12-2008

Factors Affecting Landowner Participation in the Candidate Conservation Agreements with Assurances Program

Kendra Womack
Utah State University

FACTORS AFFECTING LANDOWNER PARTICIPATION IN THE CANDIDATE CONSERVATION AGREEMENTS WITH ASSURANCES PROGRAM

by

Kendra L. Womack

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Human Dimensions of Ecosystem Science and Management

Approved:

_____	_____
Steven E. Daniels Major Professor	Mark W. Brunson Committee Member
_____	_____
Terry A. Messmer Committee Member	Byron R. Burnham Dean of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2008

ABSTRACT

Factors Affecting Landowner Participation in the

Candidate Conservation Agreements

with Assurances Program

by

Kendra L. Womack, Master of Science

Utah State University, 2008

Major Professor: Dr. Steven E. Daniels
Department: Environment and Society

The United States' Endangered Species Act of 1973 has been recognized as one of the most powerful laws enacted to protect endangered species in the world. Its protections for animal species extends onto private land, which has in some cases created conflict between the law, its enforcers, and private landowners. The Candidate Conservation Agreements with Assurances (CCAA) program was developed in 1999 to provide a regulatory incentive for private landowners to engage in pro-active conservation for sensitive species to preclude the need for listing under the ESA in the future. Since 1999, however, there have only been 17 CCAAs signed, a relatively small number given the thousands of species eligible for the program across the U.S. This research used semi-structured qualitative interviews with individuals from four

participant categories to expand our understanding of why landowners might choose to participate in the CCAA program, and of what benefits and barriers they perceive in program implementation. Participant categories included 1) private landowners enrolled in a CCAA; 2) private landowners that are eligible to enroll, but declined to participate; 3) State fish and wildlife agency employees who have participated in CCAAs across the county; and 4) Fish and Wildlife Service employees responsible for CCAA program implementation. Twenty-six interviews were completed during this research project. Results suggest that program implementation is affected by a multitude of factors; no exclusive drivers were identified. However, the variety of factors that were identified are assessed and management and policy recommendations are made. Hopefully these results and recommendations can potentially affect program policy to increase participation and the potential of the CCAA program as an effective tool for conservation on private lands in the United States.

(145 pages)

ACKNOWLEDGMENTS

I thank my major professor, Dr. Steve Daniels, for his support and vision on this project. In particular I thank him for his commitment to making sure this project stayed rooted in pragmatism and his undying patience as I struggled with document organization. I also thank my committee members: Dr. Mark Brunson for his encouragement and expertise in theoretical foundations and qualitative research methodology, and Dr. Terry Messmer for his ardent reminders about why this research matters.

I also thank the Snake River Office of the Fish and Wildlife Service in Boise, Idaho, for their support and flexibility as I pursued this degree. In particular I thank Michael Morse who, as my supervisor, showed astounding commitment to my efforts. Thanks to all the staff in the office for making it possible for me to work and attend graduate school. In addition, I thank Alison Beck Haas, who wholeheartedly supported my quest and for whose mentoring and spirit I will be forever grateful.

This research would not have been possible without the cooperation of research participants who voluntarily shared their experiences and precious time with me. All of the participants have also embarked on a special journey under this program, and their willingness to walk in the dark for species conservation is laudable.

Last, I thank my friends and family, who never doubted that I would be successful, and reminded me so when I forgot. Your love and support made this possible.

Thank you all.

Kendra L. Womack

CONTENTS

Page

ABSTRACT iii

ACKNOWLEDGMENTS v

LIST OF TABLES viii

CHAPTER

1 INTRODUCTION 1

1.1 Introduction 1
1.2 Background 2
1.3 Framing the Research Problem 9

2 LITERATURE AND REGULATORY REVIEW 10

2.1 The CCAA Program — Purpose, Process, and Progress Overview 10
2.2 Literature Review 16

3 METHODS 50

3.1 Research Context 50
3.2 Research Participants 51
3.3 Research Interviews 54
3.4 Data Analysis 56
3.5 Human Subjects Protection 57

4 RESULTS 60

4.1 Personal Choice 60
4.2 Adoption and Diffusion of Innovations 78
4.3 Public Policy Implementation 80

5 DISCUSSION, CONCLUSIONS, AND POLICY IMPLICATIONS 89

5.1 Research Question 1: What factors are influencing non-Federal landowners to participate, or not to participate, in the CCAA program? 90
5.2 Research Question 2: Does the small number of CCAAs to date indicate that the program is not meeting its objectives? 102

5.3 Research Question 3: Could the CCAA program or its implementation be changed to increase participation? If so, how? 104
5.4 Reflections on Theory 111
5.5 Conclusion 115

LITERATURE CITED 117

APPENDICES 127

A. Interview Guides 128
B. Informed Consent Letter 133

LIST OF TABLES

Table Page

1 Existing CCAA information as of March 2008 (http://ecos.fws.gov). 15

CHAPTER 1

INTRODUCTION

1.1 Introduction

In its ruling in Tennessee Valley Authority v. Hill (437 U.S. 153, 180, 1978), the United States Supreme Court described the Endangered Species Act of 1973 (ESA) as "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." Not surprisingly, the ESA's legal and regulatory implications have generated substantial controversy, particularly in regard to the ESA's potential consequences for private lands and landowners (Shogren 1998; Sullins 2001). Private lands are widely recognized as critical for the protection of endangered species and biodiversity in the United States, but there has traditionally been little or no incentive for private landowners associated with such conservation. Recent efforts to provide such incentives include several programs that grant regulatory assurances under the ESA to private landowners who voluntarily participate in conservation actions for listed or at-risk species on their private lands. One such program is the Candidate Conservation Agreements with Assurances (CCAA) program, which provides regulatory assurances to private landowners who conserve at-risk species, if those species should ever become protected under the ESA. The CCAA program was launched in 2001, and to date there are 17 total agreements in the United States. This research project endeavored to describe the factors affecting landowner participation in CCAA program, including both incentives and potential barriers to participation.

1.2 Background

The ESA's protections for listed endangered and threatened animal species extend fully onto private lands; Section 9 of the ESA explicitly prohibits private landowners from "taking" listed animal species on their property.[1] The ESA defines "take" as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" of any listed species (ESA, Sec. 3(19)). "Harm" has been further defined by the U.S. Fish and Wildlife Service, and upheld by the courts, to include actions that significantly modify or degrade habitat (e.g., Babbitt v. Sweet Home Chapter of Communities for a Greater Oregon (515 U.S. 687, 1995)).

The implications of the Section 9 takings provisions are extremely important given the frequency with which listed species (and biodiversity in general) occur on private or non-Federal lands. Indeed, 90 percent of the listed species in the United States occur on non-Federal lands, and more than 70 percent of listed species rely on non-Federal lands to meet the majority of their habitat needs (Government Accountability Office (GAO) 1994). This has important ramifications for landowners and listed species. For landowners, the "taking" prohibitions under Section 9 may evoke fear, and may affect their willingness or ability to conduct otherwise legal activities on their lands. In some cases, landowners might actively seek to eliminate species that occur on their lands prior to a pending listing in order to avoid potential future restrictions or regulations (*e.g.*, (Matthews 1999; Burnham et al. 2006), or may destroy or modify habitat on their land known to be suitable for listed species (Bean 1999; Hadlock and Beckwith 2002b; Langpap 2006; Lueck and Michael 2003; Wilcove and Lee 2004). In the most extreme

[1] Threatened and endangered plant species are not subject to take prohibitions under Section 9 of the Act.

cases a landowner may even apply a "shoot, shovel, and shut-up" approach to protecting their property from the risk of future regulation (e.g., Nelson 1995), although documenting the frequency of such actions is difficult. Landowners may also refuse to grant agencies or organizations access to conduct surveys on their land (Bean 1999; Brook, Zint, and De Young 2003; Hadlock and Beckwith 2002b), which impedes discovery of the species and thereby protects the landowner from any potential associated regulations. As Elmendorf (2003, 437) states, landowners may seek to "perfect their [private] property rights through preemptive habitat destruction." In any case, a fear of restrictions or penalty may discourage landowners from engaging in conservation activities for listed or at-risk species that might increase numbers or suitable habitat on their properties. These attitudes and behaviors toward species conservation do not bode well for the long-term survival of species and maintenance of biodiversity on private lands.

As noted earlier, private lands provide important habitats for all or a portion of the life cycle of many listed and sensitive species. If landowners do not have the incentive to participate in conservation activities (indeed, Section 9 may actually serve as a disincentive), then potential habitat or refuge for listed species may be reduced or destroyed over time. There is a sizeable literature discussing the role of incentives in encouraging conservation of species on private lands (e.g., Bean 2006; Hadlock and Beckwith 2002b; Langpap 2006; Parkhurst and Shogren 2003; Parkhurst and Shogren 2006; Shogren 2005; Wilcove and Lee 2004). The idea of incentives for conservation on private lands is not new. Aldo Leopold had a vision of the need for incentives in writings as early as 1934 (as cited in Knight and Riedel 2002):

> The crux of the problem is that every landowner is the custodian of 2 interests, not always identical, the public interest and his own. What we need is a positive inducement or reward for the landowner who respects both interests in his actual land practice. All conservation problems — erosion, forestry, game, wild flowers, landscapes — ultimately boil down to this.

Leopold's writing underlines not only the importance of incentives for conservation, but also the critical nature of accomplishing conservation on private lands. As with the ecological issues mentioned above, endangered species conservation on private lands involves the consideration of a public good by private interests and with private costs (Daniels and Brehm 2003; Hadlock and Beckwith 2002b; Shogren 2005, others). Increasing the incidence and decreasing the risk (real or perceived) of endangered or at-risk species conservation on private lands is at the heart of the current conservation conversation (see Chapters 17 through 24 in Goble, Scott, and Davis 2006 for the most recent writings).

Although many scholars of the subject agree that incentives are needed to encourage conservation of listed and at-risk species on private lands, there is considerable debate over both the most effective form of these incentives, and the role they can successfully play over time. The suite of existing incentive programs (for a recent summary discussion see Parkhurst and Shogren 2006) focuses primarily on economic mechanisms aimed at "creat[ing] an economic value for endangered species and thereby alter[ing] the decisional calculus so that the benefits of compliance with the ESA outweigh the benefits of opposition to it" (Knobloch and Cawley 2005, 133). There seems to be general agreement, however, that economic incentives alone are not likely to result in effective conservation over the long-term or in all cases (Elmendorf 2003;

Hadlock and Beckwith 2002b; Knobloch and Cawley 2005; Langpap 2006; Parkhurst and Shogren 2006). Hadlock and Beckwith (2002b, 200) capture the overall idea well.

> No one type of incentive, by itself, is the best for addressing the full range of potential barriers that may affect landowners. The objective is to find the most appropriate mix of incentives (monetary and nonmonetary) that will collectively encourage the particular landowner to voluntarily engage in species recovery.

Similarly, several authors have suggested that landowners' conservation decisions, and specifically those regarding endangered or at-risk species, must be considered in the context of their moral culture (Peterson et al. 2002), underlying values and attitudes (Raymond and Olive 2007), or more generally their way of life (Knobloch and Cawley 2005). Overall it seems that the economic lens presents an oversimplified and perhaps incomplete view of land and species conservation issues on private lands, and a broader approach is needed.

To begin to address the challenge of conserving species on private lands, and to provide non-economic incentives, the USDI Fish and Wildlife Service (FWS) and the National Marine Fisheries Service[2] promulgated or adopted regulations for three programs that provide "take exemptions" to landowners who are engaging in otherwise lawful activities that may affect listed species or species that may become listed, or to landowners who voluntarily engage in conservation efforts for such species on their property (FWS 1999a, 1999b, 2004). Collectively, these programs include Habitat Conservation Plans (HCPs), Safe Harbor Agreements (SHAs), and CCAAs. Habitat Conservation Plans and SHAs involve listed species, whereas CCAAs address candidate

[2] Although the National Marine Fisheries Service was listed on the promulgating regulations for the CCAA program, as an agency they have to date not participated in the development of a CCAA for any of the species under their jurisdiction. Thus, all agency references in this document are of the Fish and Wildlife Service unless otherwise specified.

species or “species that will likely become candidates in the near future” (FWS 1999b). Candidate species have no formal Federal protection, and Section 9 does not prohibit “take” of candidate species; however, if a candidate species becomes listed all of the Federal ESA protections take effect.

Safe Harbor Agreements and CCAAs are relatively new programs. The final regulations for these programs were published in the Federal Register on June 17, 1999 (FWS 1999a, 1999b), with revisions to the regulations released as recently as 2004 (FWS 2004). There are important distinctions between CCAAs and SHAs, but the critical similarity is that they are intended to promote voluntary conservation and recovery efforts by private landowners for listed or at-risk species. Additionally, both programs provide landowners who participate with certain assurances from the FWS regarding future land-use restrictions or other regulatory actions. These programs were incepted to provide regulatory incentives and encourage landowners to participate in voluntary conservation for listed, candidate, and sensitive species on their private properties. It is important to note that prior to the 1999 regulations for CCAAs, the FWS finalized numerous candidate conservation agreements without assurances; that program continues to be available for interested landowners, although no regulatory or other incentives are explicitly provided under the program.

One could argue that the conservation of candidate and sensitive species is more critical to the successful maintenance of biodiversity than is the conservation of listed species (Shaffer et al. 2006). Similarly, one could argue that the growing number of imperiled species is an indication of systemic species conservation failure on a broad scale, with a tendency to rely on the ESA more as a management tool than as the safety

net it was designed to be (Daniels and Brehm 2003; Goble, Davis, and Scott 2006). In other words, society in general, and government more specifically, have thus far not focused on proactive conservation and "keep[ing] common species common" (Hadlock and Beckwith 2002b), but rather in many cases have waited until species are imperiled before actively seeking information about the species and its threats, or implementing conservation actions (Shaffer et al. 2006).

This approach makes conservation more difficult on a number of levels. First, when a species' numbers are greatly reduced, the science of conservation biology shows us that the likelihood of long-term population viability may also be greatly reduced (Meffe and Carroll 1994; Shaffer et al. 2006). We are obliged to strive to ensure viability, however, and conservation of limited remaining habitats for a species is likely to be excessively costly (Shaffer et al. 2006). Another important consideration is that once a species is listed they inherit the "baggage" of that listing. In the most contentious scenarios (e.g., the northern spotted owl) this may result in landowners becoming "entrenched in positions espoused by their moral culture" (Peterson et al. 2002, 949), or becoming otherwise engaged in largely symbolic arguments over the effect of that listing (Lange 1993; Raymond and Olive 2007). At a minimum the decision to list brings with it potential regulatory restrictions and "take" prohibitions. In either case, landowner fears such as those described earlier in this writing will likely be increased, cooperation may decrease, and overall the conservation commitment may be diminished. Relatedly, management of listed species is perhaps less flexible, encourages less innovation, and may be less responsive to landowner needs and desires than efforts to conserve non-listed species (Hadlock and Beckwith 2002b). For all of these reasons, the CCAA program

appears to be a critically important addition to the toolbox of conservation programs for private landowners.

In sum, at-risk, candidate, threatened, and endangered species all rely, at least in part, on the activities of private landowners on private lands for their long term conservation. The ESA's regulatory and enforcement mechanisms (i.e., the "hammer" of Sections 9 and 10) do not effectively encourage protection of either listed or at-risk species or habitats, and may actually serve as disincentives. In response, the FWS has offered regulations and programs that provide both economic and regulatory incentives to improve the success of conservation efforts on private lands.

The research project presented here explored the factors affecting private and non-federal landowner participation in the most proactive of these incentive programs, the CCAA program. To date, no research has been conducted specifically to assess the effectiveness of the CCAA program as an incentive mechanism for private landowners, although several authors have postulated about its potential effectiveness and theoretical core (Bean 2006; Donahue 2005; Hadlock and Beckwith 2002b). Perhaps more importantly, the program has had limited implementation; only 17 agreements have been completed since 1999 despite 250 candidate species, and many more eligible at-risk species. This suggests that there may be factors serving as barriers to landowner implementation of the program.

At this juncture more species than ever are listed or on the verge of being listed. All of these species may be affected by increased habitat conversion and loss, the unknown and likely profound effects of climate change, other biological threats, and the precarious position of the ESA in the always uncertain political environment.

Accordingly, it is crucial for both managers and the scholarly community to evaluate and understand potential adaptations to the existing framework that could increase conservation effectiveness. This research attempts to illuminate a piece of the larger context that is biodiversity and species conservation on private lands.

1.3 Framing the Research Problem

The background information provided above helps elucidate three pragmatic research questions.

1. What factors are influencing non-Federal landowners to participate, or not to participate, in the CCAA program?
2. Does the small number of CCAAs to date indicate that the program is not meeting its objectives?
3. Could the CCAA program or its implementation be changed to increase participation? If so, how?

These questions guided both the literature review and methodological design of this research endeavor. The methods for this research project were designed to address these research questions, although no *a priori* hypotheses were developed. Chapter 3 (Methods) of this Thesis provides a comprehensive discussion of the methodological approach used to inform these questions and guide the research.

CHAPTER 2

LITERATURE AND REGULATORY REVIEW

2.1 The CCAA Program — Purpose, Process, and Progress Overview

The CCAA program was first noticed in the Federal Register as a draft policy in 1997. Final policies and regulations for CCAAs were promulgated on June 17, 1999, and became effective July 19, 1999. In this section the purpose of the CCAA program, the basic process elements needed to produce an agreement, and the current status of the program nationwide are described.

2.1.a Purpose

Candidate Conservation Agreements with Assurances were designed to provide a regulatory incentive mechanism to encourage conservation of proposed, candidate, and other sensitive species on private lands. The implementing regulations articulate the purpose of the program (64 FR 32726).

> This policy is intended to facilitate the conservation of proposed and candidate species, and species likely to become candidates in the near future by giving citizens, States, local governments, Tribes, businesses, organizations, and other non-Federal property owners incentives to implement conservation measures for declining species by providing certainty with regard to land, water, or resource use restrictions that might be imposed should the species later become listed as threatened or endangered under the Act.

More specifically (64 FR 32726):

> Under the policy, non-Federal property owners, who enter into a Candidate Conservation Agreement with assurances that commit them to implement voluntary conservation measures…will receive assurances from the Services that additional conservation measures will not be required and additional land, water, or resource use restrictions will not be imposed should the species become listed in the future.

In addition to offering landowners assurances regarding future commitment of resources and management certainty, the CCAA program also provides participating landowners with a section 10(a)(1)(A) permit under the ESA, also known as an "enhancement of survival permit," which protects the landowners from the "take" prohibitions set forth under section 9 of the ESA (for those activities identified in the CCAA) if the species ever becomes listed.

The primary purpose of the CCAA program is to facilitate species conservation before species are listed under the ESA, and ultimately to prevent species from becoming listed under the ESA. To accomplish these conservation goals, CCAAs are required to meet certain criteria, which the FWS (2003) refers to as the "CCAA standard." The CCAA standard is defined in the regulations as follows (64 FR 116, 32727):

> [T]he Service must determine that the benefits of conservation measures to be implemented by a property owner under a CCAA, when combined with those benefits that would be achieved if the conservation measures were also to be implemented on other necessary properties, would preclude or remove any need to list the covered species.

The extent of conservation necessary to meet the CCAA standard may vary substantially depending on the needs of the species involved, and the existing threats to the species across its range. In some cases, a property owner may already have reached the CCAA standard prior to embarking on the development of an agreement, and in other cases the landowner may be required to make substantive changes to his or her land management activities and operations to meet the CCAA standard. The FWS has ultimate authority and responsibility for determining what the CCAA standard is in any particular case. It is interesting to note that the CCAA standard is arguably more stringent and requires more conservation effort to reach (depending on the circumstances)

than the standard for SHAs for listed species. A SHA requires only that the actions undertaken be "reasonably certain to result in a net benefit" (69 FR 85) to the listed species over the course of the agreement; the CCAA standard requires that actions taken under the agreement "preclude the need to list the species" (64 FR 116).

2.1.b Process

The FWS's draft CCAA Handbook (2003) identifies 16 elements that must be present in every CCAA. Some of these elements are largely standardized across all agreements, and some elements are specific to each one. Standardized elements include: the authority and purpose of the agreement, the requirements for notification of take, the assurances provided under the agreement, and a description of the procedures for agreement termination. The remaining elements, which will be unique to each agreement, are listed below.

1. Parties to the agreement;
2. Tracking number;
3. Description of the enrolled property;
4. Background information on the covered species and properties;
5. Description of existing conditions;
6. Identification of conservation measures and management activities, including a description of the threat factors for the species;
7. Expected benefits to the species under the agreement;
8. Description of the level and type of take expected, and any other impacts to the species;
9. Description of monitoring activities and responsibilities under the agreement;

10. Description of provisions for amendments to the agreement;

11. Duration of the agreement; and

12. Description of the agreement's adaptive management strategy, if appropriate.

The FWS's Environmental Conservation Online System, accessible online at http://ecos.fws.gov, provides information on all existing conservation agreements; the draft CCAA handbook is available online at http://www.fws.gov/endangered/candidates/ccaa_handbook_contents/handbooktext.pdf.

Although the CCAA program is a conservation incentive program, it differs from many other incentive programs in that it is also a regulatory permitting process designed to meet pre-defined legal standards. Thus, the process of completing an agreement is substantially more complex than negotiating the terms of the agreement itself. For example, although the FWS's field-level offices can negotiate and develop a CCAA with a willing landowner(s), the field office may not have ultimate authority to approve that CCAA. Each agreement must be reviewed by government solicitors to ensure compliance with legal and regulatory requirements; solicitor review may necessitate substantive changes to the draft agreements. Additionally, the FWS's permitting process is subject to analysis under the National Environmental Policy Act, and public notification such that each draft CCAA must undergo a public comment period before approval. Finally, because the FWS's issuance of a section 10 permit is considered a federal action, the FWS must conduct an intraservice consultation under section 7 of the ESA to ensure that the issuance of the permit does not jeopardize the continued existence of any listed species or critical habitat; this consultation may take up to 135 days to complete. Overall, the development of a CCAA and issuance of a section 10 permit is

likely to involve a substantial commitment of time. A description of all of the permitting and processing requirements for completion of a CCAA can be found in the FWS's draft CCAA handbook (2003).

Candidate Conservation Agreements with Assurances vary in "size, scope, structure, complexity, and the activities they address" (FWS 2003, 5). All agreements are between the FWS and a non-Federal landowner, but other elements are intended to be flexible to accommodate the unique needs of both the species and the landowners involved. There are two main agreement structures: individual agreements, and programmatic or "umbrella" agreements. Individual agreements are between the FWS and one property owner who receives assurances and a permit; programmatic agreements are between the FWS and multiple property owners. Programmatic agreements can be further distinguished between those where one section 10 permit is issued to a non-Federal entity and then multiple other landowners are covered under the agreement with "certificates of inclusion," and those where multiple section 10 permits are issued under one agreement. Agreements may have Federal or non-federal cooperators, who agree to participate in implementation of the agreement over time. Although Federal agencies can cooperate on development or implementation of a CCAA, they cannot be the permit holder.

2.1.c Progress

Since the program's inception, there have been 17 CCAAs signed with section 10(a)(1)(A) permits issued. The names of the existing agreements, as well as the species covered, the state where they exist, and total land area covered are identified in Table 1.

Table 1. Existing CCAA information as of March 2008 (http://ecos.fws.gov).

