

UNDERSTANDING STAKEHOLDER MOTIVATIONS FOR PARTICIPATING IN
NATURE CONSERVATION

A Thesis

by

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ABSTRACT

Understanding what motivates stakeholders to participate in nature conservation is becoming increasingly important for developing effective conservation efforts in the midst of climate change. The intended outcomes of this type of research are improved policy making and implementation, and well-conceived and executed ecological restoration initiatives. In regions where sound biological knowledge exists, yet abundance of at-risk species continues to decline, it is particularly important for conservation scientists to understand stakeholder motivations. Natural resource management collaborative processes and focus groups are two methods that are useful for gaining insight into stakeholder motivations for conserving nature.

A collaborative management process sponsored by the Mission-Aransas National Estuarine Research Reserve (NERR) provided an opportunity to study motivations for participating in collaborative natural resource management. For this study we used a survey to identify stakeholders' motivations for participating in the Mission-Aransas NERR collaborative process by asking them what they think is important for the group to accomplish, the important roles they and other participants performed, and their reasons for continued participation. We found that opportunities to share information, the ability to play a wide variety of roles in the collaborative process, and contribution to closer connections between science and policy motivated these participants.

We used the situation surrounding the decline in northern bobwhite and other grassland bird abundance across Texas as a case study to explore stakeholder

motivations for conserving these species. We conducted focus groups across 10 ecoregions in Texas to assess the motivations of landowners, land managers, quail hunters, conservationists, and general public for participating in bobwhite and grassland bird conservation. Specifically, we were interested in whether stakeholders were motivated by their values, including culture, intrinsic values, ecosystem, policy, economic, and education. We found that these values are shared by all stakeholders interested in conservation, and occur in many variations depending on the values most important to an individual.

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NOMENCLATURE

NERR	Mission-Aransas National Estuarine Research Reserve
NRM	Natural Resource Management
TPWD	Texas Parks and Wildlife

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CHAPTER 1
INTRODUCTION
STAKEHOLDER MOTIVATIONS FOR PARTICIPATING IN COLLABORATIVE
NATURAL RESOURCE MANAGEMENT

Introduction and Literature Review

Collaborative natural resource management (NRM), also referred to as community based conservation (CBC), ecosystem management, and alternative dispute resolution, is becoming increasingly common in the natural resource policy making process (Decker, Riley, and Siemer, 2012). We follow Yaffee and Wondolleck (2000:2) in describing collaborative processes as those that are “place-based, cooperative, multi-party, and grounded in high-quality information and involve building relationships between individuals and groups who have been isolated or alienated from each other.” When the collaborative process relates to conservation policy, public participation is important because stakeholders who have participated in the process are more likely to support policy measures, view policy aims in a positive light, and appreciate the difficulties associated with policy development, which may help them understand why few policies offer the perfect solution (Yearley et al. 2003 and Shanahan, Gore, and Decker 2012).

People generally are incentivized by the opportunity to exercise self-held values (Senecah 2004, Clarke and Milburn 2009), and they often perceive participation in collaborative NRM processes as opportunities to strengthen and assert their identities

(DeCaro and Stokes 2008). DeCaro and Stokes found that acknowledging stakeholder autonomy encouraged public understanding of the complexity of the planning process. Collaborative processes that demonstrate respect for stakeholder autonomy by offering access, standing and influence in the policy-making process, contribute to the legitimacy of whatever decisions are eventually made (Senecah 2004).

DeCaro and Stokes (2008) further argued that since motivations emerge out of individual identities and values, understanding and responding to participant motivations is one way to demonstrate respect for stakeholders as autonomous individuals, and may contribute directly to successful implementation of NRM policies. In a study of participant motivations for engaging in collaborative NRM initiatives, Schuett and Selin (2002) found that collaborative initiatives had greater credibility among both public stakeholders and management agencies if they identified and responded to stakeholder motivations for participation. Brody (2003:409) argued that understanding stakeholder motivations is “essential for protecting biodiversity and improving the effectiveness of management outcomes.” Understanding what motivates stakeholders to participate in collaborative NRM projects is key to designing and implementing appropriate processes that increase the ability of lay publics to understand the complexity of policy making (DeCaro and Stokes 2008). Identifying and responding to stakeholder motivations strengthens collaborative initiatives by enabling NRM managers to demonstrate respect for individual stakeholder identities, which contributes to stakeholder satisfaction and empowerment. Successful collaborations and participant motivations are interdependent,

with each contributing to the others' success, to the success of future NRM initiatives, and ultimately to biodiversity conservation.

A sense of urgency regarding freshwater distribution in Texas has contributed to the growing number of collaborative NRM processes. Freshwater flows to estuaries along the Texas Central Coast have been greatly reduced over the past decade and provided an opportunity for studying participant motivations in collaborative natural resource management. The reduction has been attributed to land use change, climate change, statewide drought, increased demands from industry, and rapid human population growth in central Texas (BBEST 2009). Whatever the cause, partitioning freshwater across the state has become a controversial political and legal issue. Partially in response to these challenges, in 2007, Texas Senate Bill 3 required scientists and stakeholders to prescribe freshwater inflow recommendations to Texas bay and estuary systems (Texas Water Code Annex, Section 11.0235 and 11.02362). These recommendations are intended to guide policy decisions made by the Texas Department of Environmental Quality (DEQ). As part of the effort to develop appropriate recommendations, the Mission-Aransas National Estuarine Research Reserve (NERR) initiated a collaborative process to involve local residents in providing freshwater inflow recommendations for the Mission-Aransas Estuary. The NERR collaborative process was designed to aid stakeholders in creating and prioritizing recommendations for DEQ. A secondary purpose of the collaborative process, which operated from May 2011 through October 2014, was to study stakeholders' motivations for participating.

As noted above, understanding participant motivations is important for successful NRM. By considering motivational factors throughout the planning process, managers can preemptively seek to satisfy the needs and desires of active stakeholders, or those who are positively inclined toward conservation and restoration of local ecosystems and who desire to contribute to those efforts (Bernacchi et al. In press). In order to design effective collaborative NRM processes, conveners and managers need at least minimal understanding of what motivates stakeholders to participate. Understanding motivations also can guide NRM managers in how to explain decisions in ways that respond to concerns. Furthermore, managers can better mediate potential conflicts that arise from policies that do not match stakeholders' desires. Demonstrable understanding of and response to participant motivations has the potential to increase stakeholder satisfaction with NRM because, whether or not the eventual decision is consistent with their preferences, all stakeholders will have strong evidence that managers listened and responded to their concerns.

