over the phone at the request of ranchers who preferred to schedule a phone call rather than an in-person meeting or who were currently out of the state. One interview included a husband and wife (interviewed concurrently and analyzed together) who jointly made decisions about their property, another included two brothers (interviewed separately but analyzed together) who also jointly made decisions. Thus, the 21 ranchers interviewed includes a total of 23 individuals. Two of these individuals were women, the rest were men.

To conduct each interview, I used a semi-structured interview questionnaire (see Appendix A). All interviews were conducted by the author. The interview questionnaire includes key questions and topics to cover with each interview. Key topics on the interview questionnaire included, background information, why ranchers had or had not participated in SGI, the costs and benefits they saw to participating, their experiences with grazing planning, and any changes they think would improve the program (see Appendix A).

The questionnaire was also designed to be flexible, allowing free flowing conversation and enabling ranchers to raise issues of importance to them (Dunn 2005; Longhurst 2010). The openness and flexibility of the interviews was meant to create a conversation-like atmosphere in which ranchers felt comfortable expressing their own views and motivations (Didier and Brunson 2004; Yin 2003). Also, flexibility in the interview structure allowed for an adaptive research design that could respond to emerging themes or deepening understanding about what is driving ranchers' responses to SGI (Patton 2002).



To enable interviews to be as comfortable as possible, I let the ranchers choose the time and place of the interview and documented interviews by note-taking. Note-taking is a simpler form of recording interviews which can avoid the formal appearance of an interview that causes some participants discomfort (Dunn 2005). Note-taking also requires constant engagement with the conversation and hyperactive listening (Dunn 2005). I took care to accurately record notes and include as much direct quotation as possible, asking ranchers to repeat phrases when needed (Patton 2002). The process of recording interviews by note-taking is, by its nature, the first form of analysis; allowing the researcher to identify and organize data as the interview is in process (Tessier 2012). While this analysis is important to the flexible and emergent design of both the individual interview and research as a whole, I also recognize that such analysis early in the data collection can also limit later forms of analysis (Tessier 2012). I discuss my data analysis process and procedures in the next section.

### 3.4 *Data Analysis*

This study uses an inductive analysis approach adapted from Corbin and Strauss' (2015) grounded theory methodology. This is a useful methodology for this study since I did not enter the study to test a particular theory related to ranchers' behaviors and decision-making. Rather, consistent with grounded theory, I was seeking to exploring an emerging area of study and was open to unexpected insights (Corbin and Strauss 2015; Didier and Brunson 2004). In this approach, key concepts used to frame the analysis and interpretation are developed from the data and not chosen prior to the research being conducted (Corbin and Strauss 2015). These concepts are known to the researcher having been identified using the knowledge of previous studies and theory, but always with an openness to identifying concepts most relevant to the data at hand or

creating new concepts (Corbin and Strauss 2015). The inductive approach means I am not testing any pre-defined predictions about rancher behavior, but rather I am using ranchers' perspectives to understand their experiences and processes of decision-making in regards to SGI (Wilmer and Fernández-Giménez 2015). The analysis process involves iterative coding –or labeling data with concepts that capture their meanings—to build up to integrated, complex, and contextualized understanding of the data (Creswell 2013). I described the steps I took in this process next.

As previously mentioned, data analysis actually began with the interview itself. The documenting of notes enabled me to record some contextual cues and interpretations during the interview in the margin of my field notebook. Soon after an interview was completed, I typed up my field notes and summarized the interview in an analysis memo. In this memo, I discussed my first impressions of the interview and what contributions I thought it may provide. These initial engagements with data while still in the field were important for guiding subsequent interviews and for developing initial concepts that I could compare between and among interviews (Corbin and Strauss 2015). Once all interviews were completed and typed, I began a process of word-by-word, line-by-line analysis, called open coding (Creswell 2013). Open coding enabled me to identify salient concepts from my interview notes. Examples of these early concepts include: costs of conservation, benefits of conservation, and autonomy of property rights. As I proceeded through each interview, I grouped phrases of interview text under the conceptual headings I had previously created and developed new concepts as needed until no new concepts could be identified.

Next, I returned to my conceptual headings to compare the data within and across concepts. Corbin and Strauss (2015) describe this phase as making theoretical comparisons to develop the different properties or characteristics of a concept as well as the dimensions or

variation within each concept. For instance, a property of the benefits of conservation that I identified was the direct financial payments ranchers received from their SGI contracts; a dimension of this property is that some ranchers do not find these payments very appealing. The purpose of theoretical comparisons is to develop a complete understanding of each concept in terms of all its properties and dimensions, referred to as saturation (Corbin and Strauss 2015). I compared data across concepts to identify how concepts might be connected to each other. In particular, I looked for the conditions, consequences, and counterpoints that help connect concepts into a more unified understanding. In continuing the example from above, a condition that I identified with some ranchers not finding financial incentives appealing was their relative financial stability. Also important to this stage and throughout the analysis process was writing memos to test different interpretations, identify gaps in my knowledge, and discover how concepts might relate to each other (Corbin and Strauss 2015).

The final steps of the process involved summarizing concepts, identifying gaps in my understanding, asking new questions of the data to address those gaps, and ultimately linking concepts into a coherent storyline. Conceptual maps or diagrams that depict the relationships between and among concepts were particularly helpful in discovering the interconnections among my data. Ultimately, it is the organization and integration of concepts into a coherent storyline that enables me to interpret why ranchers are participating in SGI, or not, tensions and opportunities with agreed upon grazing management plans, and what changes could be made to help SGI achieve its objectives. Through this storyline, I was able to identify particular decision patterns of ranchers which help to explain both the decision-making process of ranchers (Wilmer and Fernández-Giménez 2015), as well as key factors that influenced those decisions.

Finally, I brought my interpretation of the interview data back to the existing literature, to my review of the SGI program and policies, and to the insights I gained from agency interviews to develop an integrated and multi-dimensional understanding. I compared the findings of this study to existing theories about behavior, to identify where they confirm or challenge these ideas, and suggest new or novel understandings of ranchers' concerns and behaviors regarding the SGI program, especially in Washington. I attempted to identify what might be particular, contextual issues pertaining to the Washington study site and sample so as to speculate where my findings may or may not be applicable to other SGI locations in the Intermountain West.

### 3.5 *Research Validity and Reliability*

There are several steps I took throughout the research process to increase reliability and validity in the research findings. In qualitative studies, validity refers to the steps that a research takes to ensure the accuracy of the data, while reliability refers to the consistency of the research approach with other research (Creswell 2014). The validity strategies taken in this research included peer debriefing, triangulation, prolonged engagement in the field, and negative case analysis (Creswell 2013; Lincoln and Guba 1985; Patton 2002). Throughout the coding process, I regularly met with my advisor and a colleague to compare my interpretations of the data with theirs and to discuss methodological issues. I have used multiple sources of information to corroborate interpretations, including interviews with state and federal employees, information from public documents, as well as perspectives from multiple theories. I have also used my own experience having worked in Douglas County for more than a year and a half to enrich and deepen my understanding and interpretation of ranchers experiences. While engaged in analysis, I remained constantly open to and, in fact, purposefully searched for, cases where patterns did

not hold or where evidence deviated from the theme (Patton 2002). Far from devaluing the findings, these negative cases help to preserve the richness or “density” in detailing findings in a comprehensive way (Corbin and Strauss 2015). In this thesis, I select particularly illustrative quotations to include, enabling the reader to see directly the data I used to make my analysis and enter the thoughts of the ranchers interviewed (Patton 2002; Wilmer and Fernández-Giménez 2015).

Despite these measures, I recognize there are limitations to the study. First, regarding my sampling design, it is impossible to know how well my sample of ranchers matches the true population of ranchers in Douglas County and what biases were in my sample or ranchers. There was no way for me to know all ranchers operating in the study area. This included ranchers who were particularly difficult to identify through the sampling process I used; such as ranchers who owned property outside of the study area but grazed land within the area as well as ranchers who largely grazed land they leased from other private individuals and, thus, not publicly visible. The final sample of ranchers included in this study also depended on the willingness of individual ranchers to participate in the study, which is often the case in research. For example, I wanted to sample more ranchers participating in SGI than the eight that I did interview. It remains possible, that ranchers who preferred not to participate in the study or who never returned phone calls differ in important ways from the ranchers that were willing to participate in the study. To the extent there is a pattern of non-participation, there is bias; however, I am unaware of what the bias could entail. I am also aware of other factors that may contribute to rancher decision-making, like gender (Wilmer and Fernández-Giménez 2016a, 2016b), historical analysis (Alagona 2008; Sayre 2002), and intergenerational family dynamics (Wilmer and Fernández-Giménez 2015) that this study does not explicitly examine.

My past experiences and position as a researcher are also important factors that bring both strengths and limitations to this study. As previously mentioned, I think that my prior experience working in Douglas County provided knowledge and familiarity with the SGI program and to specific ranchers in Washington that were important to my data collection and analysis. This enabled me to better understand what ranchers told me in interviews, to approach ranchers with locally relevant knowledge and familiarity, and to improve my ability to network with other local resources who gave me advice and guidance throughout my research.

I also recognize that this experience could have led to a certain degree of bias. I may have pre-conceived notions about ranchers' participation in SGI from this experience, which can lead to confirmation bias in my findings. I minimize this bias by checking my interpretations of data with other colleagues as well as comparing my findings with previous research regarding ranchers' decision-making. I also have working relationships with some of the people involved in SGI from my prior experience which could bias my findings to not be as critical in my analysis. I have attempted to minimize this bias by being as fair as I can to the perspectives of those that I interviewed and letting the data speak for itself. Finally, I have my own opinions on SGI in particular as well as approaches to wildlife conservation on private lands in general. I was originally interested in SGI because I thought it was an innovative approach to conservation and seemed to align with my personal inclination to believe that landscapes can work to sustain people and wildlife which could bias me towards being overly sympathetic of these efforts. Again, I strived to be as fair as possible in capturing the voices of those that I interviewed and analyzing, from those voices, the situation in an accurate way.

In sum, there are limitations to this study. Nonetheless, the research was designed to seek rich qualitative investigation and not data that are representative nor capable of yielding

predictive insights (Sayre 2004). The purpose of the study was to gain in-depth understanding of a particular group of ranchers, to illuminate conditions important to them, and insights I could glean from this for understanding what encourages or discourages ranchers' participation in SGI and incentive-based conservation more broadly. I conclude that the value of this study is in its exploratory nature, preliminary insights, and contribution towards a foundation of knowledge to catalyze further research and understanding. Other researchers interested in this topic could use the results of this exploratory research to produce hypotheses to test with a large, random sample enabling statistical analysis and an ability to generalize across Washington and potentially to other regions engaged in the SGI program.

### 3.6 *Human Subject Protection*

The Institutional Review Board for the Protection of Human Subjects in Research at the University of Montana approved this research design under the exempt category of review (IRB # 121-16). Under the exempt category, written informed consent by research subjects is not required. All ranchers interviewed in this study gave verbal consent to participate in the study after their confidentiality and anonymity was assured to them both in the introductory letter as well as verbally before each interview. I take great care in this thesis to preserve both the confidentiality and anonymity of ranchers and agency personnel by using codes to cite direct quotations, removing potentially identifying pronouns, and describing important contextual information in such a way as to minimize potentially identifying material.

#### 4.0 RESULTS: RANCHER RESPONSES TO SGI

In this chapter, I present the results concerning ranchers' reactions, or responses, to the Sage Grouse Initiative (SGI) as an incentive-based conservation program. I discuss rancher responses along the three different but overlapping dimensions reviewed in chapter two narrowed to the specific context of Washington: (1) the ESA and regulatory incentives offered by SGI; (2) ranching in Douglas County, Washington; and (3) the program structure of SGI.

Within each of these dimensions, ranchers make decisions to participate or not participate in SGI, and especially to follow Washington's SGI prescribed grazing practices, in response to their views and concerns involving cultural, political, and economic dynamics. My research found that in a regulatory context, ranchers' responses are influenced by their perceptions of regulatory risk arising from the possible listing of sage-grouse as an endangered species, and the options they understand as mitigating that risk. Within a ranching context, ranchers' respond differently based on their operational characteristics, their knowledge of ranching, practices that foster stewardship, and their relative economic stability. Within the context of SGI's programmatic structure, ranchers differentially value economic and noneconomic benefits and costs from the practices, prescriptions, and incentives SGI offers. My explanation of ranchers' behaviors as complex responses within these three dimensions establishes the underlying factors that help answer the major research questions of this study: why do certain ranchers participate in SGI, why do other ranchers not participate in SGI, and what are the implications of these findings for future research? While these questions will be addressed most directly in the following, concluding chapter of this thesis, the key factors explaining ranchers' responses to SGI are described in detail in this chapter.



Below, I explore each dimension in turn to assess ranchers' responses to the Washington SGI program. Throughout these analyses, I provide illustrative quotations to provide evidence for my interpretations, as well as to enable the reader to see the source of my data. With each quotation, I provide codes to refer to the speaker. Providing these codes offers references for each quotation while preserving the anonymity of interviewees. These codes indicate whether a rancher is a participant (P) of SGI or a nonparticipant (N) and the number in the order in which they were interviewed. For example, N6 is the sixth nonparticipant that I interviewed. In one case, N4A, the code is followed by an 'A' to indicate that this rancher has applied to participate in SGI, but is not yet in the program.

#### *4.1 Dimension I: Ranchers' Responses to SGI in a Regulatory Context*

The SGI program is a response to the ESA which traditionally only mandated compliance with few or no incentives for private land managers to affirmatively or proactively conserve imperiled species on their properties. Supporters of the SGI program assume that it provides an incentive to ranchers to proactively conserve sage-grouse through what is called "ESA Predictability." ESA Predictability is a form of regulatory assurance that is meant to give ranchers greater certainty in the regulatory environment they face regardless of whether the sage-grouse is listed or not. My study found that ranchers' responses to ESA Predictability were highly dependent on the level of risk they perceived arising from possible future regulations to protect sage-grouse. In other words, ranchers' perceptions of regulatory risk influenced whether they were incentivized by an assurance mechanism designed to protect ranchers against those regulations. Interview data indicate multiple factors that contribute to whether ranchers perceive risk or not and what ranchers perceive as most risky. Even with high perceptions of risk, whether

ranchers accept SGI as an appropriate means to increase predictability depends further on their degree of trust in the people or procedures of SGI.

In Figure 4 below I offer a simple conceptual diagram depicting the rancher responses to regulatory predictability I found in this study. As shown in the diagram, I found ranchers' responses to the predictability incentive of SGI as involving three concepts: background risk factors, regulatory risk perceptions, and levels of trust. The background risk factors influence the degree of regulatory risk ranchers perceive which in turn defines whether a rancher has a desire to mitigate risk or not. Whether or not a rancher accepts SGI's ESA Predictability as an appropriate risk mitigation option is influenced by various issues of trust, including their trust in SGI personnel or their trust in SGI procedures. Concerns for the latter included the amount of autonomous control ranchers perceive giving up by accepting an SGI conservation plan and their trust in the ESA Predictability mechanism itself to offer them any real protections. Different combinations of these factors result in different levels of receptiveness towards the ESA Predictability incentive. Some ranchers were receptive to the ESA Predictability incentive and participate in SGI partially for that reason, others were indifferent or noncommittal, and still others were incredulous, rejecting participation in SGI altogether. In the following sections, I analyze these concepts in greater detail.

## Rancher Responses to Regulatory Risk



### Risk Perceptions

High

None/low

### Trust

Acceptance of SGI predictability depends on trust of government, agency, or procedures

No perceived need to mitigate, or unaware of options to mitigate

**Figure 4.** Conceptual diagram showing key factors and associated sub-components that influence ranchers' responses to SGI's regulatory predictability incentive. Overall responses were determined by various background risk factors driving low to high risk perceptions and further by different levels of trust in the program.

#### 4.1.1 Background risk factors.

There are several conditions that emerged in interviews which contribute to ranchers' perceptions of regulatory risk. I refer to these as "background risk factors" because they are antecedent conditions (e.g., values, experiences, perceptions, or characteristics) that partly

determined the level of regulatory risk that ranchers perceived from the possible listing of the sage-grouse. Several ranchers drew upon “social memories” of what an endangered species listing can mean for resource-dependent communities (Sorice and Abel 2015:106). They recalled events that transpired after the spotted owl was listed in the forests of the Pacific Northwest that border Douglas County to the West. Those ranchers that made this connection perceived a threat to their livelihood and feared a total industry shut-down for grazing comparable to what they witnessed happen to the logging industry. The following quotations illustrate this connection:

From different circumstances, like the spotted owl... they are looking for reasons not to graze. There was a lot of talk that if [the sage-grouse] went in [to the ESA], we were going to have to quit grazing. (P3)

I see the sage-grouse as the big basin spotted owl. It's a tool that a certain population uses to remove cows and I would say, to destroy myself, I would go that far. (N9)

The perception of severe consequences of any potential regulation is a background risk factor itself. The above quotations demonstrate that ranchers perceive higher risk when they think the consequences of a listing can be very severe.

Being neighbors to the spotted owl case not only gave ranchers a front row seat to witness ESA policy implications, but also affected the county in a more direct way. As one rancher who was involved with the local Foster Creek Conservation District explained:

What we did not want to happen was what happened with Weyerhaeuser and the spotted owl. That's why we started the HCP [Habitat Conservation Plan]... what we attempted to do [with the HCP] was avoid the US Fish and Wildlife Service shutting down the whole county, which they could do, they did it with the spotted owl... we decided we wanted to avoid that here. (P7)

According to this rancher, learning from the spotted owl case and talking with involved industry personnel directly influenced the Conservation District's decision to pursue a HCP (Habitat Conservation Plan). This HCP has been 16 years in the making and was just recently approved by the USFWS in 2015 (as a Multiple Species General Conservation Plan –MSGCP) (Foster

Creek Conservation District n.d.). This is important because most Douglas County ranchers are well aware of the HCP, giving them another risk mitigation option apart from SGI or the Candidate Conservation Agreement with Assurances (CCAA) that the WDFW is working to develop. The availability of several different regulatory assurance programs (i.e., risk mitigation options) thus may work to lessen or increase the appeal of one over the others as different ranchers have different preferences for particular programs.