Agreement Name	Species Covered	State	Size (Acres)
Adams Cave Beetle	Lesser and Greater Adams Cave Beetles	Kentucky	1
Alexander	Lesser Prairie-Chicken	Kansas	2,232
Eastern Massasauga – Rome State Nature Preserve	Eastern Massasauga Rattlesnake	Ohio	104.8
Grayling CCAA for the Big Hole River	Arctic Grayling	Montana	382,200
Green Diamond Resource Co.	Southern Torrent Salamander, Coastal Cutthroat Trout, Tailed Frog	California	417,000
Gunnison Sage-grouse Umbrella	Gunnison Sage-Grouse	Colorado	800,000
Idaho Department of State Lands Spotted Frog	Columbia Spotted Frog	Idaho	680
ODFW Columbian Sharp-tailed Grouse	Columbian Sharp-tailed Grouse	Oregon	2,752
Robust Redhorse	Robust Redhorse	Georgia	18.3 linear river miles
Soulen Ranch Southern Idaho Ground Squirrel	Southern Idaho Ground Squirrel	Idaho	43,982
Southern Idaho Ground Squirrel Programmatic	Southern Idaho Ground Squirrel	Idaho	1,051,752
State of Montana Umbrella Agreement for Westslope	Westslope Cutthroat Trout	Montana	No data available
Tagshinney Tree Farm	13 species	Washington	144
Three Forks	Colorado River Cutthroat Trout	Colorado, Wyoming	27
Three Mile Canyon Farms Multi-Species	4 species	Oregon	95,000
Lesser Prairie Chicken programmatic	Lesser prairie chicken	Texas	No data available
Yellowcheek darter, Upper Little Red River watershed programmatic	Yellowcheek darter fish	Arkansas	558,615 acres

There are 19 permit holders currently identified under the CCAA program; three agreements have more than one permit holder, and the remainder of agreements has one permit holder. There are seven programmatic agreements, all of which have a state fish and wildlife management agency as the permit holder. Under these programmatic agreements, there are more than 25 individual private landowners who have obtained certificates of inclusion for coverage under the state agency's permit. A state agency is the permit holder on eight agreements (programmatic and standard), larger industrial entities or corporations hold permits under four agreements, as do smaller family-owned companies or private individuals, and a non-profit conservation group is the permit holder on one agreement. Finally, under one agreement a state agency, a conservation group, and two other government entities are joint permit holders. To date, no species that is covered under a CCAA has been subsequently listed under the ESA.

2.2 Literature Review

There appears to be no research to date specifically examining the CCAA program and its implementation. There are many studies exploring the HCP program, a few investigations specific to the SHA program, some scholarly speculation about the potential of the CCAA program, and a substantial literature exploring the ESA and its implications on private lands. Review of these related literatures suggests that the CCAA program may have explanatory elements rooted in a variety of scholarship, including landowner motivation, economics, incentives, adoption and diffusion of innovations, public policy implementation, and others. Thus, this literature review must synthesize research and writing from those various disciplines to offer a more emergent understanding of the program. In this case I have chosen to frame the CCAA program

and its implementation with three synthesized lenses: personal choice, adoption/diffusion, and public policy implementation.

The personal choice lens will explore two questions: Why would a private individual or entity choose to conserve in the first place, and why might an individual choose to participate in a conservation partnership with the FWS?. The adoption/diffusion lens will discuss factors that are thought to explain how and why innovations, including innovative programs like the CCAA program, are adopted into and diffused throughout a target population. The public policy implementation lens focuses on how the content and context of a program like CCAAs can affect the value and success of the public policy overall.

It is important to recognize that each lens considered here is a synthesis of multiple concepts, scholarship, and disciplines. This is particularly true for the personal choice lens, in which personal motivation, economics, incentives, and other factors must all be considered. Due to limited space, and expansive relevant knowledge, some ideas will undoubtedly be emphasized more than others. However, what is most crucial is the synthetic view, where emergent ideas and themes are revealed.

2.2.a Personal Choice

Choice is a fundamental consideration for the CCAA program because it is an entirely voluntary program; under no circumstances would the FWS mandate an individual to participate in the program, and there are no regulatory requirements for non-listed species. If no individuals choose to participate, then there are no CCAAs and no CCAA program (effectively). As discussed above, there are two important components of personal choice related to participation in the CCAA program. First is whether or not

an individual chooses to do conservation on one's property at all. Second is whether or not an individual chooses to go substantially further to engage in conservation for species under the ESA, or to formally partner with the FWS for such efforts. What emerges from the following discussion is that these two choices may be determined by substantially distinct factors for many individuals.[3]

2.2.a.i Choice #1: To Conserve or Not to Conserve

Interest in private lands conservation largely began in the dust bowl era of the 1930s, where soil erosion prevention was the primary conservation concern (Ervin and Ervin 1982). Some of the earliest writings on the topic come from Aldo Leopold, who is renowned for having been ahead of his times regarding conservation theory (Knight and Riedel 2002). Early academic and agency research into landowner motivations occurred in the 1950s and 1960s, again with a focus on soil conservation practices and adoption of Federal soil conservation programs (Ervin and Ervin 1982). Research on the issue has since greatly expanded, although the majority of studies until the mid-1990s seemed to center primarily on soil and water conservation. In 1994 the GAO published a report documenting the occurrence of species listed under the ESA on private lands, illustrating the previously under-recognized importance of private lands in species conservation and the need for further research and synthesis. Although the motivations for soil and water

[3] Many participants in the CCAA program thus far are not necessarily "individual" landowners, but rather are corporations, state agencies, or conservation entities. For purposes of this discussion, "landowners" will be in reference to private landowners and to family owned entities engaged in active land management on private property. In addition, I will not speculate about motivations for state and other agencies to conserve, but takes at face value the mission statements of the various conservation groups and state fish and wildlife management agencies involved in the CCAA program thus far and assumes that they are motivated largely by their stated mission and conservation goals.

conservation are related to species and biodiversity conservation, there are also some important distinctions; both dimensions will be explored in this research.

Landowner Motivations

There is an extensive literature regarding landowner motivations for conservation, including the role of incentives as motivation. Most of this research can be loosely categorized in terms of endogenous factors (those factors arising from the landowner), or exogenous factors (those factors arising from sources other than the landowner). Endogenous factors might include landowner age, education, land use type, economic status, and personal values and attitudes; exogenous factors could include financial incentives, enactment of new policy, social pressures, etc. In some cases there may not be a clear distinction between endogenous and exogenous factors or they may be very much interrelated; in other cases it may be somewhat unclear what motivates a landowner. For example, Schneider and Ingram (1990) suggest that individuals may be motivated by "cultural notions of right, wrong, justice, individualism, equality, [and] obligations," all of which could be categorized as endogenous or exogenous factors depending the circumstances. The literature specifically debating the role of incentives as exogenous factors motivating conservation is vast; thus, incentives will be addressed in a separate section.

Early research on conservation practices in general (e.g., Blase 1960 as cited in Ervin and Ervin 1982) found that conservation motivations and barriers were related primarily to economic factors, including availability of off-farm income, ability to borrow money, and amount of personal debt. Other recent literature has also found that financial considerations play a significant role in motivating or inhibiting landowner

participation in riparian conservation programs (Corbett 2002; Rhodes, Leland, and Niven 2002), in general nature conservation (Schenk, Hunziker, and Kienast 2007), and in water conservation (Kessler 2006). Additional factors that have been identified include landowner age and formal education level (Ervin and Ervin 1982; Kreuter et al. 2006; Serbruyns and Luyssaert 2006). Pannell et al. (2006, 7) describe six "demographic and situational variables" that various studies have found help to determine landowner adoption of conservation practices in general. These include: the profit expectation of a practice, availability of off-property income, property size, owner age, education, and the reason for owning land. These factors are related to the adoption and diffusion literature, which will be discussed further in subsequent sections of this writing.

Research has also shown that landowners are motivated by less explicit characteristics as well. Variables such as personal and family attitudes and values, place attachment, socio-cultural position, and property rights orientation have all been related to landowner participation in conservation programs or activities (Corbett 2002; Kabii and Horwitz 2006; Kessler 2006; Kreuter et al. 2006; Lynne, Shonkwiler, and Rola 1988; Rhodes, Leland, and Niven 2002; Serbruyns and Luyssaert 2006; Uphoff and Langholz 1998; Winter, Esler, and Kidd 2005). For example, Corbett (2002) found that rural Utah landowners who believed that their land management actions affected environmental quality were more likely to participate in a government riparian enhancement program (other predictive variables included financial motivation and sufficient information). Environmental values in general, and knowledge of the ecological values of riparian areas were also important. Similarly, Lynne, Shonkwiler, and Rola (1988) showed that stronger positive attitudes towards conservation increased conservation behavior and

practices for Florida farmers. Property rights orientations were also found to be important factors influencing landowner adoption of rangeland management practices that enhance ecosystem services (Kreuter et al. 2006). In addition, that study found that the perception of social responsibility was a significant factor influencing landowner adoption. Overall, research suggests that many factors, including both economic and non-economic, influence and motivate landowner participation in various conservation programs and activities. Importantly, no one element is consistently the principal deciding factor; in most cases researchers have suggested that the combination of and relationship among factors, both endogenous and exogenous, are important to each individual circumstance and conservation decision (e.g., Shaffer et al. 2006).

Landowner Rights and Responsibilities

Another thread related to landowner motivations in general is the relationship between landowner rights and responsibilities; a landowner's choice to conserve is inextricably tied to more fundamental questions of land ownership. For example, is maximum economic benefit and development of private land a right of land ownership? Are biodiversity conservation and healthy landscapes a public right that result in landowner responsibility? Does a landowner have a personal sense of responsibility to conserve resources on their private land for a greater good? These questions have been vetted to some extent in various contexts, including takings law (Polasky, Doremus, and Rettig 1997), duty of care legislation (Bates 2001; Kabii and Horwitz 2006), and property rights debates more generally (e.g., Freyfogle 2003; Jackson-Smith, Kreuter, and Krannich 2005; Meyer 2000; Raymond and Olive 2007).

The classical property rights view in the United States stems from the Lockean orientation, where land ownership is "natural" and associated landowner rights are individual, stable, and relatively free from government intervention or authorities (Pincetl 2006; Raymond and Olive 2007; Yung and Belsky 2007). However, many authors have suggested that in actuality neither landowner rights nor responsibilities can be so consistently defined across individuals. For example, Jackson-Smith, Kreuter, and Krannich (2005) identified four dimensions and property rights orientations for rangeland owners in Texas and Utah. These dimensions included individual rights, social responsibility, land stewardship, and rights erosion concerns. Similarly, Yung and Belsky (2007) found that ranchers in Montana "argued for landowner control of private property" but also recognized private land as "part of a larger social and biophysical landscape"; what the authors call a "community claim" of public interest in private lands.

Property rights themselves have often been defined in terms of their legal multi-dimensionality as well. The "bundle of sticks" analogy is perhaps the most common; Meyer (2000, 2) describes it as follows:

> Property rights have been likened to a bundle of sticks where each stick represents a right or stream of benefits. Some important landowner sticks include the right to sell, lease, mortgage, donate, subdivide, grant easements, etc. The community also has a bundle of rights, such as to tax, take for public use, regulate uses, etc. Some more recent issues have also been added to and taken from the bundle…such as the rights to farm, to air and water quality protection, to species conservation and preservation, etc.

In Australia, the idea of "duty of care" has been debated in terms of its implications as a publicly imposed regulation on private land. Bates (2001, 2) explains that a "duty of care" would "require that individuals who could influence a risk of harm to the environment take 'reasonable and practical' steps to prevent such harm." This

notion of a "duty of care" explicitly assumes that environmental (specifically biodiversity) conservation for its own sake is a landowner's responsibility. Contrast this to requirements under "command and control" regulations such as the Clean Water Act where a particular water quality standard must be met to ensure the rights of other landowners. Polasky, Doremus, and Rettig (1997) describe this as the "harm-benefit" analysis frequently considered in the courts where the assumption is that "land ownership does not carry a right to harm one's neighbors or the public at large through nuisance activities" (73). What is most evident in the literature is that people define property rights and responsibilities in different ways, but that all definitions take place in the broader social context and have relevance beyond the relationship between people and property (Kabii and Horwitz 2006). Specifically, how an individual defines his/her property rights and responsibilities, and how society defines private property rights and responsibilities, have important implications for the choice to conserve.

2.2.a.ii Choice #2: To Conserve
Under the Endangered Species Act

This section focuses upon the distinction between the factors that might motivate someone to conserve on their private lands in general, and the factors likely to influence landowner conservation for endangered (or at-risk) species either independently or in partnership with the FWS. In a few cases, research has found that the motivation for landowners to conserve species is, at least in part, similar to other conservation practices. For example, Langpap (2004) found that age, land tenure, and conservation attitudes were significant determinants of landowner participation in conservation programs for endangered species. Land parcel size, amount and source of information about a

particular program, and attitude toward the ESA and conservation in general were significant factors influencing landowner participation in the Safe Harbor program for endangered species (Mehmood and Zhang 2005). However, a majority of writings discusses the various factors that theoretically reduce landowner motivation to conserve species under the ESA. Two of the most evident distinctions between conservation in general and conservation of species under the ESA are personal cost and the level of personal risk. For example, soil, water, timber, and other similar conservation practices may result in direct and measurable benefits to landowners including reduced soil erosion or timber stand improvement (Ervin and Ervin 1982; Nagubadi et al. 1996; Langpap 2004), which are often important to proper functioning of other farm or ranch resources. Conversely, landowners may not perceive any personal benefits from species conservation, but may see high levels of risk associated with regulation, land use restrictions, and any associated financial burdens. Several interrelated items will be presented and discussed to explore these issues of landowner choice, including the following: an overview of the historic conflicts between private landowners and endangered species, notions of equity and fairness and the incentives theorized to address them, and factors affecting cooperation between private landowners and the FWS (or the government in general).

The ESA and Private Lands — An Overview

The Endangered Species Act has been both hailed and cursed as the "pit bull" of environmental laws, particularly in relation to potential implications for private landowners. Indeed, the penalties that may be incurred by an individual or entity that

violates the ESA by "taking" a listed animal are substantial, as identified in section 11 of the ESA (civil penalties ranging between $500 and $25,000; 16 U.S.C. 1540). However, data indicating that these penalties are actually borne to any significant extent are lacking. Much of our current information regarding effects from the ESA on private landowners is derived largely from "anecdote and symbol, emphasizing stories of grandmothers losing the family estate to an endangered owl" (Raymond and Olive 2007, 4), with little or no evidence that such effects have occurred on a large scale. Bean (1999) suggests that the takings prohibitions under the ESA "have a far narrower sweep than either environmentalists or landowners commonly think" (10702). At least one study found the notion that listings under the ESA had adverse impacts on rural economies unfounded (Duffy-Deno 1997), and other authors point out that the potentially severe penalties under section 9 have actually contributed to lax enforcement of the ESA on private lands because the FWS may be disinclined to impose harsh sanctions depending on the case-by-case circumstances (Farrier 1995; Sheldon 1998). Interestingly, Thompson (2006) reviewed section 9 lawsuits over the past ten years and reported that the majority were directed at commercial uses (e.g., development, timber harvest), and few, if any, were directed at what he calls the "working landscape" of farming or ranching. However, a 1994 GAO report found that those individuals or entities who have been successfully criminally prosecuted for violating section 9 of the ESA have indeed incurred substantial penalties including probation, jail time, and monetary fines; the majority of these cases involved prosecutions for directly killing a listed species.

Regardless of the empirical effects, there is little debate about the perception among landowners that the ESA is something to fear. Numerous authors suggest that endangered species evoke fear of regulations and land use restrictions for many private landowners, resulting in an unwillingness to participate in conservation efforts (e.g., Bean 1999; Hadlock and Beckwith 2002b; Langpap 2006; Lueck and Michael 2003; Wilcove and Lee 2004). For example, Reading and Kellert (1993, 578) found that ranchers feared reintroduction of the endangered black-footed ferret *(Mustela nigripes)* onto rangelands in Montana because of the potential for its presence to "restrict ranching and farming operations, result in a loss of control over grazing lands, and affect their rural, western lifestyle." Polasky, Doremus, and Rettig (1997, 70) suggest that unlisted species may "present an even more tempting opportunity for investment in destruction of conservation values" because there are not any explicit legal or regulatory consequences for doing so. This is particularly unfortunate because biodiversity conservation is not likely to be effective if it is limited to protection of species under the ESA (Yaffee 2006); the ESA was intended to be a last resort, not the only one (Daniels and Brehm 2003; Goble, Davis, and Scott 2006).

It has been suggested that conflict associated with species conservation and the ESA may be largely symbolic or symptomatic of other factors. I will not provide an expansive review of the conflict-specific scholarship on endangered species and their symbolic implications. Suffice it to say, however, that conflict regarding endangered species conservation is rarely about the species themselves. Instead, the conflict is rooted in the constructed meaning and identity of various interested groups and entities, and how those meanings are legitimized or threatened by others (Peterson and Horton 1995;

Peterson et al. 2002; Reading and Kellert 1993). For example, Lange's 1993 analysis described various rhetorical tactics used by environmentalists and loggers in the spotted owl *(Strix occidentalis)* debate of the Pacific Northwest to frame issues in the extreme (e.g., "jobs versus owls"), resulting in conflict escalation. Others have characterized similar episodes in terms of how conservation of a species affects a group's way of life, or how they make sense of their world (Knobloch and Cawley 2005; Peterson and Horton 1995; Reading and Kellert 1993). In addition, the endangered species-private lands debate is in many ways a "contest of social values" and interests (White and Hall 2006, 306), with endangered species inevitably being pitted against economic and social well being in a fixed-pie battle.

Perceived Equity and Fairness

Related to the value-ridden nature of endangered species conservation is the idea of distributive equity or fairness because many of the benefits of species conservation are public good values. Doremus (2003, 220) describes them as follows:

> Public goods are non-exclusive, meaning that they cannot be supplied to some people while at the same time being denied to others. They are also non-rival, meaning that their enjoyment by one person does not reduce their availability to others (Ostrom, Gardner, and Walker 1994).

Further (Doremus 2003, 220):

> [B]iodiversity as a whole is primarily valued for its non-consumptive uses. It provides scientific information; esthetic enjoyment; ecological services; option value, meaning the possibility of future use value of one kind or another; and existence value…

Doremus (2003) and other authors (e.g., Daniels and Brehm 2003; Kabii and Horwitz 2006; Polasky, Doremus, and Rettig 1997; Vlek 2000) also advance the dilemma: the desire for species conservation is inherently a society-level value choice

that has implications for individual action and behavior of some, but not all, citizens. Put another way, there is an inequitable distribution of costs and benefits associated with species conservation; society asks those who "host" species to bear the cost of conservation, but the non-exclusive nature of species existence allows wide distribution of the benefits. Several authors explicitly address the issue of fairness and equity (e.g., Doremus 2003; Hadlock and Beckwith 2002a; Kabii and Horwitz 2006; Polasky, Doremus, and Rettig 1997), suggesting that perceived fairness affects a policy's successful implementation and appeal. Doremus (2003, 224) proposes that "costs can fairly be imposed either on those responsible for the problem or on those who benefit from the solution," and Polasky, Doremus, and Rettig (1997, 74) state: "a regulation imposing heavy costs on a select group seems less fair. It presents the appearance of the tyranny of the majority." Stankey and Shindler (2006, 30) further this idea by describing the dichotomy between the public agreeing that humans have an ethical obligation to protect species, and the public understanding the "consequences, impacts, and alternatives" of species protection at a more local level. This is especially relevant given the broad and relatively strong public support for the ESA and endangered species regulation (Czech and Krausman 1999); the "majority" of people in the United States are not landowners who are likely to incur large personal costs associated with endangered species conservation. However, Knobloch and Cawley (2006) warn that the "majority" has more influence on conservation efforts than the public and policy makers generally recognize; the landowners are simply closest to the resource, which makes them an easier target for liability. For example (137):

> To lay the burden of environmental protection on private landowners, without acknowledging the full cast of players (consumers, corporate interests, etc.) who shape our ways of life and consequent environmental demands, neglects an important relationship between land use and more attenuated threats to native biodiversity. Put simply, if there were not meat eaters and meat packers in the United States, or wooden houses to build from cuts made on corporate land, there would be no conflict over range cattle or timber production endangering now rare species.

Others have made similar arguments. Karkkainen (2002, as cited in Elmendorf 2003, 453) suggests that "certain landowners are singled out for exceptional burdens; there is no semblance of horizontal equity in the way the ESA burdens fall."

A few authors point out that it is perhaps an impossible task to truly measure and compare the costs and benefits of species conservation (e.g., Doremus 2006; Shaffer et al. 2006; Vlek 2000). Vlek (2000) suggests that human psychology makes it easier for people to understand short term benefits than long term distributed costs (i.e., they are "cognitively more available"). Similarly, Doremus (2006) argues that the costs of conservation are easier to monetize and measure than the benefits resulting in more attention from landowners and policy-makers. Further, is it possible or indeed appropriate to place an economic value on conservation of biodiversity, or is it a fundamentally different type of resource than anything valued in the free market (e.g., Shaffer et al. 2006)? Polasky, Doremus, and Rettig (1997, 68) point out that "current endangered species policy largely avoids the species valuation question" and requires conservation over activity, "no matter how valuable that activity might be." They argue further:

> One way to reconcile the nearly absolute prohibition of the ESA with an economic approach that compares the relative benefits of alternatives is to assign an extremely large, possibly infinite, cost to extinction.

Although multifaceted, what is most evident is that it is not viable for species or biodiversity conservation efforts to ignore issues of distributive fairness, regardless of the difficulty inherent in valuing species existence and the costs and benefits of conservation.

A variety of literature has been introduced in the previous two sections and two conclusions are manifest: 1) conservation of public goods (species, biodiversity) on private lands poses issues of equity and fairness which may affect private landowner motivations to conserve, and 2) this problem is exacerbated because conservation of endangered species is associated with regulatory risks as well as symbolic threats to landowners' notions of personal and cultural values, rights, and responsibilities. Vlek (2000) would likely consider these conclusions indicative of a "commons" dilemma, which he defines as follows (159):

> The essential characteristic of environmental problems is the inherent conflict between the individual, social, and economic benefits of numerous activities and behaviours on the one hand, and the accumulated, collective environmental costs and risks on the other.

He contends: "as dilemmas they may be 'resolved' only by the achievement of a safer, sustainable balance of individual and collective benefits and risks" (161). One potential approach to achieving such a "balance" is the use of incentives, which is debated at length in the literature. A summary discussion follows.

Incentives

Schneider and Ingram (1990, 515) describe incentives as tools that rely on "tangible payoffs, positive or negative, to induce compliance or encourage utilization" of a policy. The majority of scholars consider that implementation of the ESA, including

both the potential for land use restrictions and the threat of legal enforcement for harming species, has acted largely as a perverse incentive (or a disincentive) for private landowners to conserve (Bean 1998; Innes, Polasky, and Tschirhart 1998; Langpap 2006; Parkhurst and Shogren 2005; Peterson and Horton 1995; Polasky, Doremus, and Rettig 1997; Thompson 2006). Indeed, Peterson and Horton (1995, 143) suggest that the "very existence of these provisions (to say nothing of their enforcement) has provoked hostility among property owners…" Such perverse incentives provide "dysfunctional results"; in the case of species conservation the result is that conservation is inhibited rather than fostered. Put one way, "disgruntled landowners make poor conservationists" (Farrier 1995, 98).

Perhaps one way to remedy the perverse incentives for conservation of species is the use of inducements, which are positive incentives that act to encourage participation in a policy (Schneider and Ingram 1990). For species conservation, discussion often converges on economic (financial or monetary) inducements which may include impact fees, subsidies, tradable development rights, conservation banking (market techniques), fee simple acquisition, or easements (e.g., Hadlock and Beckwith 2002b, Parkhurst and Shogren 2006). As Doremus (2003, 219) points out, "…it is economically rational for [landowners] not to conserve. Incentives can correct that imbalance, matching the landowner's interest with the community's." Similarly, Polasky, Doremus, and Rettig (1997) discuss the "fiscal illusion" of policy-makers and suggest that economically efficient outcomes can occur when landowners are compensated for conservation values on their property. Zhang and Flick (2001) found that landowners who received financial assistance were more likely to conserve than those who acted on regulatory statute alone,

and that conservation occurs more slowly under regulation than with financial incentives. Some landowners seem willing to comply with the ESA and other laws provided they are compensated for their efforts, losses, or inconvenience (Schenk, Hunziker, and Kienast 2007; Shogren 2005), and many see compensation and other financial motivations as effective ways to encourage private lands conservation. Overall, most authors agree that there is a role for various economic incentives in encouraging landowner conservation, particularly in helping to redress the inequities of species conservation.