Our primary objective in this study was to identify stakeholders' motivations for participating in the NERR collaborative process. To accomplish this, we asked participating stakeholders what had influenced them to begin participating, what they hoped the group would accomplish, and what roles they and other participants played in accomplishing these objectives.

Study Area

Freshwater inflow to Texas estuary and bay systems is ecologically, economically, and socially important. Establishing freshwater inflow policy for the

Mission-Aransas Estuary system matters to a diverse set of stakeholders because the estuaries house many commercially valuable species of fish, crab, shrimp, and oysters, which contribute to the State's economy. Additionally, people use the estuaries for recreation, including sport fishing and bird watching. Estuary species rely on the salinity gradient created by the mixing of fresh and salt water for survival. Without sufficient freshwater inflow, hyper saline conditions develop, and intolerant species suffer. Many residents have settled in this community because of the presence of these species, and the opportunities they provide for recreation and appreciation (Bernacchi et al. In press).

The Mission-Aransas NERR fostered a collaborative management process that engaged a research team and local stakeholders in a shared learning and knowledge building process about the estuary system. The collaborative process included studies on the salt tolerance of Rangia clam (*Rangia cuneata*) and blue crabs (*Callinectes sapidus*), two species selected by the participants as especially important. They also (1) chose blue crab population dynamics as the focus for an ecological model of the system, (2) guided selection of sampling sites for a study of tide patterns in the Mission-Aransas Estuary and Copano Bay systems, and (3) provided local knowledge to assist with GIS mapping of land use change, climate change, and drought. At quarterly workshops, the research team shared their project findings, and stakeholders from the community shared their local knowledge and insights into specific processes (Buskey et al. 2015). The research team included scientists and researchers from the NERR and several universities. Active stakeholders came from the agriculture, commercial fishing, and recreation industries; local businesses; municipal and county governments; environmental non-governmental

organizations (ENGOS); as well as State and Federal water and other natural resource management agencies.

Methods

Our study operated within the theoretical perspective of social constructivism, which seeks to reveal the multiple truths that exist among participants, and to enable each person's voice to be heard (Lindlof 2011). We utilized qualitative inquiry to identify the issues participants found important, which gave maximum latitude for expression of their voices. Our purpose was to learn about participant motivations, and we did so by providing participants with opportunities to express individual constructions of their relationships with the area around Mission-Aransas Bay (Lindlof 2011 and Lincoln 1985). We then compared individual reality constructs to discover whether and in what ways they were reciprocated by other participants.

To gauge the motivations of stakeholders who have participated in this multi-year process, we developed a 12-question survey. Prior to distributing the survey, we conducted a pilot to refine the questions. We asked natural science researchers from our team (n=6) to respond to the survey questions, and then to provide feedback and suggestions. We chose to pilot the questions with these members of the research team because they were familiar with the collaborative process, but had focused on studying natural, rather than social science dimensions of the estuary. Using feedback from the pilot, we refined the survey before distributing it to 26 participants who attended a project workshop on April 10, 2014. See Supporting Information for the complete list of survey questions.

The survey asked participants to identify the initial influences that led them to begin participating in the collaborative process (questions 2, 4, 5, and 11), report on their goals and objectives for the process (question 3), and to identify and describe roles they believed were the most important to the success of the collaborative process (questions 6 – 10). Finally, we asked them to explain their overall rationale for continued participation (question 12). This question gave them an opportunity to further emphasize one of the topics they had already talked about, or to introduce topics we had not included.

The survey took approximately 20 minutes to complete, and included both multiple choice and open ended questions. We invited participants to provide their contact information at the completion of the survey should they wish to participate in an in-depth interview to be scheduled at a later date. We conducted five follow up interviews. We asked the same basic questions, but used an informant-directed approach so that interviewees could direct the conversation toward topics of greatest interest to them. This provided greater richness and depth regarding participant motivations.

We transcribed both survey and interview responses into digital format for analysis and conducted qualitative textual analysis to identify themes and subthemes that emerged (Peterson et al. 2006). To maintain participant confidentiality and fulfill IRB requirements (IRB2012-0187D), we have removed names from our data. We labeled each completed surveys with a number from 1 through 26. Likewise, each response was numbered, from 1 through 12. We used the same system for identifying statements from interview transcripts. We labeled the interview transcripts from 1 through 5, and then

numbered each response within the interview. For example, the citation *I1, R2* refers to the response to the second question within the first interview; the citation *S2, R3* refers to the response to the third question within the second survey. We follow this convention when reporting our findings.

Results

Three themes emerged from the textual analysis. Information sharing was the most frequently mentioned motivation for participation, and was often introduced in connection with other themes. Modes of information sharing that motivated continued participation in the NERR workshops were presentations, activities, and discussion sessions. Participants were also motivated by the opportunity to share information with those unable to participate at NERR workshops. The second theme participants identified was role playing. They reported roles that facilitated information sharing as strong motivators for continued participation. The third theme identified by participants was a desire to contribute to closer connections between NRM and science. Overall, participants were motivated by their hope of accomplishing three objectives through this collaborative process: 1) learning about estuaries and bays, and gaining exposure to current scientific practices; 2) communicating what they learned with each other and with those unable to participate, about what is learned; and 3) using science to improve NRM throughout the system. These three objectives were closely interrelated with each other and with the themes of information sharing, role playing, and connecting NRM with science. We use the label “thematic synthesis” to describe this holistic relationship.

Information Sharing: Access

The sense that participation in the NERR collaborative process provided participants with access to NRM in the region was a strong motivation to participate. Senecah (2004) described access as participants' ability to acquire sufficient and appropriate information to understand both the substantive and process aspects of NRM. The hope that information sharing would provide them with access to the process motivated people to begin participating and continue to participate over the multi-year project. Participants brought their own personal and/or professional experiences allowing for productive information exchange. One participant described a positive experience of information sharing:

It has actually been really worthwhile because it will be somebody who has a lot of experience in the bays, or somebody who has a lot of experience in management, or the biology or both, and they will provide some insight that I think is really good for the whole room to hear. And that is the kind of stuff, I think that is the point of these meetings, or like one of the points, is to really engage all those different people with all those different perspectives so you will get something way more valuable, something you couldn't read about (I1, R10).