Individual ranchers vary in the degree to which they feel they have any control over the amount of risk they face. Some ranchers saw the situation as completely out of their hands, conceding that “if [sage-grouse] get listed, you are going to have to comply” (N6). Other ranchers believed that they could take a more proactive approach to mitigate the risk of regulation on their operations. This proactive perspective is demonstrated by the perspective of one respondent who was working to develop a CCAA in addition to the SGI plan he already had: “I did not fear the listing, ... it was a concern ...to admit you had fear is almost to admit defeat” (P1). I interpret this quotation to mean that fearing the listing is almost like admitting, as a rancher, you are a helpless victim of government regulations – something this rancher declined to believe. Rather than feel helpless, this rancher wants to take proactive steps to confront the situation. This desire to be proactive contributes to the motivation to participate in SGI as well as to develop a CCAA.

Another factor contributing to ranchers’ assessments of risk is the perception that the pressure to conserve sage-grouse has continued despite the decision not to list sage-grouse in 2015. Several ranchers thought that this pressure is still present. On the other hand, a few ranchers doubted the likelihood of a listing in the first place, thus perceiving little risk. Another contributing factor increasing perceptions of risk is a sense of nervousness from ranchers in the

northern part of the county over recent land acquisitions pursued by the WDFW. If, in these acquisitions, grazing is removed or restricted, as in the past, this feeds ranchers' fears of sage-grouse conservation shutting down grazing, a severe consequence, and this encourages some ranchers to participate in SGI while it turns away others.

Several ranchers were unaware or unconcerned about any potential risks to their operations. Two ranchers were simply unaware of the issues surrounding sage-grouse and possible implications of the sage-grouse being listed (including one participant interviewed in this study). Other ranchers either did not think it was likely that they would ever violate any potential regulation protecting sage-grouse, or they have not seen any sage-grouse on their properties and thus did not feel like they would be affected by regulations. The following quotations highlight their reasons:

I really wasn't concerned on my part because I haven't seen many birds. (P6)

In all my ranching, I have never took an accidental taking of a sage-grouse.  
(N4A)

No [I was] not too [concerned]. One, I hoped to have a conservation plan [HCP] that would provide an incidental take. Two, I am not really doing anything. (P4)

#### 4.1.2 *Regulatory risk perceptions and responses*

The ranchers in this study were roughly split in the levels of regulatory risk they perceived between high risk with accompanying severe consequence (n=11) to little risk and no consequences (n=10). These risk perceptions varied according to the various background risk factors most salient to each rancher. Depending on the level of regulatory risk a rancher perceived, their responses to SGI's regulatory incentive is not always direct. Whether ranchers who were concerned about the potential regulatory risk saw regulatory predictability as an appropriate risk mitigation option depended on levels of trust they had in the incentive or agency.

The combination of risk perceptions and predictability acceptance resulted in different response categories. I explain these response categories below.

A majority of ranchers in this study (n=10) could be considered indifferent towards ESA Predictability and were both participants and nonparticipants. They were unaware or unconcerned about the potential listing of the sage-grouse, perceived little to no risk, and therefore, were not incentivized to participate in SGI by the regulatory predictability incentive. Two ranchers which I include in this category did recognize some level of risk in regards to sage-grouse being listed, but were not particularly incentivized by SGI's offer of regulatory predictability either because they were unaware of the incentive or did not feel the urgency to motivate action. One of these ranchers was a participant in SGI and, though somewhat concerned about sage-grouse being listed, was not aware that SGI offered any kind of assurance or predictability. This rancher participated in SGI for other benefits, such as infrastructure improvements.

Three nonparticipants were very cautious about their beliefs in regulatory assurances. These ranchers perceived that a listing would impact their operations, but they were not convinced that SGI's assurance was worth it. They were interested in mitigating their regulatory risks, but at the same time, wanted to make sure that the protections were helpful in other ways as well. In one rancher's words, "as long as it is going to help the feasibility of us maintaining our farms and ranches, yeah, I am cool with that" (N13). In regards to ESA Predictability, another rancher said, "there's merit in it, but only for the protection, the procedures aren't worth anything" (N3), thus acknowledging the value in the regulatory risk mitigation while at the same time not wanting to be vulnerable to the "strings attached" to it. A different rancher, however, did not think the assurance was worth anything, doubting if would offer any real protection: "we

don't trust any statement like that ... you cannot guarantee what the next administration is going to do" (N6).

Some of the nonparticipating ranchers were incredulous towards SGI's regulatory predictability (n= 5). These ranchers, despite perceiving relatively high risk from the potential impacts of a sage-grouse listing, were not at all inclined to see SGI as a solution to mitigate this risk. They were unresponsive to the regulatory incentive not because they do not perceive regulatory risk, but rather because they do not see SGI as an appropriate risk mitigation option. There are two primary factors that contributed to ranchers' in this category responses to this incentive: strong views that they are good stewards and a lack of trust in government agencies, some more broadly and others specific to particular agencies.

A salient concern for private property rights underlies the views of nonparticipating ranchers who believed there was a high risk of ESA regulations but were incredulous that the SGI would help them. At the core is a concern that the federal government overreaches what private land managers can do on their own property: "you get the endangered species, they're going to tell you what you can and can't do whether it's right or wrong" (N8). In this concern for private property rights can also be seen a strong value in self-reliance: "I have been in [ranching] all my life; it is very dear for me. Yeah, I want it to be profitable, but it's a way of life. I am convinced that my stewardship of this land is better than what the government can dictate to me" (N9). A strong sense that they are good land stewards on their own (i.e., self-reliant values) reflects their support of private property rights and triggers for these ranchers a fear that regulatory predictability from SGI is just a slippery slope to further government involvement and control: "I don't want to be involved with the government. They start calling the shots. You can



look at that over and over again... they come in and tell you what you can do, they get you hooked” (N9).

I found that ranchers’ perceptions of agency incompetence or an ineffective program also fed a lack of trust by incredulous ranchers. This is true even if ranchers are assessing actions of other agencies or other programs besides SGI (see Section 4.2.2.2). One rancher saw the assurances themselves as confirming evidence of the evitable ineffectiveness of the SGI program: “If by employing best management practices, they are still offering you protection, what does that say about that protection?... If you would have to hold out that kind of insurance... they are expecting a negative result” (N10). Ranchers’ perceptions of waste, ineffective practices, incompetent actions, or nonsensical behaviors erodes trust in the SGI. As ranchers lose trust and actually become distrustful, they become incredulous that any incentive in the program would actually benefit them.

In contrast, half of the ranchers in this study participating in SGI were receptive to the regulatory incentive, meaning they perceived high regulatory risk and saw SGI as a way to mitigate that risk. These ranchers had more trust in the NRCS, saw NRCS as a more local decision-making authority, or at least, if they lacked trust in the federal government, they were willing to trust in the capacity of the assurance to offer them protections. Most of these ranchers have also have experiences working with NRCS in the past on several different incentive programs. Most also are participating or considering participating in other programs like the HCP or CCAA.

Ranchers who participate in SGI with a desire to mitigate risk vary in the degree to which this desire drives their participation in the program. For some participants it may be the single driving factor. For others, a desire to mitigate risk is only part of the perceived benefits they

expect by participating in SGI, benefits such as infrastructure improvements. Thus, the role that the ESA, as a regulatory threat, plays in encouraging, or potentially coercing, participation varies among different ranchers. The following three quotations illustrate the diversity and complexity of ranchers' perspectives who are receptive to regulatory assurances:

I could give you a real flowered answer and say [what is driving me] is my love of sage-grouse, but the ultimate driver is the incidental take permit... do I like seeing the sage-grouse? Yes, but that is not my ultimate driver... If I didn't need the permit, I don't know if I would [get involved], maybe the SGI, but not the CCAA... you are getting some benefits out of [the SGI]. (P1)

We are generally conservative people, we don't like getting involved in government programs... we signed up for one reason, not the money, we were fearful of the listing... we thought that it was eminent. (P5)

We are willing to do what we can to help [sage-grouse] live so that we can continue to live here as well... We are here to help the bird, but we want some certainty. (P7)

The first quotation is more nuanced in terms of driving forces than the second. It shows how this rancher is also involved in developing the CCAA program; he is utilizing more than one risk mitigation option. It also indicates that this rancher does see other benefits in SGI beyond the regulatory predictability. Thus, if he did not live in core sage-grouse habitat or in the public's eye along a main highway, what was referred to as living "in a fish bowl" (P1), then he would not feel a high sense of risk or a need to mitigate it: "if I didn't have a sage-grouse within 50 miles of me, I don't think I would get involved ... that is not the case" (P1). As these quotations suggest, without a perceived need for protection, the drive to participate disappears for the CCAA but not completely for SGI as there are other benefits he expects from participating in SGI. For this rancher at least, these perceived benefits lessen the degree that the threat of ESA regulation drives his participation in SGI.

For the generally conservative rancher in the second quotation on the other hand, the coercive force of regulatory threat is more pronounced when other potential benefits of SGI do

not materialize. As a senior employee in corporate industry, this rancher does not need the financial benefits of SGI. This is important for two reasons. First, it means that the financial incentives of the program are not all that attractive when they do not really need them and second, it means that the infrastructure benefits are not as attractive either. The following quotation illustrates that this rancher joined the SGI regardless of the economic incentives offered: “the environmental enhancement stuff, that’s good... I would have done that anyway” (P5). Though cognizant of the infrastructure improvements and financial payments SGI afforded them, this rancher is able to afford those improvements on his own without dealing with what many perceive as the hassle and fear of working with a federal agency. The above rancher continued to say, “to be honest with you, I don’t really need the government’s money to run my business... if we weren’t afraid, we wouldn’t do it” (P5).

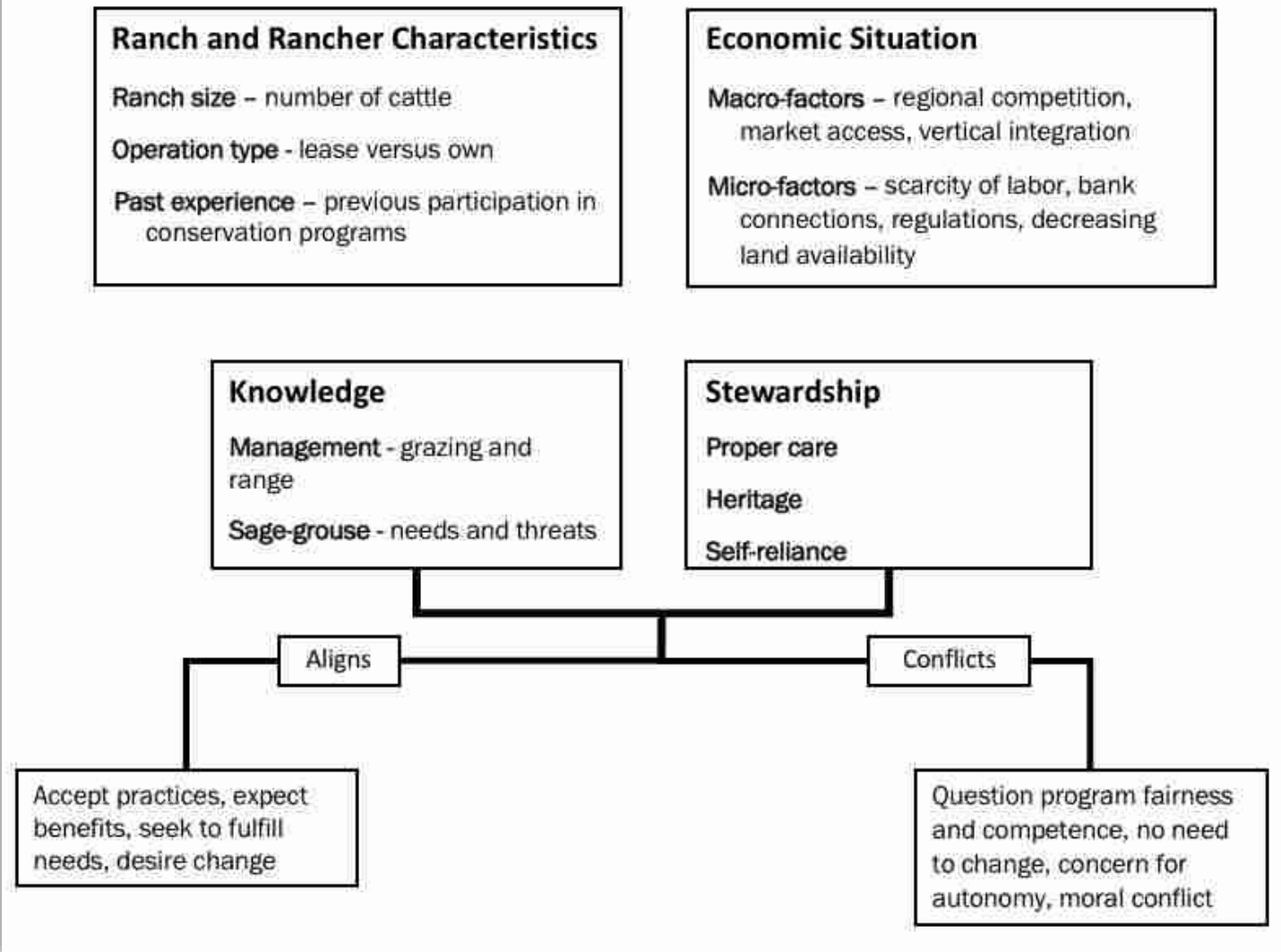
The third quotation can be interpreted in several ways. On the one hand, this statement can be interpreted as pure regulatory coercion, forcing this rancher to accept the changes he will have to make in order to avoid punitive regulations. He says, “its two-edged, we are doing what we can to help the sage-grouse, but we are also doing what we can to help yourselves” (P7). Given this rancher’s other statements about avoiding the results of the spotted owl case, this interpretation does have some support. However, this statement can also be interpreted in light of a stewardship ethic, as a willingness to sacrifice so that wildlife can co-exist with ranching. Other statements this rancher made about the role of people towards wildlife also support this interpretation: “People here who are involved in agriculture, who own land, or lease it, they have pretty positive feelings about sage-grouse... they are part of our heritage... we can and should do what we can” (P7). Thus, what this case illustrates to me is how different motivations can merge

and integrate with each other to collectively drive participation. This rancher is motivated to participate in SGI by both a stewardship ethic and by some degree of regulatory threat.

#### *4.2 Dimension II: Responses to SGI in the Context of Ranching in Douglas County, Washington*

The SGI is a program that primarily targets cattle producers operating on private land to participate in sage-grouse conservation. As discussed in the literature review, ranching is a livelihood strategy that often carries with it strong identities, values, and ethics; ranchers have accumulated locally-relevant and dynamic knowledge through years of experience working with the land; and, through their work, ranchers often feel strong connections to, and a sense of stewardship of the land. Four aspects of the ranching context were found to be particularly important to understanding the responses of ranchers in this study to SGI in Washington: (1) their ranch and rancher characteristics, (2) their accumulated knowledge, (3) their sense of stewardship, and (4) their perceived economic realities and constraints. I depict these factors and their key properties in Figure 5 below. By exploring each of these aspects of the ranching context, I argue we will better understand how these ranchers perceive SGI aligning or not within a ranching livelihood that is so imbued with cultural, political, environmental, and economic meaning.

## Rancher Responses in a Ranching Context



**Figure 5.** Conceptual diagram showing the key factors and associated sub-components of the ranching context in Douglas County that influence ranchers' responses to SGI. Factors include differences in ranch and rancher characteristics, economic situations, and whether ranchers' knowledge claims and stewardship values were perceived to align or conflict with SGI practices and prescriptions.

### 4.2.1 Ranch and rancher characteristics.

Ranchers interviewed for this study reflect some of the diversity of ranch and rancher characteristics that exist in the Intermountain West. However, there are at least two important

distinguishing characteristics of ranching in Douglas County, Washington that make it unique compared to many other areas in the Intermountain West: 1) the relatively high numbers of mixed cattle and wheat operations, and 2) the relatively low dependence of ranchers on federal grazing allotments. Table 1 lists salient characteristics of ranchers and ranches categorized by nonparticipation and participation in SGI.

**Table 1. Rancher and Ranch Characteristics organized by Nonparticipants and Participants.**

\* Percentage of ranchers who own cattle themselves versus lease property to be grazed

\*\* Percentage of ranchers who indicated past involvement in NRCS or other Farm Bill programs

|                        | Total<br>Number | Percent Own<br>Cattle* (%) | Average Herd<br>Size | Previous<br>Involvement** (%) |
|------------------------|-----------------|----------------------------|----------------------|-------------------------------|
| <b>Nonparticipants</b> | 13              | 85                         | 198.3                | 77                            |
| <b>Participants</b>    | 8               | 75                         | 162.5                | 100                           |
| <b>Total</b>           | 21              | 81                         | 184                  | 86                            |

A majority of both participants (75%) and nonparticipants (85%) owned cattle themselves as opposed to leasing their properties to other cattle operations. The average herd size was larger for nonparticipating ranches (198 cows) than for participating ranches (162 cows). The number of cows ranged from a low of 50 cow/calf pairs for one nonparticipant and a high of 500 reported by two other nonparticipants. Most ranchers reported being 3<sup>rd</sup>, 4<sup>th</sup>, or even 5<sup>th</sup> generation ranchers or farmers after their ancestors homesteaded in the area in the late 1800s to early 1900s. Very few operations produced strictly cattle (n=4); many were mixed cattle/wheat operations (n=7), while others had additional enterprises such as buying and selling cereal seeds, or cultivating various irrigated crops (n=4). Operations also commonly received income from fallow crop ground in CRP or SAFE programs (n=7). All participating ranchers in SGI reported

some previous involvement in other NRCS or Farm Bill programs. Three nonparticipating ranchers specifically stated not having participated in any government programs. Only one rancher interviewed lived and worked completely off-ranch and out of state. This rancher hired a ranch manager. Of the 18 ranchers who own cattle themselves, 15 reported having some leases on public lands, both State and Federal.

