

The Emergence of the Wyoming Core Area Strategy: “The Sage Grouse Rebellion”

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ABSTRACT

This research sought to explain the emergence of the Wyoming Core Area Strategy (WCAS), a state-based Greater Sage Grouse conservation plan. It presents a theoretical framework that is based on and adds nuance to the Advocacy Coalition Framework (ACF). The hypothesis this study explored was: if a subsystem’s jurisdiction is threatened by a hierarchically superior subsystem’s policy outputs and this jurisdiction is necessary to meet the threatened subsystem’s goals, then policy change may occur as a result of a strategy by the agents in the threatened subsystem. The data used to examine the hypothesis included expert interviews, historical documents, and interviews from media sources (secondary source interviews). The hypothesis was supported; the WCAS emerged because the Endangered Species Act listing outputs within the Species Conservation Policy Subsystem threatened the Wyoming Land Use Policy (WLUP) Subsystem’s jurisdiction, which was necessary to meet the WLUP Subsystem’s economic and lifestyle goals; the Governor of Wyoming drove the development and enactment of the WCAS as a strategy to retain jurisdiction. The research demonstrated that in order to fully account for the WCAS’s emergence, a less mechanistic view of the framework, one that accounts for the ability of agents in a subsystem to act strategically, was needed. The research also demonstrated that the Greater Sage Grouse conservation benefited from the ESA listing process despite its warranted but precluded listing status. The time frame the research explored was 2002 through March 2012.

Dedication

For the brilliant and strong women in my family

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Table of Contents

List of Figures	vi
List of Tables	vii
List of Abbreviations.....	viii
Chapter One: Introduction	1
Chapter Two: Background of WCAS and ESA Greater Sage Grouse Listing Process	4
Decline of the Greater Sage Grouse.....	4
Conflict between Sage Grouse Conservation and Wind Energy Development in Wyoming.....	6
Endangered Species Act.....	7
Wyoming Core Area Strategy	13
Conclusion.....	17
Chapter Three: Scholarly Grounding.....	19
Theoretical Framework	19
The Impact of the ESA.....	27
Environmental Federalism.....	31
Conclusion.....	34
Chapter Four: Methodology.....	35
Hypothesis Development	35
Case Study.....	37
Methods	38
Historical Documents.....	38
Secondary Source Interviews.....	42
Primary Source Interviews.....	44
Conclusion.....	51
Chapter Five: Results and Discussion	52
Historical Document Analysis	52
WCAS-Specific Documents.....	55
Secondary Source Interview Analysis	57
Expert Interview Analysis.....	63
Comparison and Discussion of Analyses	71
Chapter Six: Conclusion.....	73
Implications and Contributions of the Research.....	73
Constraints and Future Directions.....	80
Conclusion.....	83
Bibliography	85
Appendix A: State-Level Documents.....	91
Appendix B: Secondary Source Interviews: Media Sources	92
Appendix C: Virginia Tech Institutional Review Board Approval Letter	103

List of Figures

Figure 1: Greater Sage Grouse ESA Timeline.....	8
Figure 2: WCAS Timeline.....	14
Figure 3: Wyoming Core Area Map.....	16
Figure 4: WCAS Permitting Process Flowchart.....	17
Figure 5: Reconfigured ACF Diagram.....	77

List of Tables

Table 1: Interview Respondents.....	45
Table 2: Documents Sampled.....	52
Table 3: Document Analysis.....	53

List of Abbreviations

WLUP: Wyoming Land Use Policy

SCP: Species Conservation Policy

WCAS: Wyoming Core Area Strategy

ESA: Endangered Species Act

WGFD: Wyoming Game and Fish Department

ACF: Advocacy Coalition Framework

BLM: Bureau of Land Management

SGIT: Sage Grouse Implementation Team

Wyoming Ecological Services Field Office (WESFO)

Chapter One: Introduction

On August 1, 2008, Wyoming Governor Dave Freudenthal issued an executive order that altered the way the state's natural resource extraction permitting process operated and set a groundbreaking precedent for proactive state-based species conservation policy. This executive order established the Wyoming Core Area Strategy (WCAS), a statewide conservation policy for the Greater Sage Grouse. The policy requires that natural resource extraction adhere to a set of regulations based on minimizing disturbance for the bird. Since the state's economy largely depends on natural resource extraction, a policy that restricts development seems to call for explanation. Once it is recognized that the bird did not have an ESA endangered listing and thus there was no official federal mandate for the bird's conservation, it seems increasingly odd that Wyoming, a conservative state, would proactively implement a species conservation plan that could curtail a main source of income.

My research question is: why did Wyoming develop the WCAS? I employed a frequently used theory of the policy process, the Advocacy Coalition Framework (ACF), to frame the examination of the emergence of this policy. I sought to add nuance to a small part of formulation of the ACF that existed as of spring 2012 by employing scholarship from the ACF, jurisdictional competition, and a particular causal mechanism. Adding such nuance entailed reconfiguring the framework to capture the ability of subsystem policy entrepreneurs to act strategically in order to prevent external subsystems policy outputs from constraining needed jurisdiction resources. This reconfiguration results in a less mechanical view of the ACF and arguably improves the framework's recognition of the role that strategy plays in policy change.

I then used the more nuanced portion of the framework to generate a hypothesis that sought to explain the emergence of the WCAS: If a subsystem's jurisdiction is threatened by a

hierarchically superior subsystem's policy outputs and this jurisdiction is necessary to meet the threatened subsystem's goals, then policy change may occur as a result of a strategy by the agents in the threatened subsystem. The data used to explore the hypothesis included expert interviews, historical documents, and interviews from media sources (secondary source interviews). The data analysis showed support for the hypothesis and thus support for including the proposed added nuance in the ACF.

The next chapter overviews the WCAS and the ESA Greater Sage Grouse listing processes. This detailed information is necessary to provide the reader with sufficient background to understand the case and the research. This chapter first discusses the decline of the Greater Sage Grouse and then examines the ESA listing response to the decline of the bird. Third, the chapter presents a brief overview of the general steps involved in WCAS development. Finally, this chapter discusses a connection between the ESA and WCAS policy responses: the jurisdictional dynamics that result from the U.S. environmental federalism model.

This connection is used in the development of the theoretical framework in Chapter Three. The third chapter introduces the research's theoretical framework, which is informed by the ACF. Yet, it also adds nuance to the ACF. Additionally, Chapter Three overviews the scholarship on the ACF, environmental federalism, and impacts of the ESA that informed this research.

Chapter Four details the study's methodology. The methodology involved triangulation of three data sources and types of analysis methods: historical document content, secondary source interview, and expert interview analyses. Employing these types of data collection and analysis helped avoid some of the problems that stem from potential reliability and validity issues associated with each type of qualitative data. In discussing each data source, I describe

sampling, focusing decisions, and procedures, and how I sought to minimize reliability and validity concerns.

The fifth chapter explores the results of the research. First, I present the historical document content analysis findings, which showed support for the hypothesis, yet also raised six issues that I needed to explore in the other two analyses. Second, I offer the secondary source interview analysis findings, which also showed support for the hypothesis, yet do not fully address the six issues raised by the document analysis. Third, I present the expert interview findings, which showed support for the hypothesis. Finally, I discuss how the comparison of these findings supported the hypothesis. Chapter Six summarizes my conclusions and their significance and discusses the research's constraints and future directions.

Chapter Two: Background of WCAS and ESA Greater Sage Grouse Listing Process

This chapter provides essential background for understanding the overall case and the development of the theoretical framework in Chapter 3. Here, I discuss two significant policy responses to the decline of the Greater Sage Grouse: the federal-level Endangered Species Act listing process and the state-level WCAS process. I also illuminate the policy challenges involved in responding to the decline of the Greater Sage Grouse by using the example of the conflict between wind energy development and successful Greater Sage Grouse conservation. During my presentation of the WCAS, I propose a relationship between the two policy responses that arises from the phenomenon of environmental federalism. This relationship is a major component of the theoretical framework and the hypothesis I used for my examination of the case.

Decline of the Greater Sage Grouse

The total population of the Greater Sage Grouse (*Centrocercus Urophasianus*) has dramatically declined in the past century. Estimates range between a 69-99 percent decline in Greater Sage Grouse populations from historic numbers (Belton and Jackson-Smith 2010, 250). The bird resides in eleven states: Washington, Oregon, California, Nevada, Idaho, Montana, Wyoming, Colorado, Utah, South Dakota, and North Dakota as of spring 2012. Greater Sage Grouse also appear in the Canadian provinces of Alberta and Saskatchewan. The birds inhabit approximately 56 percent of their past range (U.S. Department of the Interior 2011, 66393-66394; hereafter DOI).

Many anthropogenic factors, such as energy development infrastructure, introduction and subsequent invasion of non-native species, and human population growth are contributing to the

decline of the Greater Sage Grouse (Aldridge et al. 2008, 9983). These human-driven factors cause habitat fragmentation, degradation, and loss of sage-steppe habitat (DOI 2011, 66393). The total impact of humans on the sagebrush ecosystems that the Greater Sage Grouse rely on is so extensive that these ecosystems cannot adapt to rapidly changing conditions, and this threatens the complete collapse of sagebrush ecosystems (Knick et al. 2003, 612). It can be inferred that the problems that contribute to the decline of Greater Sage Grouse sagebrush habitat also impact other species, because ecologists consider the Greater Sage Grouse an umbrella species for the conservation of sagebrush dwelling species. If conservation action addresses the habitat problems that negatively affect the Greater Sage Grouse (GSG), then other species also will benefit (Rowland et al. 2006, 333).

One primary cause of the decline of the bird is energy development. For example, Holloran et al. conducted a study on yearling GSG responses to natural gas development (2010). They concluded that one component of an effective GSG conservation strategy would be to ensure that large enough expanses of suitable habitat remain undeveloped from energy extraction (Holloran et al. 2010, 65). Yet, the need to restrict energy development for Greater Sage Grouse conservation poses policy challenges. The state of Wyoming has become the center of this challenge. My focus on Wyoming is in part because of the number of Greater Sage Grouse residing in the state: in 2011, about 40 percent of the entire range-wide population (Bureau of Land Management 2011). The focus on Greater Sage Grouse conservation in Wyoming also reflects that one of the primary causes of the decline of the Greater Sage Grouse is a pivotal part of the state's economy, energy development. Energy development contributes to the habitat fragmentation, degradation and loss that are primary influences on the bird's decline (Aldridge et al. 2008, 983 and DOI 2011, 66374).

A prime example of the energy development that exists in Wyoming is wind energy development. The conflict between this type of energy development and the bird's conservation needs illustrates the policy challenges of the Greater Sage Grouse conservation policymaking. The wind energy industry and government agencies are increasingly recognizing Wyoming for its existing and future wind energy development. A growing dialogue in the U.S. about increasing domestic and renewable energy sources encourages this focus (Rosenbaum 2010, 3-4 and U.S. Department of Energy 2008). The goal of the U.S. Department of Energy to have 20 percent of the U.S. energy supply come from wind energy by 2030 also amplifies this focus (U.S. Department of Energy 2008). The Bureau of Land Management (BLM) affirms that Wyoming can play a large part in meeting this goal.

Much of Wyoming has fair to excellent wind energy potential, with some areas having outstanding to superb potential as identified by the Department of Energy's National Renewable Energy Laboratory. Currently, most of the interest has been focused on southern Wyoming (Bureau of Land Management 2011b).

This wind energy potential has substantial implications for the future of Wyoming's economy. For example, in 2004, wind energy generated \$480,000 in property tax revenue in Carbon County, Wyoming (Department of Energy 2004, 4).

Conflict between Sage Grouse Conservation and Wind Energy Development in Wyoming

The implications of successful Greater Sage Grouse conservation planning create a conflict between this goal and wind energy development. For one interest to be furthered, the other must be restricted. This conflict is particularly apparent when recognizing the habitat needs of the Greater Sage Grouse in conjunction with the necessary infrastructure development that wind energy requires. A prime example occurs in Carbon County, Wyoming. The most ambitious wind farm plans are situated in the County, and, as stated above, wind energy is a very

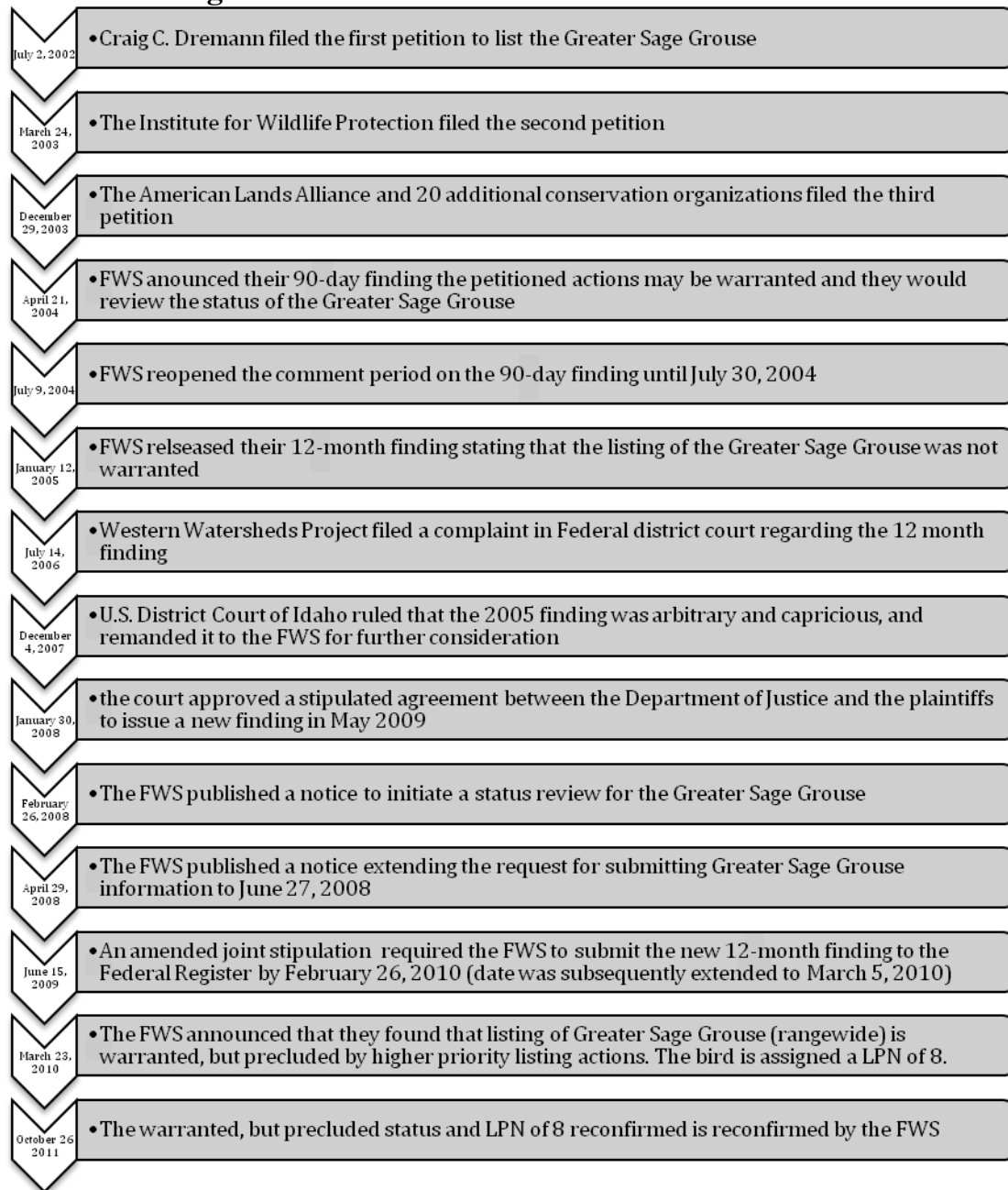
important source of government income. However, the sites of these proposed wind farms also overlap with the essential habitat of the Greater Sage Grouse (Rosenbaum 2010, 4). The recognition that Greater Sage Grouse avoid wind turbines and other wind energy-related infrastructure escalates this conflict (Pruett et al. 2009, 1258). Thus, wind energy development necessarily adds to the problems of habitat loss, fragmentation, and degradation that contribute significantly to the decline of the bird.

The conflict between wind energy development and the conservation of the Greater Sage Grouse poses policy-making challenges. Ultimately, which agency or level of government has primary jurisdiction over the management of Greater Sage Grouse habitats and ideal wind energy development land are factors that will play an enormous role in current and future management plans for handling this conflict. The ESA Greater Sage Grouse listing process and the WCAS are two contemporary policy processes that involve both state and federal action and illustrate the jurisdictional dynamics regarding Greater Sage Grouse conservation.

Endangered Species Act

Scholars frequently refer to the national Endangered Species Act (ESA) as the “pit bull” of environmental law (Garcia 2006, 578). Strict judicial interpretation of the ESA has resulted in two prominent controversial issues: “the types of species that are listed and the limitations that the ESA imposes on economic growth, especially in the private sector” (Czech and Krausman 2001, 3). The Greater Sage Grouse conflict is a prime example of the controversial issue of the limitations that the ESA imposes on economic growth. This section details the history and future directions of the Greater Sage Grouse listing process. The presentation includes an overview of the prominent federal laws involved and a critical court case that directly influenced the process. Additionally, Figure 1 offers a quick reference for an outline of the ESA process.

Figure 1: Greater Sage Grouse ESA Timeline



(DOI 2010, 2, DOI 2011, 66394, and *Western Watersheds Project v. U.S. Forest Service* 2009)

The debate surrounding the decline of the Greater Sage Grouse entered the federal policy realm in 2002 when the first petition to list the bird was filed. By 2003, over 20 organizations had filed three listing petitions (DOI 2010, 2). The ESA petition pathway requires that “to the

maximum extent practicable,” within 90 days the FWS must review the petition(s) and determine if, based on the information presented in the petition(s), further review of the status of the species is needed (*Western Watersheds Project v. U.S. Forest Service* 2007, 4-5). The FWS determined that further action was warranted for the bird. Accordingly, in April 2004, the U.S. Fish and Wildlife Service announced that it would begin to review the submitted petitions and scientific information regarding whether the agency should list the Greater Sage Grouse (DOI 2010, 2).

The next step in the listing process involves a second finding, typically referred to as the 12-month finding. If the 90-day finding warrants further review of a species, then the FWS has one year to issue its 12-month finding. Two kinds of information guide this finding. The best scientific and commercial data available comprise the first consideration (ESA 1973 and *Western Watersheds Project v. U.S. Forest Service* 2007, 4). Secondly, the FWS must base the 12-month finding on a consideration of the adequacy of existing regulations (ESA 1973 and *Western Watersheds Project v. U.S. Forest Service* 2007, 4).

The FWS may come to three different conclusions in the 12-month finding: the listing of the species is not warranted, the listing action of the species is warranted, or an endangered listing is warranted but precluded (*Western Watersheds Project v. U.S. Forest Service* 2007, 5). Because of limited resources, agencies must prioritize their conservation actions for species, which causes the need for the third finding. In short, this means that “the petitioned action is warranted, but precluded by higher priority pending proposals and expeditious progress is being made to list, delist, or reclassify” (*Western Watersheds Project v. U.S. Forest Service* 2007, 5 and DOI 2011, 66370). When this third finding occurs, the FWS assigns the species a Listing Priority Number (LPN). The lower the assigned LPN, the higher the listing priority (DOI 2010, 153).

The FWS announced the Greater Sage Grouse 12-month finding in January 2005. The agency determined that an endangered listing of the Greater Sage Grouse was not warranted (DOI 2010, 2). In July 2006, Western Watersheds Project filed a complaint in the U.S. District Court for Idaho. The organization complained that the not warranted finding on the Greater Sage Grouse was arbitrary and capricious, a complaint based on the Administrative Procedure Act (APA 1946). The APA sets out the possible scope of judicial review of agency actions. When the court applies the APA to the ESA listing process, it may determine that a listing conclusion is unlawful if it decides that the agency's conclusion was arbitrary or capricious (APA 1946).

Judicial decisions involving application of the APA have resulted in four standards for any judicial examination of an agency decision. First, the court must be able to determine a rational connection between existing states of affairs and the agency's decision or action. Second, the agency has discretion regarding decisions that require its expertise (*Western Watersheds Project v. U.S. Forest Service* 2007, 19-20). Third, even if the agency has scientific or technical discretion, its decisions must be well reasoned and, if they are not, then the court may overturn the agency's decision. Finally, the judicial examination of an agency's action must be "searching and careful" (*Western Watersheds Project v. U.S. Forest Service* 2007, 20) It is important to note, however, that a court may not substitute its decision for an agency's decision. The court may only find the agency's decision arbitrary and capricious and require the agency to go through the decision process again (*Western Watersheds Project v. U.S. Forest Service* 2007, 19-20).

In December 2007, based on the ESA, APA, and legal precedents, the U.S. District Court of Idaho ruled that the not warranted conclusion of the FWS was indeed arbitrary and capricious (*Western Watersheds Project v. U.S. Forest Service* 2007). It reached this decision for two

primary reasons: that the FWS did not base the finding on the best science available and that the agency failed to adequately consider the existing regulatory mechanisms for Greater Sage Grouse conservation (*Western Watersheds Project v. U.S. Forest Service* 2007, 19-20). As previously stated, the ESA requires these two components for a determination.

First, the court determined that the FWS service failed to use the best science available in four ways. Although the FWS consulted scientific experts, it excluded the experts from the final decision process. Second, the FWS did not record or keep a detailed record of the majority of the experts' opinions. Third, the FWS ignored the parts of the experts' opinions that were recorded while making the listing determination (*Western Watersheds Project v. U.S. Forest Service* 2007, 21-29).