For this participant, information sharing was most valuable when people shared their personal and professional experiences with the group because it provided opportunities to engage all participants, to offer multiple perspectives, and to provide insight beyond the published literature. Another participant explained that participants were "sharing information that otherwise might not be exposed to other science studies (S6, R10)." A

third participant claimed, “that is the key to this collaboration, I think, whenever you get the state, the feds, and the academics, and these nonprofits together, ...you find out that...there is data that we need to be able to link, you know, freshwater inflows to a certain resource” (I3, R1). Statements such as these illustrate how highly participants valued information sharing as a way to improve management of the estuary.

Participants identified presentations, activities and discussion sessions as positive ways of promoting information sharing. The possibility of sharing information outside the collaborative process also motivated continued participation because it provided an opportunity to further discuss information learned during NERR workshops with groups not formally associated with the NERR. One participant recalled the blue crab ecological modeling activity carried out over three workshops and the discussion periods following the activity saying, “when completing the blue crab model/participation in discussion periods... [I] observed stakeholders providing their own knowledge/experience to help inform others (S5, R9). Participant responses to the survey indicated that encouragement for all stakeholders to share their own knowledge, whether gained from experience or formal study, motivated continued participation. Participants believed that everyone gained from having multiple opportunities to share his/her own knowledge with broad audiences, and also to learn from other stakeholders.

Similarly, a participant expressed the importance of multiple workshops and multiple activities for information sharing to be most productive, saying,

What was interesting...is the series of having five or six workshops. You can go to one, provide information, and then at the second one they'd shown how they

incorporated that into the project. Because lots of times you go to one or two day workshop and then you never see the results of it...So, when we were able to provide our information, it was used and that helped to improve the process (I3, R7).

The iterative nature of projects conducted over the course of the collaborative process was valuable to participants. They believed the information sharing that occurred at each individual workshop promoted productive knowledge building, which increased their access to the NRM process.

Role Playing: Standing

Stakeholders reported that performance of certain roles, both by themselves and by others, motivated them to continue participating in the NERR collaborative process. Participant responses indicated that opportunities to play those roles enabled them to achieve a sense of standing in the NRM process for the Mission-Aransas Estuary. Rather than referring to legal standing, we use the term in the broad sense articulated by Senecah (2004:24) as the “civic legitimacy, respect, esteem, and consideration that should be given to stakeholder perspectives.” Participants identified roles that sometimes motivated, and sometimes discouraged continued participation. Participants tended to identify with one or two roles, most frequently as observers, information providers and liaisons with non-participants. One participant recalled how all NERR participants got to play roles they did not normally play when participating in workshops and meetings:

It was the same with indicators, we were able to choose which indicators we thought were most helpful, crabs, oysters, things like that, and also where we

wanted to put tide instruments [flow meters] to see circulation in the bays. So we got to pick out points within the bay, and those were chosen to move forward with (I3, R7).

Another person noted that, even when it came to formal presentations, all participants had opportunities to share in the role of information provider, noting that many presentations “weren't done by folks from NERR. That having someone that is not a NERR employee, it gives you the chance to ask better questions about folks, presenters, your colleagues and your stakeholder colleagues, who have a better understanding of the issues” (I2, R5). The opportunity to perform these roles, and thereby assert their standing, stood out as unusual when compared to stakeholders’ previous experiences with NRM, and motivated their continued participation in the NERR collaborative process.

Although informants noted the motivational value of several different roles, they also noted that some ways of playing those roles discouraged further participation. They also indicated their belief that others were likely to be influenced in the same way. The role stakeholders described as most variable in its ability to encourage or discourage participation (depending on how it was played) was the role of observer. One participant explained how active observation was motivational because observers “were drawn into the exercises” (S13, R10). Another participant explained that the role of active observer required “gathering information and hearing/understanding stakeholder perspectives, questions, and concerns” (S3, R7). On the other hand, some participants described passive observation as discouraging continued participation. One participant recalled a

workshop in which “some of the observers didn’t seem to be learning from the exercise” (S13, R10). Another stated, “Some people just didn't really speak up that much. I'm not quite sure what they were doing, I guess, or what their thoughts were on the process (I2, R8).” These respondents characterized the observer role negatively, suggesting that, as performed by some stakeholders, it weakened the process, discouraging them and other stakeholders from continued participation.

Those identifying as liaisons with non-participants reported that they were motivated by the opportunities to share information with colleagues, the public, committees they work with, or some combination of the three. There was no common definition of those whom the information was shared with, but rather a combination of players whom participants had access to. One participant described the role of liaison with non-participants, as “folks that were coming to workshops...they would take in the information, and then relay that back to the stakeholder group...because some of those folks on the stakeholder group weren't able to come to the workshops” (I3, R8). Other participants also expressed how important the active liaison role was for sharing information with those unable to attend NERR workshops. Overall, our informants agreed that multiple roles were important for productive and accurate information sharing and opportunities to play those roles contributed to the desirability of participating in the NERR collaborative process, especially when all members played their roles actively.

Connecting Natural Resource Management with Science: Standing

The third theme, which also contributed to participants' sense of standing, was the desire to more closely connect science to NRM. One participant stated they were motivated by the "unique" opportunity the workshops provided for "getting science to managers" (S11, R3). She believed stakeholder participation in the NERR collaborative workshops provided a direct vehicle for ensuring that managers had access to the most relevant science. Another participant explained the need to improve NRM by learning more about how the estuary operated:

The lack of knowledge between the link of freshwater inflows and the biological community. How one affects the other. How freshwater inflows influence biological productivity. We don't have all the answers we need, although we have to make decisions on managing freshwater coming into the bay. The lack of knowledge can be problematic when trying to justify releases of water for bay productivity (S26, R5).

Similarly, another informant described participation as an opportunity to promote "improved freshwater inflow requirements for the estuary - i.e., have more information to justify the recommended inflow standards" (S5, R3). Both of these examples call attention to the current lack of biological knowledge on freshwater inflows and how knowledge is important for making management decisions. Another stated interest in "gathering information/data that can be used to better manage the resource affected by FWI [freshwater inflow]" (S24, R3). He was motivated by using science for informed management of freshwater inflows, both into Mission-Aransas Bay and in other

locations. All participants were unified in their overriding motivation to contribute to science-based management of the estuary.