#### 4.2.2 *Ranchers' accumulated knowledge.*

I argue that aligning and conflicting knowledge claims about what threatens sage-grouse, the proper management of sage-grouse, and the proper management of rangelands plays a large role in shaping ranchers' ultimate assessment of and motivations for participating in SGI (see Fig. 5). Ranchers demonstrated their knowledge about sage-grouse and grazing management throughout my interviews with them. Significantly, ranchers' experiential knowledge was often at odds with what they hear from the biologists and agencies working to conserve sage-grouse. Overall, I found that ranchers participating in SGI, while not agreeing with every SGI prescription or action, largely agreed that SGI's grazing plans would help their operations especially in regards to infrastructure improvements. In contrast, ranchers not participating in SGI, often contested SGI's approach to sage-grouse conservation and grazing management more than participants.

The following sections begin with a description of ranchers' knowledge that shapes different beliefs about sage-grouse and grazing management, and continues with some specific examples of how contested knowledge plays an important role in shaping their perceptions of SGI, as well as other conservation programs practices and prescriptions.

#### 4.2.2.1 *Ranchers' knowledge of sage-grouse and grazing management.*

Both participating and nonparticipating ranchers contested SGI's approach to sage-grouse conservation in Washington State. Many ranchers in this study expressed their views on the most pertinent threats to sage-grouse. Common across these threats was a belief that predators of sage-grouse, especially ravens and coyotes, are increasing. They compared the number of predators now to what they have experienced over their ranching careers, what they remember seeing as children, what their parents have told them, and what conditions were like historically. In the days following the homesteading era, sage-grouse were plentiful but the "...predators were eliminated because all the farmers had chickens" (P1). Predator control, especially of ravens, was one of the most consistently cited management actions across all interviews in this study as necessary to conserve sage-grouse in Washington.

Concerns about increased potential for wildfires was also an important threat to sage-grouse. Ranchers attributed this increase in potential for wildfires to efforts actually aimed to protect sage-grouse such as SGI and CRP. They argue that these programs are promoting more fire risk by leaving grass either un-grazed in the case of fallowed cropland in CRP and SAFE, or with greater stubble height in the case of rested pastures in SGI. Traditionally, these ranchers have felt that the best wildfire prevention came from grazing the rangeland, mowing it, or inadvertently through the summer fallow wheat system that leaves fields bare every other year. "In this country if you don't graze it, you burn it... so what is more harmful to the sage hen?" (N11) Now, however, ranchers fear that un-grazed CRP and SAFE acres and SGI pastures rested from grazing are creating a continuous mosaic of grass fuel that can sustain fire across the landscape like never before.



Ranchers downplayed the role that habitat degradation plays into sage-grouse declines, especially in relation to other threats such as predators. Historical narratives again served as evidence to this claim:

When sage-grouse populations shot up during the homesteading, it was totally overgrazed, but all the predators were eliminated because all the farmers had chickens. (P1)

...the government poisoned the coyotes and ravens... It's the predators that is damaging the sage-grouse, not the farmer. (N8)

When I was a little kid, there were a lot of sage-grouse out there, now you rarely see them... what is weird is that there was way more farm ground at that time...everything was grazed to hell. (P5)

Now, ranchers point out that, sage-grouse numbers are low, range management is better than it has ever been, and there are nearly 180,000 acres of CRP in Douglas County, so they wonder how can habitat really be the issue? Sage-grouse, according to these ranchers, are accustomed to farming and ranching. Ranchers emphasize that sage-grouse have been living with farming and ranching for two centuries. Beyond simply not posing a significant threat to sage-grouse, some ranchers feel that cattle actually benefit sage-grouse. This is because, "If anything [cattle] help because they stimulate green vegetation, and bugs" (N3).

Ranchers question the focus to conserve sage-grouse based on habitat because they believe other threats, especially predators, are more important. Thus, when they do not see other initiatives to address these other threats, they question the effectiveness of SGI or feel that SGI is targeting ranchers unfairly. The following quotations reflect this questioning of SGI's focus on habitat protection:

Grass management is not the issue... all these things are just Band-Aids, they are not getting at the root of the problem. (N4A)

I don't think it is a question of habitat ... the easiest fix is to blame what is out there to see, the habitat is easy to blame... Habitat plays a role, but everyone wants it to be the silver-bullet but it's not... if they would focus on some of these other issues. (N6)

Other threats were mentioned in interviews including competition with non-native species like pheasants, chuckers, and Hungarian partridges. Two ranchers also thought increasing numbers of wild turkeys in Douglas County might be displacing or out-competing sage-grouse populations. Another rancher felt that a lack of winter feed is a primary driver of sage-grouse declines. Traditionally, large amounts of wheat grain were left unharvested because of inefficient harvesting mechanisms, but now with increased efficiency in harvesting technology, very little grain is left. A final threat brought up in the interviews was improper CRP/SAFE management, which will be discussed in greater detail below.

The claim that sage brush is important to sage-grouse was also questioned by a few ranchers. They believed that too much sage brush is actually contributing to the decline of sage-grouse because grouse avoid thick sage brush and need more open spaces. According to one rancher, "when this country was first homesteaded, there was tons of sage-grouse, there was no sage brush... you know why... fire" (N11). This rancher went on to explain that indigenous tribes in the area historically would burn sage brush to promote sage-grouse populations, which were an important part of their diet, and to stimulate camas growth, the roots of which were another important food in their diets.

Whether ranchers saw their rangelands as needing improvement and their views towards the expertise of SGI were other important variables regarding who participates or not in Washington's SGI program. When ranchers' beliefs about rangeland management largely aligned with Washington's SGI grazing practices, they accepted these practices and were willing

to implement them. Many participants for example believed that resting a pasture from grazing increases the health of the pasture:

The theory is if you don't let it go to seed one out of three years, the root wad will start to recede ... made since to me. (P4)

I think that delayed grazing and rest are pretty crucial to maintaining or enhancing the forage. (P7)

However, while recognizing the benefits of rest, some participants did not believe that a pasture needs 18 months of rest to realize those benefits in their region. As one rancher put it, "for this particular climate, [a deferred system] works... it's been in place for 50 years" (N4A). Those ranchers that did not think 18 months was necessary will likely not follow this pattern after their contracts with SGI are completed. For instance, when asked if they would continue their grazing plans after the contract, these participants said:

Very closely, maybe not exactly... you may not have that total rest period. (P1)

I probably won't leave [pastures] idle as long, but yeah, I will leave some of them idle when I can. (P3)

A nonparticipant offered a counterview, however, when claiming SGI's grazing system does not, "go long enough... it takes a year to make the plant healthy, then you have to get the roots healthy to produce seed... we have some pastures that we haven't grazed in a spring for 8-10 years" (N6).

Nonparticipating ranchers questioned the effectiveness of Washington's SGI grazing prescriptions more often than participants. Many nonparticipants did not believe that a rotational system was beneficial, worth the extra effort to implement, or feasible to accomplish given their particular situation. The following quotation demonstrates one rancher's lack of anticipated benefit, for himself nor sage-grouse, from a SGI rotational grazing plan: "I am not convinced that [a grazing plan] would benefit the status of the range. I am not convinced it would improve

the quality. I am not convinced that it is going to help the sage-grouse” (N9). When ranchers questioned the efficacy of the SGI’s grazing prescriptions, they see less benefits in participating in the program, and costs to participation become more salient.

Ranchers’ views towards SGI’s rangeland expertise also varied amongst participants and nonparticipants. One participating rancher recalled that his pasture looked “pretty bad” (P4) and sought NRCS’ rangeland expertise as a reason for joining SGI. Another rancher, however, figured, “as long as those grasses are here, you are not in any real danger ... you are in pretty good shape” (N7). Judgements about pasture conditions are based on ranchers’ personal views regarding grazing management and ultimately influenced their receptiveness towards “improving” their grazing practices through following prescriptions in SGI. The first rancher saw his pasture as needing improvements and thus, sought NRCS’s technical expertise to accomplish it. The other rancher, in contrast, did not see the need to improve his pasture and thus, had no motivation to seek assistance through SGI. While both ranchers above essentially agreed that NRCS had valuable expertise to offer, other ranchers were more explicit in their distrustful or trust of NRCS’s “expert” knowledge. The following quotations from a distrustful nonparticipant and a trusting SGI applicant illustrate the key role that trust plays in ranchers’ decisions to engage in SGI or not:

I don’t really trust those range guys... Just because you got that diploma, don’t make you an expert. (N2)

I have known [the NRCS employee] for about 20 years... he has taught me more about grass than all of the other range managers I have met ... and he talks to you about it in a way that you can understand. (N4A)

Ranchers often referred to their knowledge as “common sense” and questioned the “sense” of many SGI rangeland management prescriptions. The fact that some ranchers refer to this knowledge as common sense is illuminating in that it highlights the importance of place-

based, local knowledge to these ranchers. Decisions that lack applicability to their location, but which originate from outside the region where bureaucrats do not understand the local context, do not seem logical to local ranchers; that is, they seem to lack any local “common” sense.

Ranchers distrustful of SGI noted that agency personnel lacked practical knowledge when they were disconnected from the locality and lacked ongoing, hands-on experience of the conditions of their local land base. A lack of perceived common sense was at times treated with scorn:

“some guy with a degree from the University of Montana can tell you what to do” (N2).

Their views were developed through years of hands-on experience and shared learning of what works and what does not work in their locale. As such, their knowledge is multigenerational, dynamic, and responsive to unique biophysical conditions that vary spatially and temporally. Thus, it is not so much “common” as it is situated within a particular locale and context. One rancher likened grazing decisions to a “gut feeling” (N11); no doubt developed over decades of grazing so that the practice feels instinctual and automatic. It is learned behavior, however, not as “fixed” or “real” as it may sound. Indeed, one rancher called grazing planning an art rather than a science, precisely because he recognized the unpredictable context of grazing planning and the benefits of expecting on-going change and being adaptive. When grazing prescriptions are seen as too scientific or not dynamic and adaptable, ranchers may get frustrated as the following two quotations reveal: “it’s not a science, it’s an art ... you can get way too scientific about it ... one reason that people get frustrated with the agency thing” (P1); and “the fallacy of someone saying you need to do this [in a grazing plan], ... it’s the same if there is rain or no rain, it’s not biological” (N3).

An appeal for more common sense is not just an appeal for more common/local knowledge but also for more local control. One rancher who was not participating in SGI said it

this way: “I would like to see more local, common sense with implementing [conservation programs], I would like to see that with the sage-grouse program as well” (N13). Ranchers indicated distrust of decisions made extra-locally, be they out of the region such as in Olympia, or more distantly from Washington D.C. This cynicism towards decisions made by specialists or based on “expert” knowledge makes ranchers distrustful of regulation because they fear they are not reflective of their local conditions. “People from Washington D.C. start telling us how to start managing our grazing practices. I feel that Washington D.C. is so far removed from what it takes to run an operation, and they have no idea what sage-grouse need either” (N9).

#### 4.2.2.2 *Contested knowledge.*

Having described some of the different ways ranchers understand the current status of sage-grouse and how to properly manage their grazing, we turn to some specific examples of how their knowledge shapes their perceptions and judgements on the competency, effectiveness, and ultimately, worth of SGI. Understanding how contested knowledge operates requires not only examining the SGI program, but also ranchers’ experiences with other conservation programs. The SGI does not exist in a vacuum. In Douglas County especially ranchers have been exposed to multiple federal conservation programs and years of WDFW efforts to monitor sage-grouse populations as well as other imperiled species that exist in Douglas County such as the pygmy rabbit and the Columbian sharp-tailed grouse. In fact, the history and prevalence of government programs in Douglas County led one rancher to call it a, “government program county” (N6). Ranchers’ experiences with or opinions of one program influences their perceptions and inclinations towards participating in other programs. The SGI is no exception. The actions and prescriptions of other Farm Bill programs such as CRP and SAFE, as well as

WDFW efforts to conserve imperiled species, influence ranchers' views of SGI prescriptions and the entire program more broadly.

Contested views on the underlying knowledge of different programs and the particular activities they entail undermine ranchers support of them. This was most evident for SGI in Washington regarding the practice of fence flagging. Most ranchers, both nonparticipants and participants, questioned the effectiveness or worthiness of fence flagging. Ranchers told me they have never seen a sage-grouse killed by a fence. Hence, this causes them to question the rationale of installing fence flags:

What really irritates me, they pay people to put flags on fences!... I am 74 and I have never seen a grouse hung up on a fence. (N3)

I am 65 years old, I probably have 80 miles of fence. In my entire life I can tell you that I have never found a dead sage-grouse on a fence... I see those reflectors glinting in the sun and it is absolute insanity. (N10)

These quotations demonstrate how ranchers' knowledge, based in their experiences and observations, defines what makes sense to them and what does not. Practices that do not fit with their experiences are deemed silly, stupid, insane, irritating, or just poor judgment, leaving ranchers to feel that their experiences are not reflected in the program activities.

Since many ranchers in Douglas County also cultivate wheat, most of the ranchers I interviewed also had experience with the SAFE program, either first-hand or through neighbors and friends. The implementation of SAFE in 2012 was contentious and was an event that many ranchers brought up in interviews. Their main concern centered on the conversion of former CRP to SAFE. The SAFE program requires a more diverse stand of grass, forbs, and shrubs than most CRP fields. Thus, farmers with old CRP fields who wished to enroll in SAFE had to replant their CRP acreages. This resulted in approximately 63,000 acres of former CRP land being tilled under and replanted to more diverse seed mixes (NRCS, pers. comm.). Besides being frustrated

with having to replant so much CRP, many ranchers also perceived the replanting as very harmful to sage-grouse who use CRP fields quite often. The replanted SAFE acres would have been bare dirt with all sage brush and grass cover removed. This would not become useable habitat for sage-grouse for 3-4 years (WDFW, pers. comm.). In addition, the rollout was the same year that a more than 90,000 acres burned after a wildfire swept through the northern part of the county. Thus, in one year roughly 160,000 acres of sage-grouse habitat was wiped out.

Not only did ranchers question the prudence of the SAFE rollout, but they also challenged the logic of the seed mixes used. Several ranchers failed to see the need to plant sage brush, “I see where the money goes, to pay dry land farmers to plow up good grass and put in sage brush... you don’t need to ever plant sage brush out here, it grows fine on its own” (N3). Another thought it “silly” to spend so much money to plant “flowers”, just to have sage-grouse eaten by coyotes (N8). In both cases, efforts to conserve sage-grouse are seen by ranchers as a waste of time and money.

The implementation of the SAFE program has fed into certain ranchers’ distrust of government agencies and questioned their competence to manage sage-grouse effectively. The following quotations capture this sentiment well:

In my view that was poor judgment... it’s a pretty sore subject. Here we were, the people living on the land, they didn’t like what was going to happen... but, of course the wildlife folks know better (*sarcastic tone*). (P7)

It was going to be exactly like CRP, everyplace that has CRP can roll over, but you have to tear it out...in the infinite wisdom of [the program planners] we have to tear out their entire habitat. To me, that directly impacted the sage-grouse... that was just stupid... that’s people back in Washington D.C., they don’t understand, its common sense. (N13)

These two quotations, to me, illustrate the vast difference ranchers perceive between their own knowledge and that of the various agencies (WDFW, FSA, NRCS) involved in sage-grouse conservation. Whose knowledge informs sage-grouse conservation? According to the ranchers, it



is not the knowledge of “the people living on the land,” but rather the “people back in Washington D.C.” The complaint that time and money is not wisely spent is not just aimed at the SAFE program. In many cases, ranchers confused SAFE with SGI, did not recognize that they were different programs, or just did not differentiate between the two in interviews. To a land manager, efforts to conserve sage-grouse often seem the same regardless of the sponsoring agency. It is also possible that land managers expect these efforts to be more coordinated and unified than they often are in practice. Nonetheless, the result is that questioning the competence of the SAFE program has bled over into questioning the competence of SGI as well. Even when WDFW may largely agree on the short-term impacts of the 2012 SAFE implementation, the perceptions of ranchers are that there is a lack of respect for their knowledge and the agencies are incompetent.

Conflicts over WDFW efforts are not just confined to sage-grouse management either. Efforts by WDFW to conserve pygmy rabbits in the southern part of the county and Columbian sharp-tailed grouse in the northern part also contribute to certain ranchers’ feelings towards SGI. Bad experiences with either of these projects has led some ranchers to come away with a distaste for federally-led conservation programs in general, perceiving them to actually be anti-rancher. As one rancher put it, “I guess I am cynical after my experience with pygmy rabbits,” feeling that “when they find an endangered species, the first thing they do is pull the cattle off instead of asking what is being done right that they are there in the first place” (N3).

#### 4.2.3 *Ranchers’ stewardship commitments.*

Ranchers’ commitment to stewardship is another important factor that influences how they weigh their decision to participate or not in SGI. Ranchers participating in SGI saw their

participation in the program as advancing or aligning with their stewardship goals (see Fig. 5). Nonparticipants, in contrast, felt they were already good stewards of their properties and saw no need to change their operations. While rarely using the term stewardship, the ranchers I interviewed often talked about the proper care and management of their operations. Not only did ranchers describe what stewardship, or proper management is, but they also gave various reasons for why stewardship is important. These are discussed below.

Several ranchers defined stewardship as, "...doing what is right" (N1). Doing what is right meant what is right for proper grass management. Good grass management was defined by one rancher as simply not hurting the grass (N10). For another rancher, good grass management means having a lighter touch (i.e., a lower stocking rate) when grazing (P1). Many ranchers said they were already doing what they thought SGI wanted in terms of grazing management. Even without resting pastures, some ranchers still see their grazing management as very similar to SGI's grazing management.

Ranchers in my study also interpreted the presence of wildlife as evidence of proper management. As one rancher put it, "We have sage hens [on our property], so we are already doing what is right" (N1). Some took this sentiment even further by insinuating that wildlife are dependent on farmers and ranchers for their feed, or at least that ranching and conservation are inherently compatible through proper stewardship. They see stewardship as a duty to maintain and care for an agricultural heritage, which includes native wildlife species (at least those apart from wolves): "I think that it fits in very well with our philosophy that outside of the wolves we want these animals here, they were here" (P7).