The court deemed the FWS decision arbitrary and capricious with respect to the best science standard for a final reason that was related to a larger controversy. In the memorandum opinion, the court criticized the methods used by the Deputy Assistant Secretary, Julie MacDonald. The court described her approach to ESA listing decisions: "MacDonald's principal tactic is to steer the best science to a pre-ordained outcome... This process allows the ultimate decision-makers to subjectively bend the best science to their own ends, while obscuring any inconsistencies" (*Western Watersheds Project v. U.S. Forest Service* 2007, 35). Thus, the court concluded that Macdonald's extensive involvement in the unwarranted conclusion was an additional independent reason for finding the decision to be arbitrary and capricious (*Western Watersheds Project v. U.S. Forest Service*, 32-34). The court concluded that there existed no rational connection existed between existing states of affairs and the agency's decision because of these four violations (*Western Watersheds Project v. U.S. Forest Service* 2007).

The court also determined that the FWS decision was arbitrary and capricious because

the FWS failed to satisfactorily “consider the adequacy of existing regulatory mechanisms” (*Western Watersheds Project v. U.S. Forest Service* 2007, 31-32). The court found that during the listing process there was not sufficient information regarding the existing regulatory mechanisms for 78 percent of Greater Sage Grouse habitat. Despite the gaps in information, the FWS Director failed to explain why the information gaps did not matter and stated that he was “encouraged that sage-grouse and sagebrush conservation efforts will moderate the rate and extent of habitat loss for the species in the future” (*Western Watersheds Project v. U.S. Forest Service* 2007, 30-31) Additionally, the court could not determine a rational connection between existing evidence and the agency’s conclusion (*Western Watersheds Project v. U.S. Forest Service* 2007).

The court ruled that the FWS had to revisit information regarding the Greater Sage Grouse and issue a new finding by May 2009 (*Western Watersheds Project v. U.S. Forest Service* 2009). Due to a delay in the availability of a key conservation assessment of the Greater Sage Grouse, the court extended the finding requirement to February 26, 2010 (*Western Watersheds Project v. U.S. Forest Service* 2009). After an additional and unforeseeable delay due to the death of the Director of the FWS, the court extended the deadline again until March 5, 2010 (*Western Watersheds Project v. U.S. Forest Service* 2010 and DOI 2010, 2)

After once again reviewing scientific and commercial information, submitted petitions, and consultation with Greater Sage Grouse and sagebrush experts, the FWS found that the Greater Sage Grouse warranted listing across its range, but higher priority listing actions precluded this action (DOI 2010, 121). The FWS reconfirmed the warranted, but precluded status in 2010 (DOI 2011, 66393). In 2010, the FWS assigned the Greater Sage Grouse an LPN of 8 (DOI 2010, 153). In 2011, the agency reconfirmed the LPN status of 8 for the Greater Sage

Grouse (DOI 2011, 66394). The FWS gives listing priority over the Greater Sage Grouse to all warranted, but precluded species with lower assigned LPNs (DOI 2011, 66394).

Although the FWS did not as of spring 2012 list the Greater Sage Grouse as endangered, it will continually evaluate the bird's status. The agency will take conservation action in the future if it assigns the Greater Sage Grouse an endangered listing (ESA 1973). The possibility of an endangered listing looms each year, because the FWS annually re-reviews the list of candidate species and determines if it will adjust each species' LPN or the species warrants an endangered listing (DOI 2011, 66370). Thus, the possibility of a future listing must continue to be part of any consideration of the existing and future conflict between wind energy development and Greater Sage Grouse conservation. If the FWS lists the Greater Sage Grouse as endangered, then the federal government will have jurisdiction over the management decisions about the Greater Sage Grouse habitat (ESA 1973).

Wyoming Core Area Strategy

While considerable debate took place over the listed status of the Greater Sage Grouse in the federal policy realm, significant regulatory action related to the conservation of the Greater Sage Grouse also was occurring at the state level. This state-level action resulted in the development of the Wyoming Core Area Strategy (WCAS), the focus of the present research. My motivation to focus on the WCAS stems from the recognition that several other western states and the Bureau of Land Management are incorporating and supporting the WCAS in their Greater Sage Grouse management plans (Bureau of Land Management 2011a; Mead 2011, 2). Thus, the WCAS has been an influential policy and further understanding of the WCAS emergence also helps explain the emergence of these other policies. In order to provide an overview of the WCAS, this section includes a history of its development, a possible impetus for

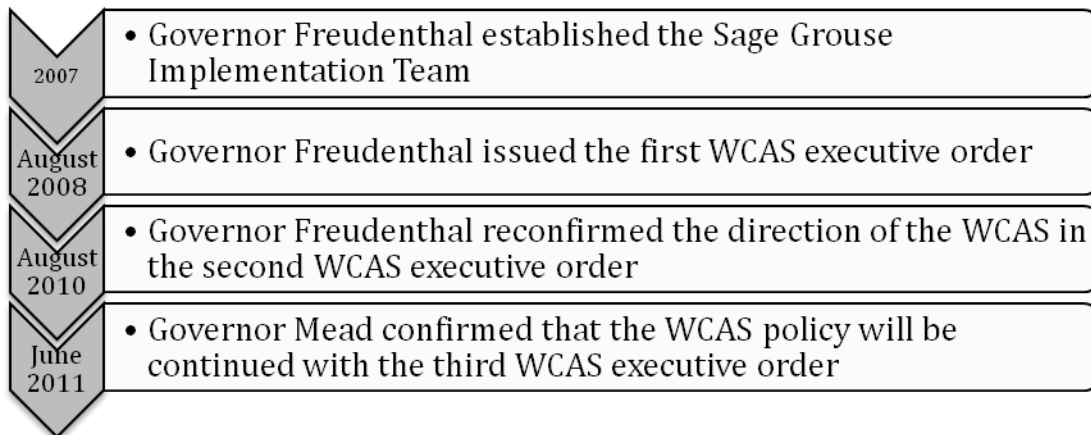
its development, a brief example of some regulations detailed in the WCAS, and a description of the agencies involved in its implementation.

In 2007, Wyoming Governor Dave Freudenthal (D) established the Sage Grouse Implementation Team (SGIT). The individuals that composed the team represented stakeholders with vested interests in future Greater Sage Grouse conservation policy, such as the energy and agriculture industries, private landowners, conservation interests, and government agencies. The Sage Grouse Implementation Team aimed to develop a Greater Sage Grouse conservation plan that also balanced the needs of Wyoming’s natural resource-based economy (Schulte 2011, 59-60).

Governor Freudenthal announced the result of the team’s effort in August 2008, when he issued an executive order that detailed a Wyoming-based Greater Sage Grouse conservation plan. This conservation plan was the Wyoming Core Area Strategy (WCAS) (Freudenthal 2008).

Freudenthal issued another WCAS-focused executive order in August of 2010. The order adjusted the conservation regulations but confirmed the direction of the WCAS (Freudenthal 2010). The current (2012) governor of Wyoming, Matt Mead (R), who took office in 2011, issued an executive order in June 2011 that reconfirmed the direction of the WCAS (Mead

2011). **Figure 2: WCAS Timeline**



(Freudenthal 2008, Freudenthal 2010, Mead 2011, and Schulte 2011, 59-60)

The success of the restrictions on energy development outlined by the WCAS likely will determine if the state of Wyoming retains jurisdiction over the management of Greater Sage Grouse habitats. This jurisdictional implication connects the ESA policy process and the WCAS policy process and is one primary relationship between the two policy responses to the bird's decline. A past public comment from former Governor Freudenthal further illustrates this relationship and its importance:

“I need to get clear on the record, it isn't some obsession that I have with the Sage-grouse that has led me to where I'm at,” Freudenthal assured his listeners at the Wyoming Wind Symposium on the University of Wyoming campus last August as his staff presented conservation plans. “What I have is an obsession with is making sure that the economy in this state continues to function, which it won't if we in fact get that bird listed” (Ostlind 2010).

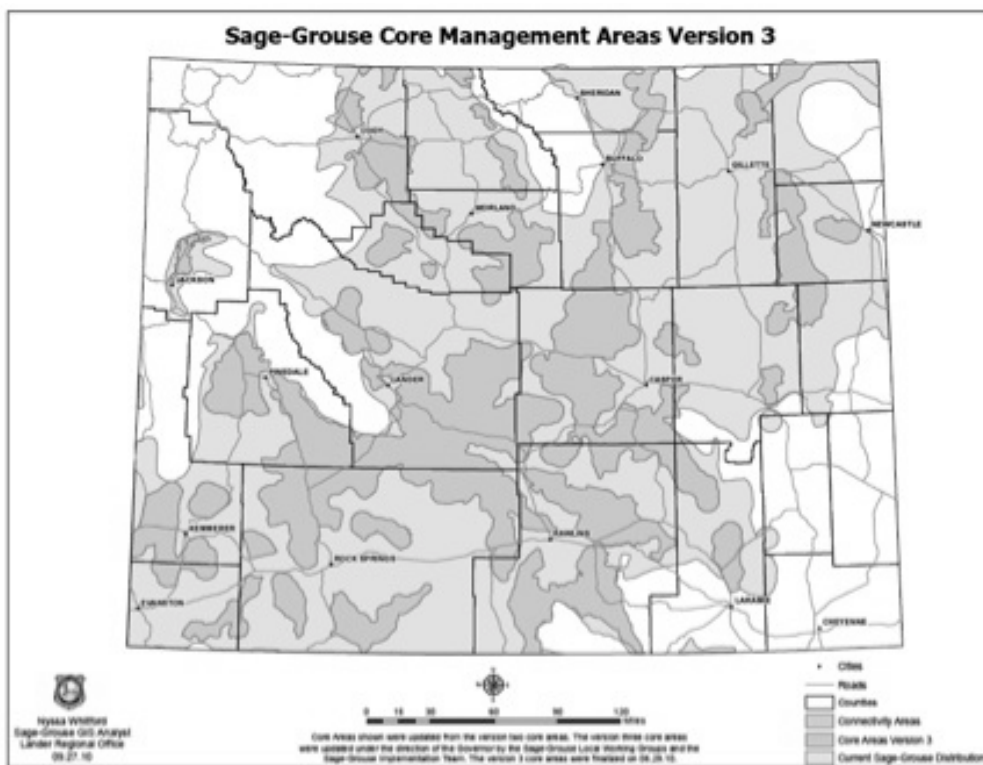
If the bird is listed, the state of Wyoming no longer will have jurisdiction over the decisions regarding the bird's habitat. This lack of jurisdiction could lead to restrictions on energy development, which would negatively impact Wyoming's economy. Thus, the desire to retain jurisdiction is one very plausible part of a potential explanation for the WCAS emergence and is a connection between the two policy processes.

The WCAS could result in the retention of jurisdiction in at least two ways. First, if the restrictions on energy development in the WCAS result in the improvement of the Greater Sage Grouse population, then during the FWS's annual ESA review of the bird the agency may reach a not-warranted determination. Second, if during the annual review the FWS determines that the WCAS is an adequate regulatory mechanism to address the conservation challenges facing the Greater Sage Grouse, then the agency may reach a not warranted listing.

I briefly present here some WCAS restrictions on wind energy in order to illustrate the restrictions that may prevent a listing. The designated core habitat areas and occupied Greater

Sage Grouse leks comprise the basis of these restrictions. The core areas are depicted in Figure 3. The WCAS does not allow for wind energy development to occur within these designated core areas (Mead 2011, 13). Additionally, wind (or other) energy development must abide by seasonal restrictions. There is a seasonal no surface occupancy restriction within two miles of Greater Sage Grouse leks from December 1st to March 14th for areas used by the Greater Sage Grouse as winter habitat (Mead 2011, 9).

Figure 3: Wyoming Core Area Map



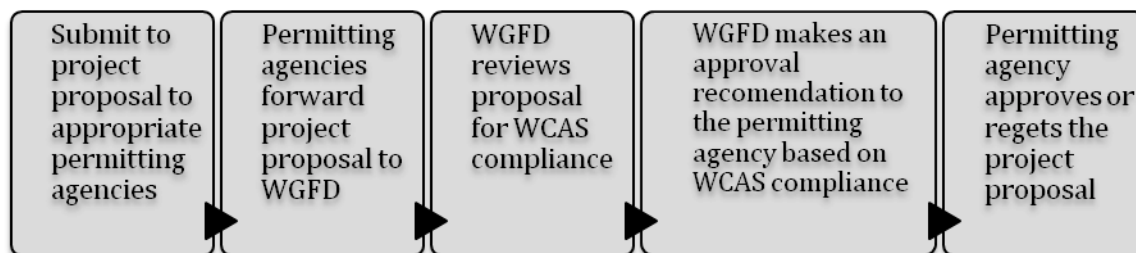
(Wyoming Game and Fish Department 2011b)

The WCAS is implemented using the previously existing permitting system in Wyoming. The Wyoming Game and Fish Department (WGFD) is the primary state agency involved in the implementation of the WCAS. The WCAS stipulates that the WFGD fills the roles of recommendation, facilitation, and consultation about the permitting process required by the

WCAS. However, the WCAS does not give the WGFD the authority to approve or deny permits (Mead 2011, 7).

The WCAS stipulates that authority remains with the agencies that had authority prior to the 2008 WCAS executive order. However, these agencies require that project proposals and applications submitted after the 2008 executive order incorporate the WCAS restrictions (Wyoming Interagency 2011). The permitting agencies then forward the project proposals and applications to the WGFD to review for WCAS compliance, which is illustrated in Figure 4. The WGFD then makes a recommendation for approval or denial to the permitting agency (Wyoming Interagency 2011). For example, for a proposed wind farm project, one of the agencies that would need to approve the project is the Wyoming Office of State Lands and Investments. For permitting agencies to approve the project, it must meet the stipulations required by the various agencies and the WCAS (Wyoming Interagency 2011).

Figure 4: WCAS Permitting Process Flowchart:



(Wyoming Interagency 2011)

Conclusion

The ESA listing process and the development of the WCAS are related because of the jurisdictional dynamics discussed and the subsequent implications of retaining jurisdiction over

Greater Sage Grouse conservation and Greater Sage Grouse habitat decisions by preventing an ESA endangered listing. In the next two chapters I use the proposed jurisdictional relationship to develop a theoretical framework and introduce the testable hypothesis that guided the empirical research. The Advocacy Coalition Framework was the basis for the theoretical framework and hypothesis formulation because of its ability to help explain the jurisdictional dynamics and relationship between the ESA and WCAS processes. The following chapter elaborates the ACF, environmental federalism, and ESA scholarship in order to present the scholarly grounding and theoretical framework used in the research.

Chapter Three: Scholarly Grounding

The WCAS case is at the intersection of many debates in environmental politics and policy. Two particularly prominent and relevant debates involve the effectiveness of the ESA and of the American system of environmental federalism. Additionally, analysis of this case provides insights into and seeks to extend a prominent theory of policy change: the Advocacy Coalition Framework. This chapter offers an overview of the theoretical framework that guided the research and considers the scholarship on the effectiveness of the U.S. system of environmental federalism and of the ESA.

Theoretical Framework

I utilized the Advocacy Coalition Framework (ACF) to guide the thesis research because of its potential to offer an explanatory model of policy change. This section first presents a brief overview of the ACF and a justification for employing the framework in this research. In addition, the project sought to add needed nuance to a specific portion of the ACF. In this later portion of the section, I briefly discuss one gap in the ACF literature, which this research sought to fill. I also describe the process of narrowing the scope of the thesis to a very specific portion of the ACF.

Sabatier and Jenkins-Smith developed the ACF in the late 1980's from research on energy and environmental policymaking processes (Nohrstedt 2010, 311). The scholars designed the ACF as a tool for determining how and why policy change occurred over time (Sotirov and Memmler 2011, 1). Since its inception, scholars have used the ACF for policy analysis in a variety of policy fields including sports, environmental, domestic violence, drug, and nuclear policy (Sabatier and Weible 2007, 207). Scholars also have continually reworked and added sections and nuance to the evolving framework.

The creators also developed the ACF with the intention of providing an explanatory model of policy change that avoided many of the limitations scholars associate with other theories of the policy process (Weible et al. 2009, 122). The framework captures many other helpful explanatory concepts found in other theories of the policy process. Many scholars view the ACF as an eclectic, elaborate, and useful model for analyzing the policy process (Sotirov and Memmler 2011, 1). Scholars, including me, view the ACF's eclecticism as a benefit of employing the framework.

The family resemblance among the policy process theories and comparative policy models has become more pronounced, to the point where they probably belong under a single roof, and that roof is the currently entitled the advocacy coalition framework (Schlager 2007, 317).

I chose to employ the ACF because scholars observe that it has many strengths and components of other theories of the policy process (Schlager 2007, 317). However, as the section discusses later, ACF scholars also observe that the continually developing framework still is incomplete in some ways. I attempted to begin to help fill one gap in the ACF with this project.

In order to provide the focus appropriate to an MA thesis, this research emphasized a specific ACF pathway to policy change. In order to provide the context that the focal pathway exists within, the pathways to policy change in the ACF are briefly outlined here. The presentation then continually narrows until it reaches the focal casual chain.

The current formulation of the ACF includes four main paths to policy change: policy-oriented learning, internal shock, a hurting stalemate, and external perturbations (Sabatier and Weible 2007, 198). According to ACF scholars, policy change results from policy-oriented learning, which occurs when thoughts or behavioral intentions alter due to new experiences or new information in order to attain or revise policy goals (Sabatier and Weible 2007, 198). A hurting stalemate between advocacy coalitions may eventually lead to a negotiated agreement,

which may include a policy change (Sabatier and Weible 2007, 205-207). Internal shocks lead to policy change through events that occur within a policy subsystem. These internal events either redistribute resources or affect the belief systems of the policy participants in the subsystem, which may lead to policy change (Sabatier and Weible 2007, 204-205).

Similar to internal events, the redistribution of resources is a way that external perturbations can lead to policy change. ACF scholars maintain that external influences can cause resources to be constrained, which may cause policy change (Sabatier and Weible 2007, 201). The ACF identifies several categories of resources: (1) the formal legal authority to make policy decisions, (2) public opinion, (3) information, (4) mobilization of troops, (5) financial resources, and (6) skillful leadership (Sabatier and Weible 2007, 201).

The general ACF causal pathway to policy change that I focused on was the pathway between external events, resources, and policy change. Scholars contend that the ACF literature fails to satisfactorily elaborate on this link between external events, resources, and policy change (Weible et al. 2009, 128). For example, based on their review of applications of the ACF to natural resource policy research, Sotirov and Memmler concluded that ACF scholarship does not satisfactorily elaborate the causal relationship between external influences and policy change. They also note that the ACF literature suggests this causal proposition applies to only two types of external influence: changes in government and in external policy impacts (Sotirov and Memmler 2011, 9). Sotirov and Memmler conclude that in ACF scholarship the links between the other types of external events, resources, and policy changes are unclear at best (2011, 9).

Although it has gaps, the ACF has the potential to overcome these problems because it is continually evolving. I intended this thesis project to help fill one gap in the ACF literature, the ambiguity between external events, resources, and policy change. Due to the scope of the project,

however, the research still needed more focus. Given Sotirov and Memmler's conclusion that changes in government and external policy impacts are the only types of external events that seem to clearly result in policy change, these two types of external events were promising to emphasize. Given Chapter Two's presentation of the two policy processes occurring at the state and federal levels, I chose to focus on external subsystem policy impacts, identifying the ESA policy process as an external policy impact. Thus, the general ACF casual chain that I focused on was external policy impacts, resources, and policy change.

This approach required that I treat the state-level WCAS policy process and the federal-level ESA policy process as parts of two different policy subsystems. I justify this treatment by considering the ACF literature. For example, Ellison considered different hierarchical levels of agencies that had concurrent jurisdiction over a policy area as part of the same subsystem (Ellison 1998, 38-39). Yet, when different hierarchical levels of agencies did not have concurrent jurisdiction over a policy area, he considered the agencies as part of different subsystems. He did not consider the FWS as a part of the Denver water policy subsystem for instance, until the ESA process resulted in the FWS having jurisdiction in Denver water policy (Ellison 1998, 53). Similarly, as the Greater Sage Grouse is not yet listed as endangered, the FWS will not exercise jurisdiction in the policy subsystem that the WCAS occurs within. Thus, I treated the ESA process as part of an external policy subsystem until the FWS has the ability to begin to exercise jurisdiction in the Wyoming Greater Sage Grouse policy process.

For this research, I defined the policy subsystem that the ESA process occurred within as the Species Conservation Policy (SCP) subsystem. I define the policy subsystem that the WCAS process occurred within as the Wyoming Land Use Policy (WLUP) subsystem. I defined these subsystems informally because performing a complete and thorough subsystem analysis was

outside of the scope of the thesis. Despite the informal nature of these definitions, nevertheless, scholarship supports such an approach.

ACF scholars typically define policy subsystems by analyzing policy participants and territorial and substantive scope (Weible 2007, 98). Examples of types of policy participants include local, state, and federal government officials; interest groups; nongovernmental organizations; community groups; researchers/scientists; members of the media; and target groups (Weible 2007, 98). The territorial scope of a policy subsystem frequently is defined by legal boundaries. Ellison's work discussed above is an example of this is Weible's ACF stakeholder analysis of California's Marine Protected Area Policy (Weible 2007, 103). The territory of the SCP subsystem can be roughly defined as existing where it legally can produce policy. Two examples of the territorial boundaries of the Species Conservation Policy subsystem are the Endangered Species Act and the Migratory Bird Treaty Act. Examples of the territorial boundaries of the WLUP subsystem are the boundaries between states lands and BLM land and the political boundaries of the state. The substantive scope of a policy subsystem is the policy area that the subsystem is concerned with (Weible 2007, 98). For example, in the SCP subsystem the policy area is species conservation, and in the WLUP subsystem the policy area is land use.