Thematic Synthesis: Influence

Responses also revealed how the three themes interrelated to provide them with hope that, by participating in the NERR collaborative process, they could exercise an influence that would contribute to sustaining the Mission-Aransas Bay. As Senecah (2004:25) noted “influence is the outgrowth of access and standing.” Participants demonstrated the interconnected motivational impacts of the three themes in several ways. One stakeholder highlighted theme one and two by self-identifying with the role of observer, which enabled him to “attend meetings and gain knowledge” (S14, R7). He highlighted the importance of information sharing, which provided “better understanding of how the estuaries work and how the system responds to a variety of external factors” (R3). He explained that his primary motivation was to “continue to gain knowledge and stay informed” (R2). Another participant emphasized themes one and three, saying, “I would like to hope that understanding more about how the estuaries are managed means you can make the science fit legally what is needed to protect the things that you want to protect” (I1, R2). Another participant described “gaining exposures to new science being done” as a way to “advance/inform the decision making process regarding freshwater inflow needs” (S6, R3). Their motivations for continued participation were based on the belief that knowledge gained from information sharing, both among and beyond those who participated in the collaborative process, would lead to more scientifically informed policy decisions.

Respondents also noted connections between all 3 themes. One participant summed up the interrelationship of all three themes in one flow chart, “Improve communication → data integration and analyses = improved awareness and understanding → better resource management (S2, R3).” Another participant, who self-identified with the role of information provider, explained that, “being a scientist, I am collecting data on the sea grass components” (S15, R7). He engaged in information sharing by contributing to “the methodologies for data collection, the data itself (S15, R3)”. He hoped to contribute to improved NRM policy by clarifying “the linkages between the biology and the physics” (S15, R3).

Overall, participants were motivated by their desire to learn about estuaries and bays, gaining exposure to current scientific practices, communicate what they learned with each other and with those unable to participate, and facilitate the use of science to improve NRM. These three objectives combined as the proposed means of achieving participants’ overall goal of sustaining the Mission-Aransas Bay. As one respondent told us,

I grew up as a Boy Scout. I grew up surfing at the beach. I was always outside, all the time, camping and stuff. So, I want my kids to be able to have the same experiences. I want them to be able to go to the beach and not get entangled by trash. I want them to be able to go out and catch fish that are a size that would get them excited. I want them to be able to see turtles when they go out there, see stuff swimming around. I want them to be able to go camping and be able to see their natural environment, you know, native species. All those things that I was

able to do as a kid, I feel like it is my duty to be able to make sure that those things are going to be available to them, and their children when they get older (I3, R11).

Discussion

Information Sharing: Access

For active stakeholders who participated in the NERR collaborative process, information sharing motivated continued participation by providing access to NRM for the estuary. Through the various modes of information sharing, stakeholders were able to acquire information that enabled them to understand the NRM process. The presentations, activities, and discussion sessions were important for promoting access because they created an atmosphere that was conducive to information sharing. They enabled participants to learn about the estuary and bay systems, and created a setting wherein everyone could ask questions, engage in discourse, and share their own personal and professional experiences with other stakeholders and the project team. This atmosphere encouraged joint learning through the contribution of stakeholders' expertise, and it facilitated the development of stakeholders' access to the collaborative process (Yaffee and Wondolleck 2000, Senecah 2004). As well, the mutual learning and sharing of science and stakeholder opinions was important as a demonstration that neither formally validated science nor participants' local knowledge should be ignored (Peterson and Ramirez 2012). The consideration and sharing of both traditional scientific knowledge and local knowledge gained by participants' lived experience offered one means of providing stakeholders with access to the NRM process. Awareness that each

participant would have multiple opportunities to share their own knowledge with others, and that this information would feed into discussions held during the workshops promoted a learning environment that expanded the entire group's knowledge foundation. This increased knowledge was then available when stakeholders considered how best to improve estuarine policy, and it enabled everyone to engage in the resulting dialogue.

Role Playing to Connect Natural Resource Management with Science: Standing

Creative opportunities for role playing in ways that could strengthen connections between NRM and science also motivated these stakeholders to continue their participation. Stakeholders were motivated to participate in the collaborative process because it offered them opportunities to perform roles they had not been allowed to perform in previous NRM processes. Playing these roles provided stakeholders with a sense of their standing as respected individuals whose contributions were valued. These stakeholders were motivated to continue and expand their participation as a way of contributing to greater health of the estuary. As active stakeholders, the desire to participate in conservation management differentiates participants from stakeholders who may be satisfied – and may even prefer – to receive no more information than necessary to provide them with basic awareness of management decisions that are likely to impact them (Bernacchi et al. In press). As Decker et al. (2012) and Wagner (2007) noted, active participation encourages increased trust, helps build mutual understanding, and strengthens public support for policies. Understanding and responding to active stakeholders is important especially when they are “positively predisposed” toward local

conservation efforts (Bernacchi et al. In press:4). These active stakeholders can foster collaborative solutions, for example, to help wildlife managers mitigate disagreements that may emerge between government agencies' regulatory responsibilities and individuals. This can lead to greater satisfaction with NRM policies, as well as improved relationships between local residents and agency personnel.

The belief that they were contributing to a closer connection between NRM and science also contributed to the sense of standing among workshop participants. This was a role they had not had the opportunity to play in previous NRM processes. They were motivated by the opportunity to act as vehicles of information for ensuring managers had direct access to the most relevant science. In order for stakeholders to achieve and then maintain a sense of standing, they must feel empowered throughout the collaborative process. According to DeCaro and Stokes (2008), participants' autonomy must be recognized in order for participants to feel they can affect change. This contributes directly to the success of collaborative NRM initiatives, as the increased knowledge and communicative capacity participants gain by playing new roles such as information provider contributes to their empowerment (Ramirez and Fernandez 2005). A process that imparts the sense that participants are important social actors strengthens both the particular project and overall NRM efforts toward collaborative management.