The connection between careful stewardship and maintaining a ranching livelihood is something that most ranchers alluded to but was stated directly by the following rancher: "...we

farmers and ranchers have to take care of our land. We aren't going to jeopardize that because it's our livelihood" (N13). Thus, they would argue that successful ranchers, by necessity, are good stewards. "I am in the business of raising cattle and cattle need grass. If I own the ground the cattle graze, if I want to continue raising cattle, and if I want my family to continue raising cattle, what am I going to do to hurt that grass? Nothing" (N10).

The connection between stewardship and livelihood is strong for most ranchers in my study, but for some the connection goes very deep, particularly for certain nonparticipating ranchers. As some stated, a good steward is self-reliant; he/she does not need help from the government to properly manage land. This perspective is summed up well in a quotation from one such highly self-reliant nonparticipant:

If I can't maintain an operation on my own without government intervention, there is something wrong. People talk about sustainability... that's a big part of sustainability. I have been [ranching] all my life, it is very dear for me. Yeah, I want it to be profitable, but it's a way of life. I am convinced that my stewardship of this land is better than what the government can dictate to me...there're bad apples, there's errors, but I would hold that we [ranchers] have done an excellent job managing grazing lands. That is our livelihood, if we abuse it, we lose it. I think we do a better job than the BLM, we know the land. (N9)

Strong values and identities of self-reliance, self-sufficiency, independence, and personal competence lie at the foundation of this perspective. These foundational values also form the basis of a property rights value-orientation (Jackson-Smith et al. 2005). The interaction between stewardship, self-reliant values, and property rights is self-justifying. In other words, ranchers' perceptions of their capacities for good stewardship and sustainable ranching livelihoods give them justification for and, by extension, some defense against, what they view as unnecessary government incursion into their ranching operations, and furthermore, their private property rights. If private land managers are good stewards of the land, why would government

involvement in their operations be necessary? And if ranchers' livelihoods depend on taking good care of the land, why would ranchers not be good stewards?

Understanding why ranchers feel stewardship is important can offer insight into their motivations for or against participating in SGI. The ranchers I interviewed mentioned multiple reasons for why they try to properly manage their cattle operations. Of course, key among these reasons is the argument that proper stewardship is essential to maintaining a livelihood in ranching; that is, keeping the ranch sustainable. Many mentioned responsibility to future generations and a desire to keep the land productive so that generations to come would be able to live off that land. It is viewed as a duty in many cases to maintain the heritage, taking care of the land and wildlife, just as their forefathers did before them. There is also an element of enjoyment in agriculture which drives a desire to be a good steward. Ranchers mentioned simply enjoying the work, the challenges that come with it, the daily interaction with cattle, and the landscapes they spend their days in. In some cases, ranchers saw participating in SGI as a means to achieving their stewardship goals, while in other cases, ranchers' saw government involvement in their operations as antithetical to their stewardship values and goals.

Although less frequently mentioned, there is also an interplay between the very practical and the more personal reasons to be a good steward in the daily operation of a ranch. One rancher captured this interplay well:

The traditional is 40 acres per cow pair, we are running 60 or 70 ... the reason being ... It's better to have too much than not enough when you have a disaster... It's a personal thing and a pride thing. There's nothing that I hate worse than having my neighbors side of the fence look better than mine. Could I run a 100 more cows? Maybe so, but then my side of the fence would look worse. (P1)

This rancher recognizes that by reducing the stocking rate and grazing with a lighter touch, he is better prepared to adapt to an unforeseen event like a drought or wildfire; thus recognizing the

practical connection between stewardship and resilience. On the other hand, this rancher also derives pride from perceiving his side of the fence as looking better than the neighbor's. Both the practical benefit of being better prepared for uncertainty and the personal satisfaction that brings the positive sanction of pride influences how this rancher decides the proper stocking rate. This rancher thus, expected both practical benefits as well as the ability to show off his good ranching skills from his participation in SGI (see Section 4.3.1).

#### 4.2.4 *The economic situation for ranchers in Douglas County.*

The economic constraints that ranchers perceive set their reality from which they understand and interact with SGI. Understanding their reality helps illuminate how SGI may or may not fit into their lives, particularly in regards to the benefits and costs ranchers perceive to participating in SGI discussed in the next Section. The economic reality facing ranchers in Douglas County is similar in many ways to the situation that many ranchers across the country are facing. As noted in the literature review, this entails changing social, political, economic, and environmental pressures on ranchers that are threatening ranching livelihoods across the West. While the changing economic picture for ranching in the West has been covered much more thoroughly in other texts, I will highlight a few of the macro- as well as micro-economic aspects ranchers in this study cited that set a context unique to north-central Washington (NCW).

As the cattle industry becomes increasingly integrated into a global market, the differences between ranching in NCW and other places in the U.S. became more apparent. “[Ranching in NCW is] becoming more expensive relative to the rest of the United States” (N6). Compared to other parts of the U.S., NCW ranchers are constrained by realities of climate – longer winters require purchasing more forage to feed cattle through the winter months; low

rangeland production –in NCW a rancher might need 20-40 acres per cow whereas east of the Mississippi ranchers can pasture 3-4 cows per acre; and minimal processing infrastructure –most slaughterhouses are in Texas, Oklahoma, and the high plains, increasing the production cost for NCW ranchers to get their beef to market. A consolidated slaughter and feedlot industry also leaves the ranchers with little negotiating power: “You can’t discuss prices with the feedlots. It’s can you get them in?... Those guys can kill you” (N6).

At the microeconomic scale, family ranching operations are struggling not only to continue the family ranching lifestyle and legacy, but also to find willing and capable laborers to do the necessary ranch work. Ranchers say that it is hard to find willing laborers because more of the younger generation who grew up on ranchers are leaving to go to college, seeking non-ranch occupations, and are expecting higher wages; or others lacking a ranch background, simply do not view it as a plausible occupation. One rancher puts a significant amount of blame for the shortage of future generations of ranchers on the CRP and SAFE programs. When farmers put their entire operations into CRP, the contracts went for at least 10 years, so the younger generation had no work and left the farm. Ranchers themselves are having to leave the ranch to make ends meet, “there’s nobody making a living, you got to have 400-500 head to make a living... this isn’t my only source of income” (N11). Traditionally, many people in Douglas County had mixed wheat and cattle operations. This mixed operation helped farmers through the ups and downs of wheat production and prices: “What a cow/calf operation did was gave you some liquidity ... when you had a bad year you could sell some cows ... I think it was a form of insurance” (P4). Now, farms can get federal crop insurance that protects them from crop failure or annual changes in market prices. Small mixed operations are in decline, but the ranches that

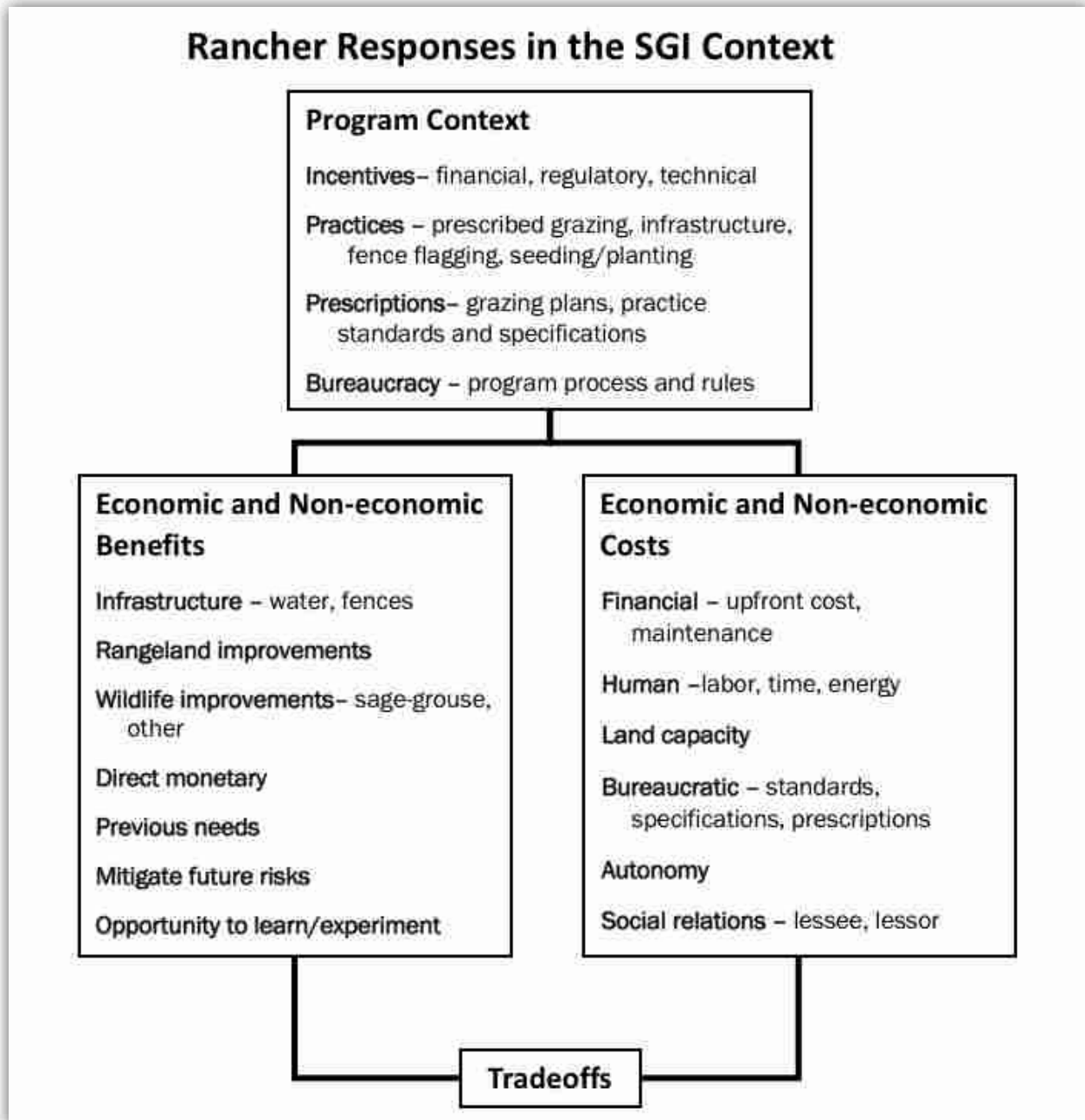
are left still operating continually need and seek other supplemental ways to generate and diversify their ranch incomes.

Some ranchers are also feeling pinched by what they perceive to be hostile banks, government regulations, and private land acquisitions. Given the slim profit margins in family ranching in the Intermountain West, some ranchers say that “a lot of these banks aren’t too friendly” (N6) towards ranchers when approving loans as compared with other agricultural producers. Another perception among some ranchers is that environmental regulations are becoming more and more stringent; “Government regulation is something that we all fear. The Endangered Species Act, regulation for water... these are fears ... the ranching industry is evolving dramatically. I don’t know what is going to happen” (N9). This sense of fear is only intensified for some ranchers by government actions to acquire land for wildlife conservation, shrinking the land base available for grazing. “The game department coming in and buying up ground has gotten people nervous” (N11). Large land acquisitions of formerly private lands by the WDFW or the Colville Tribe stoke fears that conservation of habitat for salmon, sharp-tailed grouse, or even sage-grouse could displace the cattle industry entirely.

#### *4.3 Dimension III: Rancher Responses in the Context of the SGI Program Itself*

The SGI program offers ranchers an opportunity to implement various practices in exchange for financial, regulatory, and technical incentives. As ranchers perceive the SGI practices available to them and the incentives that accompany those practices, they take into account their personal situations, the various prescriptions they would have to follow, and the broader bureaucratic rules and processes SGI follows. Together, these considerations form ranchers’ most direct responses to the SGI program and the practices it offers them. From the

rancher’s perspective, these program structures influence the various benefits and costs they anticipate from participating in SGI. I present a basic conceptual diagram of the key costs and benefits perceived by ranchers in Figure 6 below.



**Figure 6.** Conceptual diagram showing the key factors and associated sub-components that influence ranchers' responses to SGI in a program context. Responses were influenced by different components of the program context which drove varying perceptions of both economic and noneconomic benefits and costs. Differences in perceived costs and benefits led to distinct tradeoffs in ranchers' decisions..



It is extremely important to recognize both economic and non-economic benefits and costs that different ranchers perceive. In this thesis I use the term “economic” to refer to benefits and costs that are material in nature, directly impacting ranchers’ expenses of time, money, and energy. I use the term “non-economic” to refer to those benefits and costs which are more intangible, impacting ranchers’ emotions, values, norms, knowledge, and social relations. In the sections below I first describe the benefits of SGI that both participating and nonparticipating ranchers brought up, followed by the costs they perceive.

#### 4.3.1 *Economic and non-economic benefits of participating in SGI.*

One of the most telling differences between interviews of participants and nonparticipants was the benefits, both economic and noneconomic, that ranchers expected from participating in SGI. As to be expected, SGI participants mentioned benefits more than did nonparticipants; however, some nonparticipants did mention benefits which I will describe below as well.

Probably the most cited benefit, by both participants and some nonparticipants, and key factor triggering participating in SGI was improvements in grazing infrastructure, especially water developments. Ranchers generally agreed that water developments are a particularly important need, as one participant put it, “water development in this country is huge” (P1). Several participants interviewed mentioned specific water developments as a primary driver to their participation in SGI:

Probably the water facility, that drew me into the program to start. (P3)

The main reason, to get water where we didn’t have water. (P8)

Even nonparticipants acknowledged the importance of water developments as a benefit. For example, one nonparticipant who had previous experience with water developments had this to

say: “Where I see 90% of the benefit of those programs is the water projects... those water developments do more to disperse cattle than all the fences in the world” (N6).

There are many subsidiary benefits of a water development. A new development can save a rancher time, energy, and money that was previously spent in hauling water to pastures without adequate water supply. Also, as indicated in the quotation above, ranchers use water sources to help distribute cattle in pastures and utilize pastures in a more even way or, as one rancher put it, to “manage our grass without a fence” (N4A). Water, and grazing infrastructure in general, are key components of a benefit chain described by several ranchers. The benefit chain generally began with supplying a pasture with adequate water, which in turn would improve grazing distribution; better cattle dispersion would then improve grazing efficiency; better grazing efficiency is expected to yield healthier grass; healthier grass would lead to greater and more quality grass production; more grass should translate to more weight gain by cattle; and finally, better weight gain by cows would lead to more profits. This benefit chain was also referred to in explaining how grazing infrastructure might improve sage-grouse habitat. Two quotations from ranchers help demonstrate how ranchers perceived infrastructure benefits:

Hopefully by dispersing these cows and doing a better job grazing, maybe it will help the sage-grouse. (N4A)

The plus for the SGI program is that it allows you to stay in business without having to sell. [Due to] economic benefit, you are able to use your ground better because of water and such. It isn't all the economic part of it, you are actually doing the right thing in terms of timing of grazing. (P1)

Participating ranchers also reported observing improvements to their rangeland over the course of their SGI grazing plan, fostering increasing support for the SGI program. These improvements included enhancing forage quality due to better water supply in the proper places

and to resting pastures. Some ranchers began with unquestioned faith in the benefits of SGI and other programs:

Any conservation program is going to be helpful...if it is good for the hens [i.e., sage-grouse], it is good for us. (P2)

It's a win-win situation for everybody. (P8)

The financial benefits of participating in SGI were also key, as direct payments enabled participants to improve the conditions of their rangeland or keep up the maintenance on their pastures. As such, participants spoke of the program as a “good deal” (P2) or “hard to pass up” (P7). These ranchers desired to improve their land and saw SGI as an opportunity to get paid to do so. One rancher even described CRP as paying ranchers to grow sage-grouse:

Realistically, let's look at this deal with CRP. Whoever is willing to pay you for growing habitat for sage-grouse ...and you get more stable income from it, what are you going to do? They are paying us to grow sage-grouse... we will grow anything that is legal as long as somebody will pay us to do it. (P7)

Another rancher reported the financial benefits as the primary reason for participating in SGI: “Economically was probably the first priority, we weren't really worried about the sage-grouse” (P2). On the other hand, ranchers who thought they could have improved their properties without financial help, stated that SGI at least helped them get improvements in faster than they would have on their own.

In almost all cases, participants mentioned SGI fulfilling a previous need or desire. These were specific to the individual context and were often one-time needs. For instance, one participant saw SGI as an opportunity to prevent a particular pasture from being converted to crop, another saw the opportunity to create a pasture that they otherwise could not use, and yet another used payments from SGI to payoff improvements they made on a previous CRP contract.

Others had specific water improvements in mind or had a desire to get into a rest-rotation system.

Some ranchers mentioned a benefit of having greater certainty against forces pressuring grazing. They see SGI as helping them secure “self-protection” or even assurances for future generations to be able to ranch. At times, ranchers made the direct connection between SGI and the protection of a way of life. This assurance was not always attributed to the formal ESA Predictability, but also had more informal aspects conveyed by some ranchers. The following quotations from both a participant and nonparticipant captures the more informal and symbolic protection some ranchers perceived:

Very similar to the HCP, it allows certainty into the future... if we are enrolled in either [program], we have indicated that this land is there to help the sage-grouse population. As long as we can do that, I think that will fend off the suit-happy people. (P7)

[Regulatory predictability] was one of them, the other one was, at least what I believed at the time, was that by participating I believe that you would not only get some protection, but you would get some credit... some kudos... On the symbolic part, there is something where if I have done something to help wildlife, those are the things that need to be recognized... there should be someone to keep track of that... with the SGI, here is a program that can ... it is actually in writing. (N13)

To these ranchers, the symbolism of participating in a sage-grouse conservation program affords them recognition that goes beyond the formalized regulatory protection. Participating in a conservation program is a way for them to get “kudos” for their stewardship efforts, and if that credit is recognized by a broader community, then it can be translated into protection against regulation and litigation.

Several ranchers thought SGI also gave them an opportunity to learn and/or experiment with different management techniques. With financial, infrastructure, and technical support, participants in SGI can have the freedom to try things they would not otherwise try, like resting pastures, and learn how to rotate grazing in their pastures. “I think it helped me understand how

to manage my ground and keep some ground idle” (P3). Additionally, some participants reported learning about the different grasses they had on their property, or about how to keep better grazing records. A final non-economic benefit of note is the personal pride some ranchers felt in managing their grazing in a way that reflected personal goals, as mentioned previously (see Section 4.2.3).