As a result of how I have informally defined the subsystems, the focal casual chain then has narrowed to the external policy outputs of the SCP subsystem, affected resources of the WLUP subsystem, and policy change within the WLUP subsystem. In order to further reduce the scope of the thesis, I also chose one type of resource to focus on. Given the previous chapter's discussion of the jurisdictional relationship between the ESA and WCAS policy subsystems, of the six ACF-identified resources, the most promising to focus on is the formal legal authority to make decisions, that is, jurisdiction. Thus, I further narrowed the focal casual chain of this

project to that involving external policy impacts, jurisdiction, and policy change. The casual chain that I studied is, policy impacts, jurisdiction of the WLUP subsystem, and the emergence of the WCAS in the WLUP subsystem.

ACF scholars previously have addressed the role jurisdiction plays in policy change. In an analysis of a particular natural resources policy change, for example, Nicholson-Crotty introduces the concept of bureaucratic competition over jurisdiction to the ACF in order to fill what he perceives as a gap in the framework. He argues that bureaucratic jurisdictional competition can explain the behavior of coalitions and thus help explain the development of policy (Nicholson-Crotty 2005, 345).

Ellison's 1998 ACF analysis of Denver water policy change also contains the notion of jurisdictional competition. Ultimately, he argues that when autonomy of the dominant coalition within a subsystem is stable, then policy change is unlikely to occur; conversely, when policy fragmentation is present, policy change is likely to take place (Ellison 1998, 54). Ellison conceptualizes autonomy as "a function of governing relationships and legal institutional arrangements, and should be understood in terms of undisputed jurisdiction or territoriality" (1998, 40). Restated in the language used for this research, autonomy is a lack of jurisdictional competition.

Ellison defines policy fragmentation in two ways. First, he observes, "formal control over policy in American government is shared among formal institutions and agencies at various levels" (Ellison 1998, 40). Secondly,

Policy fragmentation occurs when a single government operates at cross-purposes. The federal government, for example, subsidizes the tobacco industry and supports antismoking programs (Ellison 1998, 40).

Both definitions of policy fragmentation capture the notion of jurisdictional competition. Thus,

Ellison's work supports the proposition that jurisdictional competition will likely contribute to policy change.

Ellison and other ACF scholars also have identified jurisdiction as a resource advocacy use coalitions to achieve their goals. In their case studies, Nicholson-Crotty and Ellison regard understanding jurisdictional conflict as critical for understanding policy change (Ellison 1998, 40 and Nicholson-Crotty 2005, 345). However, gaps still remain in understanding the causal mechanism that drives the causal chain. In order to fill this gap, I propose a specific causal mechanism, the strategy of agents in a policy subsystem. With this final focusing decision, the focal causal chain of this research project involves external policy impacts, jurisdiction, strategy, and policy change. For the WCAS case the components of the focal casual chain are operationalized as the ESA subsystem, jurisdiction over Greater Sage Grouse decisions, strategy of agents in the WLUP subsystem, and the emergence of the WCAS.

I based the decision to include strategy as a causal mechanism on the work of Ellison, Nicholson-Crotty, and Falletti and Lynch. Nicholson-Crotty and Ellison employed the notion of strategy in their work on jurisdiction in the ACF. From his case study and application of jurisdictional competition, Nicholson-Crotty concluded:

The case also demonstrates, however, that the ACF may underestimate the potential scope of strategic behavior by bureaucratic agencies attempting to influence policy. Echo Park suggests that the framework may provide an even more accurate picture of the policymaking process if it more fully recognizes the potential for and the substantive impact of such behavior (2005, 357).

Ellison used strategy for his water policy case study in order to better understand policy change.

He concluded:

The case of water-resources development and intergovernmental politics also demonstrates the strategic proclivities of the water commissioners and their allies in Denver (Ellison 1998, 54).

The authors' consideration of strategy in the ACF was to account for the emergence of particular policies in circumstances with jurisdictional considerations.

I took this research a step further and hypothesized that strategy is the causal mechanism that links the external policy impacts, jurisdictional conflict, and policy change in the WCAS case. I derived the definition of casual mechanism that I employed from the work of Falleti and Lynch: "portable concepts that explain how and why a hypothesized cause, in a given context, contributes to a particular outcome" (2009, 1143). Their conception of mechanisms requires that researcher not identify the independent variables as the cause of changes in the dependent variable. Rather, a third element, a mechanism, connects the relationship between the two types of variables (Falleti and Lynch 2009, 1144). Using this conception of causal mechanism, I further developed the ACF with respect to the focal causal chain. In the following chapter, I use this focal casual chain including strategy as a casual mechanism to develop the hypothesis that guided the research.

I termed the agent that I attributed the casual mechanism to a "policy entrepreneur." I defined policy entrepreneur, following the work of Mintrom and Vergari, as an individual who seeks to create dynamic policy change, one who has the ability to "see the logic in an emerging historical situation and act on that insight" (Mintrom and Vergari 424, 1996). In the WCAS case, I conceptualized the ability of the entrepreneur to see the logic in the emerging historical situation as the notion that the policy entrepreneur was able to see that jurisdiction was threatened, that jurisdiction was necessary to achieve perceived goals, and that the necessary jurisdiction could be retained through dynamic policy change.

This project employed the ACF as the basic framework for the research. However, the study sought as well to contribute to ACF scholarship by adding nuance to a specific portion of

the framework. In order to further inform the project, I turn next to scholarly grounding on components of the focal causal chain. After overviewing the impacts of the ESA, the first part of the casual chain, I examine environmental federalism, since the history and context of environmental federalism provide insight into how the jurisdictional resources of the WCAS subsystem can be constrained by the ESA subsystem.

The Impact of the ESA

The first component of the focal causal chain is external policy impacts; specifically, the impact of the ESA outputs in the SCP subsystem on the WCAS subsystem. A substantial amount of scholarship on the ESA exists. Two prominent themes in the ESA scholarship are especially relevant to this research: whether the ESA successfully meets its species conservation goal and the impact of the ESA on economic development.

The ESA is among the most contentious of federal laws in existence in spring 2012. Surprisingly, there was very little controversy in the legislative or executive branches about the act when it was enacted (Bean 2009, 369). For example, the US House passed the ESA in 1973 with a bipartisan vote of 355 to 4 (Collins 2010, 130). When President Nixon signed the Act into law, he stated: “Nothing is more priceless and more worthy of preservation than the rich array of animal life with which our country has been blessed” (Collins 2010, 130). The ESA has two purposes. First is “to provide to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species” (ESA 1973) and second is “to take such steps as may be appropriate to achieve the purposes of the treaties and conventions” (ESA 1973).

A great deal of debate centers on whether the ESA fulfills its first purpose. Typically the

debate is based on quantitative measurements of endangered species and recovery and extinction rates. Since 1974, the FWS has listed about 1,300 species as endangered. However, the FWS has deemed only 18 species sufficiently recovered enough to be delisted (Norris 2004, 289). Some view these statistics as evidence of the ESA's failure. Others argue that these statistics cannot be used as evidence of failure since most listed species have not been listed long enough to fully recover (Taylor et al. 2005, 360).

Taylor et al. performed a comprehensive quantitative analysis of the effectiveness of the ESA up to 2005 (Taylor et al. 2005, 360). Their work supports those who believe the ESA is successful. They base this conclusion on a discussion of seven main findings that emerged from their analysis. First, the longer a species was listed, the more likely it was that the species was improving (Taylor et al. 2005, 361). Second, listed species with critical habitat designations are more likely to recover or be stabilizing (Taylor et al. 2005, 361-363). Third, species with recovery plans are more likely to be recovering (Taylor et al. 2005, 363-364). Fourth, multi-species recovery plans are less effective than single species recovery plans (Taylor, et al. 2005, 365). Fifth, listed species are more likely to improve than unlisted species (Taylor, et al. 2005, 365). Sixth, ESA protections do not favor animal species over plant species (Taylor, et al. 2005, 365). Seventh, species listed as threatened are more likely to improve than species that are listed as endangered (Taylor et al. 2005, 365-366). Based on these findings, Taylor et al. concluded, "The ESA is effective and can be improved by prompt listing, protection of critical habitat, and dedicated recovery plans" (2005, 366).

Interestingly, Taylor et al.'s three prescriptions for ESA improvement also are three common criticisms of the ESA. Collins (2010) calls the three prescribed areas for ESA

improvement listing, critical habitat, and recovery plan loopholes. In discussing the listing loophole, he states:

The official listing process that all species must navigate is so strict, slow and constrained by scientific ignorance, political pressure, bureaucratic intransigence and budgetary shortfalls that many species disappear before becoming identified or studied enough to meet the laws rigorous listing qualifications. Unable to qualify for ESA protections, hundreds of imperiled species are left to languish for years or go extinct while on the DOI's roster of "candidate species" (Collins 2010, 132).

It is clear that Collins considers the listing aspect of the ESA as a failure. Others also criticize the listing process by pointing out that if listings continue to occur at the present rate, it would take over 150 years to list all of the G1 and G2 species recognized as imperiled by Nature Serve, a non-profit conservation organization whose mission is to provide the scientific basis for effective conservation action (Scott 2004, 289-290; Nature Serve 2012).

Regarding the second prescription for ESA improvement, critical habitat protection, Collins states:

Critical habitat designations offer necessary protections, but often they are too incomplete and inadequate to foster recovery. Although the listing of any species is supposed to be based solely upon a scientific assessment of the species' condition, other considerations are permitted when agencies determine critical habitat. The law permits the FWS and NMFS to balance the habitat needs of the imperiled species against economic and social needs of society. Thus, portions of an endangered species' critical habitat can be sacrificed if the agency feels the economic benefits outweigh the costs (Collins 2010, 136).

His criticism focuses on a commonly attacked part of ESA implementation. Taylor et al. and Scott's finding that listed species with critical habitat designations were more likely to recover or be stabilizing offers insight into why environmentalists are adamant about the importance of adequate critical habitat designation (Taylor et al. 2005 and Scott 2004). Despite quantitative evidence about the importance of critical habitat designation for species recovery, it continues to be a controversial subject. For example, in 2004 former Secretary of the Interior Bruce Babbitt

stated, “you could strike the critical habitat designation from the statute tomorrow and no one would miss it...The Fish and Wildlife Service has been brought to its knees carrying out court-ordered mapping exercises and impossible economic analysis” (Scott 2004, 291).

Another contentious aspect of ESA implementation involves recovery plan designations.

Describing the purported recovery plan loopholes, Collins states:

There are two loopholes that permit the FWS and the NMFS to evade recovery plans. First, the ESA permits the agency to dodge the recovery plan requirement if it finds that it finds that a recovery plan would not “promote the conservation of a species.” Second, the agency does not have to make or follow deadlines for the promulgation and implementation of recovery plans. So far, the responsible agencies have stretched and bent these legal exceptions to deny recovery plans to more than 40 percent of all listed species (Collins 2010, 138)

Considering that Taylor et al. concluded that species with recovery plans are more likely to recover, the evasion of designating recovery plans is problematic. This evasion also contributes to the contention over the ESA’s track record.

Despite the poor implementation record of the ESA in listing and delisting, critical habitat designation, and recovery plans, its proponents still argue that it can be deemed successful if its main strength is considered. They argue that the strength of the ESA is not promoting species recovery; rather its strength is preventing extinction of listed species. Few listed species have gone extinct, and most are recovering or at least stable (Scott 2004, 289).

While the track record of the law remains contentious, it is clear that both sides of the debate acknowledge that a major hurdle for species to benefit from the ESA is receiving a threatened or endangered designation. For example, Taylor et al. concluded that the ESA was successful; yet they indicate that the statute does little if anything to help species that are not listed as endangered or threatened. Collins also holds that species cannot benefit from the ESA if they are not listed.

This research contributes to the ESA debate by examining if a species can benefit from the ESA even if it does not have a listing. The focal causal chain indicates that the beginning of the causal chain is the ESA process. If the hypothesized causal chain is supported by the research, then the study shows one case where a species, the Greater Sage Grouse, potentially benefited from the ESA despite the lack of a listing.

Another theme of contention that emerges from the ESA literature is the limitations that the Act poses on economic growth in the public and private sectors (Czech and Krausman 2001, 3). An often-cited example of the enormous potential impact of the ESA on growth-based projects is the Snail Darter case. In this instance, the discovery of a small fish, the Snail Darter, eventually led to an ESA endangered listing of the fish. A lengthy court battle ensued over whether a multi-million dollar dam project that would adversely impact the fish's habitat should be canceled. Eventually, the dam was exempted from the ESA requirements (Williams 2002, 180-181). However, the implications of and controversy over this case remain relevant: an ESA listing can have serious implications for development and growth in the private and public sectors.

This project adds to the literature concerning the ESA's impact on development. For example, if the proposed casual chain is supported, then this research would demonstrate that even without an official listing, the ESA process can lead to stunted energy development and constraints on land use.

Environmental Federalism

Another portion of the proposed causal chain deals with the existing jurisdictional dynamics. The American system of environmental federalism is the context in which these dynamics exist. Scholarship on environmental federalism contains discussions of the way

environmental protection policy responsibilities are or should be allocated among federal, state, and local governments (Percival 1995, 1141). Such scholarship is relevant to the research because I propose that the WCAS emerged as a strategic move within the WLUP subsystem to keep the allocation of jurisdiction over a particular environmental policy at the state level. This section first briefly presents the history of the allocation of U.S. environmental policy as of spring 2012. Second, it presents two particularly relevant issues in environmental federalism scholarship to this research: the effectiveness of the current system and the affect federal involvement has on state environmental policy decisions.

As of 2012, scholars acknowledge that the federal government plays the dominant role in environmental regulation policy (Percival 1995, 1146). This was not always the case, however. Before the 1960's and the move toward the increased role of federal government, the states were responsible for environmental policy. Environmental protection policies existed in the forms of state laws, local ordinances, and common law nuisance protections, which federal officials came to see as inadequate (Adler 2007, 67 and Percival 1995, 1141). Prior to the 1960's conservationist and environmentally sympathetic federal officials feared that states were not and would not implement the necessary environmental policies to effectively address environmental concerns (Adler 2007, 67). Adding to this fear was the increasing concern that in an absence of a more centralized federal environmental policy, "a race to the bottom" would occur, in which states continuing lessen environmental restrictions in order to benefit economically from environmentally harmful industries and practices while free riding on the environmental benefits produced by other states with stricter environmental policies (Fredriksson and Millimet 2002, 101-102).

Before the move towards increased federal involvement in environmental policy, the federal government encouraged states to enact adequate environment regulation. When the states failed to produce adequate regulation, Congress began passing federal environmental legislation and agencies, such as the ESA and the Clean Water Act (Fredriksson and Millimet 2001, 102 and Percival 1995, 1142). Nixon further increased the federal role by creating the EPA in 1970 (Rosenbaum 2011, 8). The creation of such legislation and agencies either moved or had the potential to move jurisdiction over environmental regulation from the state to the federal level. For example, once the FWS lists a species as endangered, the jurisdiction over decisions regarding the species is no longer solely held at the state or local level.

The strong federal role in environmental policy remains a controversial subject, with numerous arguments for and against it. One central contention in a majority of these arguments is whether such an approach is effective at achieving conservation and environmental goals (Buzbee 2005, 109-113). One particular effectiveness debate includes the consideration of how states react when there is a lack of federal policy in an environmental area (Buzbee 2005, 126). One side of this debate recognizes the continued fear that a race to the bottom will occur if environmental policy is decentralized. Thus, some argue that federal involvement is necessary for effective environmental policy (Fredriksson and Millimet 2001, 102). Another effectiveness contention is that cooperative federalism is needed for effective environmental protection because the federal government relies on the cooperation of state and local agencies in order to achieve its environmental goals (Percival 1995, 1178).

Environmental federalism literature also includes exploration of the ways that state and federal environmental policy decisions impact each another. In some cases, increased federal environmental regulation results in increased state environmental regulation. In other cases,

increased federal regulation results in a decrease in state environmental regulation (Adler 2007, 114). The latter finding challenges the assumption that greater federal regulation always will lead to greater environmental protection (Adler 2007, 114). Although some research examines the influence that federal regulation has on state regulatory policy, the literature still lacks a full understanding of this dynamic (Adler 2007, 114).

The WCAS case study offered further insight into the impact that federal involvement has on state environmental policy, specifically, exploring whether and how the ESA federal policy process influenced the development of the WCAS state conservation policy. Greater insight into this dynamic will be beneficial because increased knowledge might aid in developing a more effective environmental protection framework (Adler 2007, 114). The WCAS case study also contributed to the broader debate on the effectiveness of the American environmental federalism system.

Conclusion

The ACF, ESA, and environmental federalism scholarship provides history and context for this research. This project also contributes to these areas of scholarship. The research seeks to add nuance to the continually developing ACF. Finally, the research offers further insight into the ways that state and federal environmental policy decisions can influence one another.

Chapter Four: Methodology

In this chapter I present the primary hypothesis that guided this research and the methodology I used to examine it. First, I present the hypothesis and my rationale behind its development. Second, I detail the justification for my selection and analysis of the WCAS case. Finally, I detail the methodology I used to examine the hypothesis.

Hypothesis Development

As the previous chapter discussed, I derived the theoretical framework for this research from the ACF literature. Accordingly, I also used the ACF to develop the hypothesis. To demonstrate the ACF's contribution to the development of my hypothesis, I referred to two of the ACF's 15 hypotheses that specifically deal with policy change and are particularly relevant to the theoretical framework that I proposed (Kübler 2001, 625):

ACF policy change hypothesis 1: The policy core attribute of a governmental program in a specific jurisdiction will not be significantly revised as long as the subsystem advocacy coalition that instituted the program remains in power within that jurisdiction – except when the change is imposed by a hierarchically superior jurisdiction (Kübler 2001, 625).

ACF policy change hypothesis 2: Significant perturbations external to the subsystem (e.g. changes in socio economic conditions, public opinion, system-wide governing coalitions or policy outputs from other subsystems) are a necessary, but not sufficient, cause of change in the policy core attributes of a governmental program (Kübler 2001, 625).

The first hypothesis captures the notion that jurisdiction is a critical consideration for understanding policy change. However, because I propose that the WCAS emerged because of a strategic move to keep jurisdiction, the first policy change hypothesis is not fully consistent with my proposed theoretical framework. This is because the first ACF policy change hypothesis implies that jurisdiction needs to already be altered for policy change to occur. Thus, the first policy change hypothesis does not take my proposed causal mechanism, strategy, into account.

The second policy change hypothesis also captures some elements of my proposed

theoretical framework; however, like the first, it is not fully consistent with my proposed explanatory theory. The second hypothesis implies that external influences already must have dramatically altered the policy subsystem in order for policy change to occur. Yet I propose that policy change occurred in order to preempt external policy outputs from altering the subsystem's resources.

In order to fully capture my explanatory theory, I revised and synthesized these two policy change hypotheses. I kept the notions of jurisdiction and external influences as critical components of the explanation of policy change, yet still emphasized the anticipatory and strategic elements of the proposed policy change theory. Consequently, the general hypothesis that I tested with the WCAS case was:

If a subsystem's jurisdiction is threatened by a hierarchically superior subsystem's policy outputs and this jurisdiction is necessary to meet the threatened subsystem's goals, then policy change may occur as a result of a strategy by the agents in the threatened subsystem.

This hypothesis examines the focal causal chain by identifying the policy output of the hierarchically superior subsystem as the external policy impact, strategy as the causal mechanism, jurisdiction as a resource, and policy change as the outcome. Given the presentations in Chapters Two and Three, to examine this hypothesis I specified the hierarchically superior subsystem as the SCP subsystem, the specific jurisdiction as Greater Sage Grouse habitat decisions, former Governor Freudenthal as the agent behind the strategy, and the policy change as the WCAS. The ESA process exists within the SCP subsystem.

These specifications of the hypothesis capture the jurisdictional dynamics presented in Chapter Two that occur due to the institution of environmental federalism. Additionally, this hypothesis retains the importance of jurisdiction for policy change found in the first policy change hypothesis and the role of external influences on policy change found in the second

hypothesis. My hypothesis nevertheless also explains why even though the resource is not yet constrained, the focal causal chain can still occur, by employing strategy as a causal mechanism.

Case Study

ACF scholars insist on utilizing testable hypotheses to examine the framework. Scholars have used a variety of methods to test the ACF and its hypotheses including document content analysis, questionnaires, observations, and interviews (Weible et al. 2009, 127). I chose to test my proposed hypothesis with a case study of the WCAS policy. I selected the WCAS case because of its potential future impact and its potential for generalizability. The BLM and several other western states use the WCAS as a blueprint for their own Greater Sage Grouse conservation plans (Mead 2011, 2; BLM 2011a). An understanding of how the WCAS emerged will help give scholars insight into how and why these Greater Sage Grouse conservation plans emerged. That is, I see the WCAS case as a starting point for more fully understanding the emergence of Greater Sage Grouse conservation plans in the West, despite the lack of an ESA mandate.

This case is generalizable because the inter-jurisdictional dynamics in the WCAS case also occur in other states, since the current American model of environmental federalism also affects other western states. Additionally, the conflict between species conservation and economic dependence on natural resource extraction takes place in other western states. Thus, the findings of this case study will be useful for analyzing other western states' species conservation policies. An example of another potential case that might benefit from the insights produced by this research is the Canada Lynx conservation plan in Colorado. The FWS lists the cat as threatened (DOI 2000, 16052). Similar to the WCAS case, despite a lack of an ESA endangered listing, the state of Colorado developed a conservation plan for the cat (Colorado

Division of Wildlife 2002). Also similar to the WCAS case, if the cat is listed, then the state's economy might be impacted because the FWS considers agriculture and timber harvesting as contributing factors to the cat's decline (DOI 2000, 16071).