What is also evident, however, is that economic incentives alone are not likely to either sufficiently motivate landowners to conserve, or to ensure effective long-term species conservation. Some landowners may be unwilling to accept monetary compensation to protect species, "for they fear further public erosion of their autonomy and private control" and "see compensation as a set of golden handcuffs" (Shogren 2005, 10-11). Similarly, Schenk, Hunziker, and Kienast (2007) found that landowners were not willing to tolerate increasing levels of regulation in exchange for increases in monetary compensation (subsidies) for nature conservation, and that many landowners "prefer to keep their independence" (72). Others have also suggested that the autonomy to control management, and recognition of land ownership as a definition of power, wealth, and even democracy are important factors affecting support for conservation on private lands (Bergmann and Bliss 2004; Dutcher et al. 2004; Langpap 2006; Peterson and Horton 1995), and government programs may represent threats to private property rights or risks to personal autonomy. Indeed, in a study of conflict surrounding the management of the endangered Florida Key deer, Peterson et al. (2002) found that many landowners were

more concerned with maintaining property rights than with economic factors. Several other authors have suggested that even when financial considerations are important to landowners they are rarely the only consideration, and often not the most important (e.g., Hadlock and Beckwith 2002a; Uphoff and Langholz 1998; Wilcove and Lee 2004). Dutcher et al. (2004) found that any level of government involvement in their management decisions disillusioned riparian landowners, and Langpap (2006) suggests that cost-share incentive programs may not be effective in many situations due to landowners' strong aversion to any government intervention.

Economic incentives have also been faulted for their limited ability to encourage long-term conservation. One of the primary reasons cited for this is the inability of the existing market and traditional economics to account for the value of species (Doremus 2006; Innes, Polasky, and Tschirhart 1998; Parkhurst and Shogren 2005; Polasky, Doremus, and Rettig 1997; Schenk, Hunziker, and Kienast 2007; Shaffer et al. 2006; Vlek 2000). Hadlock and Beckwith (2002b, 202) suggest that although incentive programs can use some market principles, it is:

> …not feasible to rely wholly on market methods for endangered species conservation because many of the conditions necessary for the market to function cannot be fulfilled for ecological resources (e.g., wildlife is a public good, perfect information does not exist, there are significant transaction costs, property rights are not fully assigned, etc.).

Parkhurst and Shogren (2005) also express concern with market methods because there is not a uniform system available by which to measure biodiversity and species values. Although it may be possible for government intervention to effectively create a legitimate market for a public good such as biodiversity, substantial barriers to a market approach for biodiversity conservation will still exist (Doremus 2003).

The argument that landowners need to understand and accept species conservation as a meaningful endeavor has also been proffered as a drawback to a purely economic approach. Knobloch and Cawley (2005, 143-144) present the following explanation:

> Financial incentives or compensation for endangered species protection may be expedient. They may satisfy some landowners' need for compensation for lost income, but such an approach does not and cannot by itself address the very large field of financial relationships and conflicting obligations within which landowners make their living and their ways of life. Financial reward for species protection is part and parcel of the systems of belief and action that endanger ecosystems in the first place; they can encourage only further enlightened self-interest without meaningfully laying the cultural groundwork for a genuinely effective land ethic.

Writing from the perspective of human psychology, Vlek (2000, 158) similarly suggests:

> As long as gains and losses are defined in personal, financial, and material terms, and not in terms of a broader, collective, and long-term conception…this micro- and meso-level outcome-rationality is yielding a host of environmental and social costs that accumulate into sub-optimal (collectively irrational) conditions for society and the environment as a whole.

Fundamentally, if landowners do not value conservation efforts exclusive of economic incentives then their efforts will be vulnerable to changing policy, funding availability, and any other factors that might interfere with the incentive mechanism (e.g., Schenk, Hunziker, and Kienast 2007). Thus, an integrated variety of mechanisms are needed to effectively motivate landowners in efforts that will promote long term species conservation (Doremus 2006; Hadlock and Beckwith 2002b; Innes, Polasky, and Tschirhart 1998; Langpap 2006; Parkhurst and Shogren 2005; Shaffer et al. 2006).

In regard to alternative incentive mechanisms, Doremus (2003, 219) asserts that "other incentive possibilities are limited only by policymaker's creativity and the extent

of government control of resources useful to property owners." Possibilities include, but are not limited to, regulatory assurance, technical assistance, and social recognition (Doremus 2003; Elmendorf 2003; Hadlock and Beckwith 2002b; Langpap 2006; Uphoff and Langholz 1998; Wilcove and Lee 2004; Zhang and Mehmood 2002). As described previously, two voluntary policies currently exist under the ESA that offer regulatory assurance to participating landowners, including SHAs and CCAAs.[4] Research on the effectiveness of SHAs has been mixed, but studies have generally suggested that regulatory assurances on their own are not sufficient to encourage significant participation (Wilcove and Lee 2004; Zhang and Mehmood 2002). Bean (2006) further asserts that current implementation of voluntary programs by the FWS may not be likely to result in large-scale participation due in part to large transaction costs and a byzantine process; the lack of a funding source designated to help with the development and implementation of such agreements has also been noted as a potential shortcoming (Zhang and Mehmood 2002). This is not to say than any authors explicitly suggest that these voluntary programs are not effective at promoting conservation by some landowners, only that they are new programs and certain changes in current implementation could help to improve overall conservation success. Bean (2006) notes that, in particular, the SHA program has encouraged landowners with a wide range of intrinsic values and attitudes towards species to participate in conservation activities for listed species on their private lands. Recent research has found that grazing permittees perceived substantial risk to their operations associated with regulations under the ESA

[4] HCPs also have a "no surprises" clause that is a regulatory assurance. However, HCPs are prepared not explicitly to conserve species, but rather to provide landowners the ability to "take" species if it occurs incidental to an otherwise lawful activity and does not jeopardize the species. Some would argue that HCPs are not a voluntary conservation program; they are not presented as such here.

(Conley et al. 2007). On the other hand, Langpap (2006) found that landowners did not feel greatly threatened by potential regulation under the ESA, and Brook, Zint, and De Young (2003) and Raymond and Olive (2007) found that landowners were unlikely to change their management activities for listed species, implying the same. Based on these findings the likelihood of landowner participation in the SHA program would be somewhat diminished, particularly if the desire to conserve stemmed from fear of regulation as opposed to a desire to conserve species for their own sake. For example, Parkhurst and Shogren (2003, 2) submit that the incentives provided in the CCAA program only apply to "landowners who assign a value of protection of a species larger than the lost economic value resulting from voluntary land use restrictions," suggesting that regulatory assurance without financial benefit would not be a widely palatable approach. Wilcove and Lee (2004, 643) imply that the "motivation, financial status, and experience of the individuals involved" will largely determine whether they fear regulation or favor conservation, and will thus be attracted to assurance programs such as CCAAs and SHAs. These findings are significant because they again advocate for multiple and varied approaches to incentivize conservation on private lands, with particular attention to the circumstances and values of each individual landowner necessary.

Finally, social and cultural factors have been suggested as important considerations in incentive programs, and indeed as potential incentives themselves. For example, Doremus (2003, 220) proposes that awards and other public recognition for conservation efforts can effectively function as incentives by providing landowners with "the approval and recognition of their community." Similarly, Uphoff and Langholz

(1998) found that although social acceptability considerations were not strong enough on their own to substantially influence conservation behavior, they served to reinforce legal or economic factors in swaying landowner decisions. Public recognition of stewardship efforts has been identified as one of three landowners concerns for evaluating incentives; the other two factors were voluntariness and privacy (Parkhurst and Shogren 2006). Consideration of social acceptability could also work as a disincentive to conservation, however, if the dominant social values do not support conservation action as a legitimate endeavor, or if they are considered counter to local custom or tradition (Elmendorf 2003).

Cooperation with the USFWS

One unique feature of the CCAA program is that in addition to being willing to do conservation, a landowner must also be willing to enter into an agreement with the FWS. At first consideration this may not seem substantial, but more in-depth reflection of the relationship between private landowners and the federal government in general (and the FWS in particular) reveals some important challenges. Among the various factors that have been shown to be necessary for successful cooperation, trust is often cited as critical to successful cooperation (Pretty and Smith 2004; Wondollock and Yaffee 2000). This paper will use Thomas's (1998) definition of trust as the expectation or belief that another will behave in a predictable way that takes one's interests into account. It is also recognized that although "relations of trust lubricate cooperation" (Pretty and Smith 2004, 633), "the existence of cooperation does not necessarily mean that individuals trust

one another" (Thomas 1998, 172).[5] Undoubtedly, cooperation between landowners and the FWS will require some level of trust in the process, trust of the institution, and trust between individuals; these concepts are inextricably linked. The following discussion describes some factors influencing the current status of trust between landowners and the FWS; however, recommendations to improve trust relationships are provided in the Discussion chapter.

Trust in Process. Many would argue that the FWS has many procedural and institutional barriers that affect the potential for cooperation on endangered species issues. Previous sections discussed the problems of landowner risk, culture, and distributive equity, all of which could reduce the likelihood that landowners would cooperate with the FWS. In addition, the regulatory process for listing species under the ESA presents a substantial quandary for procedural equity issues (Elmendorf 2003; Hadlock and Beckwith 2002b). Hadlock and Beckwith (2002b) describe procedural equity as pertaining to "whether those affected by decisions perceive the process by which those decisions were made to be fair and just" (198). According to the ESA the FWS must make listing decisions "solely on the basis of the best scientific and commercial data available," and in consideration of five listing factors, none of which consider the economic or regulatory consequences of the listing decision on private landowners (ESA, Section 4).[6] Thus, it is unlikely that landowners would perceive the listing process as procedurally fair or just, particularly if a species that occurs on their

[5] For a dissent on the importance of trust to cooperation see Raymond (2006).
[6] The author recognizes that this is a simplification of the listing process, and also notes that in many cases court-ordered listing decisions negatively affect the potential for public involvement in listing decisions and cooperation with the FWS.

land was listed and they felt that their power, autonomy, or way of life was thereby threatened.

Trust in Institution. In addition to perceived unfairness in process, a more fundamental mistrust of the federal government in general and the FWS in particular is likely to adversely affect cooperation. Government agencies and agents are described as having a fiduciary trust responsibility to citizens, meaning that agents are trusted to act in good faith on behalf of citizens even though citizens may not have the ability to monitor agent actions (Thomas 1998). Unfortunately, public trust in government has been in decay, and public dissatisfaction with government natural resource decisions is rampant (LaChapelle, McCool, and Patterson 2003; Thomas 1998; White and Hall 2006; Wondolleck and Yaffee 2000), both of which would be expected to unfavorably influence cooperative capacity (Pretty and Smith 2004). Perhaps most problematic for the FWS is what appears to be a somewhat limited relationship with the public in general, which has manifest in several ways. Raymond and Olive (2007) found that conservation of an endangered species was limited primarily by a lack of interaction between the FWS and private landowners, and a resulting failure to convey information about the species and conservation opportunities. Similarly, Peterson et al. (2002) found that the FWS managed conflict for an endangered species in Florida through "passive neutrality," which they suggest de-legitimizes the FWS in several ways. Most recently, Conley et al. (2007) found that two-thirds of grazing permittees responding to their survey felt that the FWS did not share a willingness to cooperate with them. Similarly, Elmore (2006) found that landowners involved with Utah prairie dogs largely distrusted the FWS. Needless to say this finding has profound implications for conservation if other landowners hold that

view as well. In some cases, the only experience a landowner might have with the FWS is through social or media networks. Imagine if a landowner in Idaho who might otherwise choose to engage with the FWS has been affected by (or even peripherally involved) in wolf reintroduction. Wolf reintroduction has been such a divisive and symbolic controversy (e.g., Williams 1997) that the landowner might flat out reject any notion of cooperation, regardless of the issue. As Peterson and Horton (1995) point out, people trust what they know and experience. If people either don't know the FWS, or know them only through a negative lens, trust and cooperation could be elusive.

Trust in People. Finally, an individual must have some interpersonal relationship with personnel from the FWS to encourage cooperation, and there must be some level of mutual trust between the individuals (Thomas 1998). Mutual trust always stems from interpersonal relationships, and involves one person trusting another (and the reciprocal) (Thomas 1998). Peterson et al. (2002, 2004) found that trust between FWS personnel and landowners deteriorated during two different collaborative processes that were originally intended to build consensus and achieve cooperation. Considering that FWS personnel 1) work for the FWS, which may be inherently distrusted (see above), and 2) carry the ESA regulatory stick which threatens private landowners' coveted autonomy and even their way of life, personnel may have substantial barriers to overcome to build trust and convince landowners to choose cooperation.

Thus far, a review of the literature indicates that attitudes and values, incentives (economic and other), private property rights, socio-cultural context, trust, and other factors are all relevant to understanding conservation on private lands. What is perhaps more importantly revealed is the interconnectedness and inherent complexity of these

factors and their influence on landowner decisions to participate in conservation programs in general, and for at-risk or endangered species specifically. The complexity illustrates why some consider current implementation of public policy for species conservation to be "modest and insufficient" (Bean 2006, 275). Programs like CCAAs represent innovative attempts to address some of these factors and improve conservation. Like other factors, however, policy innovations are subject to their own set of complexities, primarily related to how, why, and by whom they are (or are not) adopted.

2.2.b Adoption and Diffusion of Innovations

At its core the CCAA policy is an innovative program, combining a wholly voluntary approach and regulatory certainty to encourage conservation of species that are not yet listed but are vulnerable to substantive threats. There are only 15 agreements completed with permits signed nationwide. In most places in the country, if a private landowner participates in the CCAA program they are trying something new. The adoption-diffusion literature explicitly deals with how new ideas or technologies are adopted by individuals and subsequently diffused throughout a target population (Rogers 2003). Although the adoption-diffusion literature is multi-dimensional and very extensive, this discussion will focus on the facets most pertinent to landowner participation in a program such as the CCAA program, including information about a problem and the innovation developed to address it, and the formation of judgment about the innovation.[7]

[7] The author recognizes that the CCAA program must also be adopted and diffused into the implementing organization, in this case the FWS. However, it is beyond the scope of this paper to provide an in-depth evaluation of the adoption of the CCAA program by individuals within the FWS, or by the FWS as an

2.2.b.i The Importance of Information

Researchers have suggested that awareness of a conservation problem, a program or opportunity, and the source of information (Mehmood and Zhang 2005; Pannell et al. 2006; Wilcove and Lee 2004) can affect the likelihood of adoption. First, to participate in a particular conservation program not only does a landowner need information about the program, s/he must also recognize the need for such a program on their land. A landowner must be aware of the presence of a species on or near their property, the risks the species faces, and the potential benefits and risks that presence of that species creates for them. Brook, Zint, and De Young (2003) found that less than half of a surveyed group of landowners were certain that their property was within the range of the Preble's meadow jumping mouse *(Zapus hudsonius preblei)* when it was listed under the ESA. Not surprisingly, only one landowner stated that they had changed their management practices to benefit the mouse when it was listed. If a landowner is unaware of an issue (e.g., a potentially regulated species), or of how to appropriately address it, it necessarily follows that they are unlikely to adopt conservation strategies or programs (Rhodes, Leland, and Niven 2002).

Some authors have also suggested that the source of information about an innovation may influence the likelihood of adoption. For example, Mehmood and Zhang's (2005) findings suggest that the initial source of information regarding the SHA program is an important determinant of whether an individual is likely to enroll in the program. More specifically, they found that individuals that initially learned of the SHA program from a non-governmental forester were more likely to enroll in the program than

---

agency. Some portions of this issue will be discussed in the following section on public policy implementation.

those who were initially informed by a Federal or State agency employee. Similarly, Wilcove and Lee (2004) suggest that the entity that contacts landowners regarding a conservation program is one of the most important factors determining whether the program succeeds, and Pannell et al. (2006, 7) describe the importance of a "history of respectful relationships between landholders and advocates for the innovation" on a potential adopter's decision-making process. These results and recommendations are important given the generally low trust level between the public and the government (Brook, Zint, and De Young 2003; Hadlock and Beckwith 2002b; Thomas 1998), and the "fundamental schism" that exists "between property rights and environmental protection" (Peterson et al. 2002). As Wejnert (2002) suggests, knowledge from a trusted source reduces the novelty and increases the familiarity with an innovation, thereby reducing the perceived risk of adoption.

2.2.b.ii Judgment

For a landowner to make a positive judgment to participate in any conservation program (or to adopt a particular conservation technology), they must perceive that the program, activity, or technology will, in one way or another, help them to achieve their goals (Hastie 2001; Pannell et al. 2006; Rogers 2003). For judgments regarding species conservation, "achieving one's goals" may be primarily associated with minimizing the potential for future costs or risks (e.g., of regulation, legal vulnerability) that could affect livelihood, autonomy, or operations. Innovations (such as the CCAA program) that would be adopted largely to avoid the occurrence of some potential future event are described as preventative innovations (Rogers 2003). Due to the high level of uncertainty regarding the need for and the ultimate consequences of the innovation, Rogers (2003)

suggests that the motivation to adopt a preventative innovation may be weak. In contrast, Pannell et al. (2006) refrain from generalizing and suggest that the individual characteristics of the adopter strongly influence the likelihood that they will adopt an innovation. For example, a risk-averse individual would be more likely to adopt an innovation that they perceive to reduce risk.

Human judgment will largely determine whether particular innovations are adopted in any particular circumstance. Stankey and Shindler (2006) suggest that an individual's values and social norms interact with their cognitive and emotional knowledge or beliefs to form judgments. Therefore, a landowner's consideration of a particular conservation program or activity would be expected to integrate their cognitive knowledge (e.g., regarding science, economics) with their emotional beliefs and values to determine their judgment. Furthermore, a landowner's assessment would include both direct and indirect costs (Wejnert 2002), as well as adoption risk factors such as social acceptability, monetary costs, time, or perceived threats to autonomy or management control (Bergmann and Bliss 2004; Shogren 2005; Wejnert 2002).

In sum, individuals are likely to assimilate all available information regarding benefits and incentives, costs, and risks in the context of their personal value system and circumstance to make a final adoption decision. Fundamentally, "adoption is based on subjective perceptions or expectations rather than on objective truth" (Pannell et al. 2006, 2). Accordingly, the assimilation of factors is not likely to take place as a reasoned "pros and cons" evaluation, but rather will likely involve complex facets of cognitive and behavioral human psychology. In addition, the broader social and political context in which an adoption decision takes places will inevitably influence both the perceived

advantages of the policy, and the opportunities to participate. The following section on public policy implementation attempts to describe this phenomenon in more detail.

2.2.c Public Policy Implementation

In addition to being an innovation, the CCAA program is also a public policy being implemented by the FWS according to official regulations. The effectiveness of that implementation may therefore be a factor in the rate of adoption. It is widely recognized that there are many elements that influence how a policy is implemented, and whether it is likely to be successful. The public policy implementation literature specifically explores the implementation, or carrying out, of policy decisions (Sabatier and Mazmanian 1980). More specifically, Mazmanian and Sabatier (1983) define policy implementation as "those activities and events that occur after the issuance of authoritative public policy directives, which include both the effort to administer and the substantive impacts on people and events." Policy implementation research abounds, stemming from the realization that public policy does not always (or perhaps often) achieve its stated goals and objectives (O'Toole 2004; Pressman and Wildavsky 1979; Schneider and Ingram 1990).

Several authors have developed conceptual frameworks to consider the policy implementation process, including Van Meter and Van Horn (1975), Mazmanian and Sabatier (1983), and others. Many of the writings are distinguished based on whether they follow a "top-down" or a "bottom-up" view of implementation, with top-down scholars focusing on the "legally mandated policy instruments and resources," and bottom-up on the "environment in which target groups operate" (Najam 1995, 23). Berman (1978) explicitly addresses this dichotomy in his writings on the "micro and

macro implementation of social policy." According to Berman, macro-implementation is a function of a central/federal government implementing policy to influence local actors, whereas micro-implementation requires the local actors to develop their own policy in response to that handed down from above. Najam (1995, 19) summarizes the spirit of Berman's (1978) characterization of the bottom-up view: "the effective power to determine a policy's outcomes rests, therefore, not with the original policymakers but with local deliverers…" More recent literature (e.g., Goggin et al. 1990; Sabatier 1986) blurs the lines between the top-down and bottom-up camps, and moves towards a more synthesized, and perhaps more realistic view of policy implementation. Najam (1995) suggests that this blurring is positive and may provide a better understanding of the complexity of the larger policy implementation process. However, O'Toole (2004) argues that little real progress has been made in the implementation literature that extends the discussion beyond the theoretical into the practical (an interesting irony given the seeming inherent "practicality" of policy implementation).

Perhaps more relevant to this study than the top-down/bottom-up debate, however, is the consideration of variables that are thought to influence policy implementation. There is considerable disagreement on this topic as well (O'Toole 2004), but in his work Najam (1995) synthesizes a great deal of the previous works to identify and offer five "key clusters of explanatory variables" relevant to policy implementation. The "5 C's" include content, context, commitment, capacity, and clients/coalitions. Najam (1995, 35) defines the 5-C's as follows.

- Content — What are the goals, causal theory, and methods of the policy?

- Context — What is the "corridor" that the policy must travel through, and how is it bounded?
- Commitment — How committed to successful policy implementation are the responsible individuals?
- Capacity — Do those entrusted with policy implementation have sufficient administrative capacity?
- Clients/Coalitions — Whose interests are either supported or threatened by policy implementation; what tactics do they use to enhance or hinder implementation?

Many others have contributed to the discourse on the role of these variables in policy implementation, although not always in the same terms. It is beyond the scope of this discussion to provide an extensive review of the literature on policy implementation research. However, it is useful to augment some of the definitions provided above with characterizations from other scholars.

Bayrakal (2006, 132) expands Najam's definition of context by describing the "corridor" as being "shaped by social, economic, political, and legal relationships, characteristics, and setting" of a policy. This is important because it emphasizes that policy implementation takes place within a much larger framework of influence than might commonly be recognized or accounted for. Indeed, Sabatier and Mazmanian (1980) suggest that changing social and economic circumstances are among the three most important long-term factors influencing policy success.

Mortimer and McLeod (2006) expand on the idea of administrative capacity and context as important to policy implementation by suggesting that an agency's political

power may be fundamental to their ability to implement policies. This idea, related both to capacity and context, may be especially important for natural resource decisions that are highly controversial (e.g., endangered species or old growth forest management). Interestingly, the notion of an agency's political power also plays substantially into the debate on science and public policy (Hoberg 2004; Mortimer and McLeod 2006). Although an extensive discussion on science and policy is beyond the scope of this writing, suffice it to say that science can very rarely be used to extract an agency from conflict surrounding policy decisions (Hoberg 2004). Instead, the political power (capacity) and the political context in which agency policies are enacted and implemented are key to understanding and evaluating policy success.