#### 4.3.2 *Economic and non-economic costs of participating in SGI.*

Both participants and nonparticipants readily brought up various costs to participating in SGI. For participants these costs made their participation more difficult, but were countered by the benefits they expected from the program. For nonparticipants on the other hand, these costs formed some of the key barriers to their participation in the SGI program.

One of the most obvious and often-mentioned costs was the actual financial cost of implementing a conservation plan. Despite financial incentives, an SGI conservation plan is not free. As one nonparticipant put it, “You can go broke buying bargains” (N3). The way that the financial incentives in SGI, and in many other NRCS programs, work is through cost-share. Generally, the cost-share rate is calculated to equal about 75% of the cost to the participant to implement the conservation practice (NRCS, pers. comm.). Thus, participants have to come up with at least 25% of the cost; however, the cost-share is not approved until after the practice has been implemented and certified by an NRCS employee. Therefore, participants actually have to stand the full cost to implement the practice, before being partially reimbursed. Simply put, “You have to have the funds and labor upfront to get it in” (N6). For some ranchers this payment structure can pose a difficulty. One participant referred to it as, “a balancing act to pay for things

before cost-share came in” (P2). Nonparticipants wondered if and when they would be paid for everything they did and how they would be able to come up with the upfront cost.

At a basic level, signing up for, designing, implementing, and maintaining a conservation plan through SGI also requires time, energy, and labor. Implementing a rotational grazing system is a more intensive grazing strategy for certain ranchers. It requires, among other things (as discussed further below), more time and labor to implement. Often, properly implementing rotational grazing means first ensuring that a ranch has sufficient infrastructure (fences, water troughs, etc.) to support it, which of course requires a lot of time, energy, and labor. Economic constraints, such as finding willing labor (see Section 4.2.4), increase the saliency of these costs. Even when ranchers recognize the potential benefit that SGI may represent, some lack the time and energy to actively pursue and carry it out. Just taking the time to learn about SGI and weigh its costs and benefits may be a barrier to participation for certain ranchers who lack prior experience or a perceived pressing need for assistance or regulatory protection. Thus, the motivation to participate has to be enough to overcome the initial impetus needed to learn about the program and carefully weigh if it would work for them.

There are other economic challenges to implementing a more intensive grazing system as well. Many ranchers mentioned how circumstances limit one’s options to rest and rotate pastures. Resting large pastures can be particularly problematic. Some smaller ranchers do not have the land capacity to afford to resting their large pastures. Large pastures would need to be spilt so that smaller acreages are rested at one time; yet this may not be cost effective if fencing these pastures and getting water to them is not feasible because the ground is too rough/rocky or the pasture is too remote. Some ranchers also rely on particular pastures year after year as one rancher skeptical of rotational grazing notes, “our pastures are pretty hard to rotate... you always

want to use your best pasture last because it is greener” (N8). In the same vein, resting one pasture may just increase the grazing pressure on other pastures if there is not enough acreage to absorb the decreased forage availability. Also, if a rancher is leasing a pasture, they might be hesitant to use that pasture in a rest rotation because they are paying for it each year, as one participant put it matter-of-factly, “I can’t rest that ground because it costs too much [to rent]” (P4).

On the other hand, ranchers’ pasturing systems may be so complicated that they think figuring out a rest-rotation system would be too challenging. For instance, one nonparticipant put it this way, “my place, I have got it cross fenced quite extensively... I have no idea how they would come up with a rotation, all I can see is a headache” (N9). Another nonparticipant commented on all the different leases, landlords, and jurisdictions they would have to deal with to make a new rotational system work. This quotation captures the complexity a rancher might face, “yeah, one thing that works on my place...DNR wants one thing, one landowner doesn’t want anyone [from the government] on their property, another is in the CSP [Conservation Stewardship Program]” (N11). This rancher went on to say that neighbors have had to cut their cow numbers in half in order to implement an SGI grazing system. This claim could not be verified, as none of the SGI participants that I interviewed indicated that they had to reduce their herd size at all to participate in SGI. For participants who have some pastures in SGI and others outside the program, planning their grazing season may become more difficult when they have a specific grazing schedule to follow on their different pastures.

Material challenges to implementing an SGI conservation plan also include following NRCS standards and specifications. These define how NRCS practices are to be installed, implemented, and/or maintained. For example, the Practice Standard for Prescribed Grazing

(NRCS practice 528) calls for a grazing plan that includes goals and objectives, a resource inventory, a forage inventory, a forage-animal balance, identified periods of grazing, deferment, and/or rest; a contingency plan; and monitoring requirements (NRCS 2013a). Specifications are more detailed and include the specific materials and installation requirements. For example, the Practice Specification for a four-wire fence (NRCS practice 382) calls for either 3 ½ inch diameter wood posts or 1.25 lb/foot steel posts to be set 20ft apart (NRCS 2011b). These standards and specifications become part of the agreement between NRCS and the participating rancher. The participant is required to follow them in order to comply with the agreement and receive cost-share on the practices.

Both participants and nonparticipants were worried about meeting SGI practice requirements. The following two examples demonstrate this concern well:

The sage-grouse program, though, that was a challenge to put everything together right ... we were worried about how particular they [NRCS] would be in inspection... we had our tape measure out. (P2)

One thing that scares us is that those [grazing] plans are really specific with on and off dates and such. (P5)

These program requirements, jumping through hoop after hoop, are one of many bureaucratic barriers perceived by ranchers. Many of the bureaucratic costs that ranchers mentioned are part of the formalized process and program rules that all NRCS programs follow, including an application period with specific open dates and deadlines, an obscure ranking process<sup>3</sup>, and complicated payment processes. Once a ranchers' application is funded and they are implementing a conservation plan, the paperwork and bookkeeping requirements can be daunting. The NRCS has a specific multistep process for approving payments that starts with

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<sup>3</sup> A points-based process the NRCS used to rank applications to its programs and determine which applications will be funded. Points are assigned based on pre-established criteria.



certifying that practices were completed within the standards and specifications required.

Depending on the practice, this certification process can involve significant paperwork to prove materials bought to install a fence or water trough or dates a pasture was grazed for example.

Uncertainty about how the payment process works or when payments will come through can leave ranchers feeling uneasy:

I do a budget on my farm, everyone has a budget. If all the sudden they want you to pay 'x' amount [in the program], I need to know when I am going to get paid... I will have to borrow that money from the bank and she has to know when she is going to get paid too... It's always a moving target, [you] don't know when it is going to get done... It's just a ton of red tape and I believe a lot of that is administrative. (N13)

Another common source of confusion is the sheer number of programs that are available to farmers and ranchers, each with their own acronym, specific program rules, and conservation objectives which may or may not conflict, overlap, or be compatible with each other. As mentioned in Section 4.2.2, ranchers often confused SGI with the SAFE program. A rancher's participation in one program may affect what they can do in another. For instance, one participant experienced this when signing up for SGI when already enrolled in the Conservation Stewardship Program (CSP): "I was limited to what I could put into SGI because of what was in CSP" (P1). In other case, a nonparticipant figured they would be ineligible to participate in SGI because they graze federal lands and other programs are only offered on private lands and do not apply to public land.

Meeting practice requirements and navigating complicated bureaucratic processes both contribute to ranchers' sense of worry or fear of working with the government. This more emotional reaction can lead to stress, as indicated in the quotations above. This type of emotional stress can be thought of as a cost in itself. Another key non-economic cost emphasized by nonparticipants was a sense of losing control; that by participating in SGI you were "giving some

control away” (N11). This concern was not just limited to nonparticipants, as ranchers participating in SGI did not agree with every practice or action of SGI (see Section 4.2.2). While some participants were able to accept divergent views without stress, others responded with considerable frustration. The following quotations illustrate this diversity in perspectives:

There were a couple of things that we laughed at ... putting those reflector things on the fences ... If the sage-grouse don't fly higher than the sage brush, fences are the least of their worries. (P3)

There's a bigger rest period than I probably would have. I don't know if it is totally necessary, but it is part of the thing and you have to live with it. (P1)

One of the deals that kinda pissed me off ... we had to reseed some grass and stuff. (P5)

Finally, there are costs regarding social relations especially involving landowners and those that lease their grazing land. The relationship between a lessor and their lessee can vary considerably. Landowners may completely trust their lessee as one landowner said: “We let [our lessee] have a lot of...we are pretty liberal with [him]. [He] won't overgraze anything...He always errs on the other side” (N13). In other cases, however, there is a lower level of trust. Where trust is more variable, SGI may complicate the lessor-lessee relationship. The SGI works with land managers, which can be either the landowner, or a lessee who has a letter from the landowner signifying that they have control of the land in question (NRCS, pers. comm.). Thus, a landowner can participate with or without the consent of a lessee. It is up to the landowner to communicate with their lessee. A lessee in contrast, can only participate with the granted permission from the landowner. Landowners in SGI rest pastures, forcing their lessees to find replacement pastures, and follow grazing guidelines that lessees may or may not find reasonable:

I don't have any of my own ground in the Sage Grouse Initiative but I lease some pasture from someone who does...I would say that it is messy to work it into my business ... I find it difficult to work into my plan. I want to maintain control... that was dictated to me. I don't even know what the rotation is for next year. I can't make long term plans. (N9)

Without involvement the grazing planning, the lessee has no ownership in the plan and feels a loss of control.

The attitudes of landowners also keep some lessees from being able to participate in SGI. A lessee reported having landlords, "...[who] don't want anyone from the government to be out [on their property]" (N11). In other cases, landowners expressed intentions to make sure their participation in SGI was compatible, if not beneficial, to their lessees; like one participant did when saying, "If I can get it done, it will turn out better for him [the lessee] in the long run, because it will produce more grass, theoretically" (P4). However, the lessee may not agree with this landowner's assessment of the "theoretical" benefits of SGI.

#### 4.4 *Summary*

In this chapter, I set out to describe ranchers' responses to SGI in three different yet overlapping dimensions: regulatory, ranching, and SGI program contexts. I found that a key factor influencing ranchers' responses to SGI was the level of regulatory risk they perceived when facing the threat of regulation if sage-grouse were listed on the ESA. Even within this small sample of ranchers in Washington, there was considerable diversity in the amount of perceived regulatory risk stemming from different background risk factors most salient to different ranchers. Half of the ranchers who participate in SGI that I interviewed perceived little to no risk of regulation, and thus were incentivized to participate in the program for reasons apart from regulatory predictability. The other half of participants did perceive high regulatory risk and participated in SGI at least in part to mitigate that risk. A majority of nonparticipating ranchers that I interviewed also perceived high regulatory risk but did not participate in the program, demonstrating that a perception of high regulatory risk does not automatically make

regulatory predictability the most important factor in a rancher's decision whether or not to join SGI in Washington. These ranchers differed in the degree to which they trusted the regulatory incentive or accepted the government's offer of protection.

The sample was also diverse in terms of ranchers' operational characteristics, cultural identities, and economic realities. Overall I found a high percentage of ranchers in this study with previous experience in conservation programs but, significantly, the few ranchers with no or little experience were the most ardent nonparticipating ranchers I interviewed. These nonparticipants were also the most critical of SGI's approach in Washington. Key to their nonparticipation was contested knowledge about the primary threats to sage-grouse, predators in most cases, and the benefits of a rotational grazing system. Even participating ranchers contested SGI's approach as overly focused on habitat protection and unfairly targeting ranchers; however, the key difference for participating ranchers was their belief that SGI practices, especially infrastructure improvements, would benefit their operations. I found that ranchers' sense of stewardship was also key to understanding their responses to SGI. Certain nonparticipants held strong stewardship values of self-reliance, rejecting government involvement in their operations. Other nonparticipants felt they were good stewards and no need to change their operations, while participating ranchers had desires to improve their operations in specific ways. Finally, economic constraints such as thin profit margins for family ranches in North Central Washington, difficulties in finding labor, and decreasing available grazing lands shape the benefits and costs that ranchers see in participating in SGI or not.

Lastly, I found the benefits and costs ranchers perceive are also shaped by the program context of SGI in Washington. In particular, infrastructure benefits, especially water developments, were a critical decision factor for participants of SGI. Participants saw the SGI

program as an opportunity to fulfill specific, pre-existing needs or desires such as particular water developments or fencing projects. Participants often use financial benefits from SGI to make improvements or maintain other parts of the ranch. Both participants and nonparticipants recognize costs to participating in SGI; yet, for nonparticipants these costs are barriers to their participation in the program. A key cost that I found preventing participation in the program was a fear of losing autonomous control expressed by many nonparticipants. Nonparticipants, as well as participants, also emphasized the increased costs (i.e., in money, time, energy, and labor) that it takes to implement a conservation plan. Even if nonparticipants acknowledge potential benefits of the program, they do not find those benefits to be worthwhile given the costs they foresee, whether those were costs too much money, time, headache, or autonomous control.

The key findings of this chapter, namely the diversity in ranchers' regulatory risk perceptions, knowledge claims, stewardship values, and expected costs/benefits, now enable me to directly answer the first two research questions of this study: why do certain ranchers participate in SGI and why others do not. The next chapter will integrate these findings into a discussion regarding what propels ranchers in Douglas County to participate or not in SGI and how these reflect or challenge what was known previously about rancher decision-making and landowner participation in incentive programs. After this discussion, I can then turn to the final research question of the study and suggest implications for how this research may inform further research on SGI and rancher participation in incentive-based conservation of sage-grouse.

## 5.0 DISCUSSION AND CONCLUSION

In this chapter, I return to my primary research questions to, (1) examine how the study's results suggest why ranchers do and do not participate in the Sage Grouse Initiative in Douglas County; (2) fill gaps regarding existing knowledge on land manager engagement in conservation programs; and (3) offer insights on where further research is needed to fully understand the promise of the incentive-based approach to sage-grouse conservation. As a preliminary study on the qualities of a small number of ranchers in one area of Washington, a state representing a small percent of SGI efforts and the sage-grouse population, my findings cannot be used to define or predict distributions of the results I found, or to create generalizable theory. Rather, the findings enhance understanding of the factors underlying ranchers' decisions to participate or not in the Washington SGI program. Based on my findings, I discuss where additional research is needed to determine the relevancy of these findings to broader contexts within the SGI program elsewhere. I conclude the chapter and this thesis with final thoughts on what the implications of this study may mean for the promise of an incentive-based approach to sage-grouse conservation.

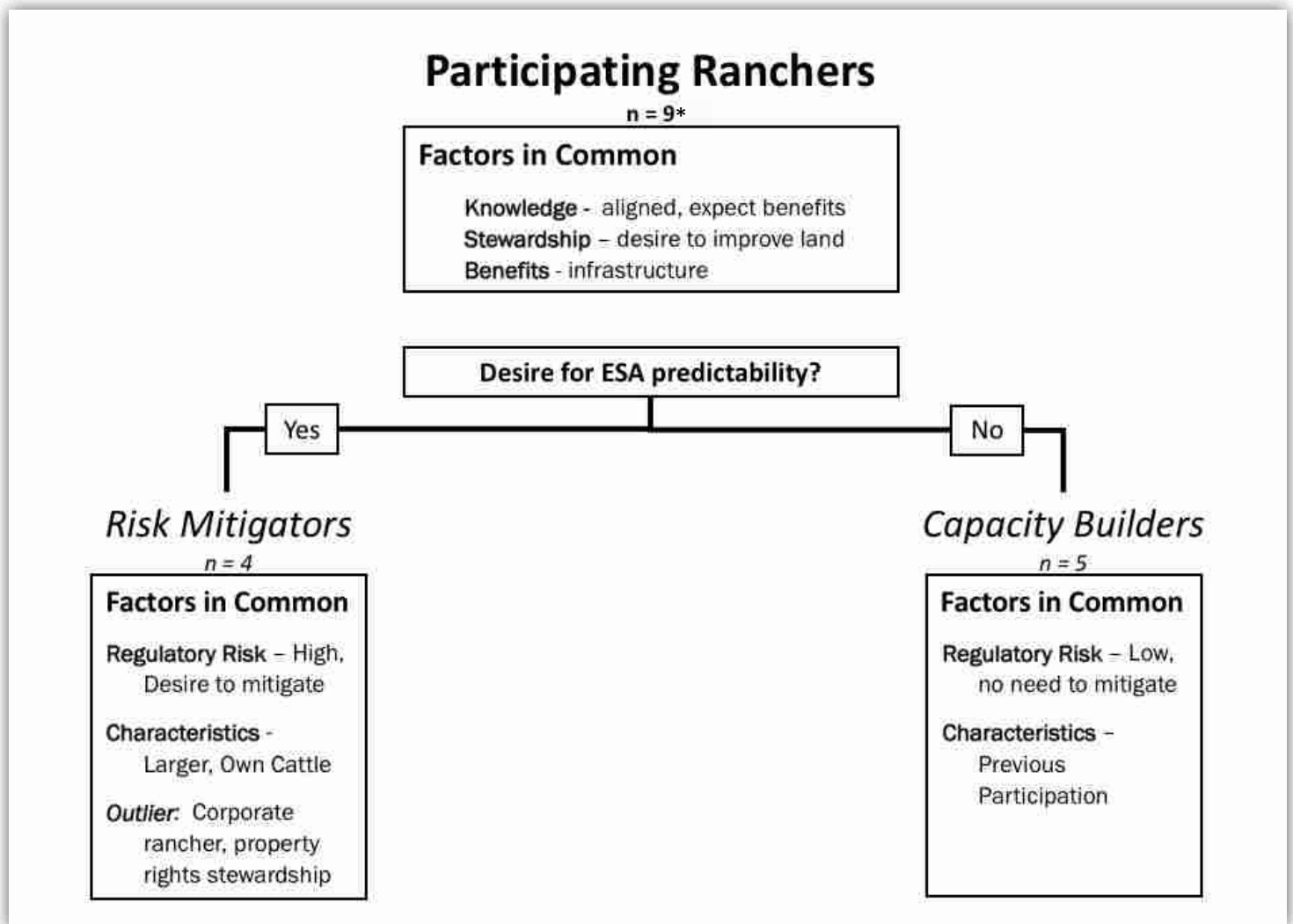
### 5.1 *Why did Certain Ranchers Participate in SGI?*

Ranchers' decisions regarding participation in SGI reflect dynamic, complex, and nonlinear processes on whether and how the SGI program makes sense to them. Their decisions result from interactions among factors within their personal backgrounds, what they view as risky and how to mitigate it, their knowledge of rangeland management and sage-grouse needs, their stewardship orientations, the personal costs they see to participating, and the operational benefits they perceive from the program. Not every decision is based on interactions among all key factors, but each decision has interactions among at least some of these factors. Taken

together, these interactions help to reveal patterns in decision-making of ranchers. The patterns that emerged from ranchers' decision processes further illuminate important insights into understanding why these ranchers choose to participate or not in SGI.