Methods

I used three methods to examine the hypothesis: analyses of historical documents, secondary source interviews, and expert interviews. I sought to examine the hypothesis using a variety of sources and methods, thus strengthening my conclusions. A benefit of analyzing the historical documents and secondary source interviews is they provided a representation of what was occurring in the WLUP subsystem during the time period in which the WCAS evolved. Analyses of these sources also helped avoid some common reliability and validity problems with expert interviews. For example, a potential measurement validity problem with expert interviews is that the respondents may recreate the past rather than accurately recalling it. A potential reliability problem with expert interviews stems from the fact that the instrument, the interview, is not the same for each respondent, as it must be contextualized for each and the differing progression of each interview. Through triangulation of my three different sets of findings, the risks of drawing inaccurate conclusions due to validity and reliability problems was minimized because I could confirm the accuracy of the findings. However, despite my intention to triangulate the data, the scope of the thesis limited how complete of an analysis of each source of data I could perform. Accordingly, I had to make compromises, which are detailed below. However, I should note that I treated the expert interviews as my primary data source and the historical documents and secondary source interviews as supplemental and informative.

Historical Documents

The historical documents that I analyzed were state policy documents. I used Wyoming's

state library digital records to access these documents. Although sampling from one site limited the breadth of this part of the analysis, I found this to be a necessary compromise to keep the project within the scope of a thesis. Given that this part of the research is intended to be supplemental rather than the primary source of data, this constraint becomes less significant. I chose the Wyoming's state library digital records because of the source's ability to provide state-level documents. I focused on such documents because I propose that the WCAS emerged as a strategy from a state-level agent and process: an executive order from the Wyoming governor.

Since I relied on one database to sample the historical documents, I used very broad search terms in order to minimize the risk of overlooking key documents. The first search term was simply "sage grouse." This yielded 10 results. After trying a variety of different search terms and types of searches, it became apparent that there were not a large number of these documents in the digital archive. Because of the small number of documents, I decided that I would analyze them all as opposed to randomly sampling them. The analyzed documents included three executive orders and seven Wyoming Game and Fish Department (WGFD) documents. The executive orders were those that enacted and reconfirm the WCAS. The WGFD documents did not specifically discuss or mention the WCAS; rather they were reports that either provide research data on the bird or, in one case, simply mentioned past studies of the bird.

I looked for support for or opposition to my hypothesis using content analysis of the documents. Scholars often use document analysis to supplement interviewing (Marshall and Rossman 2011, 160). Documents produced during the time period of interest are potentially a rich source of information and can be very valuable for informing a study (Marshall and Rossman 2011, 160). The content analysis entailed focusing on the presence, meanings, and relationships of words and concepts and then making inferences (Marshall and Rossman 2011,

161).

One potential drawback to using content analysis of historical documents as a method is that making inferences about document content can be challenging because “the meaning of documents is never transparent” (Marshall and Rossman 2011, 161). However, in order to minimize the reliability and validity risks associated with drawing inferences from a content analysis, I adhered to two guidelines (Marshall and Rossman 2011, 161-162). First, I attempted to make the logic of my interpretation as transparent as possible during my discussion of the results. Second, I looked to other data, secondary source and primary expert interviews, to help confirm my conclusions about the documents.

I broke the hypothesis down into three parts to guide my content analysis. First, I looked for influences on the development of the WCAS. For the hypothesis to be confirmed, the analysis needed to show that the influence for developing the WCAS and working to conserve the bird stemmed from the fact that an ESA listing for the bird was looming. While I examined the entirety of all the documents, key parts of each provided the relevant information: the justification of the necessity or purpose of the research reports for the WGFD documents and the justifications for the executive orders. For example, in the WGFD documents the section that provided relevant information described the purpose of the research, which detailed why the report was being done or the justification for why sage grouse were of concern to the department. For the executive orders, the section of the document that details the rationale for the executive order and the justification for why the policy was needed provided information relevant to the hypothesis. These rationales for why the bird was of concern and why the WCAS policy was needed provided information about the influences that led to the WCAS. For example, if the WGFD reports stated that the bird needed to be studied because it was an iconic species with a

declining population, then I noted this as evidence of why the department was concerned with the bird. Similarly, if a report or executive order mentioned that the bird needed to be conserved because an ESA listing would cripple the state's economy, then I took this as evidence of an influence on the development of the WCAS, supporting the first portion of the hypothesis.

The second part of the content analysis dealt with jurisdiction. This portion of the analysis had two steps. The first step involved looking for evidence of the governor's awareness of the potential of an ESA listing to impact the jurisdiction resource. The second step required determining if the governor perceived the potentially impacted jurisdiction as necessary for achieving goals. For my hypothesis to be supported, the content analysis must have revealed that these two conditions were present. For example, if a document stated that the WCAS was needed to retain jurisdiction over decisions regarding Greater Sage Grouse Habitat in order to ensure Wyoming's economy remains intact, then I coded this as support for the hypothesis. However, if a document simply noted that the bird needed to be studied because of its declining numbers or because the sagebrush ecosystem is threatened, then I noted this as a possible additional influence that needed further examination.

The third part of the document analysis involved determining if strategy might have been the causal mechanism that led to the development of the WCAS and if this strategy was motivated by threatened jurisdiction and thus threatened goals. For my hypothesis to be fully supported, there must have been explicit discussion that the WCAS policy developed because of strategic action by the governor, the proposed policy entrepreneur. For example, if a document states that the governor enacted the WCAS executive order to prevent an ESA listing in order to retain jurisdiction needed to maintain the state's economy, then this would have provided support for the hypothesis. If a document stated that the bird needs a conservation plan because it is an

iconic western species, then this would not have provided full support for the hypothesis, but would be noted and further examined.

It also is important to note that if the WGFD documents did not directly mention the WCAS, then the contents were not considered adequate evidence for influence on the WCAS. Rather, I treated these findings as supplementary and a way to inform myself prior to the expert interviews. During the other analyses, I sought to confirm or disconfirm the linkages between the findings in the documents that do not directly mention the WCAS and the influences on the development of the WCAS.

Secondary Source Interviews

Analysis of the secondary source interviews provided insight into the influences on the development of WCAS at the time of its inception and, like the document analysis, was a valuable way to check the reliability of observed data (Marshall and Rossman 2011, 143). To find relevant secondary-source interviews in print media sources I employed the Lexis-Nexis database, which I chose for its breadth of print media sources, newswires, and press releases. To sample these sources, I tried a variety of search terms and types, but settled on one very broad search term: “sage grouse” AND “Wyoming.” I then searched within generated results with the term “Freudenthal.” Additionally, I limited my search results to the time before December 30, 2010. I then removed exact duplicate material that was published under different newswires or publications. These search criteria yielded 162 media documents with secondary source interview information including newswires, press releases, newsletters, newspapers, industry trade press, web based publications, business opportunities, aggregate news sources, country and region reports, magazines and journals, and news transcripts. These documents are listed in the appendix.

The use of the search terms “‘sage grouse’ AND ‘Wyoming’” is broad enough to help guarantee that no secondary source interview information in the database involving the Greater Sage Grouse or the WCAS was overlooked. I used the search term “Freudenthal” for two reasons. First, it limited the amount of material to a manageable quantity for analysis. Second, this decision provided focus for the secondary source interview analysis. I acknowledge that limiting the sampled results with the term “Freudenthal” may result in missing crucial interviews from respondents other than the former governor. However, I acknowledge this constraint and seek to minimize it by treating the secondary source interviews only as a source of information regarding Freudenthal’s perceptions of his involvement in and action on the WCAS development. Freudenthal was a critical focus, because he was the individual who issued the first WCAS executive order, and it is important for examining my hypothesis to determine if his strategic action as a policy entrepreneur led to the development of the WCAS.

The analysis of this portion of the research was similar to the analysis of historical documents because I analyzed the selected secondary-source interviews for insight into the justifications for and influences on the development of the WCAS and compared these insights to the hypothesized focal causal chain. I then compared the evidence gleaned from these secondary source interviews with the information produced by the primary-source interviews.

As with the historical document analysis, I broke the hypothesis into three different parts. The first was identifying the influences on the development of the WCAS. Second, I looked for support for my claim that Governor Freudenthal recognized that the jurisdiction resource was threatened and he perceived this resource as necessary to meet goals. Third, I looked for evidence of the connections between existing circumstances and the emergence of the policy, specifically for strategic action by former Governor Freudenthal. Statements made by

Freudenthal found in these secondary source interviews regarding justifications for the policy, explanation of the goals of the policy, and other similar statements were analyzed for these three parts of the hypothesis.

The secondary source interviews data were found in previously existing media sources; because of this the direct quotes and interview paraphrasing are fragments of the actual interview. This posed challenges for finding one document that contained all three components of hypothesis confirmation. Accordingly, I gathered evidence in a piecemeal fashion. For example, I often found relevant interview information for the first part of the analysis, but confirming or disconfirming information for the second part was not presented in the same article. However, I also found information for the second or third part in another article. This is a constraint of the secondary source interview analysis. To help remedy this problem, I also treated the secondary source interview findings as supplementary and informative for the analysis and evaluation of the primary source interviews.

Primary Source Interviews

The primary source interviews allowed me to develop a richer understanding of the WCAS emergence. Employing interviews as a data collection method provides researchers the opportunity to gain in-depth and original understanding of a phenomenon” (Brians et al. 2011, 365). Specifically, by using expert interviewing a researcher can determine “how certain individuals or types of individuals think and act” (Brians et al. 2011, 365). This yields a particular advantage over methods such as surveys, because it can provide a richer understanding of why a phenomenon occurs (Brians et al. 2011, 365). Some scholars claim that expert interviews tend to produce reliable and valid data, and scholars have used them for researching state politics successfully (Beamer 2002, 86). However, others hold that expert interviewing

poses reliability and validity problems (Berry 2002, 679). I used my findings from the historical document and secondary source interview analyses to help minimize the risk of embracing inaccurate findings that stem from possible validity and reliability problems with the interviews.

I conducted the interviews in person and used strategic and snowball sampling. To determine the first individuals to contact, I referred to information such as policy documents, government websites, and print media sources. The criterion for choosing these individuals was that they participated in or had an intimate perspective of the WCAS process. After I had interviewed these strategically sampled individuals, I asked if they could recommend other individuals for me to speak with. I based my decision on whether to follow up with these snowball recommendations on time constraints and on the potential for these individuals to give key insight into the WCAS process. See Table 1 for a list of interview respondents and their title or positions as of spring 2012.

Table 1: Interview Respondents

Respondent Name	Title or Position
Ryan Lance	Director of State Lands and Investments and former Governor Freudenthal's Deputy Chief of Staff
John Emmerich	Deputy Director of External Operations of the Wyoming Fish and Game Department (WGFD) and member of the Sage Grouse Implementation Team
Brian Rutledge	Executive Director of Audubon Wyoming and member of the Sage Grouse Implementation Team
Pat Deibert	National Sage Grouse Coordinator for the U.S. Fish and Wildlife Service and member of the Sage Grouse Implementation Team
Dave Freudenthal	former Governor of Wyoming

Bob Budd	Chairman of Sage Grouse Implementation Team and Executive Director of the Wyoming Wildlife and Natural Resource Trust
Sophie Osborn	Wildlife Biologist and Wildlife Program Director for the Wyoming Outdoor Council
Mike Smith	Director of Regulatory Affairs at QEP Energy Company
James Byrd	Wyoming House Representative

The individuals that I interviewed and the rationale for interviewing them follow:

- Ryan Lance: Director of State Lands and Investments and former Governor Freudenthal’s Deputy Chief of Staff

Ryan Lance was often quoted in press releases and articles about the WCAS.

Former Governor Freudenthal also charged him as one of the key individuals involved in the WCAS development. Lance’s past and continuing perspective on the WCAS development made him a wonderful source of information to tap.

- John Emmerich: Deputy Director of External Operations of the Wyoming Fish and Game Department (WGFD) and member of the Sage Grouse Implementation Team

Emmerich was the WGFD representative to the Sage Grouse Implementation Team. His attendance at the team’s meetings, intimate role in the development of the WCAS, and continuing role in the implementation of the WCAS made him a critical expert to interview.

- Brian Rutledge: Executive Director of Audubon Wyoming and member of the Sage Grouse Implementation Team

Rutledge offered a conservationist perspective to the interview findings.

Additionally, as he was involved in the development of the WCAS and continues to be a part of the evolving policy, he offered valuable information and perspective.

- Pat Deibert: National Sage Grouse Coordinator for the U.S. Fish and Wildlife Service and member of the Sage Grouse Implementation Team

Deibert offered a federal perspective on the emergence of the WCAS policy and an intimate view of the ESA listing process for the Greater Sage Grouse. The Wyoming Ecological Services Field Office (WESFO) provides biological advice about species, habitat, and threats to the species and their habitat to federal and states agencies, the public, and industry. Because of her role in the WESFO, Deibert was involved in the Greater Sage Grouse ESA process and also has key insight into nationwide Greater Sage Grouse conservation policy, especially in Wyoming.

- Dave Freudenthal: former Governor of Wyoming

Former Governor Freudenthal was a critical respondent because he initially established the Sage Grouse Implementation Team that developed the WCAS, and he also issued the executive order that put the WCAS policy into action.

- Bob Budd: Chairman of Sage Grouse Implementation Team and Executive Director of the Wyoming Wildlife and Natural Resource Trust:

Bob Budd is the chairman of the Sage Grouse Implementation Team.

Additionally, he was a key part of the development of the Big Horn Sheep conservation plan that served as a partial model for the WCAS. Budd also has a long-term perspective of habitat issues in Wyoming.

- Sophie Osborn: Wildlife Biologist and Wildlife Program Director for the Wyoming Outdoor Council

The Wyoming Outdoor Council (WOC) closely followed the development of the WCAS. As part of the staff of the WOC, Osborn offered an additional conservation perspective, but this one was not derived from participation in the Sage Grouse Implementation Team. Rather, her vantage was that of a spectator at SGIT meetings and a knowledgeable wildlife professional and conservationist.

- Mike Smith: Director of Regulatory Affairs, QEP Energy Company

Smith offered an observer and industry perspective of the development of the WCAS. He frequently attended SGIT meetings and tracked the progression of the policy.

- James Byrd: Wyoming House Representative

James Byrd (D) was a member of the Wyoming legislature when funding was provided for WCAS development. Furthermore, he has nearly four years of experience as a member of the House Minerals, Business and Economic Development Committee. Byrd's legislative perspective of the evolving process and continuing implementation of the WCAS offered a fresh insight on the WCAS outside of the Governor's office and the SGIT.

The goal of the interviews was, of course, to collect information that I could use to examine support for my hypothesis. First, I looked for evidence about whether the influence for the development of the WCAS was external to the WCAS policy subsystem and if so, what that external influence was. This was relevant to the first part of the focal causal chain, external policy impacts. If the data from the interviews showed that a specific external policy impact, the

ESA, was the influence, then I concluded that the first part of the hypothesis is supported. Second, I needed to find the reason why the external policy impact influenced the development of the WCAS. If part two of the hypothesis was supported, then the interview data demonstrated that the Governor was aware of the potential for the ESA to impact the jurisdiction resource and considered this resource as a critical component of achieving goals. Third, I sought to glean from the interviews whether strategy was the casual mechanism that completed the causal chain that resulted in the WCAS policy. For example, if the data I collected from the interviews supported my claim that even if all other conditions were the same except former Governor Freudenthal did not employ strategy, then the WCAS would not have developed; my findings supported my hypothesis.

The questions that I asked the respondents differed in order to take their varying positions and involvement into account. However, although the questions varied in their framing, exacting wording, order asked and context within which they were asked, the three parts of the hypothesis that I wished to examine, remained the same for each interview. During the interviews I sought to maintain convergent and discriminant validity. Convergent validity occurs when the respondent consistently confirms an orientation toward a persistent concept despite variation in the questions that are intended to measure the concept (Beamer 2002, 88). Discriminate validity is maintained by constructing questions that eliminate possibilities in order to determine if the respondent has an orientation toward the construct of interest (Beamer 2002, 88). Another part of my interview strategy was to begin with broad questions and then narrow the focus of the questions. The advantages of this approach are that I encouraged the respondents to speak freely while still permitting me to ask specific probing questions in order help me glean the relevant evidence (Beamer, 2002, 92). During my interviews I also used Berry's guidelines for

minimizing reliability and validity concerns (2002). For example, in preparation for the interviews, I created interview templates, probing questions, and bridging questions. I also researched the individuals beforehand so I could account for any exaggeration, bias, or agenda. I also kept a research journal in which I documented my experience of the contact and interview process. I also set aside time immediately after each interview in order to debrief myself and add notes that were not be included in any recording.

I based whether an interview was audio-recorded on the respondent's preference. Five of the respondents agreed to recording, while four very respectfully declined. Despite the fact that these four interviews were not recorded, approximately ninety-five percent of the interview remained on the record with the respondents' consent. For the interviews that were unrecorded, I took an outline of notes during the interview and immediately following the interview filled out these notes with details, while my memory was still fresh. Each interview was between 35 minutes to one hour. For the recorded interviews, I took time immediately after the interview to take detailed notes. I also transcribed the recorded interviews. Each of the respondents also generously offered to respond to any follow-up questions that I have in the future.

There are potential problems with relying on interview notes and transcribed data because they are processed data. It is difficult to consistently capture the spoken meaning of a word, phrase, or entire interview in written form because people "do not speak in paragraphs" or "signal punctuation when we speak" (Marshall and Rossman 2011, 164). Thus, there is an inherently inferential nature to transcribing and to transcription analysis. My strategy to minimize the risks associated with transcription problems was to confirm the findings with other sources of information, the document analysis and the secondary source interview analysis, and

follow up with the respondents if I had any questions or uncertainties during transcription and analysis.

Conclusion

In the next chapter, I discuss how the findings from each analysis confirmed or disconfirmed the hypothesis. I also present the triangulation of the different types of data used to examine the findings. The benefit of using three different sources of data was that comparing the findings of the analyses helped avoid drawing incorrect conclusions due to potential reliability and validity problems often associated with these three qualitative methods. The following chapter turns to the results of the research.

Chapter Five: Results and Discussion

This chapter presents the results of the research. First are the conclusions from my analysis of documents and the six issues that emerged from this analysis that the following sections address. These issues are possible additional factors that may have influenced the development of the WCAS that needed further exploration in order to adequately examine the hypothesis. Second, I present the results of the analysis of the secondary source interviews. Third, I discuss the results of the analysis of the expert interviews

Historical Document Analysis

For this part of the analysis, I relied on a sample of ten documents (see Table 2). Of these documents, seven were WGFD documents and three were WCAS executive orders. To begin the analysis, I divided the documents into two groups: those that were specifically WCAS driven and those do not specifically mention the WCAS. I divided the documents in this manner to distinguish between the levels of inference that each type of document requires. Since the WGFD documents do not explicitly mention the WCAS, I cannot reasonably conclude that such documents offer full evidence for the influence of the development of the WCAS. However, I can use these documents for information about the influences on the increased interest in Wyoming in the bird, which yields essential background and contextual information.

Table 2: Documents Sampled

Non WCAS-Specific Documents	WCAS-Specific Document
1942 Sage Grouse Studies (WGFD)	2008 Wyoming Executive Order 2008-2 Greater Sage Grouse and Core Area Protection
2002 Sage Grouse and Pheasant Job Completion Report Lander Region (WGFD)	2010 Wyoming Executive Order 2010-4 Greater Sage Grouse and Core Area Protection
2002 Sage Grouse Completion Reports Casper Region (WGFD)	2011 Wyoming Executive Order 2011-5 Greater Sage Grouse and Core Area Protection

2002 and 2003 Narrative Report on Sage Grouse Species Cody Region (WGFD)	
2003 Sage Grouse Job Completion Report Sheridan Region (WGFD)	
2007 Sage Grouse Habitat Guidelines for Wyoming (WGFD)	
2011 Report on the 2011 Strategic Plan (WGFD)	

Beginning with the non-WCAS specific documents, I analyzed the documents in the order that they were published, beginning with the oldest first. As Chapter Four discussed, I broke the hypothesis into three parts. First, I examined whether the ESA was the external influence that led to the development of the WCAS. Second, the analysis asked if the agents in the WLUP Subsystem were aware of the potential of the SCP Subsystem’s outputs to affect the needed jurisdiction resource within the WLUP subsystem and perceived this resource as necessary to achieve goals. Third, I looked for evidence that the Governor’s strategy was the casual mechanism that connected the existing affairs with the policy change. The results of this analysis are presented in Table 3.