Schneider and Ingram (1990) develop the idea of clients/coalitions and commitment in their paper on individual behavior under public policy. They state (513):

> For policies to have the intended impacts on society, a large number of people in different situations must make decisions and take actions in concert with policy objectives. A framework for describing policy tools that emphasizes behavioral characteristics must proceed from a theory of individual decision and action…

They further suggest that the nature or "content" of the policy is likely to have different effects on different groups within an intended target population. For example, a particular policy might create animosity or increase conflict for people or groups who perceive that it singles them out, or has other "unfair" consequences (Schneider and Ingram 1990). It is clear that individuals, their behaviors, and their value preferences will affect the implementation of public policy, and vice versa. What is less clear, however, is the role of Najam's (1995) "coalitions" as a key variable cluster. Hoberg (2004) addresses the issue in terms of interest groups and their influence on public policy

creation and implementation, claiming that they readily fill in where the citizenry leaves gaps. Further, he suggests that such interest groups find legitimacy or power with their own claims that they represent the public interest, and that this might be particularly important when the policy issue is exceedingly complex and policy-makers are already conflicted, as is often the case with environmental or natural resource policy. Although not new, the potential role of coalitions and clients in policy decisions has recently become exceedingly clear, especially as it relates to endangered species policy decisions. On July 20, 2007, the FWS announced that it will review eight listing decisions under the ESA because they were potentially influenced by a political appointee and thus not consistent with the scientific evidence (FWS 2007). This speaks not only to the role of clients/coalitions, but also to the issue of agency capacity and power suggested by Mortimer and McLeod (2006), and to issues of agency commitment.

No one factor (or group of factors) acts independently to determine the outcome of policy implementation; rather, the elements of policy implementation, however categorized, are interrelated and inextricably linked to each other (Najam 1995). Synthesizing these factors in their full multi-dimensionality, however difficult, is important to understanding the implementation story for a particular policy case.

2.2.d Synthesis

This literature review has framed and examined the issue of endangered species conservation on private lands through three main disciplinary lenses: personal choice, adoption and diffusion of innovations, and public policy implementation. It is important to consider all of these concepts independently; however, what is perhaps most useful is to understand them in a more synthetic way. How do they cross-inform each other? The

CCAA program depends on the willingness of various stakeholders, including private landowners and other non-federal entities, as well as the FWS (both as an institution and as individual agents), to negotiate a shared vision of conservation strong enough for each party to accept certain risks and invest substantial time, energy, personal capacity, and money toward that vision. Candidate Conservation Agreements with Assurances require that stakeholders take a chance on each other, in largely uncharted territory. In sum, as a multi-actor phenomenon the CCAA program requires the following: that potential participants 1) choose to conserve, and 2) choose to conserve in partnership with the FWS; that the program performs the functions vital for an innovation to be substantially adopted; and that implementation of the policy occurs within a supportive context, and with sufficient capacity. This may seem like a tall order, and the theoretical multi-dimensionality presents an evaluative challenge. Nonetheless, this research project draws from the scholarly concepts presented here to develop research questions and a methodology to assess how the program measures up.

CHAPTER 3

METHODS

An interpretive research technique was used in this study to examine the factors affecting participation in the CCAA program. Data were collected primarily through semi-structured, qualitative interviews; interview subjects were selected using theoretical and purposeful sampling. The three primary research questions identified in Chapter 2 guided the collection and interpretation of data in this study.

3.1 Research Context

This research was conducted approximately eight years after the implementing regulations for the CCAA program were released. As is described in Chapter 2, there have been 17 CCAAs with section 10 permits issued across the country. Each agreement is unique in terms of the species involved, landscape context and land use, type of landowner (e.g., private individual, corporation, state agency), agreement structure (i.e., programmatic, individual), and individuals involved from the FWS and other agencies. Thus, each agreement and its unique set of circumstances could be considered a sample of one, and could be investigated as one case study. However, because this research was interested in the effectiveness of the CCAA program as an incentive for conservation of sensitive species on private land across the United States, I chose to examine the program as a whole.

A qualitative research design was used to facilitate an in-depth exploration of the experience and motivations of each individual involved, and to preserve the nuances and details of their explanations and situations (Davenport and Anderson 2005). Further, due

to the small universe of CCAAs and the highly individualized context, the use of random sampling techniques and subsequent statistical analysis was not feasible or appropriate for this research. These issues are described in further detail below.

3.2 Research Participants

This study used both purposeful and theoretical sampling (Glaser and Strauss 1967) to identify the participants that were most appropriate based on the research questions. Flick (1998, 65) described theoretical sampling, and how it differs from statistical sampling methods:

> The representativeness of a sample is guaranteed neither by random sampling nor by stratification. Rather, individuals, groups etc. are selected according to their (expected) level of new insights for the developing theory, in relation to the state of theory elaboration so far.

Another description of theoretical sampling is that it "proceeds according to the relevance of cases instead of their representativeness" (Flick 1998, 68). Theoretical sampling was used in this study to define the groups of participants to be included and compared (see below), and to choose some of the individual participants based on their experience and its relevance to the research questions. In other cases participants were purposefully sampled based on their level of participation and experience with CCAAs to obtain as broad a range of perspectives as possible given the small sampling frame and specialized topic (Bernard 2002; Neuman 2000). Purposeful and theoretical sampling techniques were most appropriate in this research context because of the small number of agreements and participants with the target experiences, the high degree of inter-case variability, and the distinctive and specific nature of the research questions. Overall, the research philosophy was to "…choose research participants who [had] lived through the

phenomenon that you want to learn about. Having lived through the phenomenon, they are the experts" (Auerbach and Silverstein 2003, 15).

Accordingly, participants for this research were initially identified using public records of the existing CCAAs; the primary contact listed in each agreement was the initial contact for participation in this study (i.e., based on their relevance to the research questions). A second theoretical group was identified for sampling that included individuals who were eligible to participate in a CCAA but who had not participated to date. Individuals in this group could not be identified initially, and a snowball sampling technique was employed as described below. In addition, FWS employees around the nation involved in the CCAA process and in specific agreements were identified, either by the CCAA record, or through conversations with individuals in FWS offices where CCAAs had been completed. State employees who were involved in the development of the five included programmatic or umbrella agreements were also identified as potential participants. Overall, four theoretical categories of participants were identified:

1. Individuals or representatives of entities who had participated in the CCAA process, resulting in the signing of a CCAA; or individuals who signed a certificate of inclusion under a programmatic CCAA.
2. Eligible individuals or representatives of entities who had not participated in the CCAA process; or individuals who had not signed a certificate of inclusion under a programmatic CCAA but who were eligible to participate based on land ownership where a candidate species existed and where a CCAA was developed.
3. State employees who had been involved in the development of a CCAA.

4. Fish and Wildlife Service employees from around the country who had been involved in the development of a CCAA

To identify individuals in group two, the interview instrument contained a question asking individuals who had participated in the process if they knew of others who had not participated in the process, and if they would be willing to identify those individuals (see Appendix A). In this circumstance we believed that snowball sampling would be an effective way to identify participants (Bernard 2002) for what might be called the negative case analysis (Davenport and Anderson 2005). Snowball sampling involves asking research participants to identify additional potential research participants based on certain specified characteristics (Bernard 2002). This technique proved ineffective, and only one individual in group two was identified via the snowball approach described above. The other individuals that were identified and participated under group two were found via contacts with State employees involved in programmatic CCAAs.

A semi-structured approach was used for this study; the interview instrument consisted of an interview guide with several open-ended questions. Three kinds of information were discussed in the interviews: basic facts and history about the individual's participation or experience, themes related to the research questions, and other topics that were more open-ended and unstructured but relevant to the participant's experience. This was consistent across the four groups of participants; even individuals acting in an official capacity were encouraged to share their personal, or "unofficial" views, opinions, and experiences. This approach was used to allow the researcher to simultaneously obtain systematic and focused responses (LaChapelle, McCool, and

Patterson 2003), direct the conversation (Davenport and Anderson 2005), and maintain the flexibility to follow leads (Bernard 2002; Dutcher et al. 2004) all while allowing the participant to express their own "observations, perceptions, and attitudes" (Davenport and Anderson 2005, 630). Follow-up probes were used to encourage additional information or elaboration from the participants (Bernard 2002; Davenport and Anderson 2005; LaChapelle, McCool, and Patterson 2003).

A separate interview guide was used for each of the four research participant groups. For participants in groups one and two the interview questions focused on perceptions of land ownership and stewardship, experience with or knowledge of the CCAA program, relationships or interactions with federal and state agencies, and ideas or thoughts on improving conservation incentive programs. Participants in groups three and four were asked about their overall perceptions of the CCAA process including any personal experiences, their interactions with various landowners in the process, and finally about potential improvements to the program. A copy of each of these guides is included in Appendix A. I conducted all interviews for this research. Interview lengths varied from 20 minutes to almost 3 hours; the average interview length was 58 minutes. All interviews were digitally audio-recorded with permission from the interviewees.

3.3 Research Interviews

Prospective interviewees were contacted and informed about the nature of the study and what they could expect if they agreed to participate. A brief overview of confidentiality and other topics related to the Institutional Review Board for the Protection of Human Subjects (IRB) was given during the initial contact. For those who agreed to participate a meeting date and time that was convenient for them was identified.

Due to the nature of this program, and the fact that there are CCAAs in 11 different states ranging from Georgia to Washington, some interviews were conducted over the telephone. In all, 11 interviews were conducted in person, and 15 were conducted via telephone.[8] For those conducted in person, the participant chose the location of the interview; interview locations included participants' homes, offices, a coffee shop, and a restaurant. Prior to beginning each interview, the researcher provided each participant with a copy of the Informed Consent document for this research project (Utah State University IRB approval protocol number 1672; see Appendix B), and asked if they had any questions about the project, confidentiality, or their participation. All participants provided their written consent, either in person, via mail, or via facsimile.

A total of 26 interviews were conducted for this study, including 15 subjects in group one, 4 subjects in group 2, 4 subjects in group 3, and 3 subjects in group 4. One individual fits both into group one and group two (but is counted above only in group one), as they participated in one agreement and subsequently declined to participate in another. Data collection is believed to have reached theoretical saturation (Glaser and Strauss 1967) for groups one, three, and four, but was likely not reached for group two (individuals who did not participate in the CCAA process). Given the challenge of identifying participants from group two, it is possible that other ideas and experiences may have emerged if it had been possible to include additional participants in the study. Although the four subjects interviewed in group two cannot be considered representative

[8] It is possible that the interview method (in-person versus phone-based) could influence the quality and substance of information shared by participants. However, I did not perceive any substantive differences between the two methodologies in terms of robustness or consistency of responses. In addition, both methods produced at least one interview that was above and at least one interview below the overall median interview length, indicating that the results of the two methods are comparable.

of the "negative case" (Davenport and Anderson 2005), their experiences and perspectives are still believed to be critical to a comprehensive understanding of the CCAA program. Individuals interviewed in group one represent 14 of the 17 finalized agreements. Two programmatic agreements were posted after the research was completed, and the individual identified as the contact for the other un-represented agreement was contacted via telephone on five separate occasions but did not respond.

3.4 Data Analysis

Interviews were transferred from the recording device onto a computer with Olympus DSS transcription software. I transcribed all interviews verbatim. Each interview was then coded using a five-tiered organizational approach, described in Auerbach and Silverstein (2003) as "grounded theory coding." The five coding tiers and a short description of each from Auerbach and Silverstein (2003) are listed below.

1. Relevant text: text related to the specific research concern or question;
2. Repeating ideas: similar words or phrases used to express the same idea by different participants;
3. Themes: embedded topics that organize a group of repeating ideas;
4. Theoretical constructs: the abstract grouping of themes; and
5. Theoretical narrative: a summary of the research that "tells the story of the participants' subjective experience, using their own words as much as possible."

This coding structure provides a framework for moving from the lowest level of understanding, such as that found in the raw text of the transcripts, to a higher and more abstract level of understanding and theory development (Auerbach and Silverstein 2003).

This methodology is consistent with the foundations of grounded theory (Glaser and Strauss 1967) in that categories, concepts, and theory emerge from analysis of the participants' subjective experiences as documented in the data (text) in a way that could not have been fully anticipated *a priori* based on existing information (Auerbach and Silverstein 2003; Flick 1998; Morse and Richards 2002).

The author manually conducted all coding. Concepts from the existing literature were used to help identify ideas and topics in the various coding tiers. To share the theoretical narrative, "exemplars," or quotes from the interviews, are used to "illuminate the theory" (Bernard 2002, 463) and share it with the reader.

3.5 Human Subjects Protection

The Institutional Review Board for the Protection of Human Subjects at Utah State University approved the research design for this project, and all study participants signed the informed consent document for their participation. A major part of an ethical research design (and IRB approval) is the protection of the participants' confidentiality to the extent possible. There are some aspects of this research context that complicate the issue of human subjects protection, particularly in regards to confidentiality and the disclosure of results. Accordingly, additional efforts were made to maximize protection for study participants, but they may only be partially successful.

The CCAA program is a federally permitted program, and as such, a draft of each CCAA is noticed in the Federal Register, and public comments are solicited. When the agreement is finalized and a permit is issued, the permit is issued to the individual or entity involved in developing the agreement for their property. All of that information, including the name and address of the permit holder, and the full text and content of the

agreement, is then considered public information. In addition, because there are so few agreements nationwide, the circumstances and context of one CCAA may be easily distinguishable from all of the others. These two factors together make it potentially possible for a reader to do enough research to determine the identity of an interview subject based on specific insights or comments on the process and their experience, even though the interview subject is not identified by name in the research.

Related to this is the fact that some individuals that were interviewed were acting in their official capacity as FWS employees, or as State agency employees. Because there are a limited number of employees that have been involved in these processes, it may also be possible to ascertain the identity of the individual employees who participated in this study.

For these reasons, I took measures additional to those typically found in qualitative research to minimize the likelihood that any individual participant's identity could be deduced. These measures include the following:

1. Taking special care in the reporting of direct quotations to omit the name of places, species, or other items that might not normally be seen as sensitive, but that if reported here could lead to easier identification of subjects.
2. In cases where an individual's insight is important to describing a particular theme or theoretical construct, but using a direct quote in any context jeopardizes their confidentiality, the insight is paraphrased and constructed in such a way as to minimize the likelihood of exposure.

The author acknowledges that it may still be possible for individuals who have in-depth knowledge of the process or particular agreements to discern the identity of an

individual study participant in limited circumstances. However, this is a risk that exists in many other qualitative research studies, particularly those with purposefully selected participants. The measures that are being taken should minimize this risk to the maximum extent possible.

CHAPTER 4

RESULTS

This chapter presents the data upon which the research conclusions are based, and therefore focuses on the thoughts and perspectives offered by the research participants. The primary purpose of this chapter is to summarize the interview findings in as direct and un-modified a way as possible. The interview transcripts total some 250 pages, and in order to provide both brevity and structure to this chapter, the interview excerpts are organized under the three main disciplinary lenses that were described in Chapter 2: Personal Choice, Adoption/ Diffusion, and Public Policy Implementation. Imposing that structure necessarily means that a logic construct developed by the researcher is being applied to the interview content (i.e., some quotes are discussed in one section rather than another, and portions of other interviews have been omitted entirely). Interpretation and insights will be withheld until the discussion (Chapter 5) in order to keep the current focus on the interview-derived data.

4.1 Personal Choice

4.1.a Landowners and Conservation

The literature explored in Chapter 2 suggests that the first choice a landowner would make in evaluating their potential participation in the CCAA program would be whether they were interested in conservation at all. All of the private landowners interviewed indicated that they considered conservation an important part of their management, some for more philosophical reasons and others explicitly in terms of their management objectives. These sentiments fell into three not mutually exclusive

categories including 1) those who felt that conservation was an important part of their responsibility as landowners (i.e., a stewardship ethic), 2) those who felt that conservation was a factor influencing the success of their business or operation, and 3) those who felt that conservation actions were important to their public image. Participants from a ranching background repeatedly shared their view of the positive role that ranchers play across the landscape; their connotation as they expressed these sentiments indicated that they were defending themselves and their way of life. Most participants also expressed stewardship and care for the land in terms of their relevance to success in their operations. One rancher articulated all three of these themes:

> Most people…living over there in the mountains, raising their livestock, and most of them are pretty good stewards of the land. There's a common misconception that runs through people who are not involved with ranching, and I'm not saying that you don't have examples of that, of people who essentially rape the land, you know and they beat up the streams, you know it happens…but people who are not good stewards of the land don't last. They cannot last in ranching or farming for that matter because that's your base, that's what's going to be your future, and if you short term it, yeah, you can probably maximize return over short term by overgrazing, but long term you're going to be out of business, it'll get you (Group 1 Participant 1).

Another participant more explicitly discussed the importance of a healthy wildlife population to the viability of their operation, specifically how hunting and angling can supplement agricultural income.

> [W]here this property sits, it's very aesthetically pleasing, has a high dollar value regardless of the agricultural value of it. If I had to hold this ranch together only running cattle…wouldn't happen. I couldn't hold it together, couldn't pay the bills. So, we've had to juggle the assets of the ranch to successfully manage not only the livestock operation but the hunting and fishing as well, so the wildlife segment of the ranch is very important. (Group 1 Participant 8).

Landowners who had not participated held a similar perspective, echoing sentiments that stewardship and wildlife conservation are important and desirable:

> We are…I say great respecters of the environment, and of wildlife. And we cuss it and we help it, and we have trouble with elk and deer but we love them there, I would never want them not to be there. But we like to control them, and we like birds, upland game birds, we have on our place…we'd like to improve the habitat for that…and we have a little stream in our timber so we would love to see more fish in the stream. When I was young they were there and now not many or none, so… (Group 2 Participant 3).

One theme that emerged from the landowners was the recognition and concern for the changing landscape, specifically the shift from traditional uses such as agriculture to development and subdivision. This theme was overwhelming and was iterated multiple times by several landowners, particularly those individuals located in western states such as Montana, Idaho, Oregon, and Washington. Implicit in their characterization of this phenomenon was a labeling of the newcomers as "outsiders" who fail to understand land management, do not appreciate the land the way the landowners do, and even threaten their way of life. One landowner offered this sentiment:

> If we can't pay the bills and pay the bank and get some kind of return, then we'll probably end up selling it, and people aren't going to like what they see when we do sell it. You know, it's either going to be some wealthier landowner's going to buy it and lock the gate so its his private playground or he's going to break it up into ranchettes or do something and make money out of it, and that's not what I want to do with it...(Group 1 Participant 3).

Another individual from Group 2 had a similar concern:

> [I]t's getting to the point where a lot of that land becomes more profitable to sell for housing basically, or cabins and what not than it is to operate for cattle or whatever. So that, that's a concern of mine…the future of my business and our lifestyle basically… (Group 2 Participant 4).

None of the landowners interviewed expressed unwillingness to work with under government conservation programs in general, and in fact several landowners offered

unsolicited reference to various cost-share programs that they had participated in such as the Wildlife Habitat Incentives Program, Conservation Reserve Program, Environmental Quality Incentives Program, and others. Both groups of landowners noted participation in these endeavors, and the general sentiment was that landowners were willing to "furnish the labor or dig up cash out of their own pocket" to improve environmental conditions or wildlife habitat on their property (Group 2 participant 2). All landowners interviewed, including both agriculture-based and industry-based participants, articulated some level of support for conservation and willingness to engage in conservation activities and programs on their property.

4.1.b Choosing To Conserve Under the Endangered Species Act

As previously noted, the choice to engage in conservation activities does not necessarily require that those efforts be conducted in partnership with the Fish and Wildlife Service for sensitive, threatened, or endangered species. Participants in this research study indicated that there was some level of reluctance by private landowners to participate in highly visible conservation for endangered or threatened species. This reluctance was attributed to either a fear of regulation or requirements by the Service, or to a fear of third party involvement, most specifically to lawsuits by "environmental" groups and judgments by "liberal" courts. One rancher offered the following thoughts regarding fear of regulation and conservation:

> At one point there was a lady that wanted to come and do, kinda walk over our land and just assess what we had, and I was pretty fearful of that, because if she had found an endangered species it could have taken a portion of my fields off limits from me to work or do anything to, so for awhile there I didn't give her permission and later I changed my mind and I said ok, the risk's ok, I'll risk it. But it's still a risk, so…but I love the idea of the [species] and I love trying to

> help them and their habitat…and I do have a few on my place, so I love it but I'm a little worried about the risk (Group 2 Participant 3).

Others had direct experience with the preemptive habitat destruction that is often cited in the literature. One forester shared the following view:

> As an example, big trees…you have certain kinds of habitats that are going to draw species in potentially…people think well why should I keep those trees on the landscape then, I'll just cut them. I don't have the species today, so I eliminate that issue (Group 1 Participant 9).

Others implicated "environmental groups" and the courts as the greatest source of fear for landowners, and did so with a passion that far exceeded most people's fear of regulation by the government. One landowner suggested that a CCAA was "a better way to deal with endangered species than litigation. We see absolutely no reason to make these litigants wealthy people, I mean they don't ever do anything, all they do is sue" (Group 1 Participant 1). Other participants had similar thoughts about their experience with environmental groups:

> I mean there's…in this there's a whole bunch of environmental groups that are just out to sue, you know whether it's right or not they're out to I guess to sue for these critters, you know…and get cattle away from them whether that's right or not (Group 2 Participant 4).

Interestingly, the fear of lawsuits and adverse court rulings was also one of the primary factors motivating landowners to participate in the CCAA program. For example, some participants felt that by voluntarily participating in and conducting conservation on their land for the benefit of certain species they may be less vulnerable in court, or a judge may be more sympathetic of their efforts. Other landowners made clear distinctions between "reasonable" environmental groups and "more extreme" groups, which seemed to be most relevant to whom they trusted to understand them and their

values as landowners. Several landowners and state agency employees cited the importance of coalitions and working relationships with some "more moderate" environmental groups such as The Nature Conservancy, Trout Unlimited, and others. One landowner went so far as to convey the idea that "ranching interests…and these environmental interests have come together" over the past 10 to 20 years. They explained further:

> [S]ome of these environmental groups have now come to the realization that they can't greenbelt you. It's not going to be a big park where they're all going to go out and frolic with lassie out there and smell the flowers. So they have a choice, they can either have some cows, or they can have starter castles out there (Group 1 Participant 1).

Similar to discussions in Yamaguchi (2007), landowners shared their notions of "us versus them," and seemed to identify explicit ingroups and outgroups as part of their social identity. Some of the participants, such as the one quoted above, had begun to include certain environmental groups as part of their definition of "us."

Multiple participants specifically made a distinction between ranching and farming and their perceptions of landowner values. For example:

> [M]ost ranching people are a lot different mentality than farming people. Farming people tend to be extractors, they tend to want to, one thing they're much more government acclimated because of the government programs, but they tend to want to extract a lot from the land…they use artificial means to put it back in, you know fertilizers and things like that…your ranching people tend to be maybe more in tuned with a lot of your more moderate environmental groups…they understand streams, they understand some of this stuff…water to a farmer is a resource that you want to consume as much as you possibly can because you raise a bigger crop (Group 1 Participant 1).

This distinction is relevant in that it both narrows the definition of the ingroup for ranchers, and also illustrates the pride that the landowners interviewed took in caring for and valuing the land and resources.

4.1.b.i Perceived Equity and Fairness

Few research participants explicitly discussed issues of fairness or equity regarding the ESA and its implications. However, all of the participants in group one expressed some level of frustration with the burdens that they had endured regarding endangered species and regulations. One participant did specifically articulate the issue of equity and fairness:

> [I]t ends up on the backs of the landowners out there…so if it's good for society to have abundant [species] all over the place, then maybe society should help pay for it instead of saying…we're going to cut you back (Group 1 Participant 3).

Some individuals had experience with multiple listed and sensitive species, and as one participant put it: "I grew up I wanted to be a rancher and I turned into the chief environmental officer for a small business" (Group 1 Participant 3). None of the participants indicated that they were less willing to either engage in conservation for endangered species or to work with the Service, but there was a tone of frustration, especially for those who have dealt with multiple listed species and varying habitat needs.