Two key patterns emerge to explain the decisions of ranchers who participate in SGI in this study. These patterns involve ranchers who desire to build their capacities to manage their cattle operations and ranchers who participate to mitigate the risk of regulation on their operations. The decision patterns of participating ranchers are depicted in Figure 7. The figure includes the key decision factors that all participating ranchers shared as well as the key decision factors that distinguish the two decision patterns from each other. I elaborate on the shared factors below.

A key factor triggering participation in SGI is shared knowledge between ranchers and SGI with regard to grazing management. Participants rarely agreed with every practice or goal of SGI; however, all participants agreed at the very least that the grazing system, including additional infrastructure, could improve their management. This common understanding bolstered ranchers' belief, or trust, that there would be benefits from following the rest-rotational grazing system prescribed by SGI. While most participants agreed that resting pastures from grazing could benefit the grass health, they did not necessarily agree that you need 18 months to get that benefit. In these cases, participants mentioned that they are less likely to follow the rest period prescribed in their grazing plans after their contract is completed.



**Figure 7.** Conceptual diagram showing the decision patterns of ranchers participating in SGI. The diagram shows both the key factors that all participants share as well as those that distinguish two different decision patterns. The two patterns are separated by the question of whether participants desired ESA predictability through their participation in SGI. \*This includes one rancher who had only applied to the program and did not yet have an official conservation plan.

A related point of agreement which triggers participation, was a commitment to enhance land stewardship or improve their ranching operations. Here, ranchers joined SGI so it could help them fulfill these goals and, in fact, pay them to do so. While some participants were explicitly interested in implementing a rest-rotational grazing system, most participants thought they were already doing what they perceived SGI wanted in terms of proper grazing. These participants had specific pre-existing improvements they desired and saw SGI as an opportunity to fulfill those



goals while being paid to do so. In other words, one anticipated benefit, often infrastructure improvements, drove many ranchers' participation in the program while additional incentives of the SGI program (i.e., financial payments, regulatory predictability, or technical assistance) were supplemental to their specific desired improvements.

Other key decision factors were not shared by all participants, rather the differences among participating ranchers in these other decision factors help to distinguish two separate decision patterns. The major factor separating these decision patterns I identified pertained to whether participants desire to mitigate the threat of regulation for the listing of the sage-grouse through the ESA Predictability mechanism offered by SGI (see Fig. 7). I refer to the decision patterns of ranchers who participate in SGI with a desire to mitigate regulatory risk (among other desires) as risk mitigators. I refer to the decision patterns of ranchers participating in SGI for reasons apart from mitigating risk as capacity builders. I describe the distinction between these decision patterns below.

#### 5.1.1 *Risk mitigators.*

Risk mitigators are ranchers who participated in SGI with at least some conscious desire to mitigate the regulatory risk posed by the potential listing of the sage-grouse as a threatened or endangered species (see Fig. 7). Compared to the other SGI participants, risk mitigators had larger operations and all owned their own cattle.

These ranchers perceived high regulatory threat from the potential listing of the sage-grouse and joined the program to mitigate that risk. Risk mitigators perceived the potential listing of the sage-grouse as a direct threat to their operations because of the consequences they believed would come from a listing. The background factors behind their perceptions of risk

varied from thinking listing was imminent and making comparisons to the Northern spotted owl, to having characteristics of their ranch which they thought made them particularly vulnerable to consequences, such as dependence on public land leases or being located in core sage-grouse habitat.

Although all risk mitigators perceived this high risk, the degree to which the regulatory threat was the single driving factor triggering their participation in SGI varied between the risk mitigators. On the one end, most risk mitigators expected additional benefits to participating in SGI, such as infrastructure and financial benefits, which supplemented their desire for regulatory predictability. For these ranchers, the coerciveness of the regulatory threat is reduced somewhat by the benefits, especially infrastructure improvements, that they see gaining through their participation in SGI. On the other end, ranchers who do not expect many supplemental benefits of SGI beyond the regulatory predictability can be driven to participate solely by their fear of regulation; however, as evidenced by the nonparticipants in this study, a fear of regulation does not automatically mean a rancher will accept SGI as an appropriate means to reduce regulatory threat (see Section 5.2). This presents an interesting question: why do some ranchers participate in SGI despite not expecting additional benefits apart from regulatory predictability, while other ranchers who also fear regulation do not participate in SGI?

One possible explanation to the above question suggested by the ranchers in this study is that larger corporate ranches are more willing to take a risk to participate and follow the rules of government programs than other ranchers with self-reliant stewardship ethics that do not participate in SGI (see section 5.2.3). This explanation is consistent with earlier research showing that larger ranches are more motivated by profit and have greater resources to allow

them to take risks than ranchers who are not as large and may be less motivated by production goals (Coppock and Birkenfeld 1999).

Another possible explanation is that participating ranchers simply trust the mechanism of ESA Predictability to offer them substantive protection more than other ranchers, possibly from their prior experience working with bureaucratic functions of the government. This would be consistent with Stern and Coleman's (2015) explanation of procedural trust in which the trustor trusts the structural control, in this case the ESA Predictability mechanism, to reduce risk in the relationship. In other words, rather than trusting any particular individual in SGI, is it possible that trust in the institutional mechanism itself is enough to enable participation in the program by distrustful ranchers? Instead of "cooperation without trust" (Raymond 2006), maybe we should think of these ranchers' participation as cooperation with procedural trust, but without rational or affinitive trust (Stern and Coleman 2015).

In sum, risk mitigators perceived regulatory risk and sought to mitigate that risk through their participation in SGI. In some cases, the desire to mitigate risk was the primary driver triggering participation, while in many others, risk mitigators anticipate supplemental benefits. These supplemental benefits were even more important to the capacity builders, discussed next, who did not join SGI with a desire to mitigate risk.

### 5.1.2 *Capacity builders.*

Capacity builders decided to participate in SGI for reasons other than to mitigate the risk of potential regulations. Rather, they participate in SGI to build capacity on their ranches, whether in the form of improving infrastructure, management effectiveness, financial security, or wildlife habitat. These ranchers did not perceive high risk from regulations, and therefore did not

see a need for mitigation. There were three primary background risk factors that contributed to perceptions of no or little risk: a general lack of awareness of sage-grouse and/or consequences of its listing, a belief that they were not likely to violate any potential regulation, and a belief that any potential regulation would not affect them because they have not seen any sage-grouse on their properties. One capacity builder did perceive some risk of regulation, but was unaware that SGI offered any protection against that risk.

All capacity builders had past experience working with NRCS in other programs. Capacity builders often had smaller operations and saw the SGI as a good way to get financial help to invest in improving or keeping up with the general maintenance of their operations. Two capacity builders did not own cattle themselves, but leased their properties to other ranchers to graze. These two ranchers in particular depended on conservation programs like SGI and CRP as a primary source of income. There is a degree of financial coercion for these smallest operations in economically tight positions, enticed by incentives, dependent on the payments, and stressed to get the practices just right. However, without believing in the benefits of infrastructure improvements or prescribed grazing plans first, they likely would not participate. So when one rancher with a small operation says, “We have become a conservation program ranch,” (P2), there is both a sense of dependence and pride in that statement.

The capacity builder decision pattern is illustrative for understanding the interaction of different factors within ranchers’ decisions whether to participate in SGI; in particular, it demonstrates how trust and a desire to improve can overcome knowledge conflicts over sage-grouse management. As mentioned previously, even participants of SGI were quite critical of what they saw as SGI’s approach to sage-grouse conservation (i.e., habitat improvement through grazing management) and the general narrative of sage-grouse decline that approach is based

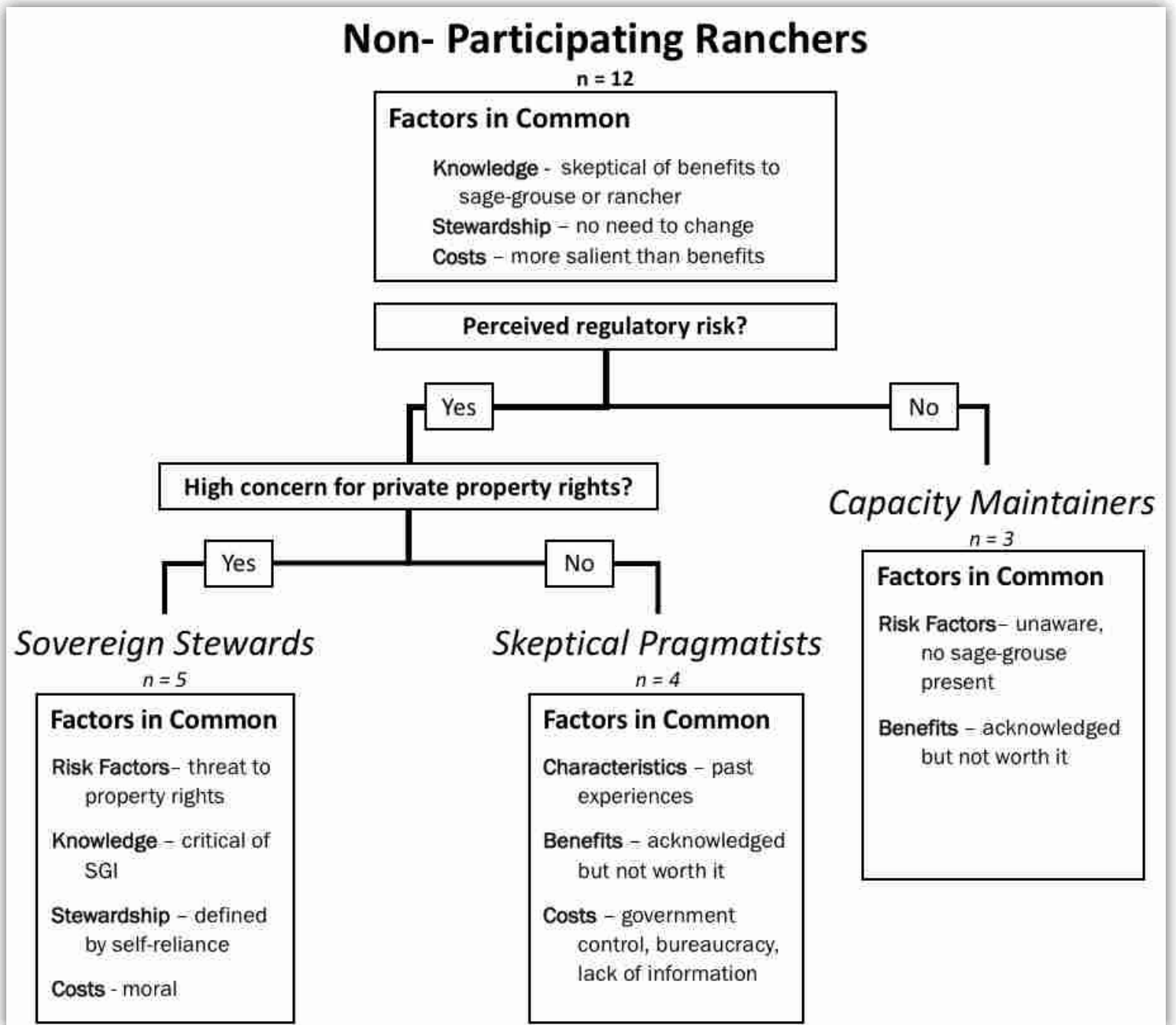
upon (i.e., that poor quality habitat is a primary threat to sage-grouse). Both ranchers I have included in the capacity builder and risk mitigator decision patterns question the effectiveness of SGI's approach as not addressing the most important threat to sage-grouse. Despite contesting the SGI approach, these ranchers still participate in SGI. Why? There are two primary contributing factors. First, they had identified capacity needs such as water developments. Secondly, ranchers had a personal relationships of trust with NRCS employees, or had more general trust in the agency as a whole built from past experiences. Thus, despite feeling unfairly targeted by SGI as ranchers, the desire to build infrastructure capacity and personal trust in agency staff overcame their concerns and contributed to these ranchers' decisions to participate in SGI.

Like the risk mitigators above, capacity builders also relied on their trust in different parts of the program. Both capacity builders and risk mitigators trusted that participation in SGI would benefit them in some way; for risk mitigators that benefit included protection from potential regulations while for capacity builders it did not. Nonparticipants, in contrast, had much less trust that participating in SGI would offer them any benefits. While costs of participation limit the acres risk mitigators or capacity builders enrolled in SGI or the likelihood that they will continue their conservation plans, costs for nonparticipants signified greater barriers to their participation. Nonparticipant decision patterns are discussed next.

## *5.2 Why did Some Ranchers Not Participate in SGI?*

Three key patterns emerge to explain the decisions of ranchers who did not participate in SGI in this study. These patterns involve ranchers who see no need to change their operations, who are skeptical of the program, or who desire autonomy in their management. The decision

patterns of nonparticipating ranchers are depicted in Figure 8. The figure includes the key decision factors that all nonparticipating ranchers shared as well as the key decision factors that



**Figure 8.** Conceptual diagram showing the decision patterns of ranchers not participating in SGI. Shows both the key factors that all nonparticipants share as well as those that distinguish three different decision patterns. The three patterns are first separated by the question of whether nonparticipants perceived any regulatory risk from the potential listing of the sage-grouse, and second by the question of whether nonparticipants who perceived risk expressed a high concern for private property rights.

distinguish the three decision patterns from each other. I elaborate on the shared factors below.

Key decision factors shared among ranchers who do not participate in SGI were disbelief in SGI's major approach, stewardship values that did not identify needed changes or were tied to property rights, and estimation that there were more costs than benefits to participating in SGI. While some participants did question SGI's practices and approach, nonparticipants nearly universally contested SGI in some way. Relying on their experiential knowledge, nonparticipants, like some participants, see SGI as targeting the wrong threats to sage-grouse survival. Ranchers' perception that SGI's efforts are misplaced, leads them to question the efficacy of the program if it is not targeting the most important threats to sage-grouse. By extension, nonparticipants also question the basic knowledge about sage-grouse that SGI is based upon. This questioning produces hesitation to join SGI. If ranchers view SGI as targeting the wrong threats, as ineffective because of this, and based on inept knowledge, their trust that the program will offer any benefits decreases. Any agency action that is perceived as incompetent, like the rollout of the SAFE program, reinforces the lack of trust in agency decisions. Moreover, without visible efforts to address all the threats ranchers perceive, ranchers are likely to feel unfairly targeted by SGI's efforts, or that SGI is placing an undeserved burden on the backs of ranchers when poor habitat is not even the most important threat to sage-grouse survival. When understanding different threats to sage-grouse, ranchers doubt the sincerity of government efforts to conserve sage-grouse and thus, hesitate or decline to commit their own efforts.

These knowledge contests are not unique to nonparticipants when participants also made similar claims; however, nonparticipants criticized SGI's grazing prescriptions more than participants. They did not believe that a rotational system was beneficial, worth the extra effort to implement, or feasible to accomplish. When nonparticipants disagree on the core program

components and do not anticipate benefits of participating to either themselves or sage-grouse, they see greater costs to participate.

In general, nonparticipating ranchers also believed that their stewardship of the rangeland was sufficiently competent to support their needs and the needs of sage-grouse. Thus, nonparticipants see themselves as being good stewards and already “doing what is right”, they do not see the need to participate in a government program. Without a perceived need to change, ranchers are less likely to see benefits from participating and are unlikely to be motivated to sign-up for SGI.

Other key decision factors were not shared by all nonparticipants but distinguish nonparticipants into three different decision patterns of nonparticipation (see Fig. 8): (1) Capacity maintainers who do not perceive regulatory risk and who also do not see any worthy need to participate in SGI; (2) Skeptical pragmatists who do perceive regulatory risk, but are hesitant to participate in SGI for multiple reasons; and (3) Sovereign stewards who perceive regulatory risk, but who reject government intervention as a necessary “improvement” to their operations. I explain the differences among these decision patterns below.

#### 5.2.1 *Capacity maintainers.*

Capacity maintainers include ranchers who do not perceive regulatory risk from a potential sage-grouse listing and who do not see the need to change anything in their operations. They do not participate in SGI because they wish to simply maintain their current management capacities and do not see SGI as providing any additional benefit. Some of the same background risk factors influence capacity maintainer’s lack of perceived risk as with the capacity builders (see section 5.1.2). They either did not think it was likely that they would violate any potential



regulations, they had not seen a sage-grouse on their properties, or were generally unaware of the issues surrounding sage-grouse.

Capacity maintainers acknowledge potential benefits of SGI, but did not see them as worth it, are turned away by other costs, or lack trust in the NRCS. As they see it, any benefit that does come out of participation probably will not be worth it considering the time and labor necessary to implement a more intensive grazing system. Capacity maintainers perceived costs such as giving away autonomous control to the government and difficulty in navigating a complex, time consuming, and confusing bureaucratic process for participating in any federal program. Certain capacity maintainers also distrusted NRCS's "expert" knowledge, perceiving it to be a-contextual and not reflective of local conditions.

In sum, capacity maintainers are not completely against participating in government programs, as they have past experience in some, but they do not see SGI as worth it because they do not really trust the NRCS, think they will be giving away too much management control, or do not want to deal with the headache of bureaucratic processes. These costs, thus, comprise the main barriers to capacity maintainers' participation in SGI; however, even if these costs were completely removed, without a perceived need to change, capacity maintainers have little incentive to participate in SGI. This dynamic is similar to the skeptical pragmatists that are discussed next.