Thematic Synthesis: Influence

The interrelationships between the three themes combined to give NERR collaborative participants a belief that they had power to contribute to sustaining the Mission-Aransas Bay. The iterative approach of the collaborative process allowed

participants to develop the full spectrum of voice, which in turn motivated them to continue and expand their participation. The combination of effective modes of information sharing, innovative role playing opportunities, and the ability to contribute to a closer connection between NRM and science motivated these stakeholders to continue participating in the NERR collaborative process, and to engage with other NRM processes they became aware of. By providing participants with a sense of access, standing, and influence, the NERR collaborative process encouraged participants to sustain their involvement in a multi-year process they saw as contributing to both a healthier estuarine system and conservation of specific aspects of that system. This empowerment contributed to both individual satisfaction and intentions to work collaboratively to affect further improvement in estuary management.

Management Implications

Successful NRM and participant motivations are interdependent, with each contributing to the other, and ultimately to biodiversity conservation. The results from our study suggest that understanding participant motivations can provide NRM managers with guidance in explaining decisions in ways that highlight their responsiveness to public needs and desires. Further, this understanding can help managers mediate conflicts that may arise from implementation of mission-driven policies that do not match the desires of local stakeholders. Demonstrable understanding of and response to participant motivations has the potential to increase stakeholder satisfaction with NRM because whether or not the eventual decision is consistent with their preferences, all stakeholders will have strong evidence that managers listened and

responded to their concerns. Finally, and closely related to the particular collaborative case used for this study, as long as climate change, drought, and rapid growth of manufacturing, agriculture, and municipalities continue in Texas and other parts of the southwestern United States, freshwater allocation will become even more complex and controversial. Understanding participant motivations at the local level may contribute to the success of freshwater management processes.

Stakeholders who engage in collaborative NRM processes demonstrate their willingness to invest their own resources, such as time, in the effort to improve NRM. Managers can facilitate the success of future collaborative NRM by consciously attempting to discover stakeholders' motivations and by thoughtfully considering those motivations throughout both the planning and implementation process. This enables managers to preemptively meet needs and desires that are consistent with conservation goals. Additionally, designing creative approaches for promoting effective information sharing can make it clear that the professionals responsible for NRM also care about human stakeholders, and that they both recognize and value the potential contributions human stakeholders can provide. This understanding and positive response to stakeholders' motivations has the potential to increase satisfaction with the NRM process, if only by providing participants with opportunities to fully express themselves in their own voices. Finally, understanding and responding to participant motivations within local contexts may contribute to more sustainable conservation because active stakeholders may have good ideas that have been tested in local communities.

CHAPTER II
STAKEHOLDER MOTIVATIONS FOR CONSERVING BOBWHITE QUAIL AND
GRASSLAND BIRDS IN TEXAS

Introduction and Literature Review

Understanding what motivates people to get involved in nature conservation should be important to conservation scientists. A growing body of literature exists regarding people's motivations for restoring ecosystems, their attitudes toward restoration incentives, and how they value nature, both extrinsically and intrinsically (Clewell and Aronson 2006, Kabii and Horwitz 2006, Ernst and Wallace 2008, Paloniemi and Tikka 2008, Lokhorst et al. 2014). The intended outcomes of this research are better policy creation and implementation, well-conceived and executed ecological restoration initiatives, and understanding the importance of self in nature and its effect on conservation efforts (Kabii and Horwitz 2006, Ernst and Wallace 2008, Paloniemi and Tikka 2008). Clewell and Aronson (2006) offer five rationales, or motivations, for restoring ecosystems, including technocratic, biotic, heuristic, idealistic, and pragmatic. The interactions between these rationales will influence the success of ecological restoration efforts, particularly the relationship between the technocratic and idealistic rationales. Clewell and Aronson (2006) contend that within the technocratic rationale, government agencies "must relinquish some authority and actively work in partnerships with stakeholders" (426). As well, local stakeholders must be motivated to engage in these partnerships and participate in restoration projects bringing "idealism and cultural

meaning” to the process (426). This partnership between the government agencies and stakeholders sets the tone, allowing the other rationales to be fulfilled.

As Texas is comprised mostly of privately owned land, conservation easements are a way of motivating landowners to participate in conservation. Conservation easements or covenants exemplify a well-functioning relationship between government and stakeholders. Conservation easements are legal agreements placed on a land title, restricting the use of the land in ways that protect conservation values that have public benefit (Kabii and Horwitz 2006, Ernst and Wallace 2008). When applying a conservation easement, government agencies must be cognizant of individual landowners’ philosophies and values in order for the ecological restoration to be successful and for helping to fulfil landowners’ goals for conservation.

Some researchers propose that landowners’ conservation behavior is not solely extrinsically motivated (Ryan et al. 2003, Ernst and Wallace 2008). Equity, property rights, and conservation ethic and stewardship are three social and intrinsic values to consider (Kabii and Horwitz 2006). Generally, these values revolve around the benefits provided by ecosystem restoration that should be shared between the landowners and the public. These values accrue from human-environmental relationships, with the desire for sustainable development motivated by personal interest, or even in the interest of future generations (Kabii and Horwitz 2006). Persons’ psychological attachment to natural areas is necessary to protect and preserve lands, and thus, utilize the benefits of such restoration to fulfill these motivations (Clewel and Aronson 2006).

We used the situation surrounding the decline in northern bobwhite and other grassland bird abundance across Texas as a case study to illuminate a variety of stakeholder conservation motivations. In regions where sound biological and ecological knowledge exists, yet the abundance of at-risk species continues to decline, it is particularly important for conservation scientists to understand stakeholder motivations. As most of the land in Texas is privately owned, and conservation easements are a primary means of protecting species in decline, this situation seems an appropriate context to shed light on people's motivations for participating in nature conservation. Since the early 1990s, long-term data from the Breeding Bird Survey (BBS) and Christmas Bird Count has been used by researchers to document the declining northern bobwhite and other grassland bird abundance at various spatial and temporal scales (Droege and Sauer 1990, Brennan 1991, Church et al. 1993, Brady et al. 1998, Peterjohn and Sauer 1999, Vickery et al. 1999, Peterson et al. 2002, Brennan and Kuvlesky Jr 2005). The decline of these species has stimulated concern and research targeting these species. As well, state wildlife agencies have regulated bobwhite hunting for over a century in states where the species is hunted, and some have spent considerable amounts for bobwhite conservation. Moreover, wildlife conservationists actively manage numerous private and public properties specifically to benefit bobwhites. Despite all the bobwhite research results available and conservation strategies implemented, bobwhite abundance in the United States continues to decline, including in areas typically considered bobwhite strongholds, such as Texas. Most bobwhite experts agree that the ultimate cause of declining bobwhite abundance is landscape scale loss of suitable