\During the interview process multiple participants made unsolicited comparisons between various species and wolves, indicating that wolves were viewed differently and landowner tolerance of that species was perhaps different than for other species. One participant's view regarding willingness to participate in government conservation programs for endangered species was echoed by several others: "now if you wanna talk wolves that might be a different story" (Group 2 Participant 2). One rancher had this unambiguous interpretation: "grouse aren't going to eat our cattle" (Group 2 Participant 2). This distinction clearly indicates that not all species are considered equal; this was also evident to the researcher in participants' views and characterization of species such

as the southern Idaho ground squirrel versus grouse species. Some landowners characterized ground squirrels as a nuisance species, whereas if landowners had habitat for grouse that was expressed as a source of pride.

4.1.b.ii Incentives

Consistent with the body of literature on the topic, this research found that most landowners believe that some form of incentive is important to encourage them to participate in conservation programs for endangered or sensitive species. All landowners interviewed for this research viewed the CCAA program as offering some level of incentive, although the importance of the incentive was not uniform across all participants. In general, landowners or entities who participated in the CCAA program fell into two primary categories: those who were going to do the activities or management specified under the CCAA with or without the protection of the CCAA, and those whose primary reason for participating was the assurances provided by the program. For those who indicated they would conduct various conservation efforts regardless of the CCAA program, the assurances under the program were considered a benefit but not a deciding factor. One participant described it as follows:

> It was a side benefit, it's secondary in nature…we were proud to be able to help them to sign a CCAA with USFWS to prevent them from having to list the [species] as an endangered species. So we took a certain amount of pride in it, but it, the main thing is in protection, of the [species] (Group 1 Participant 7).

Interestingly, another research subject from group two whose organization had chosen not to participate in the CCAA program had a similar view of the protections:

> [W]hether we have a CCAA or not, this is something we believe in and we're going to do it. So, to us the CCAA is gravy really, it gives us these protections that we wouldn't have, but we're going to do the project anyway,

> whether we have the protections or not. We were just going to live with the ESA and the restrictions it had… (Group 2 Participant 1).

In contrast, the majority of participants indicated that assurances were the most important factor, and two perspectives dominated: that the CCAA provided protection if a species was to be listed, and/or that the CCAA provided certainty regarding land management over the long term. This landowner's view best represents the "protection" idea:

> Well it was kind of a protection for me, you know. We're looking at the [species] and you're saying you're doing the right thing, and if it's moved into a species that is threatened and endangered what you've done and how you've been doing things, we're not going to hold you liable because you were doing the right things (Group 1 Participant 13).

Another landowner focused on the "certainty" aspect:

> [I]t provided me regulatory certainty, not complete, not absolute, but some level of certainty and promise from the federal government that they would honor our agreement…and we would be able to grow trees and cut some of those trees down even in the future, and continue to make it to where it's a sustainable type, and profitable even, venture…it's just so high risk, you know, it's like investing in just a super high risk startup company, that's kinda the way you feel when you're investing in forestry and people continue to change the rules (Group 1 Participant 9).

The "protection" and "certainty" elements are not mutually exclusive, and most participants expressed the importance of both elements acting synergistically to improve their outlook and perception of future operations if they were acting under a CCAA. The landowners interviewed who were not acting under a CCAA also expressed the importance of protection and certainty, although one interviewee was explicitly unconvinced about the extent of the assurances actually provided under the CCAA

> [A]nd those assurances aren't really substantial as far as I can see. You can still…there isn't as much meat in that assurance as one might be led to believe. I studied it fairly deeply, and you know once you get and establish

> there's a CCAA on a property, the environmental groups can still come in and sue, and force you into doing things that you may not agree on… (Group 2 Participant 4).

Related to both ideas of protection and certainty, and also unique to the CCAA program, was the desire to prevent species from being listed. An industry participant offered the following view, which several other landowners shared:

> [We're] doing our part to ensure that the species does not become listed because it's not in our best interest to have a listed species…that could affect our operations, so, by doing what we can to prevent that species from becoming listed it's kindof a win-win situation, and the less likely there would be limitations and additional costs further down the road…we're convinced from a business standpoint we're better off to do our part to keep species from becoming federally listed (Group 1 Participant 10).

Financial incentives were identified as an important, but not essential piece of the conservation choices puzzle. Specifically, for endangered species, participants most often cited that compensation for losses or conservation actions was important, but no landowners indicated that compensation was needed to induce participation. Meeting their bottom line was certainly important to landowners, but no one interviewed indicated that financial incentives were a reason for participating in the CCAA program. It should be noted that although some financial assistance may be available through grant programs for landowners who have a CCAA, the CCAA program does not explicitly offer economic incentives for participation. Landowners and other participants suggested that dedicated financial support could improve the program overall (this will be described further in later sections).

Overall, participants expressed both the desire to act in ways that benefit species, and to protect themselves from perceived risks associated with those species. One

rancher who had experience dealing with multiple listed species conveyed the linkages between landowners, endangered species, and incentives:

> [T]here needs to be more of an incentive-based deal because 80 percent of endangered species occur on private property, and if they change it to an incentive they could have species running out their ears instead of landowners running in fear of restrictions that could be put on them trying to make a living…because we're still on a capitalistic system and, like I tell people, my banker likes cash better than he does [species]. And so I've got to figure out a way to make that all work (Group 1 Participant 3).

Another participant articulated a commonly expressed theme about the importance of incentives and the role of private landowners in conservation:

> [A]t the end of the day if it doesn't work for me then it's not going to work for the species, I'm not going to be here, and small landowners aren't going to be on the landscape... you're just going to continue to see the conversion to nonforest use that you continue to see. And it's rampant. And you know there's…a ton of disincentives, and there's very few incentives out there…to stay in forestry in the long term, and so if we continue to beat people up with a big club rather than working with them and providing them a carrot… we're just going to continue to drive people from the land…and what you're going to get is pavement, and I don't see how that helps the species. And that's what's going on…the ratcheting of rules and regulations that continue pushing on people to continue to raise the bar…is driving people out of the business…people are just throwing their hands up and saying "I've had it. Cut it all down, I'm outta here" (Group 1 participant 9).

The above sentiment from a forester involved in the CCAA program illustrates a seemingly extreme but oft-cited potential outcome of endangered species regulation on private lands, a sentiment that was echoed in some form by several other landowners and state employees.

4.1.b.iii Risk and Realism

One of the interview prompts related to the influence of the perceived potential for listing on landowner participation in the CCAA program. Participant responses indicated that the risk of listing is indeed an important factor for most, but not all

landowners. Participant 2 in Group 1 shared that "if I would have thought they'd never get listed, I probably would not have joined up," indicating that likelihood of listing was key to his/her participation. Other participants expressed similar views, and further evidence circumstantially supports this idea. For example, the programmatic agreements for arctic grayling and for Gunnison sage grouse, for which more landowners have signed-up or indicated interest (in writing) than any other agreements, were developed within the time frames when both species were petitioned for listing under the ESA, the petitions were denied, and suits were filed in court against the Service's decisions not to list. Additionally, private lands are critical for both of these species, either for direct habitat or because they depend on water from private lands. Thus, a listing with clear private lands implications was considered likely with the "writing on the wall" more so than for some other species. Landowner's comments support the notion that risk is an important factor driving participation.[9] In another case a research participant expressed their perception that a CCAA they were involved with was driven primarily by threat of a lawsuit, and the CCAA was being used as a "settlement" of sorts.

Several participants indicated that the perceived feasibility or "reasonableness" of actions required or even suggested as conservation actions during development of a CCAA were critically important to them. One rancher said: "…they have me moving yearlings 15 miles every other day…you're going, you guys are idiots, absolutely idiots. It didn't make any sense at all" (Group 1 Participant 1). A state employee suggested a similar theme:

[9] It is also possible that the risk of listing influences which species the Service and/or state agencies focus on developing agreements for, making opportunities for landowner participation broader for species with higher risk of listing. This concept was not explored in this research.

> [T]hey know their land better than anybody, and…you can come up with a conservation measure like…restoring riparian habitats. Well, the way you would go about doing that is very different landowner to landowner. You know, where are you going to put the fencing…the type of fencing…those types of issues. If you're really going to be successful the best way to do it is to have the landowner tell you how to do it because you know a lot of these landowners…have been there for you know, 2 or 3 generations (Group 3 Participant 1).

This is fundamentally linked to another theme that emerged from participants, which was the desire for their experiential knowledge of management and conservation to be valued and incorporated in both decision-making and the development of the agreements. On one hand, landowners believed they had knowledge to share with the Service and other managers:

> And I said well yeah, I'm going to plant it. And they said, well there are a lot of squirrels there and you're going to endanger them by discing it, and I said no you're wrong there. And they said well when you get rid of the native weeds and stuff that they feed on they're going to move. And I said no they're not, they're going to feed right on what I'm planting. And they said no they won't do that and I said well they will…they've been doing it every year, I see them do it…so I'm going to go ahead, and which I did, and they came back out when it started sprouting, and see how they would just work right up those rows (Group 1 Participant 2).

Landowners were also frustrated by a seeming lack of respect for their "common" knowledge of how things function on the ground, as well as by the perceived inexperience of Service and other agency representatives. One landowner said that it "made [them] so damn mad" that biologists seemed to be ignoring the individual's opinions about a particular species that occurred on their ground, and that the biologists' politeness did little to mollify the individual's irritation with the situation (Group 1 Participant 3). A Service employee involved in this research offered that one of the main roles of Service employees in the CCAA process is providing technical assistance about

the biological needs of a species, but that "obviously the landowner is going to tell us how to get there most effectively," in terms of meeting those needs (Group 4 Participant 4).

Several participants suggested that Service personnel's knowledge of and presence on the ground is critical to gaining landowner support and encouraging program adoption:

> [E]specially the ones that are out in the field, those are the ones that…you've got to get along with and try to work with, because they'll handle the people in the office…the people that don't get out in the field are the ones that you're going to have problems with because they really don't understand what's going on (Group 1 Participant 2).

Landowners without CCAAs also expressed concerns about field knowledge:

> [Y]ou know the agents for the Fish and Wildlife Service that I dealt with had little understanding of the species and had little understanding of the economics of cattle business. Basically all they wanted to do is put together a plan…if you're going to change your operation you've got to know why you're changing it (Group 2 Participant 4).

On the other hand, landowners also acknowledged that they could learn new techniques and methods from managers to reduce their impact and improve conditions:

> And that's how a lot of these guys are…if you can make them aware that the practices that they've done for 50 years maybe could be done better, and help him help whatever the species is, they're willing to listen…and if it makes sense they'll do it…in a heartbeat…But you've got to, you have to educate them, you have to make them understand why its better, you just don't tell them because I say so. That doesn't cut it…these people aren't stupid, I mean they understand way more than people give them credit for (Group 1 Participant 1).

Several landowners who were concerned with "what is reasonable" also discussed the importance of considering both their private lands and the adjacent public lands where they may hold grazing permits from the USDA Forest Service or USDI Bureau of Land Management. To them, it was somewhat illogical to partition management

responsibility or conservation action based solely on private land boundaries. One rancher suggested the following:

> [Y]ou know there's no differentiation between where the BLM lands are, and where your private lands are. I mean there's no fences that divide it you know, and a lot of times the BLM lands, they just might be 40 acres or so…in little scattered parcels and irregular boundaries, so you can't manage just the BLM lands or just the private lands. They all have to be managed as a single landscape (Group 1 Participant 4).

Indeed, a few participants articulated that one of their greatest fears was for restrictions associated with their public lands grazing permits, not regulation of their privately held lands. Some of these participants perceived that public lands have a heightened vulnerability to legal challenges.

> For me, the real ticket would be to get that link with the assurances on our public grazing permits. Because to be honest with you…I don't think the risk of take on our private land for listed species is all that great. I mean, I don't think that with what we're doing and how we're managing our lands and operating currently, I don't think that there's a huge threat on our private lands from listed species. But, I think there's more of a threat on the public lands for listed species, and I think that's driven by the court system… (Group 1 Participant 5).

An important thread in this discussion, which was described by landowners in both group one and group two, was the consequence of how knowledge, information, or suggestions for changing management to benefit species were presented. In particular, landowners expressed defensiveness and hostility when they perceived that something was being ordered upon them, that they had a diminished ability to have input into a particular action, or if ideas were presented with a perceived level of technocratic arrogance. One landowner described an experience with a government agency:

> [Y]ou know, when you start telling people you shall do this and you shall report to me, you shall have a fight. That's what you're going to have…but you know if [they] go in with the right demeanor and the right politics they can do a

> lot of good because they do have some good suggestions. But if they want to steam roll over somebody, boy it isn't going to work (Group 1 participant 1).

Another landowner had similar experiences:

> [T]he guy stood up and was kinda threatening…and that's not the way to be because you know, people here are just independent enough if you threaten them, they'll get their back up. If you work with them they'll work with you 'til the end of the earth. You know…so you come in you say "hey, I think we have a problem this is what we can do to make it better," they'll listen. But if you come in and say "by god if you don't do something we're going to fine you or we're going to put you in jail." Well people get upset (Group 2 participant 2).

4.1.b.iv Trust

Although the results presented here are entirely qualitative, trust was by far the most salient factor influencing the success of conservation partnerships between the Service or State government agencies and private landowners. In fact, there was a virtual consensus that trust was the "single most determining factor" for partnership success (Group 3 participant 1). Trust was identified by landowners in groups one and two, the State employees, and the Service employees interviewed. Although the Literature Review focused on three different ideas of trust (process, institution, and individual), the participants overwhelmingly focused on interpersonal relationships and mutual trust between individuals.

Participant 5 from group 1 tied trust in the agency and the individual together:

> I think it begins with the person because you have to have a relationship of trust to go into these projects…but I think that evolves into the agency…but you have to have those personal relationships first.

Another landowner talked about the importance of the status of two agency employees involved with one of the programmatic CCAAs:

> I think they've established quite a bit more trust with some of the local people, and they've been very honest. I've never had reason to doubt what

> they've said. And I think they've acquired you know, some status in the community, so these two guys are able to get a lot done…[instead of] you know, if somebody showed up and said here I'm here to help you (Group 1 Participant 1).

Service employees also recognized the importance of trusting relationships with landowners. One participant both stated the importance of trust and relationships and provided an anecdote:

> [B]eing an honest, plainspeaking representative of the agency. And that goes beyond the CCAA program, but it also plays into how far you'll get with developing things with the landowners, it gets to that trust issue, and that…issue of being an honest open communicator as a representative of the Fish and Wildlife Service agency, that will be a huge determinant of whether or not the people will start to trust you over time. And you need that, it's not biology, it's not law, but it's human dynamics, and if you don't have that you're not gonna get anywhere. So just as an example, I've no problem saying I don't know. I think that's one reason that landowners like me, when they decide they like me…you'll have this discussion and usually the landowners'll put you through your paces, try to make sure you know what you're talking about, and try to see where their…experience intersects with our biology training. And they ask really good questions…and just being able to say I don't know, and I'll look into it, I'll get back to you and then doing it, is really important. Cuz they, most of the time these people have been around the block and if you blow sunshine or you try to fake that you know something, they will know it (Group 4 Participant 1).

Some landowners didn't express their thoughts overtly in terms of trust, but suggested that "just stopping in and visiting with [landowners], you know getting acquainted" is a critical piece of developing a relationship with the Service and of encouraging participation in the CCAA program (Group 1 participant 2). State employees seemed to key in to issues regarding a lack of mutual trust, most specifically the Service not trusting its State and private partners. One State employee expressed frustration about negotiating a programmatic CCAA with the Service because he/she felt that the Service had an unreasonable expectation that the CCAA had to be "litigation proof," and did not have faith in their State partners:

> As an agency I don't feel that the Fish and Wildlife Service is trustful of its partnering agencies…in this case where we have umbrella agreements where [the State] is coming in and representing multiple landowners whether they've been identified ahead of time or not, we have these umbrella agreements where we enroll landowners…we should be perceived in my mind as a partner, and Fish and Wildlife was very distrustful of us…I guess what I would recommend is that they do trust their state partners, that they realize that this is a collaborative effort that it should not be that the states are just another face in the crowd and that the Fish and Wildlife Service's role is to make the states do certain things or to regulate what the states are doing. They gotta loosen up on these negotiations…they're not gonna make these negotiations litigation proof, they just have to negotiate in good faith and work with the states if they are challenged in court to defend the decisions and the, whatever is in the CCAAs… (Group 3 Participant 2).

Another State participant perceived mistrust between the Service and private landowners in a programmatic agreement:

> [I]t's mainly an issue of trust, I guess, because this is a program that developed…from the standpoint of people who are used to being in a regulatory role, and their view of it is that they have to have everything spelled out to the Nth degree or something bad is going to happen. They don't even know what that bad thing is, but they think it will happen. Whereas from the landowner's perspective…and I'm not advocating either one of these, but the landowner's perspective they feel like they've done a good job managing their land and they feel like they should be trusted to continue to do that and that not everything needs to be spelled out. They feel like they can continue to manage their land in a way that is conducive to [the species], so there is a little bit of a lack of trust there on both ends in that landowners are saying trust us, and the service is saying well we really can't, we have to spell this out or we're going to get screwed somehow (Group 3 Participant 3).

Several participants also identified that trust between landowners and the Service is an important factor affecting landowner participation. Most specifically, past experiences with the Service or with endangered species played an important role in participants' perspectives and willingness to cooperate with the Service. One Service employee had this experience that illustrates ideas also presented by other participants:

> [B]ut there was another person who was very hesitant…she had had dealings with us on [other species]…well at first our interactions were really

> frosty, but then she seemed to start to think I might be okay, but then she wasn't really sure because she didn't want to interact with the agency I represented because she had some, in her perception, bad experiences on these other two…species. So she was very very hesitant at first. And, I'm not a psychologist or anything, but I could see the conflict in her. She got to the point where she liked me, and our interactions were comfortable, relaxed, joking with each other and that sort of thing, but then the curtain would come down when we were talking about what the agency needed or the process, or that sort of thing, because it's almost like she would forget for awhile that I was a Fish and Wildlife Service rep. and then it would come back and she would be like ok, I'm not sure I trust you. So…past baggage is huge (Group 4 Participant 1).

This section has primarily described the insights that landowners shared about their personal experiences and choices about conservation in general, and about conservation activities for endangered species in particular. Many of the participants have had multiple encounters with listed or at-risk species, and thus some of their responses were not formed exclusively by their experience with the CCAA program. Nonetheless, the results clearly illustrate some of the important motivations and concerns that landowners associate with species conservation, as well as some of the insights stemming from the State and FWS employees' perspectives and experiences. Other findings of this research are more related to aspects of the CCAA program itself and the context of its implementation. As described in the Literature Review, factors associated with the adoption and diffusion of conservation programs are likely to play a role in their successful implementation; the following section describes the research results relevant to adoption and diffusion of innovations.

4.2 Adoption and Diffusion of Innovations

Few participants in this research explicitly expressed that the "newness" of the CCAA program affected their participation or views of the program. However, several participants, specifically individual participants (i.e., not participants under a

programmatic agreement) mentioned that because theirs was one of the first agreements the process was much more difficult. Participants who responded with this similar sentiment were geographically wide-spread, and included entities or individuals from Georgia to Washington. What is clear from these responses is that there seems to be consensus, or at least a shared perception, that this is still a very new program. One Service employee suggested that the "program is still in its infancy," which was a characterization shared by many other research participants (Group 4 Participant 1).

The Literature Review discusses the role of information and the formation of judgments as important elements in the successful adoption of an innovation. As described in the section above, participants in this research articulated that information and how it was shared (and ideally mutually shared) were indeed important to their perception of conservation opportunities and their interactions with the Service. Another element related to information that was revealed directly by Service and State employees, but more indirectly by private landowners, was the dissemination of information about the CCAA program. Participants in group two (landowners who don't have a CCAA) and group four (Service employees) most consistently expressed that the Service has not adequately marketed the CCAA program to the target population of private landowners. A landowner from group two who was interested in conservation and lived in an area where a programmatic CCAA exists offered this:

> I have heard about some similar program, or that one, with the assurances and I thought at the time I heard it I thought that's great, but I heard very little about it…just basically briefly mentioned somewhere or I read it, so that's the only exposures I've had…and I thought well yeah if they would give an assurance…then maybe you'd be agreeable with that….and I thought it was a great idea because right now…under the endangered species law you have no

> assurances…so yeah I think definitely they could market that better (Group 2 Participant 3).

A Service participant said: "there's not much marketing…I've never perceived much interest on the part of the Service in marketing…" (Group 4 Participant 2). Several factors potentially affecting program marketing were identified, and will be discussed further in the Policy Implementation section that follows.

An adoption-related concept that participants in group one and group four cited might be called a "reputational effect". They recognized that it was important who did sign up for CCAAs as a measure of legitimacy for the program and for partnering with the Service. A Service employee had the following experience:

> [T]he importance of who you get to sign up, because if you get somebody to sign up in a rural landscape that is well known and respected in the community, you will have so much more chance of getting lots of other people to sign up. And we encountered that…we were able to get one of the community pillars to become engaged and get actively involved with us, and I know we had 2 people, and one of them actually said to me when we were getting close to having the final document, "well if [they] think it's all right, I'll sign it." So that's really important… (Group 4 Participant 1).

Individuals within the communities perceived similar interactions; one landowner who had signed up soon after a programmatic CCAA was completed perceived that "people kind of trusted us" and it "was really a function of friends dealing with friends" in regards to others signing up after they did (Group 1 Participant 4).

4.3 Public Policy Implementation

Several themes related to policy implementation and the CCAA process emerged from this research. The Literature Review chapter describes five factors that are thought to affect public policy implementation success: policy content, context, agency commitment, capacity, and clients/coalitions. Research participants identified all five of

these theoretical categories (Najam 1995) as affecting the success of CCAA policy implementation. Although many of the most direct insights about policy implementation came from State and Service employees, most of the participants contributed nuggets of information that help elucidate factors affecting CCAA policy implementation success. An important insight, consistent with Najam's (1995) assessment, is that these categories are not exclusive and do not act independently but rather are interdependent and inextricably linked. For example, the Service's commitment to the policy will directly affect the agency's capacity for implementation (or vice versa). These results are described and illustrated further below.

4.3.a Policy Content

The section above on landowners' choices to conserve under the ESA describes participants' perceptions that the CCAA policy and program provides certainty and regulatory protection for their future operations and encourages conservation of at-risk species. This is the stated purpose of the CCAA policy. However, a twofold policy weakness was consistently identified: the CCAA program is cumbersome to implement, and there is no dedicated funding source to assist interested landowners or states in developing agreements and implementing conservation measures under the agreements.

4.3.a.i Process, Process, Process

Many participants, including Service employees, lamented the bureaucratic and byzantine process necessary to complete a CCAA and get a section 10(A)(1)(a) permit issued. This was particularly true for participants who had completed an individual agreement (as opposed to a programmatic agreement), where they were singularly

responsible for working with the Service to complete the documentation and process requirements. One individual expressed their exasperation with the process:

> [O]h man [it was] teeth grinding gnashing, it's taken this long, and it is hard, the agencies they're duty bound to protect the resources. Small landowners like us are just trying to survive as a small business, you know…I guess I could say that at least [you're] only going to have to go through it once… the time factor and the cost and the amount of energy that you have to put in to get one, at least at the individual level, is…you know it really makes me wonder, is it balancing? (Group 1 Participant 6).

These sentiments about the process were recognized and shared by State and Service employees as well. A State employee had this reaction to the CCAA process in general:

> [W]ell it's really kind of a complicated, and cumbersome, and potentially expensive process if the route to developing an agreement was solely private landowner and FWS. From my understanding, I'm not sure that I know any individual landowner that would be able to navigate the system and jump the hurdles to get one of these agreements in place, other than someone who had the means to hire a consultant to do it, or was part of a corporation or something. I just think it's pretty complicated…(Group 3 Participant 1).