### 5.2.2 *Skeptical pragmatists.*

Skeptical pragmatists are ranchers that perceive regulatory risk, but are skeptical that SGI would benefit them. Some skeptical pragmatists doubted that the ESA Predictability would offer real protection, while others thought that the protections might be good, but the "procedures

aren't worth anything" (N3). Like all nonparticipants, skeptical pragmatists thought that their stewardship was already sustaining healthy rangelands and providing adequate habitat for sage-grouse. With this view, these skeptical pragmatists wondered what they have to gain from following SGI grazing prescriptions. Skeptical pragmatists were also cautious about involving themselves with the government.

Past experiences shape skeptical pragmatists' attitudes and hesitations to participate in SGI. For instance, past experience working on pygmy rabbit conservation has produced skepticism of any conservation effort that appears to blame cattle for species declines. Skeptical pragmatists contest the claim that cattle grazing is inherently bad for imperiled wildlife and assume that SGI operates on that same, misplaced rationale. They are concerned about how much participating in SGI would open their operation to government involvement.

Skeptical pragmatists with prior experience in conservation programs are watching and listening to the experiences of neighboring ranches who are participating in SGI before they consider it themselves. They have had past experience in other programs where they did struggle to receive timely payments or understand how the complicated bureaucratic payment system works. Other skeptical pragmatists lacked specific knowledge about SGI, have had little exposure to it, and have no previous experience with other NRCS programs. Although recognizing the potential benefit of SGI, without prior experience and with no perceived pressing need for assistance, regulatory protection, or for any changes to their operation, the drive to participate is insufficient to overcome the initial impetus needed to learn about the program and carefully weigh its costs and benefits.

Again, these cases demonstrate the barriers that skeptical pragmatists face in participating in SGI. The initial cost of just learning about the program can be a barrier to participation

especially for those who lack a clear need or desire to change, without which, motivations are insufficient to overcome this initial effort threshold. Other barriers include bureaucratic costs, historical distrust, and fear of losing autonomy. The latter two costs become even more salient for ranchers in the final decision pattern discussed next.

### 5.2.3 *Sovereign stewards.*

Sovereign stewards are defined by strong values for self-reliance and independence. They perceive high regulatory risk from a potential sage-grouse listing, especially in terms of consequences to their private property rights, but participating in SGI to mitigate that risk would be antithetical to their desire to be autonomous and self-reliant. This group of ranchers had little to no past experience participating in federal conservation programs. Ranchers in this group were among the most critical of both the narrative that points to poor quality habitat as a major threat to sage-grouse and of SGI's rotational grazing as a prescription for rangeland health.

Sovereign stewards tended to express stewardship as tied to their livelihood and value for self-reliance. They felt this strongly, rejecting that they need government "help" or involvement to be good stewards of their land. They use the connection between stewardship and livelihood as a counter-discourse to the narrative employed by some environmental groups that cattle grazing inherently destroys the environment. They also use this counter-discourse as a defense against government involvement and as a justification for private property rights. The property rights orientations, values of self-reliance, and stewardship ethics of sovereign stewards are all connected in a sort of self-justifying iron triangle. Sovereign stewards seem to justify strong property rights orientations through a particular stewardship narrative.

This worldview helps explain another aspect of sovereign stewards. Several sovereign stewards indicated a distaste for getting government “handouts” or unearned money from the government. Even when they concede the benefits of that money, they regret that it had to come from the government. For these ranchers, there is a moral element to accepting payment from the government. They view it as being unearned, undeserved, and threatening to a position of individual competence. This bleeds into concerns over private property rights. The act nearly reaches the level of a sin that contradicts fundamental values of self-reliance, individual hard work, personal pride, and independence. Despite tough times in the ranching business, accepting help from the government would be paramount to sleeping with the enemy, a betrayal of their own sense of identity and ethics.

In sum, the above decision patterns for both participants and nonparticipants together form a framework in which to begin to understand the decisions of ranchers in this study. Within this framework are qualities of ranchers and decision factors which help to distinguish particular patterns. While these patterns are by no means meant to be predictive, they offer insights into how ranchers respond to government-sanctioned incentives and hint at important considerations for the SGI program. These insights offer the seeds for better theoretical understanding and implications for future research on the SGI program and incentive-based conservation efforts more broadly.

### *5.3 Theoretical Contributions*

The qualities of ranchers found in this study reinforce in some cases what has been found among social science research previously, but also offer novel insights on how ranchers respond to incentives, especially with regard to their different stewardship orientations. To start, these

results highlight a few foundational points. First, they complicate any simplistic notion of ranchers as homogenous in their responses to incentives. Second, they challenge that merely finding the right incentive or incentive level is all that is needed to encourage participation in conservation efforts when ranchers have deeper seated concerns about the conservation program. Third, SGI was offering a different “frame” or diagnosis of the sage-grouse conservation problem than those understood by many Douglas County ranchers. Problem formation first, and then program design and implementation should recognize potential concerns, such as conflicting knowledge and threatened stewardship identities, that shape how incentives are perceived. It is also important to recognize the financial, human, operational capacity, and normative costs to adopting conservation plans. Ranchers in this study did not participate in SGI, despite the incentives it offered, because they felt it unfairly targeted them, carried too many costs, or conflicted with their knowledge, identities, or personal norms.

This research has demonstrated that ranchers’ responses to incentives for sage-grouse conservation in Washington involve complex interactions among many different factors. Economic factors alone did not fully explain ranchers’ decisions regarding SGI. This is consistent with cultural studies of ranchers who are not pure profit-maximizers (Grigsby 1980; Sayre 2001; Sheridan 2007). It is not consistent with Alder’s (2011) suggestion that removing economic burdens through conservation incentives will remove any anti-conservation tendencies. Rather, these findings concur with others who found that resistance to imperiled species conservation is best understood in the context of community politics defined by a community of resource users, ranchers in this case, with strongly held identities, knowledge, and values (Meyer 2001). It is also consistent with the demonstrated need to recognize the moral economy of rural producers in their struggle to maintain livelihoods, knowledge, and community stability

(McCarthy 2002). At the individual level, ranchers' decisions are best understood as complex processes that involve different ways of knowing, identities, and experiences (Wilmer and Fernández-Giménez 2015). The SGI program offered ranchers in Washington a broad suite of incentives. Some ranchers acknowledged economic benefits of participating in SGI, but still were not convinced to participate. While there were certainly other economic burdens that SGI could not fully remove, such as the upfront cost of implementing practices, non-economic costs were also key in discouraging non-participants. Chief among non-economic costs were feelings of losing autonomous control, threatened property rights, bureaucratic headaches, and violations of personal values.

Many have argued that the incentive-based approach of SGI, by attempting to be proactive and non-regulatory, endeavors to escape acrimonious community politics that have plagued past conservation efforts enacted through the ESA. The SGI program may be achieving this goal for some of the ranchers in this study, principally those who trust and participate in the program. These ranchers appreciate the different approach of SGI, appreciate SGI's role in sustaining their operations, and are generally happy to attempt to sustain sage-grouse populations as well.

Yet, it is also evident that SGI is not fully escaping the traditional landowner perception that imperiled species conservation threatens identities, values, or livelihoods among all ranchers in this study. The perspectives of these ranchers highlight an important nuance to our understanding of the often-called 'voluntary' or 'non-regulatory' approach to sage-grouse conservation. I argue that the SGI program does not completely transcend community politics because it is still an agent of centralized government actions; that is, it is driven by top-down forces and based on bureaucratic and scientific knowledge regarding its incentives and practices.

Furthermore, rather than operating outside of the regulatory context, the ESA is an acting force within SGI. The ESA is both a galvanizing alternative policy option—the regulatory threat held above ranchers’ heads—and a force that has shaped SGI’s practices and prescriptions (i.e., the Conference Report which identifies the Conservation Measures that must accompany any SGI practice or plan). In that respect, these ranchers correctly perceive that SGI is not acting completely outside of the regulatory context. As Shogren (2005:11) indicates, some ranchers continue to perceive SGI as a pair of “golden handcuffs”—a slippery slope descending towards greater government control and away from sovereign management. The role that the ESA is playing in SGI, both in motivating participation and, as this study shows, in discouraging participation, is “underappreciated” as a regulatory force (Nie 2008) in SGI rhetoric and in discussions of ‘non-regulatory’ incentive-based programs more broadly.

Given this regulatory context, a surprising finding of this study is that many ranchers (such as capacity builders and capacity maintainers in particular) perceived little to no regulatory threat. It is possible that this finding is particular to Washington or to the small sample of ranchers in this study, nonetheless, it is still surprising because of the prominence that sage-grouse have held in the media over the last several years and the prominence they have in Douglas County. Based on this prominence, I expected more ranchers in my sample to be concerned about the regulatory threat of sage-grouse than I found. Furthermore, ranchers in this study who did perceive high regulatory risk did not automatically accept a regulatory incentive offered by SGI as an appropriate risk mitigation option, as exemplified by the sovereign steward decision pattern. Thus, three of the five decision patterns in this study, including ranchers with both high and low risk perceptions, were not incentivized by regulatory assurances.

This finding, that three of the five categories of decision patterns were unmotivated by a regulatory incentive, runs contrary to the evolution of ESA policy, discussed in Chapter 2, which seeks to provide more regulatory certainty as a means to incentivize conservation of imperiled wildlife. For a majority of ranchers in this study, such an incentive was ineffective at motivating their participation in SGI. This finding speaks to the delicate balance that incentive-based policies nested within regulatory policy attempt to create. While increasing regulatory enforcement of the ESA may increase the saliency of the threat in the minds of ranchers with low risk perceptions and thereby possibly encourage their participation in SGI, it would also increase the incredulousness of some ranchers with already high risk perceptions, hardening their concerns about government overreach and their resolve not to participate in the program.

Another key finding of this study is the role that private property rights orientations play in ranchers' decisions to participate in SGI. Consistent with Conley et al. (2007), I found that ranchers concerned about private property rights were likely to perceive high risk of regulation from the ESA. Yet these same ranchers, instead of high risks motivating their participation in SGI, were less likely to accept the government's 'help' to mitigate that risk and participate in conservation. This is similar to Kreuter and colleague's (2006) finding that ranchers who had private property rights orientations defined by threatened rights were less likely to agree to participate in threatened and endangered species conservation management actions. Although not directly solicited, ranchers in this study likely had multidimensional property rights orientations (Jackson-Smith et al. 2005). The ranchers most highly concerned about private property rights in this study seem to align best with the threatened property rights orientations described by Jackson-Smith et al. (2005). Some ranchers participating in SGI also seemed to talk about an obligation to nature that Jackson-Smith et al. (2005) described for ranchers with stewardship



property rights orientations. However, I found more nuance in ranchers' perceptions of stewardship than measured by Jackson-Smith et al. (2005) that reflects a novel understanding of ranchers' stewardship orientations.

Ranchers who did not participate in SGI in this study just as strongly felt a sense of stewardship as those that did. Rather than stewardship being associated with a single property orientation (Jackson-Smith et al. 2005), I found that all ranchers expressed a sense of stewardship regardless of their private property rights orientations. In fact, ranchers most strongly concerned about their private property rights justified those rights with their commitment to stewardship. Similar to the ranchers described by Ellis (2013), ranchers highly concerned about property rights in this study also used a narrative of balance to describe the harmony with nature that their livelihoods demand. Rather than accepting significant social oversight, as the term stewardship implies in academic definitions (Worrell and Appleby 2000; Wunderlich 2004), the sovereign stewards in this study use stewardship and moral legitimacy (McCarthy 2002) to justify sovereignty over their private property and dispel calls to be answerable to society or government. The ranchers in Ellis' (2013) study used stewardship to justify dominion over their non-human livestock, whereas the sovereign stewards in this study use stewardship to justify their dominion over private property. These ranchers, in essence, accept the rights of stewardship without the accompanying obligations to society which is often assumed to part of a stewardship ethic. This finding is problematic for any notions that hope to achieve environmental protection goals through ranchers' commitments to stewardship.

In sum, the findings of this research suggest a novel understanding of ranchers' stewardship orientations. Recognizing the multidimensionality of stewardship orientations as well as property rights orientations is important for understanding the opportunities and

challenges of achieving wildlife conservation on private ranchlands. Ranchers are not monolithic in the way they perceive their obligations, rights, and goals within a stewardship ethic.

Understanding stewardship orientations as multidimensional helps explain why material incentives do not always result in conservation participation and how ranchers' stewardship values may in fact deter participation in government-led conservation efforts. While obligations to steward wildlife species and notions of individual property rights may, "coexist uneasily in the normative thinking of many" (Olive and Raymond 2010:453), not all stewardship orientations accommodate the premise that there is a need to change obligations or rights towards wildlife.

Stewardship orientations cannot be understood in isolation but are shaped by ranchers' particular knowledge, core values, and experiences. Because ranchers differ in the knowledge they accumulate, the core values they prioritize, and the experiences they have, their stewardship orientations also differ. Some ranchers may accept innovations and government intervention as a livelihood maintenance strategy (Didier and Brunson 2004); however, the findings of this study indicate that not all ranchers are ready to do so. While the SGI program did leverage the stewardship orientations of some ranchers to reconcile private property rights with sage-grouse conservation, to say that material incentives will completely satisfy concerns for individual property rights (Jackson-Smith et al. 2005; Olive and Raymond 2010) is not supported by the findings of this study. Understanding the multidimensionality of both stewardship and private property rights orientations can help determine which ranchers might accept an incentive-based conservation initiative as a means to increase their adaptive capacity and sustain their livelihood.

Three distinctive stewardship orientations emerged amongst the ranchers in this study. First, participating ranchers' stewardship was driven by their desire to improve the land for perceived economic benefits, the sake of future generations, and/or the good of the land. This

stewardship orientation most closely aligns with the Jackson-Smith et al. (2005) measurement of stewardship as an obligation to nature and to improve the land. It is also similar to Womack's (2008) description of landowners who participate in CCAAs and feel conservation was an important part of their economic success, ethics, or for a good public image. In the adoption literature Didier and Brunson (2004) also found that ranchers adopt innovations to show a broader public their stewardship values. This stewardship orientation was most associated with participation in SGI for the ranchers in this study. It offers the most resemblance to a commitment to stewardship that recognizes obligations to society, and thus, the best opportunity to be leveraged as a conservation strategy.

Second, certain nonparticipating ranchers' stewardship was driven by a desire to maintain the land and to continue what they were already doing. These ranchers generally saw no need to change their operations or improve their management because they believed they were already competently meeting wildlife and their own management needs. This stewardship orientation is similar to what Kennedy and Brunson (2007) found among Colorado ranchers who did not adopt management innovations because they thought they were already meeting those objectives. This stewardship orientation is problematic for SGI and other conservation programs as it counters the assumption that incentives can be used to change behavior when ranchers do not see a need to change. Shifting the frame of these programs to emphasize the maintenance of good stewardship behavior more than changing behavior could help overcome this barrier.

Third, other nonparticipating ranchers' stewardship was driven by values of self-reliance and independence. These ranchers saw private property rights as essential to enact their stewardship ethic, but also saw stewardship as justification for their sovereign control of private property. Proper stewardship, for these ranchers, does not require government intervention and is

essential to sustain a livelihood that is dependent on the land. The sovereign steward is similar to the “born to the land” landowners that Cearley Sanders (2005) found in Texas who disapproved of government dependency. In Texas, landowners who were largely dependent on agricultural production for their livelihoods fell into this category relative to landowners with more business or amenity orientations (Cearley Sanders 2005). Ranchers in Washington, however, were less diverse in that most were dependent on agricultural production for their livelihoods, but more diverse in terms of stewardship orientations, that is, not all agriculturally dependent ranchers had sovereign stewardship orientations. This stewardship orientation is most problematic for SGI and wildlife conservation efforts on private lands in general as it rejects any obligations to incorporate a broader society’s interest in wildlife protection, at least in the way those interests wish wildlife to be protected.

Despite these concerns, the SGI approach has much to offer imperiled wildlife conservation. The regulatory structure set by the ESA is necessary but insufficient to fully address the complex threats to wildlife in today’s world. To understand only the regulatory force of the ESA is to entirely miss the potential for the ESA to serve as a catalyzing force to encourage conservation, particularly conservation that goes above and beyond what the ESA can require (i.e. conservation that improves conditions for wildlife not merely prevents harm). This potential can be realized through an artful balance of incentives, policy options, and power dynamics.

A recent study on conservation efforts to support the Bi-State population of sage-grouse underscores the catalyzing potential of the ESA. Duvall, Metcalf, and Coates (2016) used a social-ecological systems approach to analyze collaborative conservation efforts that ultimately precluded the listing of the Distinct Population Segment of sage-grouse along the California and

Nevada border. They found that the ESA served as a catalyzing force that brought together diverse stakeholders at multiple scales who collaboratively blended scientific expertise with experiential knowledge to achieve system-wide conservation success. Stakeholders within this region were able to transform the species-specific threat of the ESA into a commitment to conserve the broader ecosystem upon which sage-grouse and human communities depend.

The findings of Bi-State study also show the potential synergies that exist among different policies for biodiversity protection. Doremus (2003) argues that combining multiple policy strategies for biodiversity conservation will result in greater success than relying on any one strategy alone. A regulatory approach and an incentive-based approach to biodiversity conservation are not mutually exclusive and rather can be mutually supportive (Thompson 2002). Relying exclusively on either approach can crowd out the very desired behaviors they would seek to encourage. For instance, incentives may crowd out intrinsic motivations to conserve wildlife (Stern 2006), while regulation may induce regulatory evasion and crowd out positive conservation actions (Doremus 2003). In the Bi-State case, regulatory policy (i.e., the ESA) catalyzed much broader policy strategies, including incentive programs, land acquisitions, and education programs, and together, enabled a more comprehensive conservation approach (Duvall et al. 2016).