Table 3: Document Analysis

Non- WCAS Document	Evidence for 1 st portion of hypothesis?	Evidence for 2 nd portion of hypothesis?	Evidence for 3 rd portion of hypothesis?	Possible Additional Influence?
1942 Sage Grouse Studies (WGFD)	No relevant evidence	No relevant evidence	No relevant evidence	No relevant evidence
2002 Sage Grouse and Pheasant Job Completion Report Lander Region (WGFD)	No relevant evidence	No relevant evidence	No relevant evidence	No relevant evidence

2002 Sage Grouse Completion Reports Casper Region (WGFD)	Yes	No relevant evidence	No relevant evidence	No relevant evidence
2002 and 2003 Narrative Report on Sage Grouse Species Cody Region (WGFD)	Yes	No relevant evidence	No relevant evidence	No relevant evidence
2003 Sage Grouse Job Completion Report Sheridan Region (WGFD)	Yes	No relevant evidence	No relevant evidence	No relevant evidence
2007 Sage Grouse Habitat Guidelines for Wyoming (WGFD)	No relevant evidence	No relevant evidence	No relevant evidence	Yes, BLM's sensitive species designation
2011 Report on the 2011 Strategic Plan (WGFD)	No relevant evidence	No relevant evidence	No relevant evidence	No relevant evidence

The non-WCAS specific document analysis yielded partial support for the first portion of the hypothesis. That is, it demonstrated that one reason why the bird was of interest to the WGFD was the ESA listing process for the bird. However, as previously noted, this support had to be confirmed with other analyses because the WFGD documents did not specifically discuss the WCAS. This first part of the document analysis also provided an additional reason for the interest in the bird that requires further examination. The BLM's sensitive species designation for the Greater Sage Grouse may have been a further influence for interest in the bird and, thus, a possible influence on the development of the WCAS. These conclusions and questions were kept in mind and utilized during the presentation of the WCAS specific-document analysis.

WCAS-Specific Documents

The WCAS- specific document analysis provided support for the first portion of the hypothesis. The justifications in the executive orders suggested that the ESA was an influence for the development of the WCAS. For example, the original 2008 WCAS executive order stated:

WHEREAS the U.S. Department of the Interior has been petitioned to list the Greater Sage-Grouse as a threatened or endangered species in all or a significant portion of its range, including those populations in Wyoming (Freudenthal 2008, 1)

The following two executive orders also reflected this justification, except the justification was updated to reflect the current status of the ESA process. Thus, I concluded the WCAS-specific documents supported the first portion of the hypothesis.

The WCAS-specific documents also offered support for the second portion of the hypothesis. The documents' justifications explicitly mentioned the retention of management authority, which I interpret as jurisdiction. Additionally, the documents suggested that the Governor recognized that jurisdiction was threatened and sought to maintain this jurisdiction because he perceived jurisdiction as necessary to achieve his goals.

For example:

WHEREAS the listing of the Greater Sage-Grouse would have a significant adverse affect on the economy of the state of Wyoming, including the ability to generate revenues from state lands (Freudenthal 2008, 1)

WHEREAS the state of Wyoming has endeavored to conserve Greater Sage-Grouse populations in order to retain management authority over the species through its statewide sage grouse working group, local sage grouse working groups and the efforts and initiatives of private landowners and industry (Freudenthal 2008, 1)

The WCAS-specific document analysis also offered support for the third portion of the hypothesis because the justifications in the documents that mentioned the communication between the Governor's office and the FWS suggested that the Governor sought to receive the

FWS's approval for the plan in order to prevent a listing. For example:

WHEREAS on April 17, 2008, the Office of the Governor requested that the U.S. Fish and Wildlife Service review the "Core Population Area" strategy to determine if it was a "sound policy that should be moved forward" (Freudenthal 2008, 1)

WHEREAS on May 7, 2008, the U.S. Fish and Wildlife Service responded that the "core population area strategy, as outlined in the Implementation Team's correspondence to the Governor, is a sound framework for a policy by which to conserve greater sage-grouse in Wyoming" (Freudenthal 2008, 1)

The WCAS- specific document analysis also added another five possible additional influences to be included in the next analyses: (i) if the bird as an iconic species, (ii) the prominence of the bird in the state, (iii) protection of the culture and custom of the state was an influence, (iv) legislative preferences, and (v) if circumstances prior to the beginning of the ESA listing process.

The non-WCAS and WCAS-specific document analyses were informative with respect to examining the hypothesis and providing possible additional influences to help guide the next two types of interview analyses. The document analyses provided support for the first portion of the hypothesis. That is, they demonstrated that the policy outputs from the SCP Subsystem impacted the WLUP Subsystem in a way that influenced the development of the WCAS policy. There also was support for the second portions of the hypothesis. The Governor in the WLUP Subsystem was aware of the potential for the policy outputs of the ESA process in the SCP Subsystem to impact the jurisdiction resources in the WLUP Subsystem, and the Governor viewed these jurisdiction resources as necessary for goal achievement in the WLUP Subsystem. The documents also offered support for the third portion of the hypothesis: the Governor's strategy was the causal mechanism.

The document analysis revealed six potential additional influences on the development of the WCAS. These potential influences include: (i) if the bird as an iconic species, (ii) the

prominence of the bird in the state, (iii) protection of the culture and custom of the state was an influence, (iv) legislative preferences, (v) if circumstances prior to the beginning of the ESA listing process, and (vi) the BLM sensitive species designation. The remaining analyses further explored these possible additional influences in order to determine the specific role they played and if the hypothesized causal chain was the primary driver for the development of the WCAS.

Secondary Source Interview Analysis

The secondary source analysis focused on Freudenthal. This was a useful emphasis because the third part of the hypothesis is that former Governor Freudenthal's strategy was the primary causal mechanism in the WCAS process. During the secondary source interview analysis, I sought to find information to examine the hypothesis as well as evidence of other possible additional influences. First, I discuss the findings with respect to the three portions of the hypothesis. The second part focuses on the analysis of the secondary interviews with respect to the six possible additional influences.

The secondary source interview analysis provided support for the first claim of the hypothesis: the ESA process was an influence on the development of the WCAS. In the media interviews, former Governor Freudenthal repeatedly stated that the WCAS was necessary to prevent an ESA listing. He used this justification in a variety of contexts. For example, consider the follow excerpt that captures Freudenthal's response to critics of the WCAS constraints on development:

While controversial, Freudenthal insisted the executive order was necessary to keep sage grouse from becoming a federally protected species. While the state's actions would affect development, its restrictions paled in comparison to what industry and agricultural interests would face if the Fish and Wildlife Service placed grouse on the Endangered Species List (Streater 2010).

This excerpt embodies a recurring theme in the secondary interviews; whenever any WCAS controversy was discussed, the more severe alternative of an ESA listing was invoked.

Additionally, during any discussion of WCAS justifications, the primary justification was the need to ward off an ESA listing. Other excerpts indicated that the looming listing increased the incentive to unify existing conservation plans. For example:

A lot of good work has been done to maintain healthy populations of sage grouse and other species in Wyoming," Gov. Freudenthal said. "But as we learned with the grizzly bear and wolf, if it is going to count for anything under the Endangered Species Act process - both in terms of our efforts to de-list already listed species and to prevent the listing of other sensitive species - our work has to be more unified under the banner of what the U.S. Fish and Wildlife Service terms 'adequate regulatory mechanisms.' The Executive Order does not create any new authority and legally only applies to state agencies, but is a vehicle to at least align the existing authorities of state government to ensure that we move forward under a more unified framework." (Executive Order on Sage Grouse Coordinates Agencies to Protect Grouse Habitat in Wyoming 2008)

I concluded that the secondary source interviews supported the first portion of the hypothesis.

The secondary interview analysis also provided support for the second part of the hypothesis. This analysis demonstrated that the Governor was aware of the potential for the outputs from the SCP Subsystem to impact the jurisdiction resource in the WLUP Subsystem; that is, the ESA listing could impact state-level jurisdiction. For example, the following quote reflects Freudenthal's statements regarding the need to maintain jurisdiction over land use decisions by enforcing WCAS restrictions:

"Every action that could potentially affect sage-grouse in this state, including the Baxter Proposal, is going to be viewed under the microscope of the Endangered Species Act. I want to be sure that we do not put our future ability to make land use decisions at risk," he said (Governor Relays "Significant Concerns" with Little Mountain Natural Gas Project 2008)

Throughout the secondary source interviews, Freudenthal clearly acknowledges that an ESA listing would infringe on the state's jurisdiction over land use decisions. Freudenthal also recognizes how this loss of jurisdiction could impact the goals of the WLUP subsystem.

"Wyoming is home to robust sage grouse populations and habitats that just happen to overlay world class oil and gas, uranium, grazing, wind and other resources," the governor said. "Our challenge is to protect sage grouse and other values while we meet the nation's energy needs and protect the interests of landowners." (Neary 2008)

"Wyoming stands at the headwaters of two entirely divergent courses: one that leads to promise and the other that threatens our way of life," the Governor wrote. "While this may seem melodramatic to some - we in Wyoming know and respect the "razor's edge" on which we are precariously balanced relative to sage grouse and other sensitive wildlife species, our economic sustainability and private property rights." (Governor Outlines Wind Concerns to Legislative Task Force 2009)

Freudenthal repeatedly demonstrated an awareness of the impacts of a listing. The potential restrictions on land use decisions from an ESA listing would affect energy extraction, agriculture, and private property land use. These two quotes also offer an interesting insight into the privileged status that "protecting private property rights" has in the Governor's rationale.

The secondary source interviews suggested as well that the goals that the Governor acknowledged could be divided into two general groups: economic goals and lifestyle goals. Economic goals included maintaining the natural resource based economy, while lifestyle goals included preservation of agricultural practices and maintaining private property rights. No evidence contrary to the second part of the hypothesis appeared in the secondary source interviews. Finding contrary evidence would require a complete lack of discussion of jurisdictional issues by Freudenthal.

The third part of the hypothesis examination involved determining if strategy was the causal mechanism that linked existing circumstances to the policy change, that is, the WCAS emergence. Evidence in the secondary source interviews supported the third portion of the

hypothesis. The media coverage frequently acknowledged that the WCAS was a proactive and strategic plan to keep the bird from becoming listed. For example, Aaron Clark, Freudenthal's energy infrastructure adviser, stated:

If the grouse is listed, "it becomes a very complicated bureaucratic nightmare," he said. "It could get to the point where it affects the number of cows a rancher could graze on a federal lease or what you have to do to mitigate the need to put up a new fence."..."So the state of Wyoming decided what we needed to do in terms of conservation strategy is to protect the bird to an adequate level so it doesn't get listed," he said (Stanfield 2009).

This quote and others like it offered evidence supporting the third part of the hypothesis.

In order to further explore the other possible additional influences on the development of the WCAS, I next discuss the six influences with respect to the secondary source interviews. The first possible additional influence on the development of the WCAS was the presence of the Greater Sage Grouse as an iconic species. The media sources frequently referred to the bird as "iconic" in the presentations of the WCAS. However, in this set of sampled secondary source interviews, the Governor did not so characterize the bird. The following excerpt or some variation of it appeared several times in the media sources:

"By displaying this level of self-discipline Wyoming can best demonstrate its determination to avoid a need to list this iconic species," team Chairman Bob Budd said in a statement (Gable 2007).

The above statement was part of an explanation about the need for the WCAS. Despite the continued recognition by the media and other interviewees that were included in the sampled media sources, it was not clear whether or how the consideration of bird as an iconic species influenced the development of the WCAS. For this to have been demonstrated, the secondary source interviews needed to include an explicit discussion by Freudenthal that the bird must be conserved because it is iconic.

The second possible additional influence on the development of the WCAS is whether the interest in conserving the bird was a result of its prominence in the state. The secondary interview information included a very small amount of discussion of the abundance of the bird Wyoming compared to other states. However, any mention of the breadth of the bird's habitat was framed within a discussion of how restrictions on that habitat also would restrict industry and agriculture. For example:

Wyoming is home to robust sage grouse populations and habitats that just happen to overlay world class oil and gas, uranium, grazing, wind and other resources," the governor said (Neary 2008).

At the time, Wyoming Gov. Dave Freudenthal declared a listing "could be potentially disastrous" for oil and gas development in the Powder River Basin and Pinedale Anticline areas. But with the bird residing on 110 million acres with active or prospective energy development in 11 states, the problem for producers could be far more widespread (Spangler 2004)

Based on the secondary source interviews, I concluded that the prominence of the bird in the state contributed to the drive to conserve the bird only because the prominence combined with a listing potentially would cause significant problems for industry and agriculture, which drive the state's economy. Thus, I consider the prominence of the bird as an influence that the hypothesis already included. The prominence of the bird is a factor that makes the jurisdiction resource necessary to meet goals. Because of the bird's prominence, the potential jurisdictional impacts from the SCAS subsystem outputs threaten goals. Accordingly, I conclude that this offers further support for the hypothesis.

The third possible influence on the development of the WCAS was that the interest in conserving the bird was to protect the culture and custom of the state. Identifying what I considered "culture and custom" or how to search for it was a modest challenge as the terms are vague. In the end, I settled on culture and custom encompassing the contemporary lifestyle and business as usual in Wyoming and its western heritage.

My analysis of the secondary source interviews supported that maintaining culture and custom had at least some influence on the development of the WCAS. However, similar to the prominence issue, it is an influence already was incorporated into the hypothesis. The secondary source interviews show that preserving the culture and custom was simply a goal that was threatened by the jurisdictional restrictions that could follow an ESA listing. Thus, analysis of this possible alternative issue offered further support for the hypothesis.

The fourth potential influence on the development of the WCAS focuses on interests in preserving the bird coming from the Wyoming legislature. From the information I gleaned in the secondary source interviews, it appeared that the legislature was part of an effort to conserve the bird that started before the ESA listing process began.

Freudenthal noted that long before the first petitions were filed to list the species, the state of Wyoming, the Wyoming Legislature, state and federal agencies, industry and landowners were working to improve habitat, fund mapping and habitat projects and to find better ways to drill and mine for the state's energy resources (Executive order on Sage Grouse Coordinates Agencies to Protect Grouse Habitat in Wyoming 2008).

It is still unclear, however, whether the WCAS would have emerged without the action by Freudenthal. Additionally, the legislature approved funding for studies of the bird's habitat that were needed to help move the WCAS development along:

With the funding that was approved by the Legislature and the efforts of the Game and Fish Department, we will have a pretty good handle on where grouse feed, live and breed by December of this year," said Freudenthal (Crucial Sage Grouse Strategy Focuses on Core Areas 2008).

Yet, it is also important to note that Freudenthal requested this funding for the further development of the WCAS. Due to the lack of further detail in the media sources about the extent that the legislature influenced the development of the WCAS, I further explored this additional potential influence in the primary source interviews.

The fifth possible alternative influence that I sought to address in the secondary source analysis was whether circumstances that existed prior to the beginning of the ESA listing process influenced WCAS development. Analysis of this issue yielded similar results to those for the fourth issue, because it required that I look for influences outside of the ESA process and the former Governor's initiative. I determined that, as with the question of legislative influence, I had to further clarify this issue in my primary source interviews, since the secondary source interviews did not give explicit detail, information, or context. For me to conclude that this was a driving influence for the development of the WCAS, the material needed to demonstrate that these circumstances would have led to the development of the WCAS without the ESA listing process and strategy by the Governor.

The final possible issue analyzed in the secondary source interviews was the possibility that the BLM's sensitive species designation affected the development of the WCAS. I did not find any confirming or disconfirming evidence and sought further information in the primary source interviews.

In sum, the historical document and secondary source analyses provided support for the hypothesis. However, these analyses also prompted further consideration of other possible additional influences on the development of the WCAS in the primary source interviews.

Expert Interview Analysis

In my presentation of the expert interview results, I first discuss the findings for each of the three parts of the hypothesis. Then, I discuss the potential additional influences.

The expert interviews yielded very strong support for the first portion of the hypothesis, which states that the ESA influenced the development of the WCAS. Each interview reconfirmed that the ESA listing was the influence that drove the development of the WCAS. I asked all of

the respondents a variation of the following question: “If the state of Wyoming were unaware of what was happening with the ESA listing process or if the ESA process had not occurred, would the WCAS have been developed?” Most of the respondents firmly agreed that the WCAS would not have developed if the listing process had not occurred or if the Governor had been unaware of the activity at the ESA level. For example, Ryan Lance responded: “I don’t think so. We were so fearful of what a listing would do. The listing was the driver.” The rest of the interview respondents reflected this sentiment. I also should note that three respondents used less strong language, such as answering “probably not.” However, these responses also indicated that the looming ESA listing appeared to be very much the driver of the motivation for the development of the WCAS policy.

My conclusion that the potential ESA listing was the driving influence was further strengthened by finding that the SGIT considered the way in which the FWS would evaluate the WCAS during each step of the development of the policy. Pat Deibert, National Sage Grouse Coordinator for the FWS and member of the SGIT, described the continual consultation with the FWS during the implementation team’s development meetings:

And then they kept turning to us [FWS] to say “are you ok with this”? So we were part of there but we were also watching over them. So I guess we were advisory as well as being a full participant, because they weren’t willing to make a move unless we were comfortable with where they were going with it.

Other respondents confirmed Deibert’s description of the dual participant and consultant role of the FWS.

The expert interview analysis also yielded support for the second part of the hypothesis; that is, the governor realized that the jurisdiction resource was threatened, and this could infringe on the ability to achieve certain goals. During his interview, former Governor Freudenthal described the sage grouse as the “sword of Damocles” hanging over the state’s economy and

how the people of Wyoming live. The context of this comment was a discussion of the potential impacts of an ESA listing and why it needed to be prevented. This comment further shows that two goals that the WCAS could protect by retaining jurisdiction were economic stability and preservation of lifestyle, those also recognized in the secondary source interviews. Mostly, the other interviews reflected a similar emphasis. For some respondents, however, economic concerns seemed to be more important as a driver for the development of the policy than preserving lifestyle. Despite the varying levels of importance that the respondents attributed to these two goals, it is still apparent that all respondents perceived economic and lifestyle stability as the goals of the WCAS.

The expert interviews also provided support for the third portion of the hypothesis: the causal mechanism of the policy process was Freudenthal's strategy. Throughout the interviews it became clear to me that without the Governor's initiative to put a statewide conservation policy into place, the WCAS policy would not have been developed and implemented. For example, both Lance and Budd stated that the Governor decided that something proactive had to be done to prevent the listing of the bird. After this decision, Freudenthal designated Budd as chairman of the SGIT. When the SGIT gave its recommendations for a Greater Sage Grouse conservation plan, Freudenthal determined that he would issue an executive order to ensure that the WCAS policy would be implemented in the state. All of the interviews confirmed that Freudenthal's strategic planning and action drove the WCAS development. For example, Emmerich recalled:

I think Governor Freudenthal raised the bar and saw the handwriting on the wall, you know, if we just let this thing go and it ended up getting listed, without us doing everything we can to prevent a listing and to secure the future of sage grouse, you know, it wouldn't be good for the state. So he convened a workshop, inviting everyone in the state that had a potential interest in this thing. We convened, talked about it, and, as a result of that, he knew that we had to put together some type of a team to address the issue and to put together a strategy and that is kind of how it all got started.

In order to confirm that the Governor's strategic action was the pivotal causal mechanism for the WCAS emergence, I also asked questions that aimed at seeing if any other people or agencies were among the catalysts for the development or if the WCAS or whether a similar policy might have emerged without Governor Freudenthal's strategic thought and action. The respondents showed that the WCAS project was unequivocally a product of Freudenthal's strategic thinking and action and that without his commitment to implementing the policy it would not have happened through either other state agencies or the legislature. For example, Bob Budd described the process that led the development of the WCAS:

Came down to ok, what happens if a state is this proactive? Has anybody...and nobody ever said has anybody ever done this?, which we now know the answer is no, and nobody ever really worried about it. We just said what if, why don't we just, and this was very Freudenthal. Goddamnit, we're gonna', we'll go out and do what we think is right and either they'll come along willingly or we'll drag 'em or we'll find our way out of the sack. So that was kind of the overarching concept, is that, we're gonna' at least take an effort to control our own destiny.

Other interviews reflected Budd's sentiment that Freudenthal drove the process and was committed to its implementation regardless of any obstacles in order to control the destiny of the state. When I asked former Governor Freudenthal if the WCAS or a similar policy would have emerged without his strategizing corresponding strategic action, he responded with a very firm "no." The other respondents reiterated that it was extremely unlikely that the policy would have emerged without Freudenthal's strategic action.

From the general analysis of the interviews it appears that the hypothesis is supported. However, I still return to the other potential additional influences. First is the question of the influence of the bird's status as an iconic species. Although the interviews showed that it was clear that the bird was considered iconic, people differed over how unique that status was. For example, Ryan Lance and Bob Budd perceived the bird to be far less iconic than species such as

moose, elk, buffalo, bighorn sheep, and deer. Pat Deibert observed that the iconic status influenced the development of the policy:

Only to a small component...I think some people really valued the bird for itself, for what it meant, for what it symbolized for the west. I think more concerning though was the fact that it was such a widely distributed bird in sagebrush, which has always been habitat that most people perceive as not having much value.

This response suggests that to some people, the iconic status of the species may have been an influence for their support of the policy; however, this status played only a small part in the policy's development and was not a driving influence.

Deibert's response also demonstrated a recurring theme that the reason the bird was of concern was that it was prevalent in the sagebrush. The interviews showed that the respondents viewed the bird as representative of the sage-bush ecosystem and the problems associated with the ecosystem due to its prevalence throughout the ecosystem. For example, Budd and Brian Rutledge agreed that the Greater Sage Grouse were a useful symbol to further the sagebrush conservation agenda.

But as a talisman for multiple species in sagebrush they certainly were iconic, and still are. To Audubon, to Brian and those guys, they were clearly the talismans for a broader sage-brush conservation agenda. To industry they were iconic I guess in the sense that they were ubiquitous, they were more than iconic. They're everywhere (Budd).

...And all this bird served as, particularly for Audubon, was a lever to move some attention onto an ecosystem that is in dire straits (Rutledge).