habitat that can support all life requisites through time. In Texas, these losses are primarily related to 1) lack of fire in modern landscapes, 2) grazing practices, 3) exotic vegetation, and 4) habitat fragmentation due to the previous three factors, as well as land ownership fragmentation, suburbanization, and changes to cultivated croplands (Brennan 2007). Considering the vast amount of biological data already available regarding bobwhites, more such data are unlikely to lead to changes in the trajectories of bobwhite populations. Instead, any hope of halting or reversing the decline in abundance requires social science that focuses on factors underlying conservation policy. By considering motivational factors, managers can preemptively seek to satisfy the needs and desires of active stakeholders, or those who are positively inclined toward conservation and restoration of local ecosystems and who desire to contribute to those efforts (Bernacchi et al. In press). In order to design effective policies, conveners and managers need at least minimal understanding of what motivates stakeholders to participate.

Understanding motivations also can guide managers in how to explain decisions in ways that respond to concerns. Demonstrable understanding of and response to participant motivations has the potential to increase stakeholder satisfaction with policies because, whether or not the eventual decision is consistent with their preferences, all stakeholders will have strong evidence that managers listened and responded to their concerns.

The goal of our research was to assess the motivations of landowners, land managers, quail hunters, and conservationists for participating in bobwhite and grassland bird conservation. Specifically, we were interested in what types of values motivated stakeholders to participate in conservation efforts. We were also interested to see how

people's motivations varied between ecoregions. To accomplish this, we asked participating stakeholders what motivated them to participate in natural resource management (NRM) processes intended to contribute to grassland bird conservation.

Methods

Our study operated within the theoretical perspective of social constructivism, which seeks to reveal the multiple truths that exist among participants, and enables each person's voice to be heard (Lindlof 2011). We utilized qualitative inquiry to identify the issues participants found most important, which allowed maximum latitude for the expression of individuals' voices. Our purpose was to learn about stakeholders' motivations for participating in quail and grassland bird conservation, and we did so by providing participants with the opportunity to express individual reality constructs of their relationship with quail and grassland bird conservation (Lincoln and Guba 1985, Lindlof 2011). We then compared individual reality constructs to discover whether and in what way they were reciprocated by other participants.

Focus Groups

To gauge the motivations of interested stakeholders, we developed 7 questions (Table 1) to use as discussion points during 10 focus groups held across 6 ecoregions in (Figure 1) Texas that host important populations of these birds: Coastal Prairie, Cross Timbers, Rolling Plains, South Texas, Edwards Plateau, and Trans Pecos. Prior to using these questions in the focus groups, we conducted a pilot to refine the questions. Scientists/graduate students from within our department participated in a mock focus group to test the clarity of questions, and provide feedback and other suggestions. Using

feedback from the pilot, we refined the questions prior to conducting the 10 focus groups.

Amidst the refinement of focus group questions, we made initial contact with potential participants via email. The email included the purpose of our study, an invitation to participate in one of our focus groups, and attached documents containing our project and methods purposes and consent form. The PIs provided the first set of contacts from working relationships with those involved in quail conservation and research. Within these contacts, we looked for gatekeepers who could provide us with additional contacts from other ecoregions to participate in the other focus groups. Using the contacts recommended by other participants, as well as our own online searches, we garnered enough participants to conduct all 10 focus groups from October 2014-March 2015. Each focus group had 5-10 participants. We held the focus groups at locations most convenient for the participants, and an individual participant often hosted the focus groups, and invited additional participants whom they knew well, allowing for all participants to own the conversation.

Focus group discussions lasted 1 hour, during which, participants engaged in conversation regarding the 7 questions our team developed for gauging stakeholders' motivations for participating in quail and grassland bird conservation. We took audio recordings of the conversation to ensure accuracy during transcription. The facilitator posed questions to the group, and then allowed participants to discuss with each other their perspectives and experiences. In addition to asking the 7 questions, the facilitator probed for further discussion, or asked for clarification as needed. Overall, we aimed to

foster conversation between participants in order for topics to build upon each other, giving us a rich view of participants' motivations. Following the hour discussion, participants had the option to continue the conversation, focusing on topics of greatest interest to them. The additional discussion provided greater richness and depth regarding participant motivations.

We transcribed the focus group dialogue into digital format for analysis and conducted qualitative textual analysis to identify themes and subthemes that emerged. We used individual sentences as our unit of analysis which allowed for the ease of coding by utterance in QSR NVivo Data Analysis Software. To maintain participant confidentiality and fulfill IRB requirements (IRB2014-0640D), we removed names from our data. We labeled each focus group with a number 1 through 10. Likewise, we labeled participants with a letter and number, and labeled utterances with a number. For example, the citation *FG1, A1* refers to the first focus group and the first utterance made by a participant identified as "A".

Codebook

We created a codebook to analyze stakeholders' motivations for participating in quail and grassland bird conservation. Each code is a value that a person may find motivational or de-motivational for participating in quail and grassland bird conservation in Texas. Values we coded for included cultural, intrinsic, economic, ecosystem, educational, and political.

We followed Schwartz (2006) and Hofstede and Bond (1988) in defining cultural value. People can be viewed as either autonomous individuals or as entities

embedded in the community collectivity. Autonomous individuals cultivate and express their own preferences, feelings, and ideas, while embedded individuals find meaning in life through social relationships, identifying with a group, or participating in a way of life (Schwartz 2006). Both types of people can be harmonious with the world around them, trying to understand and appreciate it, rather than to exploit it. For our purposes dealing with quail and grassland bird conservation, we chose these definitions because participants in our focus groups act as individuals or part of a group, seeking harmony with the natural world by choosing to restore quail habitat to original conditions. As well, participants can have future orientation values like persistence and thrift, or past- and present-orientation values like respect for traditions and fulfilling social obligations, like heritage or ties to the land (Hofstede and Bond 1988).

We followed Worster (1977) in defining intrinsic value. Intrinsic value can exist independently of humans; it is not something we bestow (Worster 1977:xi). We add that although humans cannot bestow intrinsic value, they, can acknowledge or recognize it. We chose these definitions because they explain stakeholders' ability to acknowledge the value of something without bestowing that value or receiving the product of the valued object.