In an interesting contrast, landowners whose experience with the program was borne largely through involvement with a programmatic agreement (e.g., they had signed a certificate of inclusion under an existing agreement) had either neutral or positive perceptions of the process. One landowner expressed a common sentiment: "they were pretty accommodating, they really were…it wasn't a big problem I didn't think. The deal worked pretty well" (Group 1 Participant 3). This contrast will be discussed and explored more robustly in Chapter 5.

4.3.a.ii Financial Assistance

Some participants saw the lack of financial support for the program as a "make or break" policy flaw that needs to be remedied for the CCAA policy to be widely adopted and implemented:

> [T]here's no financial incentives, I know I said that before…I think it's really important, it's really important, a lot of these other programs administered by NRCS…they all come with money! So, that's really important to people who have a really slim operating margin finance wise. And…you know there aren't very many actions in the world that you can expect people to take all on their own without getting paid for it. It's just not the way the world works…but we're asking them to commit, not get paid to develop these conservation agreements, just because we want them to…(Group 4 Participant 1).

Other participants suggested that the program should at least be backed by a funding source to help willing landowners through the process:

> [F]inancial assistance, so that if there did need to be surveys or some of the processing paperwork that we have to go through that a landowner might have to pay for, that we have a grant program that can help them, so that they don't have to necessarily have that initial outlay of money to just get through the process. Now, as far as incentive, I would like to see tax incentives. But that comes through tax law, not necessarily the ESA itself. But to me anybody that is setting aside land for conservation or managing land in specific ways for conservation should get a tax break. I think that would significantly strengthen the program (Group 4 Participant 4).

Private landowners who had experience with individual agreements also identified with these sentiments about financial support for the program: "if I was to go in to doing the CCAA on my own…I'd have to go to the bank and borrow money to do it. And you think, well why?" (Group 1 Participant 6).

4.3.b Policy Context

Policy context can be thought of as the seedbed in which policy implementation is either nourished or starved, and ultimate success if determined. The context is

represented by the factors of the political and social environment that, although not directly related to the policy, have impacts on policy implementation success. In the case of CCAAs, Service and State employees expressed overwhelming sentiment that the current political context has adversely affected the implementation of the CCAA policy. The reasons for this fell primarily under the theme that the risk of listing affects landowner participation, and the current political context has not supported species listings.

A Service employee expressed the link between listings, politics, and participation:

> [L]andowners are banking that a lot of these species won't be listed…you know we're gonna change administrations in two years one way or the other…I think the mere fact that there will be a change in who sits in the white house, we might see more folks come forward, or less, depending on how they think things may come about. But I definitely think politics, where we are in presidential cycles, and who, who is the dominant party in congress affects how landowners, how many come forward (Group 4 Participant 4).

State employees also recognized this effect on programs for specific species:

> If there wasn't any pressure or any belief that listing might happen in the near future, we'd have very few landowners interested…But the [species] was definitely on the edge…you know I think most people were surprised when the decision came out the way it did, you know the not warranted decision, and there's considerable speculation about that of course, in that it was a political decision and not a biological decision, and given that you know the interest was definitely there because people were concerned that it could be listed in the near future…(Group 3 participant 3).

An interesting distinction between the policy context category of factors and the other categories is that the policy context for a government program would be expected to largely influence the agency commitment and capacity factors in terms of congressional funding and budget allocations. In addition, as is indicated above, if politics affect listing

decisions, that in turn affects the relevance of the program's assurances to landowners: if landowners don't believe that a species will be listed then the assurances become less relevant. This is supported by the numerous participants in all groups who indicated that the risk of listing was an important factor in landowner participation in the CCAA program.

4.3.c Agency Commitment

Comments and insights regarding the Service's commitment to the CCAA process came primarily from Service employees who have "insider" knowledge about agency workload prioritization, budgets, staffing, and other factors. All of the Service employees interviewed for this research articulated that they do not perceive that the CCAA program ranks amongst the high priority programs, although many of them think it should.[10] Indeed, most of them saw that working on CCAAs is currently considered a luxury, although none of the participants advocated that view. One employee shared their view of the agency's commitment to the process:

> So if the agency wanted to do something to make the program better or more efficient, I would say that the agency should prioritize it higher relative to the other pressing workload like listing, and litigation, and section 7 stuff, that all have either court-ordered, or…legal deadlines, and somehow make CCAAs rank the same, even though they don't have legal deadlines, and we haven't been litigated on one yet. It's a great opportunity to try and do good things for a species before its listed, and you lose that once the species is listed. You're in a whole different arena with a whole bunch of other baggage that you have to deal with (Group 4 Participant 1).

[10] Participants indicated that the priority level of CCAAs varies widely amongst Service offices, but in general the program does not rank well against other items that are statutorily required and/or lawsuit driven.

Another employee compared the agency's commitment to outreach for HCPs versus CCAAs, arguing that current outreach for the CCAA program is not enough to achieve widespread implementation:

> [We need] better outreach…the more staff you have on the ground, giving presentations, talking to individual landowners, that sort of thing, that's how we got the HCP program to be as big as it is…a lot of us were out giving presentations, constantly, to big and small groups we were out on the ground talking with locals and you know, local jurisdictions and that sort of thing. It was massive amounts of outreach (Group 4 Participant 4).

Minimal outreach clearly becomes an issue affecting program success when one considers that of the five non-participants included in this study, two individuals were not aware of the CCAA effort that they were eligible for. State and Service employees also viewed that the state government's commitment was critical to the success of programmatic CCAAs. A State representative offered the following about agency commitment in general:

> [T]his is not an easy thing to put together and it requires a lot of time, and emotional commitment, and if it's not there it's not going to work. And you have to have the leadership; you know the buy-in of the leadership of the different agencies involved. Even if its just one state agency, if it's not a priority, it's probably not going to work (Group 3 Participant 1).

In general, there was consensus among research participants that agency commitment was key to successful implementation. There was also a sentiment that the Service has thus far not expressed a high level of commitment to implementation of the CCAA program. Closely related to agency commitment is the presence of sufficient agency capacity to successfully implement the program, which is discussed in the following section.

4.3.d Agency Capacity

Participants overwhelmingly shared that they felt the Service does not have sufficient capacity to successfully implement the CCAA program at the scale possible or desirable. State, private, and Service participants all cited that existing Service staff, budgets, and administrative resources are insufficient to nurture the program to meet its potential. A cursory review of the national Fish and Wildlife Service budget shows that funding levels for candidate species conservation have decreased every year since 2003 (retrieved online at www.fws.gov/budget/), potentially indicating both a resulting lack of commitment and a reduced capacity to pursue implementation of the CCAA program. A State employee both recognized the budget issue and expressed frustration with the implications:

> I know that their budgets are in tough shape, but…they've got to realize that these CCAAs are proactive, once again a proactive way of getting ahead of extinction curves. And they've got to; you know they should put some resources to this. It's important, rather than just wait until things get listed and then have them developing recovery plans. Get out ahead of the curve and get these fish restored, or animals restored, before they get into trouble (Group 3 Participant 2).

One Service employee articulated a viewpoint similar to other employees:

> [T]he lack or prioritization in the agency has domino effects…there's very few staff associated with it, the staff that are allocated to work on the projects don't get to work on it probably as much timewise as they could, and because of that, the word doesn't get out very well, because of that, the landowners aren't aware of it... (Group 4 Participant 1).

State employees pointed out why the lack of Service capacity increases the importance of the programmatic approach to CCAAs: "there's just no way that the Service has the resources to take the CCAA program out and do it, that's why we're doing it. It just never would've happened if the Service would've tried to do it themselves…" (Group 3 participant 3).

4.3.e Clients/Coalitions

The final group of factors that Najam (1995) cited for their importance to policy implementation was clients and coalitions and their perception, support, or opposition of a particular policy. The idea of clients/coalitions was the least cited of the factors affecting policy implementation, but was explicitly proffered by one Service employee and insinuated by others. One Service employee offered the following for why they felt there were not more CCAAs nationwide:

> I think I would place it with the Fish and Wildlife Service because we've had no real encouragement and no money to push this. We have much more money to push HCPs for instance…which do bad things for species than we do for SHA and CCAAs which do good things. I think that if there was…if there really was interest on the part of individual landowners and it doesn't have to be actual individuals but some landowner or advocacy group like a cattlemen's beef association or something like that, or you know a state stockgrowers association…where they wanted CCAAs, because they thought that it would enable them to do better range management…and still be covered under the ESA permit, then I think that it would be a lobbying thing with congress to get through some money for it (Group 4 participant 3).

Private landowners did suggest that greater Service involvement in landowners groups could improve landowner perceptions about the ESA and various programs offered by the Service:

> I always think it's a mistake, when I think about the wool grower's annual meeting, or the cattlemen's meeting, it isn't very often that we have a USFWS representative there. And I'm thinking' why is that? And there's a lot of concern, fear, I guess, over misunderstandings over the ESA, what it may or may not do to you…there is a lot of misperceptions out there about that, and I don't think it's fear as much as it is kind of lack of experience. I mean FWS is sort of faceless, nameless to a lot people (Group 1 participant 4).

CHAPTER 5

DISCUSSION, CONCLUSIONS, AND POLICY IMPLICATIONS

The results provided thus far are based solely on the reflections and responses of the research participants. This chapter will endeavor to tie the research results and findings together through interpretation and synthesis, particularly in terms of how the results inform the research questions.

As is presented in Chapter 1, this research project was guided by three research questions, which have in turn been informed by synthesizing the perceptions and experiences of various individuals involved in the CCAA program around the United States. The three research questions are repeated below, and interpretation and conclusions associated with each question are offered. Quotations from research participants are included sparingly in this chapter, and are intended only to provide emphasis for particular points or ideas. The discussion of Research Question 1 is formed primarily from the themes that emerged directly from the research interviewees. Interpretation and synthesis of these themes is subsequently presented in the discussion for Research Questions 2 and 3.

Additionally, a section titled “Reflections on Theory” is provided to bring the reader full circle. The results of the research are described in terms of how well the CCAA program, its implementation, and landowner experiences fit within the spectrum of existing literature that was presented in Chapter 2.

5.1. Research Question 1: What factors are influencing non-Federal landowners to participate, or not to participate, in the CCAA program?

Identifying the factors specifically relevant to landowners' CCAA decisionmaking is problematic for several reasons. First, there is extreme variability in the circumstances surrounding each CCAA; most CCAAs would serve as a revealing case study unto itself. For example, one participating landowner had developed a conservation and management plan for species on his/her property. The landowner had no intention of participating in a CCAA, indeed had no knowledge of the program until being introduced to it by a Service employee. The Service then took this individual's land management plan and used it to draft a CCAA that prescribed no changes from the individual's existing plan. In this case, the CCAA program was an afterthought, was not a necessary element to encouraging conservation actions on that property, and did not necessarily serve a new or unique role for the landowner or the species. This outcome was a synthesis of the landowner's existing actions, the Service's capacity, the landscape context, and the needs of the species, all of which were unique to this single case.

In other cases the CCAA is based on the propagation or introduction of sensitive species on private lands for conservation purposes. Under these CCAAs, the affected landowners are not necessarily committing to engaging in habitat improvements, rather they are willing to allow an at-risk species to be introduced onto their property, and are being offered assurances that limit future restrictions to do so. Almost all of the other agreements vary to a similar extent in terms of the context within which the agreement has been developed, the landowner requirements associated with the agreement, and

ultimately the conservation value to the species. For example, two state employees interviewed had very different views about the programmatic CCAAs they had been involved with. One employee saw their CCAA as hugely positive to the species involved; another saw theirs as politically driven and mostly status quo for the species.

This variability reinforces the potential for expansive interpretation of factors affecting landowner participation. The Service employees involved, the landowners involved, the political context of the state where the agreement occurs and the national political climate, the species in question, funding availability, and an endless list of other factors are likely to affect the experience of individuals who participate in the CCAA program. Therefore, this discussion of the factors influencing landowner participation includes the suite of those factors that emerged as overarching themes and constructs. These factors inform the current status of the CCAA program nationwide, and hopefully represent a collective, as opposed to independent, viewpoint and experience.

Although there was a high degree of case-specific variability, several categories of ideas recur throughout the interviews and can be synthesized into thematic factors affecting enrollment in and experience with the CCAA program. Some of these shared themes are not specific to the CCAA program and are more relevant to general considerations of conservation on private lands; others related specifically to the CCAA program. The shared themes included the following (not in order of importance): money matters; incentives are important but not absolute; landowners are proud stewards; trust is of utmost importance; marketing matters; process, process, process; risk is important; assurances are key motivators; some baggage weighs a lot; there's more than one way to

know things; let's be "commonsensical"; and outsiders play an important role. Each of these thematic lines is explored in more depth below.

5.1.a Money matters

Research participants clearly indicated that financial considerations are important. To the private landowners this theme was focused mostly on the personal costs that they had incurred through development or implementation of a CCAA. Most landowners didn't emphasize the issue of money, but identified it more as a "necessary evil" type of consideration — they're running a business and need to be profitable. Importantly, personal financial considerations were not specifically identified as a barrier to participation in the CCAA program, although they were identified as important considerations for what the measures in a CCAA look like.

State, FWS, and even some private landowner interviewees cited the FWS's lack of financial capacity as a barrier to successful implementation of the CCAA program. As was described in chapter 4, the FWS budget for candidate conservation activities has been static or decreasing over the past 5 years. Although there may not be a statistical correlation (the author did not attempt to identify one), there is no doubt that some relationship exists between the money and resources available for FWS involvement in the development of CCAAs and the money appropriated to candidate conservation efforts. Staff time and technical assistance for outreach, agreement development, and funding for implementation were viewed as suffering as a result of existing fiscal and staff limitations.

5.1.b Incentives are important but not absolute

Most of the participants in the CCAA program indicated that incentives to participate in conservation efforts were important in general, and that the assurances offered by the CCAA program were even more so. Incentives were identified as mechanisms for equity, a way to even the playing field for landowners whose management or conservation actions support species valued by the larger society. Some landowners suggested that for them incentives were essential for their participation in conservation efforts. However, other landowners indicated that incentives were not necessary, and that they were likely to perform certain conservation actions regardless of how (or whether) they were encouraged to do so.

One of the notions emerging from this research is that the majority of individual (non-programmatic) participants were self-motivated to do conservation outside of the CCAA program. In these cases, the CCAA is a useful additional level of protection rather than a primary motivator for conservation behaviors. This is not universally true, but is collectively an important consideration. For example, one individual CCAA is with an agency that purchased a piece of property for the specific purpose of protecting the sensitive species for which they later completed a CCAA. In this and other similar cases the CCAA program supports but does not necessarily enhance the conservation outcome for a given species, compared to the non-CCAA alternative. In these instances, the effect of incentives is debatable.

One final consideration is the extremely broad range of potential interpretations regarding what an incentive is. To some interviewees an incentive was interpreted as an inducement, or a monetary or financial offer. In other cases there was acknowledgement

that regulatory assurances served as an incentive, even in the absence of financial gains. And some landowners clearly conveyed a sense of pride associated with various social or governmental awards and recognition, potentially indicating that more intangible exogenous factors such as those described by Doremus (2003) indeed serve as incentives for some individuals. What is obvious is that as with the literature, landowners do not subscribe to a single definition of "incentive," and the degree to which any incentive drives landowner decisions varies greatly. This is relevant because how individuals define "incentive" is critical to how important they are in conservation decision-making.

5.1.c Landowners are proud stewards

> [W]e're sort of a custodian of the land, so I think it's up to us to take care of it. And, uh, and then taking care of it it's going to give back more to us. Like I tell a lot of the ranchers, if they'd be a better grass farmer, they'd be more successful with the cattle business. And I think that's something that we need to do is try to take care of the land (Group 1 participant 2).

All of the landowners that were interviewed for this research, including those who did not participate in the CCAA program, to some degree reflected the idea offered in the quote above, indicating that conservation was an important consideration in the management of their land, and that being a good steward of the land was important to them. As the literature suggests (Corbett 2002; Kessler 2006; Kreuter et al. 2006; Lynne, Shonkwiler, and Rola 1988; Serbruyns and Luyssaert 2006), endogenous factors such as value orientations would be expected to influence landowner participation in conservation programs such as the CCAA program. Landowners expressed a level of personal satisfaction associated with their participation, and were eager to share their conservation experiences and efforts. This is important to the discussion because it

reinforces the premise that landowner participation in conservation efforts should not be evaluated or characterized only in terms of its economic cost/benefit analysis. In addition, it should encourage FWS staff to acknowledge and respect the desires and experiences of landowners, as well as to recognize, reinforce, and build trust with landowners based on the mutual interests of wildlife, plant, and/or habitat conservation.

5.1.d Trust is of utmost importance

Trust was perhaps the most universally articulated factor affecting landowner participation in the CCAA process, and landowner relationships with government agencies in general. All individual landowners indicated that they would not work with someone they didn't trust, and that those people they trusted had worked hard to earn that trust. Although most interviewees differentiated between the Federal government and others they had dealt with, it was evident that the agency one works for means less than the way one behaves and interacts with others. This was clear, not only from the landowners, but also from State and other non-Federal entities, as well as from the Service employees involved. Trust must be shared and reciprocal. It is debatable whether such a strong and trustful relationship is necessary for more general conservation efforts, but the long-term nature (some agreements have 50-plus year terms), the substantial commitments of all the parties, and the potential regulatory and legal accountability make the prospect of a breach in trust under a CCAA that much more damaging.

5.1.e Marketing matters

A consequence of the FWS's staffing and budget situation is that many offices are not looking for new work items, and staff are thus not promoting the CCAA program to individuals or other agencies who might either be interested in completing an agreement themselves, or who might in turn promote the program to eligible participants more broadly. Compared to other conservation programs (e.g., HCPs) the CCAA program is relatively new so that there should not be an expectation that landowners or even some agencies would know about it and its potential applications. The effect of limited marketing efforts can be seen in part by comparing the limited geographic locations where the CCAA program has been implemented to the widespread eligibility of the program. At least two of the interviewees for this research indicated that they were interested in participating in an existing programmatic CCAA but had not been made aware of their eligibility. This is a missed opportunity directly associated with either inadequate marketing effort, or an insufficient understanding of the program and that particular agreement by the agencies and staff involved.

5.1.f Process, process, process…

Individual CCAA participants expressed concern that the transaction costs of their agreements were extremely high. These costs are borne not only by the landowner involved, but also by the Service, and include the gathering of biological information about a particular property, gaining a robust understanding of the threats and conservation needs of the species, development of the agreement, and environmental compliance (e.g., NEPA, public noticing, section 7 consultation). For some agreements the process as described by landowners took years and several thousand dollars to

complete. This landowner's thoughts capture the sentiment of most other landowners with individual agreements:

> All you're trying to do is keep us on the landscape and provide habitat, you know that's really what it boils down to. So to do that, should it cost a landowner a whole lot of money to do the right thing? I don't think so, it should be the other way around you say "hey landowner, you sign onto this CCAA, we'll provide a smooth track…we'll hand it to you, its not going to cost you a whole lot", you know then people would sign on… (Group 1 participant 6).

Additionally, for each agreement multiple layers of preparation and review by the Service are required, including multiple offices (field offices, regional offices, solicitor's (attorney) offices) and numerous personnel. Although any regulatory process will involve some complexity, landowners and other parties still cited frustration with what they perceived as a burden and unnecessary bureaucracy. Interestingly, no landowners who signed up under a programmatic CCAA identified or discussed the cumbersome process. This provides a key demarcation between individual and programmatic CCAAs and will be discussed further in section 5.3.

On the other hand, the detailed requirements of the CCAA process were also identified as important to the conservation validity of the program. Specifically, the measured and methodical process, as well as the regulatory issuance criteria for the 10(a)(1)(A) permit forces landowners and biologists to clearly understand and articulate the factors affecting a species' condition across the landscape, as well as to explore the most appropriate and efficient way to address those factors.

5.1.g Risk matters

The majority of landowners indicated that the risk that a species could be listed under the ESA was important to their decision to participate in or pursue a CCAA. The

decision space might include the following evaluation: is the perceived likelihood that species X will be listed, and the perceived consequences if it is listed, high enough to justify the perceived and/or actual transaction and implementation costs associated with a CCAA? To some it could be compared to an insurance evaluation: are my efforts (or costs) now worth the potential payoff in the future if I ever need the assurances provided by the agreement? This is a key consideration, and some landowners stated that they would not participate in an agreement if they did not believe there was a risk that the species might be listed in the future. Similarly, at least two landowners explicitly stated that the "risks don't outweigh any benefit to me not having a CCAA" (Group 2 participant 4). In one of these cases, the lack of perceived risk has led (in part) to the individual not participating in the program. The role of risk is perhaps most evident in the cases of the Arctic Grayling and the Gunnison Sage Grouse programmatic CCAAs, where the fate of listing decisions for both species have wound up in the uncertain hands of the court system. Landowners have expressed significant interest in both of these agreements, and at least one state participant cited that significant political pressure to protect landowners from listing was the real driver behind one of those agreements.

The "risk" theme is also affected by the broader political context. For example, the CCAA program has been implemented almost entirely under the two George W. Bush administrations, where there have been fewer species listed under the ESA than under any other administration since the ESA was passed in 1973. Through that same timeframe there has also been controversy resulting from high profile political interference in the decision-making process under the ESA, which is thought to have resulted in fewer listings (e.g., see Office of the Inspector General report released to

Congress March 26, 2007; FWS 2007). These types of political activity could influence the perception of risk if it results in landowner confidence that listing decisions are guaranteed one way or another. This also makes the level of risk vulnerable to changes in political influence and political climate.

5.1.h Assurances are key motivators

The "assurances" provided for under the CCAA program are important motivators for landowner participation. As noted above, not all landowners needed an explicit incentive to participate. On the other hand, those that did cited the regulatory assurances as a key factor in their decisions. As the program intended, assurances were viewed as a contract between the government and the landowner to provide certainty in the future for the landowner's operations. One landowner articulated this view that was shared by many participants:

> [I]f we can get an agreement that we can live with and be satisfied that we're not going to go out of business…we know what we're doing. And that was the thing I was struggling so hard is is that you just don't know what's going to happen from one day to the next (Group 1 participant 1).

The assurances provided were also described as an important codification of the relationship between the government and the landowner, such that some landowners felt less vulnerable to potentially hostile interactions with outsiders because they would not be standing alone. This was not universally the case, but it was an important consideration for some.

5.1.i Some baggage weighs a lot

In contrast to those landowners who felt that their relationship with the government provided a certain amount of protection, to others it was cause for wariness.

For example, there was some indication that individuals signed up under a programmatic CCAA would be less likely to deal directly with the FWS than with the state agency they had interacted with. Some of the heaviest baggage for the FWS, specifically in the western United States, is the ongoing issue of wolf reintroduction and management. In certain areas there is a high degree of mistrust and skepticism of the FWS resulting from the wolf issue. This may seem somewhat unrelated, but the intense nature of the controversy over wolves (*Canis lupus)* has affected many individuals' perceptions and understanding of the FWS. To repeat an example, the issue of wolves was mentioned by at least six interviewees in the western states, even though there was not a question about wolves directed to them by the researcher. This is evidence that the issue is both on their mind, and important to their understanding of and relationship with the FWS.

5.1.j There's more than one way to know things

The role of local knowledge emerged as a critical factor affecting landowners' relationships with FWS and other technical "experts" that may be involved in the CCAA process. In particular, landowners believe they have a unique understanding of the character of their land, their management, and the species that occur there. The role of landowner knowledge, which could be described as the lived-experience, affects the interaction of the technical specialists and the landowner. For example, if a landowner's understanding of the needs of a species, based on their "untrained" observance over time, differs from that of a trained professional wildlife biologist who has no experience with the particular species, how are conservation actions determined? Does the biologist's

understanding "trump" the landowners? What are the consequences of relying too heavily on either form of knowledge (e.g., lived-experience versus theoretical[11]). This issue was brought up multiple times by landowners because they viewed that their understanding of "how things work" on their property had been largely dismissed in favor of "biologist" knowledge. Simple acknowledgement and respect for the different interpretations or experiences was deemed a crucial block for landowners to build relationships upon.