When asked whether the fact that the bird is considered an iconic or flagship species influenced his decision to develop the WCAS, Freudenthal answered bluntly, "no, absolutely not, I am a lawyer and an economist and I think in those terms." This answer indicates that despite the idea that conservation interests utilized the iconic status of the bird to further their own agenda, this was not a primary influence on Freudenthal's decision to develop the WCAS. Freudenthal's comment also demonstrated why the prevalence of the bird in sagebrush

ecosystems, which results in the bird representing the endangered ecosystem, was of concern. It was widely understood that because of the prevalence of the bird in sagebrush, if the bird were listed, then strict restrictions on activity in this ecosystem could follow. Moreover, the interviews showed that the former Governor also did not use the iconic status of the bird to gain public approval for the policy. Rather, he repeatedly justified the policy with the idea that a listing should be prevented in order to keep the economy and lifestyle of the state intact. In general the interviews suggest that this iconic status was used more as a means to achieve agendas rather than as part of an ultimate goal; thus it was not a driving influence.

Analysis of the iconic status of the grouse also deepened understanding of the prominence issue. Although the bird was recognized as a somewhat iconic species, this was not a primary reason for the development of the WCAS. Rather, this was a reason that conservation organizations such as Audubon were interesting in helping further the development of the conservation plan. The divergent goals and rhetoric of Freudenthal and Rutledge of Audubon surrounding the prevention of a listing illustrate this point well:

This is how we termed it, to avoid the necessity of listing, that the governor would say to avoid a listing and I would retort regularly, that we want to avoid the *necessity* of a listing. So I see a significant difference there. But the good news is that it was positive on both fronts to conserve the bird and therefore the ecosystem (Rutledge).

The bird's status was a reason for the conservationists to support the WCAS on principle, because the bird represents an imperiled ecosystem. The prevalence of the bird was only a factor in the Governor's decision insofar as the prevalence of the bird in Wyoming's sagebrush would lead to widespread restrictions on activity needed to maintain the state's economy and lifestyle. From my analyses of these two potential additional influences in the expert interviews, I determined that the hypothesized causal chain was the driver of the WCAS development. In both cases, the role of the two is still tied to the influence on the Governor to create the WCAS that

stemmed from the potential jurisdictional impacts of the looming ESA listing of the Greater Sage Grouse.

The third potential additional influence on the development of WCAS was a push to protect the culture and the custom of the state. From the interviews it is clear that the respondents regarded the culture and custom as simply doing business as usual without ESA restrictions. For example, Ryan Lance observed:

I'll never forget, we sat down with Governor Freudenthal and he looked me, and he said if we're gonna' sell this thing we gotta' go out there and we gotta' talk about what the effect is to Albert Summers, who's a rancher over in Pinedale, and how his cattle operation is affected. If we can't tell them in real terms what a listing means, they don't really care. And so we talked about cattle driveways in terms going up to the forest allotments, and whether or not they can run their cows over federal allotments. Or whether or not Albert then can even have those federal permits if his cows stop on sage grouse important areas. And what limitation it would be reached the point of absurdity. Albert would have to go back and renegotiate all of his grazing permits. He'd have to undergo NEPA again under the instructional guidance under the Fish and Wildlife Service and the BLM. And so the picture we can paint for somebody like Albert who is a dyed in the wool conservative is you can have that world or you can have this one. Where we may set aside some habitat but we can preserve your way of doing it and be more thoughtful and you can call somebody in Cheyenne and get an answer or somebody at a field office in Riverton and get an answer, Pinedale, or you can call Washington. Good luck. Good luck trying to find anybody who can even talk to you about this, no less get your permit through within a year, 2 years. Oh and then, by the way, that same permit is then challenged in the federal court. It cut pretty clearly in favor of our doing our work and continuing to do our work.

Lance's views capture the shared sentiment that an ESA listing would interrupt the way that people in Wyoming operated by focusing on how a listing would impact ranchers. My analysis of the expert interviews indicated that the preservation of culture and custom was a goal but can be regarded under the general goal of lifestyle previously discussed. Thus, compared with this influence, I still considered the hypothesized causal chain as the driver. This conclusion also is consistent with the secondary source interview analysis.

The fourth issue remaining from the previous analyses was whether the interest in developing the WCAS stemmed from the legislature. The interviews indicated that the legislature had designated funding for some aspects of the development of the WCAS. Additionally, although there was some support for the WCAS in the legislature, the interviews also pointed to some legislative opposition. Ryan Lance explained why Freudenthal decided to use an executive order to establish the WCAS:

We were skeptical that we could get anything through the Wyoming legislature. We were skeptical as to whether or not we could do that, even if we could do that, we could do it in a timeframe that met with the needs of the Fish and Wildlife Service under a listing framework. And so we settled in on the executive order approach which calls on the Governor's executive authority to unify agency mission around this notion of conservation in those areas where those agencies have authority.

The other interviews offered similar reports. Although there may have been some legislative support, those involved with the WCAS development were skeptical about the legislature passing the policy. Additionally, respondents confirmed that Freudenthal's initiative was the critical factor in the WCAS emergence. Thus, I concluded the hypothesized causal chain remained the driver.

The final remaining issue was whether the WCAS emerged because of circumstances that occurred prior to the beginning of the ESA listing. This is a very broad issue to resolve that might be analyzed in a number of ways. I chose to explore it by asking questions such as: If the ESA listing process had not occurred, would the WCAS have been developed; was the process that led to the WCAS set in motion prior to the beginning of the listing process; would the legislature have enacted a similar policy eventually; and was the WCAS process started before the year 2002? From these specific probes and additional interview content, it became clear that although some concern for the bird existed prior to the listing process, the beginning of the listing process made creating a conservation plan a pressing issue for Freudenthal and for the

WGFD. John Emmerich noted the increased interest in creating a conservation plan for the bird after the listing process began:

Well just as soon as the specter of a potential listing was apparent, sure everybody paid a lot more attention to it, I think the possibility of a listing the species because it is so widely distributed would have a significant impact on what we do in a lot of areas across the west. So I certainly think this heightened the sense of urgency to do something.

This excerpt is representative of what I found in the other interviews: despite some concern for the bird's conservation in the state prior to the beginning of the listing process, the listing potential dramatically heightened this interest. The interest further increased with Freudenthal's decision to be proactive and prevent a listing. Additionally, when I asked former Governor Freudenthal these questions, he responded that he would not have developed the plan without the potential ESA listing.

I conclude that the circumstances prior to the ESA listing perhaps contributed to the circumstances that Freudenthal responded to, but the listing process was the primary influence on the development of the WCAS. Conditions before the listing process were at most minor additional influences on the development of the WCAS. Moreover, such circumstances do not reduce support for the hypothesis. Rather, because the potential listing and its possible impact on jurisdiction were the main drivers that the causal mechanism connected to the WCAS outcome I conclude the hypothesis remains supported. Without the potential policy output from the SCAP Subsystem and its possible impact on the jurisdiction resource in the WLUP Subsystem, the Governor would not have employed the strategy and thus the proactive WCAS would not have emerged.

Comparison and Discussion of Analyses

The historical document analysis provided support for the hypothesis; yet it also raised six possible additional influences on the development of the WCAS: the bird as an iconic

species, the prominence of the issue, culture and custom, support of the legislature, and circumstances prior to the listing process. The secondary source interviews provided support for the hypothesis; yet they too showed that the six possible additional influences required further examination in order to determine if they were driving influences on the development of the WCAS. The primary source interviews demonstrated that the six possible influences were not driving influences of the process that led to the development of the WCAS. For example, the circumstances prior to the ESA listing process and the prominence and iconic status of the bird were simply part of the context in which the WCAS was developed. The analyses also showed that without the ESA listing process the level of concern for conserving the bird would not have risen, and Governor Freudenthal would not have developed the SGIT or issued the executive order that created the WCAS.

Ultimately, this study supported the hypothesis. The findings showed that the ESA listing process and its potential jurisdictional impacts were the driving influences on the Governor's decision to develop a Greater Sage Grouse conservation plan. Additionally, the findings supported the hypothesized reason for why the ESA listing process influenced the Governor's decision: the process's potential to impact the jurisdiction and thus the goals in the WLUP subsystem. The findings also supported the hypothesized causal mechanism; the Governor's strategy connected existing circumstances with the outcome. Without this strategy the WCAS would not have developed. Since the subsystem's jurisdiction was threatened by a hierarchically superior subsystem's policy outputs and this jurisdiction was necessary to meet the threatened subsystem's goals, policy change occurred as a result of a strategy by the agents in the threatened subsystem.

Chapter Six: Conclusion

This thesis focused on a state-based species conservation policy, the Wyoming Core Area Strategy (WCAS). The study yielded insights into how this conservation policy emerged, relying on scholarship on the ACF, environmental federalism, and the ESA. This thesis proposed and tested a hypothesis derived from the ACF. I examined the hypothesis by employing three different qualitative analyses: content analysis of documents, analysis of secondary source interviews, and expert interview analysis. The combined findings of these analyses offered support for the hypothesis and also contributed to scholarship on the ACF, environmental federalism, and the ESA. In this final chapter, I first present the major implications and contributions of the research. Second, the chapter details several constraints on the study and suggests future directions for research that would help address these constraints.

Implications and Contributions of the Research

I used the findings from analyses of historical documents and secondary source interviews to inform and evaluate the expert interviews. Such findings demonstrated support for the hypothesis, but also raised questions that I needed to address in order to conclude that the hypothesized causal chain was the primary development driver. I addressed these questions in the expert interview analysis and ultimately found that the hypothesis accurately predicted the driving causal chain of the development of the WCAS.

This support has implications for ACF, environmental federalism, and ESA scholarship, demonstrating the potential for adding nuance to the ACF. If study of other cases supports the hypothesis and my theory can be generalized, the explanatory power of the ACF will be increased because it can begin to more fully capture proactive and strategic policymaking. This research found that the WCAS emerged because an ESA listing within the SCP Subsystem

threatened the WLUP Subsystem's jurisdiction, which was necessary to meet the WLUP Subsystem's economic and lifestyle goals; and the Governor of Wyoming drove the development and enactment of the WCAS as a strategy to retain jurisdiction. The research demonstrated that in order to fully account for the WCAS's emergence, a less mechanistic view of the framework, which accounts for the ability of agents in a subsystem to act strategically, was needed.

In order to examine how the framework can be reformulated to account for such strategic action, a closer look at the dynamics between Freudenthal and the SGIT was needed. This research demonstrated that former Governor Freudenthal acted as a *policy entrepreneur* and sought to create the dynamic policy change embodied by the WCAS. The findings showed that Freudenthal had the ability to "see the logic in an emerging historical situation and act on that insight" (Mintrom and Vergari 1996, 424). He saw both that the ESA listing process policy outputs from the SCP Subsystem threatened jurisdiction over Greater Sage Grouse habitat decisions within the WLUP Subsystem by and that such jurisdiction was necessary to achieve Wyoming's economic and lifestyle goals. Freudenthal strategized that such jurisdiction could be retained through developing the WCAS in order to prevent a listing and thus drove the creation of the policy. For example, recalling Emmerich's statement regarding Freudenthal's perceptions about the implications of a listing and what could be done to prevent it, Freudenthal's role as a policy entrepreneur becomes apparent.

I think Governor Freudenthal raised the bar and saw the handwriting on the wall, you know, if we just let this thing go and it ended up getting listed, without us doing everything we can to prevent a listing and to secure the future of sage grouse, you know, it wouldn't be good for the state. So he convened a workshop, inviting everyone in the state that had a potential interest in this thing. We convened, talked about it, and, as a result of that, he knew that we had to put together some type of a team to address the issue and to put together a strategy and that is kind of how it all got started.

Freudenthal perceived that a listing would adversely impact Wyoming's goals and drove the process that resulted in the WCAS in order to prevent a listing and secure jurisdiction and Wyoming's goals.

In order to achieve his desired policy output of the WCAS, Freudenthal used his position as governor and the corresponding ability to issue an executive order to enact the WCAS policy. The research also demonstrated that during the development of the policy, Freudenthal also employed a *policy broker* to act as an intermediary among the coalitions within the subsystem. During the analysis of the findings, I found that this policy broker was Bob Budd, the chairman of the SGIT. Budd remained accountable to the Governor, but also worked with representatives of the different interests on the SGIT that the WCAS affected. Budd described his recruitment by the Governor as the chairman of the SGIT after the first meeting in Casper:

At the end of that he [Freudenthal] just turned around to me and he [Freudenthal] said "all right, I want to know what we do to fix it. You're gonna' chair it. You've got six months." So there wasn't any conversation about it. He said "go do it".

During the expert interviews it was apparent that Budd in his role as a policy broker was pivotal to the success of the WCAS development and implementation. Lance described the role that Budd played in dealing with the different interests and personalities on the SGIT.

In Wyoming the benefit is you know everybody and the detriment is you know everybody. So everyone comes in with these biases about well, Audubon Society did X, Y and Z and commented this way on one project for oil and gas development, so Brian's a bad guy. So what it really took was sitting down, having a pretty good conversation about the personalities at play, that's why Bob [Budd] was so critical. He's managed those personalities before. He's dealt with the concept before. As you know this all started with Bob [Budd] and sitting down and saying well we have this core concept for big horn sheep management...so what are the really important places to protect? So that's how this all kind of started.

The interview respondents agreed that Budd was a crucial component of the negotiations within the SGIT that enabled the development of the WCAS. However, the interviews also showed that

Budd ultimately remained responsive to the goals of the Governor and when needed, the Governor would step in to ensure the team members were cooperating and communicating.

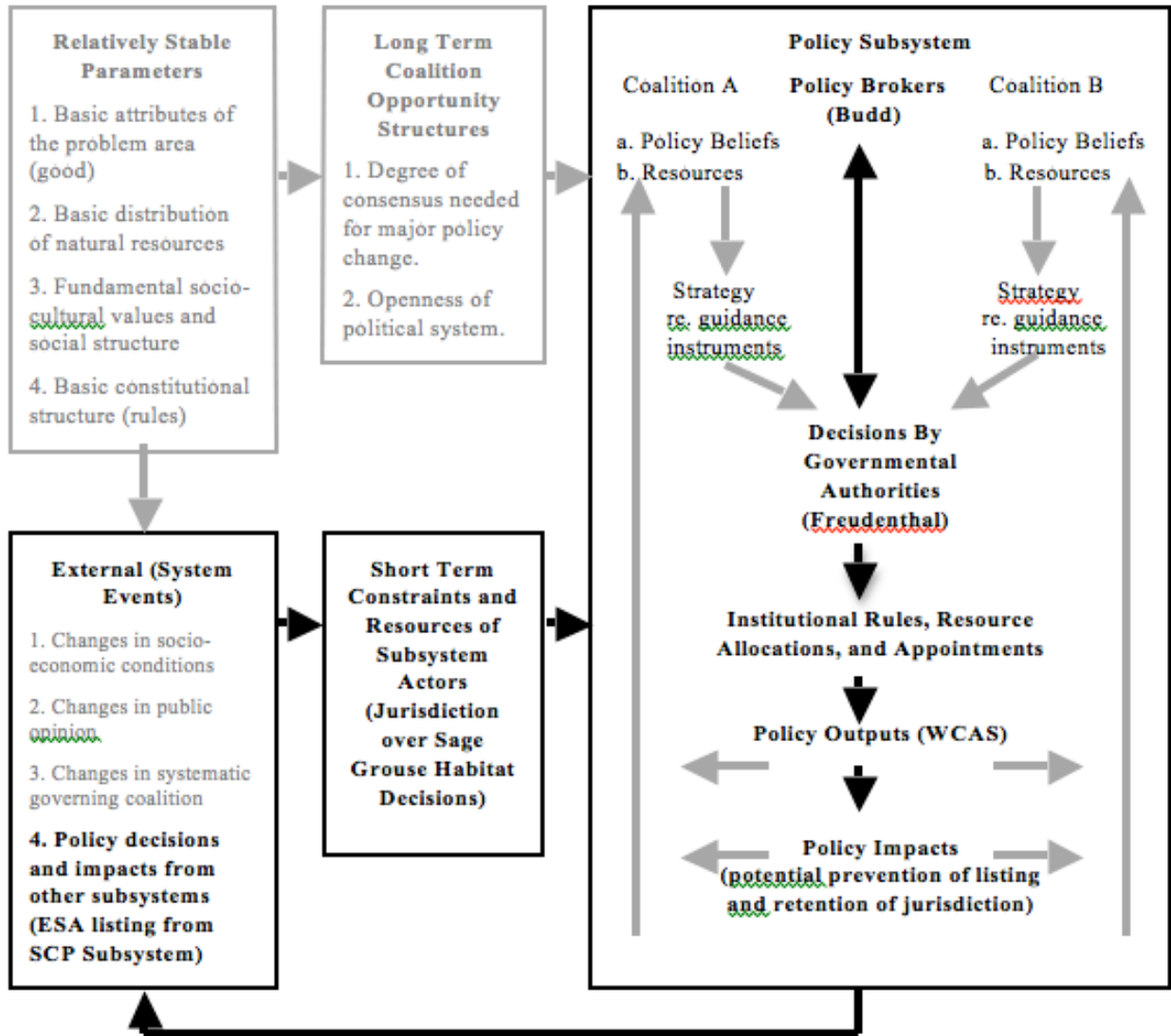
During their interviews, Freudenthal and Budd were very clear that the cooperation among the different members of the SGIT with divergent interests did not arise organically; rather it was forced and very difficult. For example, Freudenthal stated that when someone was uncooperative or not onboard with the goals for the SGIT, Budd would call Freudenthal and then the Governor would call them and get them on board. Budd recalled an example of his role of a broker over a contentious issue:

... We did it the other day, I can't remember what the issue was they were just beatin' it to death. And I just said, "okay guys look. You've beaten the god danged horse to death. You've beaten the teeth out of its skull. There's nothing left here, we're done, move on." And in a group you've worked with a long time, they know what that means. That means we're done and we've moved on. And I think you have to have a little bit of that. That has to be there. That isn't to say that it couldn't be a game and fish person one day or a Department of Ag person another day, it just says that it's absolutely critical to the process.

The above excerpt and context of the interview suggested that a strong personality in the broker role was critical for the policy to emerge because without such a person, the compromises needed to move forward would likely have not occurred.

The findings of this research showed not only support for the proposed focal causal chain but also allowed for an increased understanding of the role of the policy broker and the policy entrepreneur and their interaction. The modified ACF chart in Figure 5 shows the focal causal chain and the interactive roles of the policy entrepreneur and policy broker. (The causal chain is indicated in bold. The specifications of the parts of the casual chain for the WCAS case appear in parentheses.)

Figure 5: Reconfigured ACF Diagram



(adapted from Weible 2007, 202)

The changes I made to Weible (2007, 202) bolding the focal causal chain, adding specifications for the WCAS case in parentheses, and changing the one directional arrow running from policy brokers to decisions by governmental authorities to a bi-directional arrow. These changes indicate the specific way the findings of the research fit into the ACF and the contributions of the research to the framework.

Figure 5 indicates that the focal casual chain included the path from external subsystem policy outputs to resources to policy change; specifically highlighting the path from the SCP Subsystem ESA policy outputs, jurisdiction, and the emergence of the WCAS. The research also identified the causal mechanism within this specific causal chain, which was Freudenthal's strategy. This reconfigured diagram provides greater insight into how Freudenthal was able to act strategically and thus drive the policy change.

The added bidirectional arrow between the decisions by governmental authorities and by the policy broker captures the interaction between Freudenthal and Budd that was a critical component of explaining the emergence of the policy change. The Freudenthal's authority as governor to make decisions, such as convening the first sage grouse summit, indicating that Budd would chair the SGIT, overseeing the direction of policy development, and issuing the first WCAS executive order, was a crucial component of his ability to drive the development of the WCAS. Previous formulation of the ACF, however, did not adequately account for this because the indicated direction of the flow of events did not allow for governmental authorities to be policy entrepreneurs, to influence the policy brokers, or to act strategically. Rather, the previous formulation suggests that governmental authorities simply waited for policy brokers and coalitions to approach them once other conditions, such as the constraint of recourses, had already occurred and had influenced the brokers and coalitions to act. The change to a bidirectional arrow captures the ability of governmental authorities like Freudenthal to act strategically and to prevent potential policy outputs from external subsystems that would otherwise result in the constraint of resources, such as jurisdiction.

The change to a bidirectional arrow also captures the ability of governmental authorities to influence policy brokers such as Budd and to oversee the policy development. The arrow taps

the dialogue that occurred between Budd, the policy broker, and Freudenthal, the policy entrepreneur. The WCAS development did not unfold in a one directional fashion. There was a continual back and forth between the Governor and Budd regarding the former's goal for the policy and what was needed for the policy to develop in a way that would result in the achievement of these goals.

Beyond the contributions to the dynamics of ACF shown in Figure 5, this research added nuance to the ACF by demonstrating that the role and influence of governmental authorities should be expanded in order to account for their ability to act strategically and influence possible policy brokers. These contributions help fill one perceived gap in the explanatory utility of the ACF: the connections among external policy outputs, jurisdiction resources, and policy change.

The findings also demonstrated that even in the absence of an ESA conservation plan, the progression of the ESA listing process encouraged state-based species conservation. This contributes to the race to the bottom debate in the environmental federalism literature by showing that the ESA portion of the American system of environmental federalism can lead to improvement of environmental regulations at the state-level even without an endangered listing and subsequent federal conservation plans. This is particularly important given that funding and support for environmental regulations at the federal level are prone to fluctuation and deficiency. Thus, particularly for biodiversity conservation, the existence and utilization of the ESA listing process can be helpful for improvement of species conservation policy, even if funding and other resources are lacking to move to protect a species.

This benefit for species conservation policy that stems from the existing ESA process also has important implications for environmental considerations in general. This is because of

the important role that biodiversity plays in a thriving ecosystems and, correspondingly, the sustainability of human life. Arguably, ecosystems services play the most critical role in sustaining human life (Daily et al. 1997, 1). From an anthropocentric perspective, ecosystem services should be a recognized and prioritized component of biodiversity conservation planning and the management of ecosystems. This position also can be defended from an ecocentric standpoint, because services are critical for sustaining biodiversity. This relationship, of course, runs in the opposite direction as well, because large numbers of species are needed to sustain ecosystem services (Daily et al. 1997, 1). Consequently, the preservation of biodiversity should be a key consideration in emerging efforts in biodiversity conservation planning and ecosystem management; an understanding of how to improve and encourage improved species conservation policies is also critical.