For economic value, we focused on use-values to distinguish this code from "intrinsic value," with the knowledge that stakeholders view the activities in the economic value node strictly through an economic lens. We followed Ready (2012) in our definitions: Although wildlife may be a public good that is not traded in markets, it often provides the foundation upon which other markets and economic activity depend.

This can include hunting, recreation (e.g. bird watching), assistance programs, and cattle farming.

Following Bradbury et al. (2010), we defined the value of an ecosystem is “to secure a diverse, healthy, and resilient natural environment, which provides the basis for everyone’s well-being, health, and prosperity, now and in the future” (987). This includes not only benefits to humans, but also other biotic and abiotic factors, and is distinct in that they are not referred to in an economic context by stakeholders. This can include references to quail as an indicator species for the health of the ecosystem, grassland birds’ conservation efforts and their connection to quail conservation efforts, and benefits of conservation beyond quail, including other biotic and abiotic factors.

In defining educational value, we followed the Environmental Protection Agency (EPA) saying, “environmental education is a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions” (EPA). This definition places importance on people developing knowledge and being proactive to learn and share information. As well, it reinforces ecosystem values and cultural values relating to harmony by emphasizing working together with the environment, rather than mastering it.

Finally, when defining public policy value, we refer to nested suites of constitutions, statutes, guidelines, and rules, as well as locally diverse approaches to their implementation in ways that embody and respond to citizen voices. Within

democratic societies, public policy is intended to solve public problems in ways that fairly distribute benefits and burdens among citizens (Bovbjerg 1985, Dryzek and Torgerson 1993, Schneider and Sidney 2009).

Analysis

We used three focus groups for training to test the codebook and the strength of the definitions associated with each emergent value. Training allowed the 2 coders to familiarize themselves with the codebook and to refine prior to coding the remaining 7 focus groups. Following training, coders separated to code the remaining 7 focus groups. We scored Kappa for the 7 focus groups individually, and calculated an average weighted score. After scoring Kappa, we further organized the utterances into sub-nodes within the respective primary node (Table 2). This allowed for greater specification of the subject matter of the dialogue. Following sub node selection, we determined the frequency at which each node and sub node occurred. Next, we coded each previously coded utterance for the ecoregion the individual participant was from, and again, determined the frequency at which each node and sub node occurred, and how the frequency varied according to ecoregion.

Results

Our overall weighted Kappa score for 7 focus groups was 0.77 (Table 3). Overall, the most frequently discussed motivations for conserving quail were economic and ecosystem motivations, followed by political, educational, cultural, and intrinsic (Figure 2). All motivations were most frequently discussed positively, rather than negatively. The number of referenced coded per node by tone can be found in Table 4.

Cultural

Overall, participants were most frequently culturally motivated by hunting quail and preserving family/hunting heritage (Figure 3). When participants discussed quail hunting in the cultural context, they described the types of conservation characteristics most quail hunters' poses, alluding to their motivation to conserve quail. One participant stated, "I think in general, quail hunters go to great lengths to self-limit and self-regulate, and all of these operations that we've been exposed to impose restrictions on themselves that are far more stringent than the state daily bag limit" (FG5, Brennan16). Another participant added, "It's self-regulating, because when you go out and find two coveys of birds where you found ten or twenty before, you don't go back, and you're not going to keep going back until you kill out those two coveys, because it's no fun. It's only fun when you're finding ten or twenty, and so it self-regulates" (FG5, F28). These stakeholders drew upon the hunter as a conservationist motivation by bringing to light the sacrifices hunters are willing to make for the sake of long-term conservation of the species, and therefore, long term enjoyment of the sport. Other participants mentioned the social aspects of hunting quail. When discussing non-financial incentives for conserving quail, one participant mentioned the motivation to boast about the quail population one hunts or manages: "There are bragging rights...being able to sit at a table, or sit at dinner, and say, "You know what? We busted twenty-three coveys over one dog yesterday. Anybody else can top that? Come on. Come one, bring it." There's that motivation, to be able to talk about your quail population, or the quail population on where you hunt or where you manage" (FG3, C47). This participant illuminated a social

side of the sport through competition. Another describes the comradery as “a function of quail hunting, too, being a very social wildlife recreational activity. It’s not just somebody alone in a deer blind, or in a deer blind with a guide; you’re in the back of a truck with three, four other people and all kinds of conversation” (FG5, Brennan12).

For these participants, preserving heritage involved maintaining family traditions revolving around quail hunting and land conservation, and preserving those traditions for many generations to come. For example, when discussing nonfinancial incentives for conserving quail, one participant stated, “One incentive, from a landowner’s perspective, is it’s a way to keep the family members engaged in the ranch...it’s a way to keep your family together. It’s an activity that everybody can share” (FG1, B24). He mentioned the role ranch management plays in maintaining family traditions for following generations. Another participant correlated both the hunting and heritage motivations, saying, “I think the number one that I think of is legacy lands. [My boss] bought this property as a long-time dream that he had, and he wants to be able to pass that down to his kids. He’s instilled in them the values to care for the land, and the value in...especially for quail management. His two older kids love quail hunting, probably as much as he does, which amazes me” (FG6, Welch28). He expressed the importance of preserving family traditions, conserving quail and hunting opportunities, and how that legacy is passed down to generations when they are engaged in the process.

On the other hand, preserving this hunting heritage for future generations was frequently discussed as a challenge. Participants expressed concern over their ability to carry out their motivation of maintaining the hunting lifestyle due to the lack of younger

quail hunters. One participant stated, “I hardly know anybody’s grandson that’s a quail hunter primarily. Yeah, the people that come out there, I know some of their grandsons, but...and it’s a dying sport if we don’t pass it on” (FG5, F24, 25). Another said, “How do you educate your kids, and the next generation, to continue what you’ve started? It’s an uphill battle” (FG8, Bolin 21).