5.1.k Let's be commonsensical

This theme emerged from landowners' perceptions that the FWS or others had asked for or suggested infeasible and unreasonable conservation actions or changes to landowner operations for the protection of species. Some interviewees suggested that the FWS took a "command and control" approach to the development of voluntary conservation actions, such that the participants almost rescinded their involvement. Some landowners felt that their good-faith efforts for conservation were largely dismissed by FWS staff that plowed ahead with pre-conceived ideas of what conservation is. Even if the perception is only one-sided, this would likely affect the level and effectiveness of cooperation. Similar to the discussion under theme 5.1.j, to ensure mutual satisfaction, a commonsense approach must account for and be receptive to landowner limitations and concerns.

[11] This is not to suggest that professional wildlife biologists don't have on-the-ground experience, it is simply to suggest that often the roots of that experience and knowledge are very different from landowners'. In most cases the wildlife biologist and the landowner will have different lived-experiences that shape their worldview and inform their interpretations of the best pathway to conservation of a particular species or habitat.

5.1.l Outsiders play an important role

Amongst the private landowners interviewed for this research, there was significant concern about and reference to third party lawsuits that affect ESA listing decisions. The threat of legal action from "outside" environmental groups was cited as a source of fear and anger far more than any interaction with government. In addition, particularly for CCAAs across western rural areas, there was significant concern about changes associated with the ex-urbanization of the landscape, as well as the effects of wealthy landowners affecting agricultural management and values. These "outsiders" were considered a threat to their way of life, and some landowners saw the CCAA program as one mechanism to help secure their current operations and provide certainty over time, regardless of landscape changes.

5.2. Research Question 2: Does the small number of CCAAs to date indicate that the program is not meeting its objectives?

The objective of the CCAA program, as previously described in Chapter 1, is:

> …to facilitate the conservation of [at-risk] species by giving…non-Federal property owners incentives to implement conservation measures for declining species by providing certainty with regard to land, water, or resource use restrictions…" (64 FR 116).

The research findings indicate that the existing CCAA program and its implementation to date is indeed meeting the policy's stated objectives, although to a more limited extent than was likely anticipated or perhaps hoped. This obviously cannot be quantified, as policy-makers have not articulated quotas or other numerical expectations. However, the Service employees who participated in this research, including individuals in policy-level positions, expressed their perception that the

program has had limited application relative to its potential role. Overall, at least some of the CCAAs that are in place seem to be meeting the intent and conservation objectives of the policy. Perhaps the best example is the programmatic CCAA for fluvial arctic grayling in the Big Hole River system in southwestern Montana, where more than two dozen traditional-use (mostly ranching and some row-crop agriculture) landowners have signed up under an agreement that calls for extensive conservation measures for a species and situation that is highly controversial. Evidence of the success, the State of Montana has committed extensive staff to implementation of the CCAA, there is widespread trust amongst the participants, and the presence of the CCAA and willingness of landowners has resulted in additional partnerships with conservation groups, and an infusion of grant money to help meet the substantial goals of the CCAA.

Overall, this research suggests that the small number of CCAAs is likely less a result of shortcomings of the program itself, and more the lack of capacity of the FWS to take time to foster relationships, and of the FWS and other non-Federal partners to develop, complete, and implement agreements. This is not surprising given that some states have hundreds of species listed under the ESA. In those locations, the Service's staff and financial resources have focused more on the conservation of listed species, with little additional capacity to pursue voluntary agreements for non-listed species. Fundamentally, the CCAA program is a voluntary program not only for landowners, but also for the Service, which makes it less of a priority for the agency nationwide; this is evidenced by the static to declining budget allocation for candidate conservation over the past five years (see Chapter 4). The current climate of litigation- or regulatory-driven

decision-making poses a serious challenge for the voluntary CCAA program, even given the recent focus on cooperative conservation efforts throughout the government.

It is important to note that interviewees expressed that they were largely satisfied with their CCAAs once they were completed and they had entered the implementation phase, indicating that the costs were borne mostly up front. Similarly, no entity that signed and began implementation of a CCAA has terminated, or indicated (to the researcher's knowledge) that they plan to terminate their participation in the program.

In conclusion, the results of this research suggest that the CCAA program is meeting its objectives, but perhaps is not living up to its potential. The CCAAs that have been developed are meeting landowner objectives,[12] but the number of CCAAs that have been developed is nowhere near to scale. If one thinks in terms of addressing the broad sweep of species conservation needs on private lands throughout the country, then there arguably could be hundreds or thousands of CCAAs, not the handful that exist. The discussion that follows describes some recommended changes to the program that could potentially increase overall participation.

5.3. Research Question 3: Could the CCAA program or its implementation be changed to increase participation? If so, how?

The perspectives offered by interviewees for this research, many of which are supported by the literature, lead to several ways that the CCAA program could potentially be adapted to better meet the needs of prospective participants, as well as providing a better fit to the capacity of the Service and other entities that may be involved. These are

[12] This research project did not investigate the extent to which CCAAs are meeting conservation objectives. This is an important question regarding the overall success of the CCAA program, and could be addressed in future research efforts.

described and discussed individually below. The reader should note that these recommendations are presented as generalizations that could be applicable across the United States and to the broad program policy. There should be no assumption that these recommendations are directed at a particular situation from this research, or that there are not some more progressive circumstances where implementation of these recommendations would not be warranted.

5.3.a Focus on the development of programmatic CCAAs to reduce the burden on private landowners, and to more effectively use the resources and expertise of both the Service, State or other non-Federal agency partners, and landowners.

One of the most profound and previously largely unidentified findings of this research is the emergent importance of the intermediary institutions in the success of the CCAA program. Intermediary institutions are entities that serve as brokers of sorts, in this case between landowners and the FWS. These entities leverage the willingness of landowners with increased capacities in terms of biological expertise, financial and political resources, infrastructure, ability to navigate complex processes, and other resources that serve to reduce the transaction costs borne by any one landowner. Carroll (1992, 2) describes intermediary institutions as serving to "energize local groups and provide vertical mediating links between them and the higher reaches of financial, technical, and political power structure."

In the case of programmatic agreements, the intermediary (who in most cases thus far has been state fish and wildlife management agencies) completes the majority of the technical and legal paperwork, as well as sometimes facilitating and coordinating the monitoring, research, and restoration efforts. As agencies, they fundamentally have greater capacity to organize and complete agreements than any one individual landowner

could on their own. Additionally, state agencies are typically "closer to the ground," with more employees working directly with landowners to forge relationships and build trust: the so-called "vertical link" described by Carroll (1992). This capacity appears to have affected landowner experiences, as landowners who were involved in programmatic CCAAs noted fewer transaction costs and conveyed higher over satisfaction than did landowners with individual agreements. As noted several times in this thesis research, participants, including Service employees, recognized severe process challenges associated with completing a CCAA. One individual landowner perhaps stated it most clearly: "it was pretty painful" (Group 1 participant 9). Interestingly, after completing their individual agreement this landowner recognized that "[they weren't] really leading the way for other landowners to help them be able to make the ESA work for them" and subsequently forged an effort for a county-level programmatic HCP to address conservation efforts for a listed species (Group 1 participant 9).

Other benefits associated with programmatic-level agreements were also cited. As one Service employee described, the process to complete a programmatic and an individual CCAA are very similar, but in a CCAA you can then sign up multiple landowners with little additional analysis:

> I think that to the extent that the service can build in the transaction costs and the administrative stuff in the front end, which is one of the great strengths of a programmatic, you make it easier for individual landowners to sign on. You know in terms of paperwork, there's no difference in the amount of paperwork that has to go on between a programmatic and an individual…the analysis is very much the same, just a slightly different scale. So it makes sense to do it programmatically just by eliminating the transaction part of the equation, and you know focus on the outreach, landowner relations and the positive stuff that can happen for the species (Group 4 Participant 2).

The importance of intermediary institutions in the CCAA process was not evident by exploring the transcripts of landowner participants because those who had enrolled under a CCAA had only their own experiences to draw from and could not compare the two approaches. The intermediary institution theme emerged by contrasting the experience of programmatically-enrolled participants and individually-enrolled participants. Programmatic-enrolled landowners were largely satisfied with the process to complete their certificates of inclusion; most landowners with individual agreements did not their experiences as "painful" at best.

What is evident from the divergent views expressed among the various participants is that State agencies (or any other potential intermediary institution) involved in developing programmatic agreements reduce the transaction costs to the individual landowners who sign up under the programmatic agreement. They provide certain capacities that make the process easier and more satisfactory for individual landowners. It is the researchers' perception that the presence of some intermediary institution is critical to making the CCAA program accessible to small private landowners, and thus to influencing ecologically meaningful amounts of conservation across the landscape.

It can also be beneficial to state agencies to participate in programmatic CCAAs because it allows them to retain primary management responsibility for wildlife species. State governments are usually recognized as holding primary management authority for the fish and wildlife species of the state (with the exception of migratory birds). If a species becomes listed under the ESA, however, management is transferred to the FWS.

For species that may be harvested or actively managed, a listing under the ESA will largely eliminate state discretion, control, and flexibility to manage such species.

5.3.b Evaluate the CCAA process to ensure that it is streamlined to the extent possible while still maintaining the integrity and intent of the program as a mechanism for pro-active conservation.

One of the most commonly cited barriers to completing CCAAs was the bureaucratic and byzantine nature of the process. Some components of the process are necessary to provide the legal backbone for the regulatory assurances, but it might also behoove the Service to consider a "level of effort commensurate with level of risk" approach to the CCAA process. Notwithstanding some politically driven cases, the majority of CCAAs are forged with willing partners, and the Service needs those partners as much or more than the partners need the Service's assurances. This should be recognized and considered in any future evaluation of the steps required for CCAAs.[13]

In addition, difficulty negotiating with the Service was cited multiple times by several participants as a barrier that either prevented them from completing a CCAA or almost did so. That point is critical: there is at least one entity that proposed a reintroduction program for a sensitive species, all parties agreed to the biological components of the process/agreement, and the agreement has not been signed because the Service and the entity have not been able to negotiate the legal language in the document. In that case, the entity was prepared to do the conservation actions regardless of the assurances, and they still could not come to agreement on the CCAA. In other cases, the CCAA process almost collapsed due to similar obstacles. While it is true that CCAAs are

[13] I am not suggesting that conservation requirements under an agreement should be compromised or diminished. Regardless, the FWS must pass the "red-face" test in terms of whether it meets the CCAA standard.

regulatory in nature (for voluntary measures), and that there is a standard that must be met to issue a CCAA, the Service should also recognize the potential implications of an intractable approach to program implementation, especially if the "sticking point" is not essential to the regulatory or conservation outcomes. Fundamentally this comes back to the issue of trust, in this case the Service trusting others as true partners whose actions are essential for conservation success. Given the legal requirements of the ESA, and the relatively new formal recognition that partnerships and private lands are crucial to success under the ESA, success perhaps will rely on new focus and training for some employees in strategies and tactics for effective communication, negotiation, and conflict management skills.

The consequences of the complex process and difficult negotiations need to be recognized and understood; thus far they have led some entities to decide that the regulatory assurances associated with the program weren't worth the costs of developing and implementing a CCAA for their activities. At least two landowners that participated in this research had clearly declined to engage in developing a CCAA, primarily due to the perceived costs of developing and implementing the agreement. Another research participant (who represented his/her employer in development of a CCAA) expressed the sentiment well:

> [C]an I really make a difference for this species and how far out is this going to put me. Or should I just…you know the other option is playing the roulette wheel on is it going to get listed or not. And is my particular current management really affecting it? To some degree, you know if I were a private owner and got some small changes identified that I could make that wouldn't really hurt me and might help the species personally I'd probably just go ahead and do them, and not spend a lot of time on a CCAA (Group 1 Participant 11).

5.3.c Create a grant or other funding program dedicated to the development of CCAAs with willing partners.

There is a plethora of grant programs that provide funds to private landowners, either directly or through other agencies. However, many of these programs are intended for implementation of conservation activities, not necessarily planning for conservation activities. Depending on the circumstances and the capacity of various parties involved, development of a CCAA may require substantial technical or biological information, identification of conservation measures, and documentation of all of these elements. For small landowners this level of effort may be unreasonable. Availability of funds to help support landowners to develop agreements would be an important addition to the program. One possibility, specifically for programmatic CCAAs involving state agencies, would be to amend the non-traditional section 6 grant program for Habitat Conservation Planning efforts to include a module for CCAAs. Many other options exist in the current grant program structure that could potentially provide funding to the CCAA program; however, it is beyond the scope or intent of this thesis to provide a detailed analysis or description of funding mechanisms.

5.3.d Market the CCAA program more effectively

It is evident that the current level of outreach and information that the FWS provides about the CCAA program is not sufficient, if the goal is to increase participation in the program. As was discussed earlier, the FWS has limited capacity to engage in conservation activities and planning for non-listed species. In addition, the FWS does not have a large contingent of field biologists who build long-standing, one-on-one relationships with landowners, which further affects the agency's capacity to forge

agreements with landowners. In contrast, agencies such as the Natural Resources Conservation Service work almost exclusively with landowners at a technical, field, and local level. Some state agencies and even some non-profit entities may have similar capabilities and relationships. One way to provide the CCAA program with more on-the-ground visibility would be for the FWS to build an outreach program focusing on training other agencies or entities on the specific requirements and opportunities associated with the CCAA program. For example, the FWS could hold trainings for the NRCS, state agencies, university Extension, and others on the CCAA program and process; those entities could then reach out to more landowners and potentially facilitate agreements. This could result in increased participation, again by focusing on the role of an intermediary organization.

In addition, the results of this research underscore the need for general public outreach from the FWS to local residents, communities, and organizations. The research participants' focus on gray wolves is an indication that a more focused outreach and relationship-building effort will be necessary to encourage landowners to move beyond long-held negative perceptions and myths, and to build the trust required for effective species conservation.

5.4. Reflections on Theory

As evidenced by the literature review section of this thesis, a plethora of theoretical perspectives is relevant to the adoption of the CCAA program. This research built off many different theoretical foundations, and the results allow an even more thorough and nuanced look at the relationship of endangered/at-risk species conservation and existing theory. As this research developed, three theoretical lenses were chosen *a*

priori because they were hypothesized to provide the most insight into the research questions. These lenses included personal choice, adoption/diffusion, and public policy implementation. Personal choice was considered one lens although the literature explored included several disciplines. The following discussion will briefly reflect on whether the findings of this research support or are consistent with these theoretical perspectives, as well as describe any new insights.

Of these lenses, personal choice and public policy implementation had the most tangible links to the participants' overall stories and experiences, which varied across a wide spectrum of perceptions. Several motivations were identified as affecting personal choice, including economics, personal values/attitudes, and risk perceptions. Corbett (2002), Rhodes, Leland, and Niven (2002), Schenk, Hunziker, and Kienast (2007) and other authors described the role of economic factors in motivating conservation behaviors. Many research participants here were motivated at least partially by economic factors, although none were driven exclusively by economic considerations. Other individuals' motivations were more consistent with the findings of Kessler (2006), Kreuter et al. (2006), Lynne, Shonkwiler, and Rola (1988), Serbruyns and Luyssaert (2006), and others who suggest that motivations can be substantially driven by endogenous factors such as personal value orientations. Overall, this research supports literature (e.g., Shaffer et al. 2006) that suggests that the decision to participate in conservation efforts is influenced by a multiplicity of factors, including both endogenous and exogenous factors. No one factor or element could be identified as "driving" conservation decisions by private landowners in this study.

With regards to property rights, participants' views seem to largely support the model proffered by Jackson-Smith, Kreuter, and Krannich (2005). Under their model individuals' property rights orientations fall into four categories, including individual rights, social responsibility, land stewardship, and property rights erosion. Landowners in this study expressed their fears, concerns, and actions largely within those four orientations; they were inclined to fear restrictions or interference, but they also highly valued stewardship and believed they had some social responsibility to be good stewards. Their fears of the future aligned with the fourth category of property rights erosion, which could be seen as conflicting with views of social responsibility, but which individuals expressed nonetheless.

The oft-cited conflict between landowners and endangered species was reinforced by the perceptions of research participants. Although they were amenable to engaging in conservation efforts, they also conveyed stories of endangered species that were largely rooted in "anecdote and symbol" (Raymond and Olive 2007) as opposed to direct experiences. For example, this landowner expressed how he became familiar with endangered species conservation programs:

> [A]t the National Cattleman's annual convention you hear horror stories of different kinds of species from all over the nation…it was kind of a clearinghouse for these kinds of horror stories…so I was a little bit more acquainted with them (Group 1 participant 3).

This research did not explore in depth the symbolic role of endangered species, but it is clear that mythology and anecdote amongst peers likely remains an important factor in the formation of opinions and fears by individual landowners.

Adoption and diffusion of innovations was chosen as a theoretical lens for this research as well. Although participants indicated that certain elements of adoption/diffusion (as described by Rogers 2003) are important, the overall model did not seem to emerge as driving behavior and decisions related to participation in the CCAA program. For example, it is evident that landowners go through the process of receiving information from a source about the program (e.g., Pannell et al. 2006), and then judging the merits of the program based on their exposure (e.g., Hastie 2001; Stankey and Shindler 2006). What was not as evident is the subsequent importance of those processes as they are synthesized throughout a greater target population of various types of actors (e.g., early adopters; Rogers 2003). This may be a function of the low level of adoptions thus far. On the other hand, it may be more a factor of the nature of the program itself, in that each agreement is individually crafted and implemented within a set of very situation-specific considerations. In essence, the *idea* of the CCAA program might fit the adoption/diffusion model (i.e., the idea of pro-active conservation and regulatory assurances is innovative), but the implementation may not (e.g., it is not easily repeatable; Rogers 2003). The relatively minor role of the adoption/diffusion model evidenced here should not be construed as a failure of the model per se, however. This research did not explicitly consider all aspects of the complex adoption/diffusion theory, and therefore direct relationships cannot be dismissed. In addition, as the CCAA program matures and additional agreements, participants, and circumstances become available, further exploration of the adoption/diffusion model and its ability to inform or explain factors affecting program participation could be warranted.

The public policy implementation lens was particularly informative in this exploration of factors affecting participation in the CCAA program. The factors identified by Najam (1995) as influencing successful public policy implementation included the following: content, context, capacity, commitment, and clients/coalitions. Bayrakal (2006) further defined policy context to include the "social, economic, political, and legal relationships, characteristics, and settings" within which a policy is implemented. The discussion of policy implementation was essential to illuminating the factors affecting the success of the CCAA program, as they interact with the personal choice factors described above. The CCAA program is clearly influenced by both top-down and bottom-up paradigms (Najam 1995). The top-down factors are legal/regulatory mandates (i.e., the policy instrument itself), and the bottom-up factor is the environment in which the target groups (i.e., private landowners) operate and interact with the policy instrument. These results support the idea that policy content and context are the most important factors influencing the implementation success of the CCAA program. Policy content would include those factors that were identified by participants as either strengths or weaknesses of the program itself; policy context is the environment in which the program is being implemented. In this case, the policy context could be expected to largely drive agency commitment, capacity, as well as the perceptions and support of clients. For example, the political context has affected the funding available, which affects the capacity of the FWS to implement the program. The interplay of these factors and their influence on the overall success of the CCAA program over time should not be understated.

Overall, this research seems to reinforce the relevance of the literature that was presented for personal choice factors and public policy implementation. It potentially even provides new insights into the interactions amongst the various policy implementation success factors that have been identified in the literature. On the other hand, the study is very limited in its ability to make conclusions about the role of the adoption and diffusion model, which may be more a factor of the scope of this study than the fit of the model per se. Further research on this topic is warranted.

5.5. Conclusion

This research looked at the factors affecting landowner participation in the CCAA program, from the perspectives of those who have been involved and have first hand experience. The program is 8 years old, and the information available, including information provided through this research, suggests that participation is less than what is achievable. In fact, there is currently great policy emphasis on voluntary conservation programs, and widespread acknowledgement that "command and control" regulation ought not be our only means to achieve conservation for endangered species on private lands. This research shows that the adoption of the CCAA program is shaped by the interaction of many factors, ranging from agency culture and resources, to specific program features, to the attitudes and values of the landowners who are potential participants. There is no single cause for the lack of progress in implementing CCAAs, nor is there any single remedy. There is much room to increase our current state of knowledge by looking into how CCAAs and SHAs are being implemented, the conservation benefits that have been realized through their implementation, and even the

effect of a more voluntary approach on the image of the FWS among landowners and their willingness to work with the agency.

LITERATURE CITED

Auerbach, C. F., and L. B. Silverstein. 2003. *Qualitative data: an introduction to coding and analysis*. New York: New York University Press.

Bates, G. 2001. A duty of care for the protection of biodiversity on land. In *Productivity commission*. Canberra: Australian National University.

Bayrakal, S. 2006. The U.S. Pollution Prevention Act: a policy implementation analysis. *The Social Science Journal* 43:127–145.

Bean, M. J. 1998. The Endangered Species Act and private land: four lessons learned from the past quarter century. *Environmental Law Reporter News and Analysis* 28 (12):10701–10710.

———. 1999. Endangered species, endangered act? *Environment* 41 (1):12–18, 34–38.

———. 2006. Second-generation approaches. In *The Endangered Species Act at thirty: renewing the conservation promise*, ed. D. D. Goble, J. M. Scott, and F. W. Davis, 274–285. Washington, DC: Island Press.

Bergmann, S. A., and J. C. Bliss. 2004. Foundations of cross-boundary cooperation: resource management at the public-private interface. *Society and Natural Resources* 17:377–393.

Berman, P. 1978. The study of macro- and micro-implementation. *Public Policy* 26 (2):157–184.

Bernard, H. R. 2002. *Research methods in anthropology*. Walnut Creek, CA: AltaMira Press.

Blase, M. G. 1960. *Soil erosion control in western Iowa: progress and problems*. Ames: Iowa State University.

Brook, A., M. Zint, and R. De Young. 2003. Landowner's responses to an Endangered Species Act listing and implications for encouraging conservation. *Conservation Biology* 17 (6):1638–1649.

Burnham, W., T. J. Cade, A. Lieberman, J. P. Jenny, and W. R. Heinrich. 2006. Hands-on restoration. In *The Endangered Species Act at 30: renewing the conservation promise*, ed. D. D. Goble, J. M. Scott and F. W. Davis, 237–246. Washington, DC: Island Press.

Carroll, T. F. 1992. *Intermediary NGOs: the supporting link in grassroots development*. Hartford, CT: Kumarian Press.

Conley, J. L., M. E. Fernandez-Gimenez, G. B. Ruyle, and M. Brunson. 2007. Forest Service grazing permittee perceptions of the Endangered Species Act in southeastern Arizona. *Rangeland Ecology and Management* 60:136–145.

Corbett, J. B. 2002. Motivations to participate in riparian improvement programs: applying the Theory of Planned Behavior. *Science Communication* 23:243–263.

Czech, B., and P. R. Krausman. 1999. Research notes public opinion on endangered species conservation and policy. *Society and Natural Resources* 12 (5):469–479.

Daniels, S. E., and J. M. Brehm. 2003. Fur, fins, and feathers: whose home is it anyway? In *Challenges for rural America in the twenty-first century*, ed. D. L. Brown and L. E. Swanson, 329–341. University Park: The Pennsylvania State University Press.

Davenport, M. A., and D. H. Anderson. 2005. Getting from sense of place to place-based management: an interpretive investigation of place meanings and perceptions of landscape change. *Society and Natural Resources* 18:625–641.

Donahue, D. 2005. The Endangered Species Act and its current set of incentive tools for species protection. In *Species at risk: using economic incentives to shelter endangered species on private lands*, ed. J. F. Shogren, 25–64. Austin: University of Texas Press.