Overall, this research also contributes to the literatures in ACF and in environmental politics and policy. It shows how just the start of the ESA listing process and the corresponding threat of federal action can influence and promote state-level conservation policy. The threat of federal action embodied by the listing process influenced the development of a proactive state-based species conservation plan that likely would not have emerged otherwise. The increased understanding of this case can be used not only to understand the emergence of other Greater Sage Grouse conservation plans in western states, but also to provide insight into how to improve species conservation policy. An understanding of how existing federal institutions that lack the ability to act due to a dearth of resources can still impact state policy is increasingly important in an era where funding and support for environmental regulation remains in flux from one year to the next.

Constraints and Future Directions

At the same time, it should be recognized that this project has seven main constraints. First, it deals with one small part of the entire ACF. However, I can also look at this constraint as a benefit. By focusing on this small part, this research moves toward increasing the explanatory power of the ACF. It helped add needed nuance to the ACF, particularly regarding its weakness in accounting for a relationship between external subsystem events and policy change. Future directions for research to decrease this constraint include exploring the applicability of this theory to other ACF resources and other policy change pathways in the ACF.

The second constraint is that since this project examined a single case, scholars may question the generalizability of my findings to other settings. However, case studies can be generalized to theory. Because I have defined the causal mechanism, strategy, in the same manner as Falleti and Lynch (as a portable concept with explanatory power), I arguably minimize the implications of this constraint. As I have defined strategy as a portable concept, other scholars can apply this part of ACF to other cases and further increase the generalizability of the changes in the ACF this research proposed. Additionally, focusing on a single case with expert interviewing offers me the advantage of depth over breadth (Berry 2002, 680). “For projects where depth, context, or the historical record is at the heart of data collection, elite interviewing using broad, open-ended questioning might be the best choice” (2002, 682). So, although my focus on a single case may have constraints, it also has benefits. In order to continue to build on the benefits produced by this single case focus, the applicability of the theory I use in this research should be explored in other cases in the future.

The third constraint of the project is that maintaining the internal validity of a study that employs interviews is challenging. In order to reduce this constraint, I used explicit guidelines for analyzing the interviews. These guidelines helped guard against drawing invalid conclusions

from elite interviews; for example, I sought ways of verifying information from elite interviews by comparing it with information from outside sources (Brians et al. 2011, 367). I was able to verify the interview data by comparing them with information gleaned from documents and secondary source interviews. This also helps minimize a related constraint of the research: I was able to interview only a limited number of people.

The fourth constraint is that the document analysis and secondary source interviews also relied on relatively small and limited samples. Ten documents composed the sample for the document content analysis. The focus of the secondary source interviews was Freudenthal's interviews, rather than also those with other possible respondents. These constraints were unavoidable if I was to remain within the scope of a thesis. A potential future direction includes a study with a larger and more inclusive sample for these two analyses.

Fifth, I was unable to further study the other internal factors in the WLUP Subsystem that may have played a role in the emergence of the policy. Although I was able to conclude that my proposed causal chain played the dominant role in the policy emergence, a greater understanding of internal subsystem circumstances would be useful in any future study of this case. For example, insights are needed regarding the role, belief systems, and trust levels of the advocacy coalitions within the WLUP Subsystem. Future study also has the potential to further contribute to the ACF literature because ACF scholars are beginning to acknowledge that the interplay between external and internal impacts requires further exploration (Sabatier and Weible 2007, 204).

Sixth, the context of the external SCP Subsystem requires further exploration. For example, one factor that requires more examination is whether and how the change in presidential administrations from Republican George W. Bush to Democrat Barack Obama

impacted the SCP Subsystem and thus also impacted the WLUP Subsystem. Exploration of this issue also will contribute to the ACF because it would examine how another type of external event, changes in government, can impact policy change in the WLUP subsystem. This sort of external event also is important to explore because ACF scholars such as Sotirov and Memmler contend that changes in a government and external policy impacts are the two types of external events that have clear linkages to policy change (Sotirov and Memmler 2011, 9).

Seventh, the conceptualization of the case study and support for the hypothesis hinges on an informal characterization of the two policy subsystems. Future study should include a more formal subsystem analysis and characterization.

Conclusion

With this research I sought to answer the question: why did Wyoming develop the WCAS? I employed a frequently used theory of the policy process, the Advocacy Coalition Framework (ACF), to frame the examination of this question. I also proposed to add nuance to the ACF, by reconfiguring the framework to capture the ability of subsystem policy entrepreneurs to act strategically in order to prevent external subsystems policy outputs from constraining needed jurisdiction resources. This reconfiguration results in a proposed less mechanical view of the ACF and arguably improves the framework's recognition of the role that strategy plays in policy change. The hypothesis tested by this research that embodies this added nuance was: If a subsystem's jurisdiction is threatened by a hierarchically superior subsystem's policy outputs and this jurisdiction is necessary to meet the threatened subsystem's goals, then policy change may occur as a result of a strategy by the agents in the threatened subsystem. The data analysis involving documents, secondary source interviews found in media sources, and expert interviews showed support for the hypothesis and thus support for including the proposed

added nuance in the ACF. The analysis also offered an explanation for the emergence of the WCAS policy.

Bibliography

- Adler, JH. 2007. "When is Two a Crowd? The Impact of Federal Action on State Environmental Regulation." *Harvard Environmental Law Review* 31(1): 67-114.
- Administrative Procedure Act*. 1946.
- Aldridge, Cameron L, Scott E. Nielsen, Hawthorne L. Beyer, Mark S. Boyce, John W. Connelly, Steven T. Knick, and Michael A. Schroeder. 2008. "Range-wide patterns of Greater Sage-Grouse Persistence." *Diversity and Distributions* 14: 983-994.
- Beamer, Glenn. 2002. "Elite Interviews and State Politics Research." *State Politics & Policy Quarterly* 2(1): 86-96.
- Bean, Michael J. 2009. "The Endangered Species Act: Science, Policy, and Politics." *Annals of the New York Academy of Sciences* 1162(1): 369.
- Belton, Lorien R. and Douglas Jackson-Smith. 2010. "Factors Influencing Success Among Collaborative Sage-Grouse Management Groups in the Western United States". *Environmental Conservation*. 37(3): 250-260.
- Berry, Jeffrey M. 2002. "Validity and Reliability Issues In Elite Interviewing." *PS: Political Science and Politics* 35(4): 679-682.
- Brians, Craig, Jarol B. Manheim, and Richard C. Rich. *Empirical Political Analysis*. 8th ed. Longman.
- Bureau of Land Management. 2011a. [The BLM's Balancing Act: Managing the Needs of People and Sage-grouse on Public Lands](http://www.blm.gov/wo/st/en/prog/more/fish__wildlife_and/sage-grouse-conservation/energy.html). Accessed: 30 September 2011 <http://www.blm.gov/wo/st/en/prog/more/fish__wildlife_and/sage-grouse-conservation/energy.html>.
- Bureau of Land Management. 2011b. [Wind Energy](http://www.blm.gov/wy/st/en/programs/energy/renewable/wind.html). Accessed: 30 September 2011. <<http://www.blm.gov/wy/st/en/programs/energy/renewable/wind.html>>
- Buzbee, William W. 2005. "Contextual environmental federalism." *New York University Environmental Law Journal* 14(1): 108.
- Collins, Craig. 2010. *Toxic Loopholes : Failures and Future Prospects for Environmental Law*. New York: Cambridge University Press.
- Colorado Division of Wildlife. 2002. Conservation Plan For Canada Lynx in Colorado. November 5.
- "Crucial Sage Grouse Strategy Focuses on Core Areas." 2008. *States News Service*, June 12.

- Czech, Brian and Paul R. Krausman. 2001. *The Endangered Species Act: History, Conservation Biology, and Public Policy*. Baltimore: Johns Hopkins University Press.
- Daily, Gretchen, Susan Alexander, Paul R. Ehrlich, Larry Goulder, Jane Lubchenco, Pamela A. Matson, Harold A. Mooney, Sandra Postel, Stephen H. Schneider, David Tilman, George M. Woodwell. 1997. "Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems." *Issues in Ecology* 2:1-16.
- Endangered Species Act. 1973.
- Ellison, Brian A. 1998. "Intergovernmental Relations and the Advocacy Coalition Framework: The Operation of Federalism in Denver Water Politics." *Publius* 28(4): 35-54.
- Gable, Eryn. 2007. "WILDLIFE: Wyo. must address sprawl, drilling to save sage grouse, panel says." *Land Letter*, September 27.
- "Executive Order on Sage Grouse Coordinates Agencies to Protect Grouse Habitat in Wyoming." 2008. *US States News*, August 1.
- Falleti, Tulia G, and Julia F. Lynch. 2009. "Context and Causal Mechanisms in Political Analysis". *Comparative Political Studies*. 42: 1143-1166.
- Freudenthal, Dave. 2008. Greater Sage Grouse Core Area Protection, Executive Order 2008-2. Wyoming State Executive Orders. Wyoming State Library Website. Accessed: September 12, 2011 <<http://will.state.wy.us/sis/wydocs/execorders.html>>
- Freudenthal, Dave. 2010. Greater Sage Grouse Core Area Protection, Executive Order 2010-4. Wyoming State Executive Orders. Wyoming State Library Website. Accessed: September 12, 2011 <<http://will.state.wy.us/sis/wydocs/execorders.html>>
- Fredriksson, Per G., and Daniel L. Millimet. 2002. "Strategic Interaction and the Determination of Environmental Policy across U.S. States." *Journal of Urban Economics* 51(1): 101-122.
- Garcia, Amanda R. 2006. "The Sage Grouse Debate: Cost-Benefit Analysis and the Discourse of the Endangered Species Act." *New York University Environmental Law Journal* 14 (3): 572-617.
- "Governor Relays 'Significant Concerns' with Little Mountain Natural Gas Project." 2008. *States News Service*, February 12.
- "Governor Outlines Wind Concerns to Legislative Task Force." 2009. *States News Service*, May 19.
- Holloran, Matthew J., Rusty C. Kaiser, and Wayne A. Hubert. 2010. "Yearling Greater Sage-Grouse Response to Energy Development in Wyoming." *The Journal of Wildlife Management* 74(1): 65-72.
- Knick, Steven T., David S. Dobkin, John T. Rotenberry, Michael A. Schroeder, W. Matthew

- Vander Haegen, and Charles van Riper III. 2003. "Teetering on the Edge or Too Late? Conservation and Research Issues for Avifauna of Sagebrush Habitats." *Condor* 105(4): 611-634.
- Kübler, Daniel. 2001. "Understanding Policy Change With the Advocacy Coalition Framework: An Application to Swiss Drug Policy." *Journal of European Public Policy* 8(4): 623-641.
- Neary, Ben. 2008. "Freudenthal says he's encouraged by BLM grouse plan." *The Associated Press State & Local Wire*, June 13.
- Nohrstedt, Daniel. 2011. "Shifting Resources and Venues Producing Policy Change in Contested Subsystems: A Case Study of Swedish Signals Intelligence Policy." *Policy Studies Journal* 39(3): 461-484.
- Marshall, Catherine and Gretchen B. Rossman. 2011. *Designing Qualitative Research*. Los Angeles, California: Sage Publications Inc.
- Mead, Matt H. 2011. Greater Sage Grouse Core Area Protection, Executive Order 2011-5. Wyoming State Executive Orders. Wyoming State Library Website. Accessed: September 12, 2011 <<http://will.state.wy.us/sis/wydocs/execorders.html>>
- Mintrom, Michael and Sandra Vergari. 1996. "Advocacy Coalitions, Policy Entrepreneurs, and Policy Change." *Policy Studies Journal* 24(3): 420-434.
- Nature Serve. 2012. *About Us*. Accessed: February 27, 2012 <<http://www.natureserve.org/aboutUs/index.jsp>>
- Nicholson-Crotty Sean. 2005. "Bureaucratic Competition in the Policy Process". *The Policy Studies Journal* 33:341-361.
- Nohrstedt, Daniel. 2010. "Do Advocacy Coalitions Matter? Crisis and Change in Swedish Nuclear Energy Policy." *Journal of Public Administration Research and Theory* 20(2): 309.
- Nicholson-Crotty, Sean. 2005. "Bureaucratic Competition in the Policy Process." *Policy Studies Journal* 33(3): 341-361.
- Ostlind, Emilene, 2010. "D-Day for Sage Grouse Listing A Test of Wyoming Policy." *Wyofile*. Accessed: 1 October 2011 <<http://wyofile.com/2010/03/d-day-for-sage-grouse-listing-test-of-wyoming-policy/>>.
- Percival, Robert V. 1995. "Environmental Federalism: Historical Roots and Contemporary Models." *Maryland Law Review* 54(4): 1141-1182.

- Pruett, Christian L., Michael A. Patten, and Donald H. Wolfe. 2009. "Avoidance Behavior by Prairie Grouse: Implications for Development of Wind Energy." *Conservation Biology: The Journal of the Society for Conservation Biology* 23(5): 1253-1259.
- Rosenbaum, Walter A. 2011. *Environmental Politics and Policy*: 8th Ed. Washington D.C.: CQ Press.
- Rowland, Mary M., Michael J. Wisdom, Lowell H. Suring, and Cara W. Meinke. 2006. "Greater Sage-Grouse as an Umbrella Species for Sagebrush-Associated Vertebrates." *Biological Conservation* 129(3): 323-335.
- Sabatier, Paul A. and Christopher M. Weible. 2007. "The Advocacy Coalition Framework: Innovations and Clarifications." In *Theories of the Policy Process*, ed. Paul A. Sabatier. Cambridge, MA: Westview Press.
- Schulte, Elizabeth A. 2011. "The Sage Grouse Rebellion". *Natural Resources & Environment*. 25 (4): 59-60.
- Schlager, Edella. 2007. "The Advocacy Coalition Framework: Innovations and Clarifications." In *Theories of the Policy Process*, ed. Paul A. Sabatier. Cambridge, MA: Westview Press.
- Spangler, Matt. 2004. "Report on sage grouse could trigger ESA listing; industry steps up fight." *Inside Energy with Federal Lands*, June 14.
- Sotirov, Metodi and Michael Meemler. 2011. "The Advocacy Coalition Framework in Natural Resource Policy Studies: Recent Experiences and Further Prospects". *Forest Policy and Economics*.
- Stanfield, Jeff. 2009. "Wyoming seeks to keep wind projects out of sage grouse habitats." *SNL Power Week West*, July 27.
- Streater, Scott. 2010. "SAGE GROUSE: Ore. follows Wyo. blueprint to reconcile energy, species priorities." *Land Letter*, December 2.
- Taylor, Martin F. J., Kieran F. Suckling, and Jeffery J. Rachlinski. 2005. "The Effectiveness of the Endangered Species Act: A Quantitative Analysis." *BioScience* 55(4): 360.
- U. S. Department of Energy. 2004. *Wind Energy for Rural Economic Development*. DOE/GO-102004-1826.
- U. S. Department of Energy. 2008. *20 percent wind energy by 2030 – increasing wind energy's contribution to U.S. electricity supply*. DOE/GO-102008-2567.
- U.S. Department of the Interior. Fish and Wildlife Service. 2000. *Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Contiguous U.S. Distinct Population Segment of the Canada Lynx and Related Rule*. Federal Register, vol.65, no.

58.

- U.S. Department of the Interior. Fish and Wildlife Service. 2010. *Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered*. Federal Register, vol. 75, no. 055.
- U.S. Department of the Interior. Fish and Wildlife Service. 2011. *Endangered and Threatened Wildlife and Plants; Review of Native Species That Are Candidates for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions; Proposed Rule*. Federal Register, vol. 76, no. 207.
- Western Watersheds Project v. United States Forest Service. 2007. CV-06-277-E-BLW.
- Western Watersheds Project v. United States Forest Service. 2009. Amended Joint Stipulation on Remand. 06-cv-00277-BLW. Document 183.
- Western Watersheds Project v. United States Forest Service. 2009. Unopposed Motion to Extend Deadline in Amended Joint Stipulation on Remand. 06-cv-00277-BLW. Document 185.
- Weible, Christopher M., Paul A. Sabatier, and Kelly McQueen. 2009. "Themes and Variations: Taking Stock of the Advocacy Coalition Framework". *The Policy Studies Journal*. 37: 121-140.
- Williams, Christopher. 2002. "Cost of Continued Existence: Assessing the Impacts of Section 7 on Federal Agencies, Private Actors, and Endangered Species." In *Endangered Species Act: Law, Policy, and Perspectives*, ed. Donald C. Baur and WM. Robert Irvin. United States of America: American Bar Association.
- Wyoming Department of Environmental Quality. Overview. <<http://deq.state.wy.us/overview.htm>>. (November 7, 2011)
- Wyoming Game and Fish Department. 1942. "Sage Grouse Studies." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2002. "Sage Grouse and Pheasant Job Completion Report Lander Region." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2002. "Sage Grouse Completion Reports Casper Region." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2002 and 2003. "Narrative Report on Sage Grouse Species Cody Region." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2003. "Sage Grouse Job Completion Report Sheridan Region." Wyoming State Library Website. Accessed: March 1, 2011

Wyoming Game and Fish Department. 2007. "Sage Grouse Habitat Guidelines for Wyoming." Wyoming State Library Website. Accessed: March 1, 2011

Wyoming Game and Fish Department. 2011a. "Report on the 2011 Strategic Plan." Wyoming State Library Website. Accessed: March 1, 2011

Wyoming Game and Fish Department. 2011b. Sagebrush/ Sage Grouse Management. Accessed: 30 September 2011. <<http://wgfd.wyo.gov/web2011/wildlife-1000382.aspx>>.

Wyoming Interagency. 2011. Sage Grouse Update. No. 6.

Appendix A: State-Level Documents

- Freudenthal, Dave. 2008. Greater Sage Grouse Core Area Protection, Executive Order 2008-2. Wyoming State Executive Orders. Wyoming State Library Website. Accessed: September 12, 2011 <<http://will.state.wy.us/sis/wydocs/execorders.html>>
- Freudenthal, Dave. 2010. Greater Sage Grouse Core Area Protection, Executive Order 2010-4. Wyoming State Executive Orders. Wyoming State Library Website. Accessed: September 12, 2011 <<http://will.state.wy.us/sis/wydocs/execorders.html>>
- Mead, Matt H. 2011. Greater Sage Grouse Core Area Protection, Executive Order 2011-5. Wyoming State Executive Orders. Wyoming State Library Website. Accessed: September 12, 2011 <<http://will.state.wy.us/sis/wydocs/execorders.html>>
- Wyoming Game and Fish Department. 1942. "Sage Grouse Studies." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2002. "Sage Grouse and Pheasant Job Completion Report Lander Region." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2002. "Sage Grouse Completion Reports Casper Region." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2002 and 2003. "Narrative Report on Sage Grouse Species Cody Region." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2003. "Sage Grouse Job Completion Report Sheridan Region." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2007. "Sage Grouse Habitat Guidelines for Wyoming." Wyoming State Library Website. Accessed: March 1, 2011
- Wyoming Game and Fish Department. 2011. "Report on the 2011 Strategic Plan." Wyoming State Library Website. Accessed: March 1, 2011

Appendix B: Secondary Source Interviews: Media Sources

- Baker, Deborah. 2004. "Norton: Sage grouse listing would hurt energy production." *The Associated Press State & Local Wire*, June 23.
- Barber, Wayne. 2009. "Wyoming governor weighs in on carbon capture, wind issues." *SNL Electric Utility Report*, June 1.
- Berman, Dan. 2007. "COALBED METHANE: Powder River Basin drilling is killing sage grouse, Mont. governor says." *Land Letter*, March 1.
- Bleskan, Kerry. 2010. "Wyo. governor revises sage grouse habitat plan." *SNL Power Week Canada*, September 6.
- "BLM, state coordinate on sage grouse." 2007. *The Associated Press State & Local Wire*, July 22.
- Bontrager, Eric. 2007. "OIL AND GAS: Wildlife concerns delay BLM auction of Wyo. tracts." *GreenWire*, December 4.
- Carr, Matthew S. 2007. "Small Sage Grouse Looms Large Over Western NatGas Development." *Natural Gas Week*, August 13.
- Cart, Julie. 2004. "Oil industry, biologists clash over sage grouse: Energy policy puts natural resources in jeopardy, critics say." *The Vancouver Sun (British Columbia)*, June 18.
- "Coal-bed methane industry objects to sage grouse regs." 2008. *The Associated Press State & Local Wire*, June 5.
- "COALBED METHANE: Wyo. drilling moratorium near wildlife ends today." 2007. *GreenWire*, June 18.
- "CRUCIAL SAGE GROUSE STRATEGY FOCUSES ON CORE AREAS." 2008. *States News Service*, June 12.
- DeMarino, Nicholas. 2010. "Spring sage grouse counts underway." *The Associated Press State & Local Wire*, April 10.
- "Encana wants CBM wells near Lander." 2008. *The Associated Press State & Local Wire*, August 24.
- "ENDANGERED SPECIES II: WESTERN OFFICIALS BLAST ESA." 2004. *Greenwire*, June 24.
- "ENDANGERED SPECIES: Wyo. governor expands sage grouse protected area." 2010. *Greenwire*, August 26.
- "ENDANGERED SPECIES: Wyo. governor wants ESA issues litigated at home." 2010. *Land Letter*, June 10.