The Bi-State case offers one potential example for how SGI can fit into a broader network of partners and policies to coordinate, collaborate, and coproduce both ecological and social resilience within rangeland systems. The SGI approach can help shift conservation efforts away from species-specific actions traditionally spurred by the ESA, towards more comprehensive ecosystem management goals (Boyd et al. 2014). Including private land managers as equal partners in that comprehensive management strategy will be a tricky balance

to strike. This study suggests that to strike that balance it will be necessary to acknowledge the complex role that the top-down regulatory aspects of the program play in both encouraging and discouraging participation. It will be necessary to acknowledge the different material circumstances, knowledge, stewardship orientations, and economic motivations of ranchers and be willing to address land managers' concerns. It will be necessary to question assumptions and not be naïve about the perceptions of private land managers. Just as a focus on only one threat to sage-grouse risks feeding perceptions that ranchers are being unfairly targeted, over focusing on sage-grouse and forgetting about the broader ecosystem can risk the same. The SGI approach will be legitimate and effective to the degree that it can balance prescription with adaptability and facilitate the broad range of social and ecological benefits that rangelands produce at the same time that it supports habitat for sage-grouse. In the next section, I continue with a more specific and detailed discussion on the implications of this study in regards to SGI efforts to conserve sage-grouse on private lands.

#### *5.4 Implications*

Based on the framework produced from this study on why ranchers do and do not participate in SGI and building on the existing literature, discussed below are implications for how this study can inform further understanding of the conservation of sage-grouse on private lands. This discussion also answers the third and final research question of thesis: what are the implications of this study for future research on rancher participation in SGI?

An important implication of the current study is the need for additional research with larger sample sizes and in different contexts. The findings presented in this thesis are preliminary, based on exploratory research that is limited in several ways: by a small sample of

ranchers, by the specific context of Douglas County, and by SGI's emphasis on prescribed grazing in Washington. Without additional research, there is no way to know if the decision patterns of ranchers found in this research reflect broader experiences, perceptions, and views of the SGI program in other areas and contexts. However, as detailed below, the findings of this research suggest some important considerations on which ranchers might participate in SGI, why ranchers may not participate, and the potential concerns of ranchers which shape their motivations to participate in sage-grouse conservation.

One important consideration is the complexity and multidimensionality of ranchers' decisions whether to participate in SGI. In this research, I did not find one factor determining a decision point or trigger. Rather, only by considering the interaction of many factors could ranchers' differing decisions regarding SGI be deciphered. The question remains what aspects of the SGI program do ranchers in other contexts respond to and do these necessitate different approaches to garner their interest in the program?

The decision patterns identified in this research can be a helpful starting place to both understand the multidimensionality of ranchers' perspectives and circumstances as well as assess ranchers' views of SGI at a larger scale. The most likely ranchers to participate in SGI found in this study were those identified as risk mitigators or capacity builders. These ranchers had a desire to improve their operation in some capacity, believed that investments in their capacity would be worth it, and/or had a desire to mitigate the risk of potential regulations to protect sage-grouse. The ranchers who follow a decision pattern resembling the capacity maintainers and skeptical pragmatists may participate in SGI under the right conditions. These are ranchers who generally acknowledge the potential benefits of SGI, but are otherwise skeptical of agency expertise and prescriptions, do not see any need to change, or see too many costs to participating.

Ranchers following the pattern of sovereign stewards were found to be least likely to ever participate in SGI. These ranchers had a deep distrust in government activities, were critical of the competency of conservation programs including SGI, and defended their private property rights through a stewardship narrative. Participation in a government program for these ranchers is against their moral and ethical identities. It is not clear how widespread this perception is among ranchers outside of this study nor whether the SGI program would be willing or able to change to a degree that sovereign stewards would accept, especially given the political context (i.e., power dynamics between ranchers and the federal government) and the historical distrust that exists.

The deep seated concerns about the SGI program found in this study may be relevant elsewhere. Concerns found to be important in Douglas County and which could be explored elsewhere include perceptions of too much government control in SGI plans, lack of trust between the agency and ranchers, bureaucratic costs as a barrier to participation, and contested knowledge claims. For the ranchers participating in SGI in this study, these concerns did not prevent their participation in the program but rather limited how many acres they enrolled or whether they will continue to implement their conservation plans after their NRCS contract is complete. For the ranchers who most strongly held these views, these concerns contributed to their perception of SGI as a threatening and controlling program. Many ranchers in the study were uncomfortable with conservation efforts that prescribe grazing plans as a solution to the threat of poor quality sage-grouse habitat. In this case, their concern may have support in science. Recent scientific evidence suggests that the direct effects of livestock grazing on sage-grouse habitat may not be what was once thought (Gibson et al. 2016; Smith 2016). The relationship between grass height and sage-grouse nest success is, at this point, the most suspect.



Despite the uncertainty regarding the role of grazing in sage-grouse conservation, SGI in Washington state is focused nearly exclusively on prescribed grazing. This is unlike SGI programs in other states which, for instance, address the threat of conifer encroachment or development—threats that largely do not exist in Washington. The SGI program in Washington, thus, is in an especially difficult spot in this regard. Certainly there are other threats to sage-grouse beyond poor quality habitat that neither SGI nor the WDFW deny. However, addressing these other threats, like human-subsidized predators and wildfire, is a challenging task, and in the case of predator management, requires sustained human intervention to maintain. Thus, it is easier, for these reasons, to focus efforts on habitat. Biologists also defend a focus on habitat, arguing that maintaining the habitat is the best place to start as providing enough quality habitat is the foundation on which sage-grouse can build resilience against other threats (WDFW, pers. comm.). For SGI in Washington, prescribed grazing is the primary practice they have chosen to conserve sage-grouse habitat.

For ranchers in Douglas County, however, this exclusive focus on grazing management feels threatening and obscures SGI's conciliatory rhetoric that conserving sage-grouse starts with conserving ranchers. It may be helpful to think of this as a misalignment of problem frames (Gray 2003). Problem frames are informed by the ideas and knowledge the different groups see privileged in a program's actions (Lachapelle and McCool 2005). Ranchers in this study characterize SGI as blaming ranchers for poor quality habitat because of such an emphasis on prescribed grazing, when SGI considers itself attempting to do the opposite.

Similar conflict between land managers and conservation programs on the role of habitat in species conservation efforts is found in other contexts. Ranchers' knowledge and beliefs shared in this study resemble what has been found elsewhere in Washington with farmers who

do not see habitat as the primary threat to salmon recovery, and perceive themselves as unfairly burdened with salmon conservation (Breslow 2014); and with ranchers in Wyoming and Colorado who see predators as the primary threat to sage-grouse conservation (Essen 2010; Knapp et al. 2013). While it is not in the scope of this research to evaluate these knowledge claims based on scientific evidence, it is important to recognize how these beliefs influence people's views on and behaviors toward conservation programs. For the SGI program, further investigation is needed to identify how ranchers in other locales understand or frame root causes and threats to sage-grouse, especially in the context of other practices apart from prescribed grazing.

The importance of paying attention to the understandings of ranchers is not to refute or validate them, but rather to understand whether and why certain prescriptions might be contested or challenged by intended participants. The narratives of sage-grouse declines shared by ranchers in this study, for instance, reflect similar political and economic interests that Bixler (2013) found amongst different resource users in regards to mountain caribou declines in Canada. Implicit within different narratives of decline (e.g., predators versus habitat degradation) are specific actions to solve the problem (e.g., predator control versus grazing prescriptions) as well as attributions of blame to particular groups (state agencies versus ranchers) (Bixler 2013; Robbins 2006). Understanding the political context of these narratives explains why some ranchers feel unfairly blamed for sage-grouse declines by the actions of SGI promoting the practice of prescribed grazing in Douglas County.

Another illustrative example is demonstrated by the findings regarding the practice of fence flagging in Douglas County. In this study, resistance to fence flagging was one of the biggest surprises for me personally. It was surprising because I often hear or read information

from SGI or state agencies that painted the picture that flagging fences is a great practice because it is non-controversial, inexpensive, and easy to do. For these reasons, this practice was assumed to be good for building trust with land managers because it is a low risk practice that managers can easily implement. In essence, it is an easily implementable technical solution. What is more, it has significant scientific evidence to support its effectiveness (Stevens et al. 2012). Yet, despite this idea, many ranchers, including half of the participating ranchers interviewed in this study, questioned the utility of the practice. Therefore, the assumption that fence flagging is a non-controversial practice that is good for building trust may need to be evaluated more explicitly. In fact, the experiences of ranchers in this study suggest just the opposite, that fence flagging is eroding trust in SGI in Washington State.

While fence flags probably do not harm land managers (there is some time, energy, and cost to implement them but it is comparatively minimal), if managers do not see the conservation benefit, continuing to implement them only feeds a perception of waste and incompetence that may bleed into other aspects of the program. Often it is ranchers' experiential knowledge, having never seen a sage-grouse killed by a fence, that causes them to question the practicality of fence flags. For these ranchers, fence flagging does not make sense with what they are seeing on the ground. An easy technical solution to a problem may be a welcome sight for managers who so often confront such wicked problems with no clear solutions. However, if the land managers who are being asked to implement the solution do not agree upon what the problem is in the first place, the solution offered is a waste, an unnecessary hassle, another wedge in the expert-local disconnect.

The science supporting fence flagging is fairly conclusive, at least in the areas that fence flagging has been tested. It is possible that presenting this evidence to ranchers will be enough to

convince them of its utility, but it would be unwise to believe that scientific evidence alone will erase all concerns. Ranchers' knowledge is derived from their locally-relevant experiences and observations. If the practice of fence flagging does not make sense to them, scientific evidence from a study in a different area may not change that.

The SGI program should continue to take an evidence-based approach to sage-grouse conservation. Whether fence flagging, or any of SGI's practices or prescriptions, makes sense to implement in a particular habitat is a decision that should be based on evidence. The findings of this research suggests that ranchers may have important concerns about the SGI program, if so, their claims, concerns, or tensions call for systematic evaluation to completely understand the implications that may arise from them. This study generates ideas on where to begin such an evaluation.

### *5.5 Conclusion*

As SGI continues its work to encourage what it perceives as the best route to sage-grouse conservation, and the NRCS continues this approach with other wildlife through its Working Lands for Wildlife program, so too continues the experiment in applying incentives to wildlife conservation on private lands. Proponents of an incentive-based approach argue it is capable of achieving conservation on private lands that is more effective, efficient, and fair. One of their more important arguments in regards to conserving imperiled wildlife is an ability to encourage conservation practices that go beyond preventing the harm of a species but actually take affirmative action to improve conditions for the species. The ESA does not have the authority to compel restoration of habitat on private land for the benefit of imperiled wildlife. The ESA sets the floor or minimum required to prevent extinction. For species whose recovery necessitates

more than the minimum, incentive-based conservation can raise the ceiling on the possible actions that improve conditions for these species. Many of the practices that the SGI program offers fall into this category of affirmative conservation. Removing encroaching conifers, restoring wetlands, securing habitat through conservation easements, and resting pastures from grazing are all promoted under the guise of improving sagebrush habitat for sage-grouse.

For a species that is in decline, facing the potential of being listed on the ESA, these proactive, affirmative actions can have a positive impact on reversing declining trends. Yet to do so effectively, these programs also have to garner the interest, motivation, and commitment of their intended participants. Thus, the importance of understanding land managers' perspectives is in understanding the potential of a program to garner the participation necessary to achieve conservation that improves conditions for imperiled wildlife. The promise of an incentive-based approach in this regard is also its greatest challenge. Its practices and prescriptions have to be designed and implemented in a way that not only benefit the wildlife species but also attract the interest of land managers who are intended to implement them. As evidenced in this thesis, participation is only likely if the program fits within land managers' local economies, values, and understandings of the problem (at least for those not morally against working with the government). In other words, the true challenge and promise of an incentive-based approach is really in meeting both benefits to wildlife and people. Meeting this challenge necessitates more rigorous, empirical understanding of both the ecological and social outcomes of particular incentive programs in particular places.

One of the major conclusions of this study is a call to recognize the importance of understanding how and why a program is supported and contested by intended participants. This is a call that many conservation social scientists have been making for at least four decades in

regards to conservation programs intended to benefit the people they affect. In cases from across the world, this body of research has revealed both intended and unintended or hidden consequences of conservation programs. Since Blaikie's (1985) seminal examination of the unquestioned assumptions of soil conservation programs, researchers have uncovered conservation programs used to increase state control over natural resources (Peluso 1993), serve the interests of powerful state or international environmental organizations (Leach and Fairhead 2000), or benefit locally powerful economic interests such as real estate developers (Schwartz 2013) rather than benefit the livelihoods of resource users. An important critique often coming from this research is how little attention is paid to the interests, skills, knowledge, and motivations of the people most effected by conservation efforts. Yet, even when programs intend to incorporate local knowledge and empower people to make self-directed decisions, conservation programs have been shown to fail to realize the different economic and political motivations of resource users who do not adopt promoted conservation practices (Li 2005). In all cases, such government 'improvement' programs remain expert driven and an exercise of government attempting to define how resource users should live and behave (Li 2005).

I mention this history of conservation program critique not to say that the SGI program succumbs to these same pitfalls, but rather to point out that the substantive effects of any conservation program have to be determined on a case-by-case basis and not merely assumed. Together, the critical research on conservation programs calls for context-specific, empirical examination to unpack the complexities operating in particular conservation programs concerning particular people and circumstances in specific places. Important questions to incorporate in such an examination that emerged as relevant in this study and which reflect previous research include: do the conservation practices and prescriptions of the program

meaningfully benefit the intended participants, how and why is the program supported or contested by intended participants, and what unanticipated concerns may result from the program's implementation?

Effectively engaging land managers to achieve affirmative conservation of imperiled wildlife necessitates first recognizing land managers' perspectives, then working to fully understand those perspectives, and finally addressing any concerns that come from them. This study offers some initial insights into the perspectives of a small group of ranchers in one area of SGI's operating region. To fully understand the effects of the SGI program, both studies such as the one presented here capable of deciphering the complex experiences and perspectives of ranchers at a small scale, and studies with larger sample sizes capable of more generalization to broader scales are needed.

In light of the history of social inquiry into conservation programs, the findings of this study suggest two important questions for understanding the potential for incentive-based conservation to meet the challenge of reconciling ranchers' interests and needs with those of the sage-grouse. First, how does the relative compatibility between sage-grouse and grazing contribute to the success of SGI and how does that compatibility shape the political, cultural, and economic dynamics influencing ranchers' support in the program? In the contexts of other wildlife conservation programs, how do differences in the compatibility of human land uses and species conservation change these dynamics and what implications do these changes have on the potential for these programs' success? Secondly, how does recognizing the multidimensionality of ranchers' stewardship orientations complicate or support opportunities for wildlife conservation on private lands moving forward? In other words, can wildlife conservation

programs effectively support the stewardship commitments of certain land managers without offending the stewardship work of others?

An on-going process of investigation is necessary to answer the questions posited above. This thesis is only part of that process. Through it, I have endeavored to understand the complexities among a select group of ranchers making decisions regarding a particular incentive-based program in a specific place and time. The implications of this study, nonetheless, offer insights into important aspects of rancher decision-making, ranchers' views on conservation practices and prescriptions, and land manager support for conservation initiatives. If these insights offer any lesson, it is that recasting private land managers as partners through conservation calls for an approach that, (1) is well-informed by social research with both in-depth and generalizable analysis, (2) does not shy away from difficult questions regarding program assumptions, and (3) understands the implications of the different political positions of program planners/implementers and its intended participants. The fate of imperiled wildlife species on private land may very well depend on such a critically considered approach.



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## APPENDIX A. RANCHER INTERVIEW QUESTIONNAIRES

*Question 1:* Please describe the primary reasons why you are involved in ranching on this property?

Probe: How long have you been ranching?

Probe: What are your specific responsibilities on the ranch?

*Question 2:* Are you participating in the Sage Grouse Initiative?

If yes ... continue

If no ... go to Question 12

SGI Participants

*Question 3:* Why did you join the Sage Grouse Initiative?

Probe: What factors contributed to your decision to join?

Probe: Did you have any hesitation in joining?

*Question 4:* What do you see as the key benefits of participating in the Sage Grouse Initiative?

Probe: Which is most important and why?

*Question 5:* Are there any costs/challenges to participating in the Sage Grouse Initiative?

Probe: You were still persuaded to participate; can you help me understand why?

*Question 6:* Can you describe your grazing plan that you have with the Sage Grouse Initiative?

Probe: How did the Sage Grouse Initiative and yourself develop the plan?

*Question 7:* What differences are there in your ranching/grazing practices since joining the Sage Grouse Initiative from what you did before you joined the program?

Probe: Have you made changes to your management, grazing practices, or stocking rates?

*Question 8:* What are the objectives of your grazing plan?

Probe: Are these objectives similar or are different from your own objectives in planning grazing?

*Question 9:* Do you think that your grazing plan is effective?

Probe: Is it helping your ranch operation?

Probe: Is it helping sage grouse?

*Question 10:* Do you plan to continue all or any parts of your prescribed grazing plan after your contract with NRCS is over?

Probe: Why or why not?

*Question 11:* What changes to the Sage Grouse Initiative program do you think would make it better for you?

Probe: Why/How so?

## Non-Participant Questions

*Question 12:* Have you ever heard of the Sage Grouse Initiative?

NO:

*Question 12a.* Are you familiar with the sage-grouse?

*Question 12b.* Would you be willing to work with the Natural Resource Conservation Service in efforts to conserve the sage-grouse?

*Question 12c.* The Sage Grouse Initiative can offer you cost-share payments for implementing a prescribed grazing plan, infrastructure improvements for your grazing system, NRCS's help in designing a grazing plan, and regulatory protection from the Endangered Species Act.

Are any of these attractive to you? Why or why not

YES:

*Question 13:* Have you ever considered participating in the Sage Grouse Initiative?

Probe: Why or why not?

Probe: What factors contribute to your decision not to join?

*Question 14:* What do you see as the key costs/challenges of participating in the Sage Grouse Initiative?

Probe: Which is most important and why?

*Question 15:* Are there any benefits to participating in the Sage Grouse Initiative?

Probe: You were still not persuaded to participate; can you help me understand why?

*Question 16:* Would you say that the way you graze your property is comparable to, or very different from the way you imagine you would have to graze it in the Sage Grouse Initiative?

Probe: What changes to your grazing would you have to make if you joined?

*Question 17:* What do you think are the objectives of a Sage Grouse Initiative grazing plan?

Probe: Are these objectives similar to your own or are they largely different from your own objectives?

*Question 18:* What changes to the Sage Grouse Initiative program do you think would make it better for you?

Probe: Why/How so?