Doremus, H. 2003. A policy portfolio approach to biodiversity protection on private lands. *Environmental Science & Policy* 6 (3):217–232.

———. 2006. Lessons learned. In *The Endangered Species Act at thirty: Renewing the conservation promise*, ed. D. D. Goble, J. M. Scott, and F.W. Davis, 195–207. Washington, DC: Island Press.

Duffy-Deno, K. T. 1997. Economic effect of endangered species preservation in the non-metropolitan west. *Growth and Change* 28:263–288.

Dutcher, D. D., J. C. Finley, A. E. Luloff, and J. Johnson. 2004. Landowner perceptions of protecting and establishing riparian forests: a qualitative analysis. *Society and Natural Resources* 17:329–342.

Elmendorf, C. S. 2003. Ideas, incentives, gifts, and governance: toward conservation stewardship of private land, a cultural and psychological perspective. *University of Illinois Law Review* 2:423–505.

Elmore, R. D. 2006. *Recovery of the Utah prairie dog: public perception and cattle grazing as a management tool*. Ph.D. Dissertation, Logan: Utah State University.

(ESA) Endangered Species Act of 1973. 1973. As amended through the 108th Congress. Washington, DC.

Ervin, C. A., and D. E. Ervin. 1982. Factors affecting the use of soil conservation practices: hypotheses, evidence, and policy implications. *Land Economics* 58 (3):277–292.

Farrier, D. 1995. Conserving biodiversity on private land: incentives for management or compensation for lost expectations? *Harvard Environmental Law Review* 19 (303).

Flick, U. 1998. *An introduction to qualitative research*. Thousand Oaks, London, New Delhi: Sage.

Freyfogle, E. T. 2003. *The land we share: private property and the common good*. Washington, DC: Island Press/Shearwater Books.

(FWS) Fish and Wildlife Service. 1999a. Final rule: safe harbor agreements and candidate conservation agreements with assurances.

———. 1999b. Final rule: final policy for candidate conservation agreements with assurances.

———. 2003. Draft Candidate Conservation Agreements with Assurances handbook, available online at www.fws.gov/endangered/candidates/ccaa_handbook_contents/handbooktext.pdf.

———. 2004. Safe Harbor Agreements and Candidate Conservation Agreements with Assurances: revisions to the regulations.

———. 2007. U.S. Fish and Wildlife Service to review 8 endangered species decisions. Washington, DC: U.S. Fish and Wildlife Service.

(GAO) Government Accountability Office. 1994. Endangered Species Act: information on species protection on nonfederal lands. Report to Congressional Requesters, GAO/RCED-95-16, Washington, DC.

Glaser, B., and A. Strauss. 1967. *The discovery of grounded theory: strategies for qualitative research*. New York: Aldine Publishing.

Goble, D. D., J. M. Scott, and F. W. Davis, eds. 2006. *The Endangered Species Act at thirty: renewing the conservation promise.* 2 vols. Vol. 1. Washington, DC: Island Press.

Goggin, M. L., A. Bowman, J. P. Lester, and L. J. O'Toole Jr. 1990. *Implementation theory and practice: toward a third generation*. Glenview, IL: Scott, Foresman & Co.

Hadlock, T. D., and J. A. Beckwith. 2002a. Recommendations to improve recovery of endangered species in the United States. *Human Dimensions of Wildlife* 7:37–53.

———. 2002b. Providing incentives for endangered species recovery. *Human Dimensions of Wildlife* 7:197–213.

Hastie, R. 2001. Problems for judgment and decision making. *Annual Review of Psychology* 52:653–683.

Hoberg, G. 2004. Science, politics, and the U.S. Forest Service law: the battle over the Forest Service planning rule. *Natural Resources Journal* 44 (1):1–27.

Innes, R., S. Polasky, and J. Tschirhart. 1998. Takings, compensation and endangered species protection on private lands. *The Journal of Economic Perspectives* 12 (3):35–52.

Jackson-Smith, D., U. Kreuter, and R. S. Krannich. 2005. Understanding the multidimensionality of property rights orientations: evidence from Utah and Texas ranchers. *Society and Natural Resources* 18 (7):587–610.

Kabii, T., and P. Horwitz. 2006. A review of landholder motivations and determinants for participation in conservation covenanting programmes. *Environmental Conservation* 33 (1):11–20.

Karkkainen, B. C. 2002. Collaborative ecosystem governance: scale, complexity, and dynamism. *Virginia Environmental Law Journal* 21:189.

Kessler, C. A. 2006. Decisive key-factors influencing farm households' soil and water conservation investments. *Applied Geography* 26:40–60.

Knight, R. L., and S. Riedel. 2002. *Aldo Leopold and the ecological conscience*. New York: Oxford University Press.

Knobloch, F., and R. M. Cawley. 2005. Endangered species protection and ways of life: beyond economy and ecology. In *Species at risk: using economic incentives to shelter endangered species on private lands*, ed. J. Shogren, 131–145. Austin: University of Texas Press.

Kreuter, U. P., M. V. Nair, D. Jackson-Smith, J. R. Conner, and J. E. Johnston. 2006. Property rights orientation and rangeland management objectives: Texas, Utah, and Colorado. *Rangeland Ecology and Management* 59 (6):632–639.

LaChapelle, P. R., S. F. McCool, and M. E. Patterson. 2003. Barriers to effective natural resource planning in a "messy" world. *Society and Natural Resources* 16:473–490.

Lange, J. 1993. The logic of competing information campaigns: conflict over old growth and the spotted owl. *Communication Monographs* 60:239–257.

Langpap, C. 2004. Conservation incentives programs for endangered species: an analysis of landowner participation. *Land Economics* 80 (3):375–388.

———. 2006. Conservation of endangered species: can incentives work for private landowners? *Ecological Economics* 57 (4):558–572.

Leopold, A. 1934. Some thoughts on recreational planning. *Parks and Recreation* 18:136–137.

Lueck, D., and J. A. Michael. 2003. Preemptive habitat destruction under the Endangered Species Act. *Journal of Law and Economics* 46 (1):27–60.

Lynne, G. D., J. S. Shonkwiler, and L. R. Rola. 1988. Attitudes and farmer conservation behavior. *American Journal of Agricultural Economics* 70 (1):12–19.

Matthews, M. 1999. Standing up for the underdog. *High Country News*, 16 August.

Mazmanian, D. A., and P. A. Sabatier. 1983. *Implementation of public policy*. Glenview, IL: Scott, Foresman & Co.

Meffe, G. K., and C. R. Carroll. 1994. *Principles of conservation biology*. 1st ed. Sunderland, MA: Sinauer Associates.

Mehmood, S. R., and D. W. Zhang. 2005. Determinants of forest landowner participation in the Endangered Species Act Safe Harbor program. *Human Dimensions of Wildlife* 10:249–257.

Meyer, N. 2000. *Introduction to property rights: a historical perspective*. Urbana: University of Iowa Extension.

Morse, J. M., and L. Richards. 2002. *Readme first for a user's guide to qualitative methods*. Thousand Oaks, London, New Delhi: Sage.

Mortimer, M. J., and S. D. McLeod. 2006. Managing Montana's trust land old-growth forests: practical challenges in implementing scientific policy. *Administration and Society* 38 (4):447–471.

Nagubadi, V., K. McNamara, W. Hoover, and W. Mills Jr. 1996. Program participation behavior of nonindustrial forest landowners: a probit analysis. *Journal of Agricultural and Applied Economics* 28 (2):323–336.

Najam, A. 1995. *Learning from the literature on policy implementation: a synthesis perspective*. International Institute for Applied Systems Analysis.

Nelson, R. H. 1995. Shoot, shovel, and shut up. *Forbes* 156 (13):82–83.

Neuman, W.L. 2000. *Social research methods: qualitative and quantitative approaches.* Boston: Allyn and Bacon.

O'Toole, L.J. 2004. The theory-practice issue in policy implementation research. *Public Administration* 82 (2):309–329.

Ostrom, E., R. Gardner, and J. Walker. 1994. *Rules, games, and common-pool resources.* Ann Arbor: University of Michigan Press.

Pannell, D. J., G. R. Marshall, N. Barr, A. Curtis, F. Vanclay, and R. Wilkinson. 2006. Understanding and promoting adoption of conservation practices by rural landowners. *Australian Journal of Experimental Agriculture* 46 (11)1407–1424.

Parkhurst, G. M., and J. F. Shogren. 2003. Evaluating incentive mechanisms for conserving habitat. *Natural Resources Journal* 43 (4):1093–1149.

———. 2005. An economic review of incentive mechanisms to protect species on private lands. In *Species at Risk: Using economic incentives to shelter endangered species on private lands*, ed. J. Shogren. Austin: University of Texas Press.

———. 2006. Incentive mechanisms. In *The Endangered Species Act at thirty: renewing the conservation promise*, ed. D. D. Goble, J. M. Scott, and F. W. Davis, 247–258. Washington, DC: Island Press.

Peterson, M. N., S. A. Allison, M. J. Peterson, T. R. Peterson, and R. R. Lopez. 2004. A tale of two species: habitat conservation plans as bounded conflict. *Journal of Wildlife Management* 68 (4):743–761.

Peterson, T. R., and C. C. Horton. 1995. Rooted in the soil: how understanding the perspectives of landowners can enhance the management of environmental disputes. *Quarterly Journal of Speech* 81:139–166.

Peterson, T. R., M. J. Peterson, R. R. Lopez, and N. J. Silvy. 2002. Cultural conflict and the endangered Florida Key deer. *Journal of Wildlife Management* 66:947–968.

Pincetl, S. 2006. Conservation planning in the west, problems, new strategies and entrenched obstacles. *Geoforum* 37:246–255.

Polasky, S., H. Doremus, and B. Rettig. 1997. Endangered species conservation on private land. *Contemporary Economic Policy* 15 (4):66–76.

Pressman, J. L., and A. Wildavsky. 1979. *Implementation: how great expectations in Washington are dashed in Oakland: or, why it's amazing that federal programs work at all, this being a saga of the Economic Development Administration as told by two sympathetic observers who seek to build morals on a foundation of ruined hopes*. Berkeley: University of California Press.

Pretty, J., and D. Smith. 2004. Social capital in biodiversity conservation and management. *Conservation Biology* 18 (3):631–638.

Raymond, L. 2006. Cooperation without trust: overcoming collective action barriers to endangered species protection. *The Policy Studies Journal* 34 (1):37–57.

Raymond, L., and A. Olive. 2007. Protecting biodiversity in the heartland: norms of ownership and conservation in a "red state." In *Stanford Environmental Law and Policy Workshop*. Stanford, CA.

Reading, R. P., and S. R. Kellert. 1993. Attitudes toward a proposed reintroduction of black-footed ferrets *(Mustela nigripes)*. *Conservation Biology* 7 (3):569–580.

Rhodes, H. M., L. S. Leland Jr., and B. E. Niven. 2002. Farmers, streams, information, and money: does informing farmers about riparian management have any effect? *Environmental Management* 30 (5):665–677.

Rogers, E. M. 2003. *Diffusion of innovations*. 5th ed. New York: Free Press.

Sabatier, P. A. 1986. Top-down and bottom-up approaches to implementation research: a critical analysis and a suggested synthesis. *Journal of Public Policy* 6 (1):21–48.

Sabatier, P. A., and D. A. Mazmanian. 1980. The implementation of public policy: a framework of analysis. *Policy Studies Journal* 8 (4):538–560.

Schenk, A., M. Hunziker, and F. Kienast. 2007. Factors influencing the acceptance of nature conservation measures — a qualitative study in Switzerland. *Journal of Environmental Management* 83:66–79.

Schneider, A., and H. Ingram. 1990. Behavioral assumptions of policy tools. *Journal of Politics* 52 (2):510–529.

Serbruyns, I., and S. Luyssaert. 2006. Acceptance of sticks, carrots, and sermons as policy instruments for directing private forest management. *Forest Policy and Economics* 9:285–296.

Shaffer, M. L., L. H. Watchman, S. Vickerman, F. Casey, R. Dewey, W. J. Snape III, M. Senatore, and R. M. Ferris. 2006. Proactive habitat conservation. In *The Endangered Species Act at thirty: renewing the conservation promise*, ed. D.D. Goble, J. M. Scott, and F. W. Davis, 286–295. Washington, DC: Island Press.

Sheldon, K. P. 1998. Habitat conservation planning: addressing the Achilles' heel of the Endangered Species Act. *New York University Environmental Law Journal* 6:279–340.

Shogren, J. F., ed. 1998. *Saving habitats, protecting homes: private property and the Endangered Species Act.* Austin: University of Texas Press.

———. 2005. *Species at risk: using economic incentives to shelter endangered species on private lands*. Austin: University of Texas Press.

Stankey, G. H., and B. Shindler. 2006. Formation of social acceptability judgments and their implications for management of rare and little-known species. *Conservation Biology* 20 (1):28–37.

Sullins, T. A. 2001. *Endangered Species Act: basic practice series.* Chicago: American Bar Association.

Thomas, C. W. 1998. Maintaining and restoring public trust in government agencies and their employees. *Administration and Society* 30 (2):166–193.

Thompson, B. H., Jr. 2006. Managing the working landscape. In *The Endangered Species Act at thirty: renewing the conservation promise*, ed. D. D. Goble, J. M. Scott, and F.W. Davis, 101–126. Washington, DC: Island Press.

Uphoff, N., and J. Langholz. 1998. Incentives for avoiding the tragedy of the commons. *Environmental Conservation* 25 (3):251–261.

Van Meter, D. S., and C. E. Van Horn. 1975. The policy implementation process: a conceptual framework. *Administration and Society* 6 (4):445–488.

Vlek, C. 2000. Essential psychology for environmental policy making. *International Journal of Psychology* 35 (2):153–167.

Wejnert, B. 2002. Integrating models of diffusion of innovations: a conceptual framework. *Annual Review of Sociology* 28:297–326.

White, D. D., and T. E. Hall. 2006. Public understanding of science in Pacific Northwest salmon recovery policy. *Society and Natural Resources* 19:305–320.

Wilcove, D. S., and J. Lee. 2004. Using economic and regulatory incentives to restore endangered species: lessons learned from three new programs. *Conservation Biology* 18 (3):639–645.

Williams, M. A. 1997. The wolf in Yellowstone: science, symbol, or politics? Deconstructing the conflict between environmentalism and wise use. *Society and Natural Resources* 10.

Winter, S. J., K. J. Esler, and M. Kidd. 2005. An index to measure the conservation attitudes of landowners towards Overberg Coastal Renosterveld, a critically endangered vegetation type in the Cape Floral Kingdom, South Africa. *Biological Conservation* 126:383–394.

Wondollock, J. M., and S. L. Yaffee. 2000. *Making collaboration work: lessons from innovation in natural resource management*. 1st ed. Washington, DC: Island Press.

Yaffee, S. L. 2006. Collaborative decision making. In *The Endangered Species Act at thirty: Renewing the conservation promise*, ed. D. D. Goble, J. M. Scott, and F. W. Davis, 208–220. Washington, DC: Island Press.

Yamaguchi, T. 2007. Controversy over genetically modified crops in India: discursive strategies and social identities of farmers. *Discourse Studies* 9 (1):87–107.

Yung, L., and J. M. Belsky. 2007. Private property rights and community goods: negotiating landowner cooperation amid changing ownership on the Rocky Mountain Front. *Society and Natural Resources* 20:689–703.

Zhang, D. W., and W. A. Flick. 2001. Sticks, carrots, and reforestation investment. *Land Economics* 77 (3):443–456.

Zhang, D. W., and S. R. Mehmood. 2002. Safe Harbor for the red-cockaded woodpecker: private forest landowners share their views. *Journal of Forestry* 100 (5):24–29.

APPENDICES

Appendix A. Interview Guides

Group 1 — Landowners with CCAA or Certificate of Inclusion

Question 1: Please describe the primary reasons you own your land.

Probe[14]: What's most important to you about owning your land?
Probe: In regards to being a landowner, what are your biggest fears or concerns for the future?
Probe: How do you view wildlife conservation on your land?

Question 2: Why did you choose to participate in the CCAA process?

Probe: What factors were most important in your decision?
Probe: How did you hear about the program?
Probe: Did you consider the likelihood that species X would be listed in your decision to participate?

Question 3: What barriers or difficulties did you encounter in the CCAA process?

Question 4: Were there any factors that were influencing you not to participate?

Probe: How important were these to you?
Probe: You still participated, can you help me understand that a bit more?

Question 5: What are your thoughts about the process overall?

Probe: Tell me about your interactions with the FWS.
Probe: If you were to give the FWS advice regarding this program, what would be the most important thing you'd want to tell them?

Question 5: Is there anything else that I didn't ask that you think is important for me to know?

Question 6: Do you know of any other landowners similar to yourself that did not participate in the CCAA process, either by choice or that you're not sure about?

Probe: Would you be willing to share their name with me so that I can get their perspective?

[14] Probes as described here are for guidance purposes only. Not every probe is likely to be used during interviews.

Group 2 — Landowner Referred from Group 1 (have not participated)

Question 1: Please describe the primary reasons you own your land.

Probe: What's most important to you about owning your land?
Probe: In regards to being a landowner, what are your biggest fears or concerns for the future?
Probe: How do you view wildlife conservation on your land?

Question 2: Are you familiar with the CCAA program?

NO:

Question 2a. Are you familiar with Species X?
Question 2b. What are your thoughts about Species X?
Probe: Do you see any risks to you in the future if species X is listed under the ESA?
Question 2c. Would you be willing to engage with the Federal govt. in efforts to protect Species X?
Probe: under what conditions?
Probe: with what limitations?
Probe: would you be more willing to engage with the State wildlife management agency?

Yes:

Question 3: Can you help me understand why you decided not to participate in the program.

Question 4: What are your thoughts about species X?

Probe: Do you see any risks to you in the future if species X is listed under the ESA?

Question 5: Are there any conditions or circumstances under which you would consider participating?

Probe: Please describe those conditions.
Probe: What advice would you give to the FWS to make the CCAA program more appealing to landowners?

Question 6: Is there anything else that I didn't ask that you think is important for me to know?

Group 3 — State Fish and Wildlife Agency Employees

Question 1: In general, what is your perception of the CCAA program and its effectiveness?

Probe: What are the program's strengths?
Probe: What are the program's weaknesses?

Question 2: What do you perceive as the most important factors affecting a landowner's participation in the CCAA process?

Probe: Please elaborate why you think that's the case.
Probe: Do you think the current process addresses those factors adequately?

Question 3: Do you see the CCAA program as an effective conservation tool for private landowners?

Probe: Have you experienced or noticed any barriers or difficulties in implementing or promoting the use of the CCAA program with private landowners?

Question 4: To you, what's the most critical role of the State fish and wildlife agencies in the CCAA process with private landowners?

Probe: Do you see a difference between the role of the organization versus the role of individual employee?

Question 5: Why do you think so few landowners have chosen to participate in the CCAA program?

Probe: Do you think there's anything the State fish and wildlife agencies can do to increase participation in the program? If so, what?

Probe: Do you think there's anything the FWS can do to increase participation in the program? If so, what?

Question 5: Is there anything else that I didn't ask that you think is important for me to know?

Group 4 — Fish and Wildlife Service Employees

Question 1: In general, what is your perception of the CCAA program and its effectiveness?

Probe: What are the program's strengths?
Probe: What are the program's weaknesses?

Question 2: What do you perceive as the most important factors affecting a landowner's participation in the CCAA process?

Probe: Please elaborate why you think that's the case.
Probe: Do you think the current process addresses those factors adequately?

Question 3: To you, what's the most critical role of the FWS in the CCAA process with private landowners?

Probe: What is the role of the organization versus the role of individual employee?

Question 4: Why do you think so few landowners have chosen to participate in the CCAA program?

Probe: Do you think there's anything the FWS can do to increase participation in the program? If so, what?

Question 5: Is there anything else that I didn't ask that you think is important for me to know?

Appendix B. Informed Consent Letter

Informed Consent
Factors Affecting Landowner Participation in the Candidate Conservation Agreements with Assurances Program
Utah State University

Overview of the Study

This research is being conducted by researchers at Utah State University to investigate the factors that are affecting participation in the Candidate Conservation Agreement with Assurances (CCAA) program under the Endangered Species Act. Specifically, we are interested in why private landowners choose, or choose not, to participate in the program if the opportunity is available. We will be conducting interviews with individual landowners and employees of the U.S. Fish and Wildlife Service to collect information on what the factors may be. It is our intention that the information gathered through this research will be communicated to individuals or organizations that have the potential ability to effect change in the program.

How were you chosen?

We are interviewing individuals from three different groups including: 1) individuals who have participated in a CCAA and currently work under an agreement for some portion of their land management; 2) individuals who were referred from the first group as potential participants in the process that are not currently working under a CCAA; and 3) Fish and Wildlife Service employees in charge of administering the CCAA program in a particular geographic area. You fall into one of those three categories. We believe that each of you has the ability to offer important insights into the success of the CCAA program. There will be approximately 40 participants in this research.

What kinds of information do we want to gather?

We will gather information about your thoughts on private land ownership and conservation, the CCAA process itself, including its strengths and weaknesses, endangered species management, and relationships with other individuals and organizations.

Information will be gathered in personal interview settings, either in person of via the phone using a semi-structured (conversational) interview style. This means that we will use a pre-determined set of questions to guide our discussion, but answers can be free-form and conversational, and we may discuss other topics during the interview.

Is your participation required?

Your participation in this study is entirely voluntary. Specifically, you have the right to terminate participation for any reason at any time without penalty. In addition, you have the right to refuse to provide specific information or answer questions that you are not comfortable sharing with us.

Possible risks and benefits associated with the study

We believe there are very minimal risks associated with participation in this project. Respondents may feel some discomfort when discussing their personal views of land ownership and endangered species, and their relationships with government agencies. However, we believe that this discomfort will be minimal and brief.

Throughout our work, we will take steps to ensure that your identity is kept confidential. Respondent answers will be recorded using written notes and (with permission) audiotape or digital recordings. Individual respondents will be tracked using ID numbers, rather than names or other identifying information. We will contact you for permission before using your name or identity in any of our reporting of the results. All of our original interview notes and tapes will be will be stored in a secure manner and will not be shared or available to any other researchers, organizations, or agencies. The audio tapes will be destroyed after they have been transcribed.

The student researcher on this project, Kendra Womack, is employed part-time with the U.S. Fish and Wildlife Service. However, the FWS is not funding this research project, and will not have access to any of the interview notes, tapes, or other materials. The FWS may only receive results considered to be public and non-sensitive, such as a published article or thesis.

The benefits of this project could be significant. No compensation is being provided to you in exchange for your participation in the study. The information you provide will help us better understand the important factors in improving collaboration on conservation issues for sensitive and endangered species on private lands. Information may also help government programs better adapt to meet the needs of private landowners in their efforts to conserve natural resources on their property.

We strongly believe that the voices of the people the CCAA program is aimed at including should be heard and their concerns addressed. We hope that our efforts will lead to the changes that improve your access to effective conservation programs on your land.

A summary of the findings from this study will be provided to you at the conclusion of the project if you would like.

Contacting the researchers

If you have any questions or concerns about this study at any time, we encourage you to contact the scientists who are leading this project.
The Institutional Review Board (IRB) for the protection of participants in research has approved this research. If you have any questions or concerns about your rights you may contact them at (435) 797-1821, or by email at true.rubal@usu.edu

By signing below, the lead researchers agree to abide by the terms of this document.

Dr. Steven E. Daniels	Kendra L. Womack
Telephone: (435) 797-1255	Telephone: (208)-869-9829
email: sdaniels@ext.usu.edu	email: klwomack@cc.usu.edu

By signing below I agree to participate in this research:

_____ _____

Signature of Participant Date