“EXECUTIVE ORDER ON SAGE GROUSE COORDINATES AGENCIES TO PROTECT GROUSE HABITAT IN WYOMING.” 2008. *States News Service*, July 31.

“Federal board halts CBM wells over grouse concerns.” 2009. *The Associated Press State & Local Wire*, March 19.

“Fighting Chance”. 2010. *The New York Times*, March 3.

Frantz, Ashley. 2007. “Energy, wealth and wildlife: Wyoming looks for harmony.” *CNN*, July 24.

“Freudenthal changes protected area for sage grouse”. 2010. *The Associated Press State & Local Wire*, August 27.

“Freudenthal disappointed in sage grouse finding”. 2004. *The Associated Press State & Local Wire*, April 16.

Gearino, Jeff. 2005. “Local groups monitor sage grouse status in Wyoming.” *The Associated Press State & Local Wire*, June 30.

Grable, Eryn. 2007. “BLM: Oil and gas lease sales draw interest from all sides.” *Land Letter*, December 6.

Gable, Eryn. 2007. “OIL AND GAS: Wyo. seeks delay on lease sale to protect sage grouse.” *Land Letter*, November 29.

Gable, Eryn. 2007. “WILDLIFE: Wyo. must address sprawl, drilling to save sage grouse, panel says.” *Land Letter*, September 27.

Gable, Eryn. 2008. “ENERGY DEVELOPMENT: Climate change, sage grouse concerns prompt protests to Wyo. leases.” *Land Letter*, May 22.

Gable, Eryn. 2008. “ENERGY DEVELOPMENT: Enviros protest BLM management plan for Pinedale area.” *Land Letter*, October 16.

Gable, Eryn. 2008. “ENERGY DEVELOPMENT: Groups protest leasing on Wyo.’s Little Mountain.” *Land Letter*, July 31.

Gable, Eryn. 2009. “ENDANGERED SPECIES: FWS may punt on sage grouse decision, leaving issue to Obama admin.” *Land Letter*, January 8.

Gable, Eryn. 2009. “OIL AND GAS: Wyo. BLM lease sale spurs multiple protests.” *Land Letter*, May 21.

Gable, Eryn. 2009. “OIL AND GAS: Wyo. lease sale includes Adobe Town parcels, sage grouse habitat. 2009.” *Land Letter*, October 8.

“GOV. DAVE’S COMMENTARY ON WYOMING’S WIND ENERGY CHALLENGE.” 2009. *US State News*, August 25.

“Government pledges money for sage grouse.” 2010. *Island Park News (Idaho)*, March 19.

“GOVERNOR FREUDENTHAL ISSUES EXECUTIVE ORDER ON SAGE-GROUSE CORE AREA STRATEGY TO PROTECT BIRD AND ALLOW DEVELOPMENT.” 2010. *State News Service*, August 25.

“Governor Freudenthal: “No” to federal education dollars, yes to protecting sage-grouse and let’s make a deal on Grand Teton National Park state land.” 2010. *State News Service*, August 16.

“Governor’s Commentary on Wyoming’s Wind Energy Challenge.” 2009. *States News Service*, August 19.

“Governor Outlines Wind Concerns to Legislative Task Force.” 2009. *States News Service*, May 19.

“GOVERNOR RELAYS “SIGNIFICANT CONCERNS” WITH LITTLE MOUNTAIN NATURAL GAS PROJECT.” 2008. *States News Service*, February 12.

“Governor’s Sage Grouse Implementation Team meeting March 10.” 2010. *US State News*, February 24.

“GOVERNOR’S WORK FOR WILDLIFE HONORED.” 2006. *US States News*, February 17.

“GOVERNOR TO CONVENE SPECIAL SUMMIT ON SAGE GROUSE AT CASPER COLLEGE.” 2007. *State News Service*, May 30.

“Governor Unsurprised by Sage Grouse Decision, Vows to Press on with State’s Efforts.” 2010. *States News Service*, March 5.

“GOV. FREUDENTHAL ASKS BLM TO WITHHOLD OIL, GAS LEASES IN SARATOGA VALLEY.” 2007. *US States News*, November 2.

“GOV. FREUDENTHAL ISSUES EXECUTIVE ORDER ON SAGE-GROUSE CORE AREA STRATEGY TO PROTECT BIRD, ALLOW DEVELOPMENT.” 2010. *Right Vision News*, August 31.

“GOV. FREUDENTHAL OUTLINES WIND CONCERNS TO LEGISLATIVE TASK FORCE”. 2009. *US State News*, May 21.

“Gov. Freudenthal praises federal sage grouse decision.” 2005. *The Associated Press State & Local Wire*, January 7.

“GOV. FREUDENTHAL: SEASONAL STIPULATIONS SHOULD STAY.” 2005. *US States News*, October 4.

“GOV. FREUDENTHAL TO CONVENE SPECIAL SUMMIT ON SAGE GROUSE AT CASPER COLLEGE.” 2007. *States News Service*, May 30.

“GOV. FREUDENTHAL UNSURPRISED BY SAGE GROUSE DECISION, VOWS TO PRESS ON WITH STATE’S EFFORTS.” 2010. *US State News*, March 6.

“Govs asked to oppose federal takeover of sage grouse programs.” 2004. *The Associated Press State & Local Wire*, May 25.

“Gov tells industry to back wildlife efforts.” 2007. *The Associated Press State & Local Wire*, August 23.

“GROUP TO MOVE QUICKLY TO DEVELOP SAGE GROUSE RECOMMENDATIONS.” 2007. *State News Service*, July 13.

“Grouse may rival owl’s economic effect.” 2008. *UPI*, March 17.

Gruver, Mead. 2010. “Backlog of protested Wyo. leases persists at BLM.” *The Associated Press State & Local Wire*, May 9.

Gruver, Mead. 2010. “BLM looks to Audubon to map sage grouse habitat.” *The Associated Press State & Local Wire*, February 17.

Gruver, Mead. 2010. “BLM in Wyo. to begin deciding on backlogged leases.” *The Associated Press*, July 15.

Gruver, Mead. 2010. “BLM sends Wyo. guidelines to protect sage grouse.” *Associated Press State & Local Wire*, January 5.

Gruver, Mead. Energy Groups relieved sage grouse won’t be listed. 2010, March 5. *The Associated Press*.

Gruver, Mead. 2010. Grouse won’t be listed as endangered or threatened. *Associated Press*, March 5.

Gruver, Mead. 2010. “Movement in Western oil-gas lease backlog in Wyo.” *Associated Press Online*, July 31.

Gruver, Mead. 2010. “Sage grouse designation cheers energy groups.” *Lewiston Morning Tribune*, March 6.

Heilprin, John. 2004. “Protections for rare sage grouse could chill natural gas production.” *The Associated Press*, September 24.

- Heilprin, John. 2004. "Sage Grouse Listing May Curb Natural Gas." *The Associated Press Online*, September 24.
- Howell, Katie. 2008. "OIL AND GAS: Enviros protest BLM management plan for southwest Wyo. area." *Land Letter*, October 2.
- Israelsen, Brent. 2004. "Governor protests BLM sale of oil, gas leases in Wyoming." *Salt Lake Tribune (Utah)*, June 9.
- Joyce, Matt. 2009. "Anschutz Corp among believers in Wyoming wind power." *The Associated Press State & Local*, May 25.
- Joyce, Matt. 2009. "Anschutz Corp. plans Wyoming wind farm." *The Associated Press State & Local*, May 24.
- Joyce, Matt. 2009. "Feds firm on wind farm ban in Wyo. grouse areas." *The Associated Press State & Local Wire*, July 10.
- Joyce, Matt. 2009. "Feds stand by wind farm ban in core areas." *The Associated Press State & Local Wire*, July 9.
- Joyce, Matt. 2009. "Horizon halts Wyo. wind project because of grouse." *The Associated Press State & Local Wire*, August 7.
- Joyce, Matt. 2009. "New Google maps show sensitive areas of West." *The Associated Press State & Local Wire*, April 2.
- Joyce, Matt. 2009. "Talk of Wyoming wind tax whips up debate." *Associated Press Online*, 17 November.
- Joyce, Matt. 2009. "Wind industry wants review of Wyo's grouse policy." *The Associated Press State and Local Wire*, July 14.
- Joyce, Matt. 2009. "Year of policy debate for Wyoming wind industry." *The Associated Press State & Local Wire*, December 24.
- Joyce, Matt. 2010 "Wyo. governor contenders support grouse strategy." *The Associated Press State and Local Wire*, July 2.
- Joyce, Matt. 2010. "Wyoming grouse team adds protected habitat areas." *The Associated Press State & Local Wire*, June 29.
- "Judge orders sage grouse decision." 2010. *Deseret Morning News (Salt Lake City)*, February 22.
- Kenworthy, Tom. 2004. "Battle brewing over sage grouse protection." *USA Today*, July 13.

- “LAND LETTER: Park Service seeks to protect “soundscapes.”” 2008. *GreenWire*, August 8.
- “LANDMARK FEDERAL SAGE-GROUSE POLICIES IN WYOMING SET STAGE FOR WILDLIFE- FRIENDLY ENERGY DEVELOPMENT NATIONWIDE.” 2010. *States News Service*, January 4.
- Leber, Jessica. 2010. “ENDANGERED SPECIES: Imperiled sage grouse decision could still shake wind industry.” *ClimateWire*, March 8.
- Lehmann, Jason. 2009. “Duke Energy to build 4th Wyoming wind farm, 9th in US.” *SNL*, August 31.
- LoBianco, Tom. 2010. “New maps of sage grouse breeding areas concern Western US oil, gas interests.” *Inside Energy with Federal Lands*, October 28.
- “LOCAL NEWS; Briefs.” 2008. *Wyoming Tribune-Eagle (Cheyenne)*, April 29.
- Luccioli, Colleen. 2008. “OIL AND GAS: Wyo. governor criticizes Rock Springs drilling proposal”. *Land Letter*, February 14.
- Moen, Bob. 2005. “Freudenthal increases state support for Game and Fish.” *The Associated Press State & Local Wire*, December 1.
- Moen, Bob. 2007. “Governor-appointed sage grouse team holds first meeting.” *The Associated Press State & Local Wire*, August 1.
- Moen, Bob. 2007. “Sage Grouse recommendations due this week.” *The Associated Press State & Local Wire*, September 23.
- Moen, Bob. 2007. “Wyoming: Sage Grouse panel due to make recommendations this week.” *The Associated Press*, September 24.
- Moen, Bob. 2010. “Wyo. working on grouse conservation initiative.” *The Associated Press State & Local Wire*, April 17.
- Neary, Ben. 2007. “Panel issues final sage grouse recommendations.” *The Associated Press State & Local Wire*, September 25.
- Neary, Ben. 2008. “Freudenthal says he’s encouraged by BLM grouse plan.” *The Associated Press State & Local Wire*, June 13.
- “New energy leases planned for Jack Morrow Hills.” 2008. *The Associated Press State & Local Wire*, March 18.
- “New Hope for Sage Grouse.” 2010. *Targeted News Service*, January 4.

- “OIL AND GAS: Enviro groups’ challenges have bogged down Wyo. leases.” 2010. *Greenwire*, May 11.
- “OIL AND GAS: GOV. FREUDENTHAL ASKS BLM TO HALT WYO. SALE UNTIL FURTHER STUDY.” 2004. *Greenwire*, June 9.
- “OIL AND GAS: Interior board halts well permits to protect sage grouse.” 2009. *Greenwire*, March 18.
- Olson, Ilene. 2004. “COMMITTEE VOTES TO LEASE RIVERTON BUILDING.” *Wyoming Tribune Eagle (Cheyenne)*, December 11.
- O’Neil, Lauren. 2008. “Wyoming, BLM Authorize Planned Drilling in Pinedale Anticline Region.” *Natural Gas Week*, September 22.
- Peck, Clint. 2002. “The sage grouse saga.” *Beef* 38(7): 32.
- Reis, Patrick. 2008. “ENDANGERED SPECIES: Conservationists divided over Wyo. plan for greater sage grouse.” *Land Letter*, August 7.
- Taylor, Phil. 2010. “CAMPAIGN 2010: Next Wyo. governor faces “painful choices” on energy, species.” *Land Letter*, October 28.
- Taylor, Phil. 2010. “OIL AND GAS: BLM Wyo. issues backlogged leases in sage grouse areas.” *Land Letter*, August 5.
- Taylor, Phil. 2010. “OIL AND GAS: BLM Wyo. overturns drilling permits in wild horse range.” 2010. *Land Letter*, August 12.
- Thompson, Jonathan. 2009. “The West as a modern-day La Mancha.” *Ruidoso News (New Mexico)*, July 30.
- Trandahl, Nicholas. 2010. “Grouse Controversy Hinders State.” *Weston County Gazette*, July 8.
- “SAGE GROUSE PROTECTION COULD IMPEDE DOMESTIC ENERGY PRODUCTION.” 2004. *Inside Fuels and Vehicles*, July 1.
- “SAGE GROUSE SUMMIT WILL EXAMINE CURRENT STATE OF GROUSE CONSERVATION AND LAY GROUNDWORK FOR FUTURE.” 2007. *State News Service*, June 8.
- “SAGE GROUSE TEAM RECOMMENDS 21 CONSERVATION MEASURES.” 2007. *States News Service*, September 25.
- “Sage Grouse team to meet Monday in Cheyenne.” 2008. *The Associated Press State & Local Wire*, February 24.

- “Sage Grouse Working Groups Seeking Project Proposals”. 2008. *US States News*, May 23.
- Spangler, Matt. 2004. “FWS move on sage grouse raises concerns in West.” *Inside Energy with Federal Lands*, April 26.
- Spangler, Matt. 2004. “Report on sage grouse could trigger ESA listing; industry steps up fight.” *Inside Energy with Federal Lands*, June 14.
- Spangler, Matt. 2004. “Stakeholders make their case for and against U.S. sage-grouse listing.” *Inside Energy with Federal Lands*, August 16.
- “SPECIALISTS TO MEET AND DISCUSS STANDARDS FOR SAGE GROUSE MAPPING.” 2007. *US States News*, November 13.
- Stanfield, Jeff. 2009. “Wyoming seeks to keep wind projects out of sage grouse habitats.” *SNL Power Week West*, July 27.
- Stanfield, Jeff. 2010. “Interior gives energy industry reprieve by declining to list sage grouse as endangered.” *SNL Power Week Midwest*, March 16.
- “State’s Future Tied to Conservation of the Sage Grouse: Gov. Freudenthal Receives Recommendations from Implementation Team.” 2010. *Right Vision News*, July 1.
- “STATE SIGNS COOPERATIVE MOA WITH FEDERAL WILDLIFE AGENCY.” 2007. *US States News*, December 19.
- Stone, Daniel. 2010. “A Hitch for Wind Power in Wyoming and the Rest of the West.” *Newsweek*, April 5.
- Straub, Noelle. 2008. “INTERIOR: BLM announces new sage grouse protections in Wyo.” *GreenWire*, August 14.
- Straub, Noelle. 2010. “OIL AND GAS: BLM restricts development on Wyo. sage grouse habitat.” *E&E News PM*, January 5.
- Streater, Scott. 2008. “ENERGY CORRIDORS: Path of transmission lines continues to unearth wildlife, siting concerns.” *Land Letter*, August 21.
- Streater, Scott. 2009. “OIL AND GAS: Drilling plans must accommodate grouse to avoid ESA listing -- study. 2009.” *Land Letter*, October 22.
- Streater, Scott. 2009. “RENEWABLE ENERGY: Wind power industry retreating from Wyo., citing sage grouse concerns.” *Land Letter*, August 6.

Streater, Scott. 2009. "RENEWABLE ENERGY: Wyo. wind power boom could drive sage grouse to endangered list." *Land Letter*, June 4.

Streater, Scott. 2009. "SAGE GROUSE: Wyo. survey shows population down since 2008." *Land Letter*, August 27.

Streater Scott. 2009. "WILDLIFE: Wyo. task force recommends more study of wind-power impacts to grouse habitat." *Land Letter*, 5 November.

Streater, Scott. 2010. "ENDANGERED SPECIES: Ranchers, energy industry worry as FWS nears sage grouse decision." *Land Letter*, March 4.

Streater, Scott. 2010. "ENDANGERED SPECIES: Sage grouse appears headed for "candidate" status." *Land Letter*, February 25.

Streater, Scott. 2010. "ENDANGERED SPECIES: Wyo., neighboring states bear burden of grouse "candidate" listing." *Land Letter*, March 11.

Streater, Scott. 2010. "OIL AND GAS: Grouse concerns prompt Wyo. lease sale protests." *Land Letter*, December 9.

Streater, Scott. 2010. "RENEWABLE ENERGY: Bird advocates call for stronger regulation of wind turbines." *Land Letter*, May 13

Streater, Scott. 2010. "RENEWABLE ENERGY: Wyo. governor would tax wind generation, require remediation of wind farm sites." *Land Letter*, February 4.

Streater, Scott. 2010. "RENEWABLE ENERGY: Wyo. poised to adopt controversial wind power guidelines." *Land Letter*, April 22.

Streater, Scott. 2010. "RENEWABLE ENERGY: Wyo. wind farm would encroach on grouse "core area." *Land Letter*, February 18.

Streater, Scott. 2010. "SAGE GROUSE: BLM tightens development restrictions in Wyo. core habitat areas." *Land Letter*, January 7.

Streater, Scott. 2010. "SAGE GROUSE: Imperiled bird becomes high priority under BLM management plans." *Land Letter*, June 24.

Streater, Scott. 2010. SAGE GROUSE: Ore. follows Wyo. blueprint to reconcile energy, species priorities. *Land Letter*, December 2.

Streater, Scott. 2010. "SAGE GROUSE: Wyo. transmission developers squeezed by bird protections." *Land Letter*, August 26.

“Thousands Urge Gov. Freudenthal to Defend Wyoming’s Leadership on Sage Grouse Conservation.” 2004. *U. S. Newswire*, May 25.

“United States : Horizon halts Wyo. wind project because of grouse.” 2009. *TendersInfo*, August, 8.

“United States : Movement In Western Oil-Gas Lease Backlog In Wyo.” 2010. *TendersInfo*, July 31.

“United States : New rules to limit wind power in Wyoming.” 2010. *TendersInfo*, January 5.

Valerie Richardson. 2008. “Grouse threatens West; Some say worse than spotted owl.” *The Washington Times*, March 17.

Valerie Richardson. 2010 “Compromise on greater sage grouse; Bird gains ‘candidate species’ rank.” *The Washington Times*, March 8.

“Western Governors Call on Congress to Make Common-Sense Reforms to ESA; Council Created to Help Conserve Sagebrush Ecosystem, Sage Grouse.” 2005. *U.S. Newswire*, June 13.

“Western Governors Pledge to Continue Sage Grouse Conservation Efforts.” 2005. *U.S. Newswire*, January 7.

“WILDLIFE: Study to investigate turbines’ effect on sage grouse.” 2009. *Greenwire*, May 26.

“WILDLIFE: Wind developers want federal review of Wyo. plan.” 2009. *GreenWire*, July 14.

Wilkinson, Todd. 2004. “Sage grouse of Western plains seen as next “spotted owl.”” *Christian Science Monitor (Boston, MA)*, June 25.

“Wind farms may be barred from key Wyo grouse areas.” 2009. *The Associated Press State & Local Wire*, July 2.

“WIND POWER: No turbines on Wyo. sage grouse habitat -- FWS. 2009.” *ClimateWire*, July 13.

“Wind River tribes back grouse protections.” 2009. *The Associated Press State & Local Wire*, April 4.

“Win-Win Plan on Sage Grouse”. 2007. *Wyoming Tribune Eagle (Cheyenne)*, October 3.

“WY Governor Moves to Balance Energy With Bird Species Protection.” 2008. *PR Newswire*, August 1.

“Wyo. eyes new sage grouse tactic.” 2007. *The Associated Press State & Local Wire*, August 25.

“Wyo Game and Fish urges delay of oil and gas development.” 2007. *The Associated Press State & Local Wire*, November 24.

“Wyo. governor blasts courts over wolf protection.” 2010. *The Associated Press State & Local Wire*, June 5.

“Wyoming Governor’s Executive Order Sets Smart Course for Sage Management.” 2008. *Targeted News Service*, August 1.

“Wyoming has much at stake in sage grouse debate.” 2009. *The Associated Press State & Local Wire*, May 2.

“Wyoming News Briefs.” 2004. *The Associated Press State & Local Wire*, May 25.

“WYOMING PROFESSIONALS RECOGNIZED FOR WILDLIFE WORK.” 2008. *US State News*, July 25.

“WYOMING WILL FOCUS ON CONSERVATION MEASURES THAT WORK, SCIENTIFIC POPULATION ESTIMATES.” 2007. *State News Service*, June 29.

Appendix C: Virginia Tech Institutional Review Board Approval Letter



MEMORANDUM

DATE: February 20, 2012

TO: Karen M. Hult, Jennie Trefren

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires May 31, 2014)

PROTOCOL TITLE: Wyoming Greater Sage Grouse Policy

IRB NUMBER: 12-151

Effective February 17, 2012, the Virginia Tech IRB Chair, Dr. David M. Moore, approved the new protocol for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at <http://www.irb.vt.edu/pages/responsibilities.htm> (please review before the commencement of your research).

PROTOCOL INFORMATION:

Approved as: **Expedited, under 45 CFR 46.110 category(ies) 6, 7**

Protocol Approval Date: **2/17/2012**

Protocol Expiration Date: **2/16/2013**

Continuing Review Due Date*: **2/2/2013**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Date*	OSP Number	Sponsor	Grant Comparison Conducted?

*Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office (irbadmin@vt.edu) immediately.

cc: File