Societal influence was the only category for which participants expressed more challenges than opportunities to their accomplishing their motivations. We call this “peer pressure.” Peer pressure was often described as concern for what others think of the land management practices one does. One participant used the phrase “What does the guy at the coffee shop think of what I’m doing?” (FG2, B83) as an example of the type of complicated thought process landowners and managers can have when trying to maintain both a cattle grazing operation and proper quail habitat. Similarly, another participant gave an example of this type of complex situation: “For some reason, the old cattle guy, or his son, is the first guy at his door, and so, instead of going and hiring a biologist, the cow guy has already got his foot in the door, and convinced him that he’ll take care of it.... Well, he hadn’t taken care of it ten or fifteen years, and...so I just see that as an issue. And, I’m not against cattlemen or cattle guys or... I have to remind them, that all those folks are trying to make a living, in some form or fashion. But, I mean, we don’t have to do it the way granddaddy did it. And, you know, I don’t know how many times I’ve heard, “Well, we run a cow to twenty-five acres. That’s what this country runs.” (FG4, B25, 26). This anecdote illustrated the complexities of land management that arise when ranchers are uninterested or even wary of learning new technique from trained

field biologists, and instead, rely on their family and those traditional practices to maintain habitat. This can be detrimental to quail conservation, as expressed by another participant, if proper habitat management is not utilized: “You know, it’s drastically over-stocking, or overgrazing, and the belief that you have to have exotic -you know, Bermuda grass, Bahia grass, other introduced/improved grasses- if you want to make money on quail. Culture that thinks that, you know, introduced grasses are the way it’s supposed to look” (FG2, C28). In short, for many participants, peer pressure created a barrier to proper management practices, which can have an impact of quail conservation motivations.

Intrinsic

Participants discussed an intrinsic motivation for the existence value of quail more frequently than sensory value of quail (Figure 4). Existence value included mentions of “interest” in quail and willingness to aid in conservation, but not necessarily with any other motive than to know they are alive. For example, a participant explained how his motivation to conserve quail could be expanded to other landowners. He said, “Quail is one species that we’re using as a charismatic species, a species of interest, to the landowner, that can possibly help them pick up an interest in conservation of grasslands, on the properties. And so, I think one opportunity that is there, is that landowners, for the most part, have an interest, are aware of the decline of the species, and are willing to do something about it” (FG7, B1). Others alluded to intrinsic motivation for the existence value of quail by using particular phrases, such as, “quail enthusiast,” “quail person,” and “every quail is a trophy quail.” (FG3, C35,67 and FG6,

Welch19). These descriptions mirrored participants' intrinsic motivation for the existence value of quail because they positively identify with the species, but do not mention a particular purpose for conservation. An example of someone who is not intrinsically motivated to conserve bobwhite quail specifically is as follows: "I'm not into bobwhites, you know; the other species of quail interest me more than bobwhites, just because I don't have bobwhites on my property" (FG10, B12). In this case, the lack of existence value motivation is not malicious or due to lack of education, but rather, out of practicality for this individual. On the other hand, some lacked the existence value motivation to conserve quail due to a lack of influence. For example, "The interest is there, but it's..., they're not...it's passive interest, to some extent, and the direction...you know, they don't know what to do" (FG7, Reidy2).

Intrinsic motivation for the sensory value of quail can be described as the enjoyment of experiencing the species through the lens of one's own senses. One participant shared his sensory value motivation to conserve quail using an anecdote of 'watching' the quail: "The pleasure of being able to watch them, I think. A covey came through to the house -to the yard- this morning, and my wife was thrilled. She just thought that was so great. It happens every day, but...she loves it" (FG9, A39-41). Another participant mentioned he "grew up listening to the quail, so has always liked them" (FG2, Newman46). Like him, others drew upon childhood experiences of seeing and listening to quail, and how those experiences are motivation to continue conserving quail. For example: "They remember back to their childhood, 'yeah, we used to go hear them, or see them, or hunt them,' so they do have a willingness sometimes to work and

get them back” (FG7, Baker1). Finally, two participant discussed being able to hear the quail on their property, and that they are motivated to keep the sounds from disappearing in order to preserve their culture, saying, “[There is] the value of, ‘if that whistle of the bobwhite disappears from my land, it is not okay’” and “There’s nothing like waking up in the morning and hearing the quail talk to each other, and whatnot, and it’s relaxing, and you know, it’s a part of Texas” (FG4, E35 and FG6, D11).

Ecosystem

When discussing ecosystem value, participants most frequently discussed holistic benefits of the native grassland ecosystem as motivation to conserve quail (Figure 5). One participant shared his personal experience conserving quail using native grasses: “I think the number one thing that we’ve seen work on our place is converting old-growth brush country back into more motte country...take it back to a little bit more of a grassland state” (FG6, Welch13). Another described the broad beneficiaries of native grasses, saying, “I think that their [CRP] design was just to bring the native grasses back, and with that came quail. I think, with the landowner’s ability to manage them, you’d have an even more improved habitat for wildlife” (FG6, Jones10). Similarly, another participant shared his experience as a wildlife biologist aiding in habitat management: “Most of the biologists that I talk to love just to get out and see the property, and offer assistance to help you better manage your place for all wildlife species, and not just for deer, or quail, or turkey” (FG8, Poole6). For all these participants, they were motivated to be responsible for maintaining the grassland ecosystem to ensure the holistic benefits for quail, grassland birds, and other wildlife.

The connection between grassland birds and quail was the second most frequently discussed ecosystem motivation. This type of motivation included when participants mentioned how conservation efforts are beneficial to both quail and grassland birds. For example, one participant said, “We all kind of agreed, earlier, that grassland birds and quail...mutually beneficial: you benefit the habitat for grassland birds, you’re going to help quail, or vice versa” (FG8, Poole13). Another participant stated more specifically, “I think they’re, in my opinion, all interconnected. When you disturb the soil and get weed growth, you are providing a food source for quail, but you’re also providing a food source for the sparrows, and the meadowlarks, and all the other related species” (FG6, G26). Another participant drew a connection between the population trends of quail and the trends of other grassland bird populations: “I see grassland birds where you go into these co-op areas or these fringe areas, and it may not be feasible to bring quail back in a couple of years, but you can measure success by bringing back grassland birds and say, “Okay, this is what we’re doing. It’s the right thing.” But, you can measure success, I think, if you’re looking at grassland birds, and then learn whether you’re doing the right thing or the wrong thing” (FG5, F10).

Quail specific ecosystem motivations included the effects of the environment on quail specifically, without mention of other grassland bird species. For example, one participant mentioned, “One of the beautiful things of this part of South Texas: it’s just naturally a good place for bobwhite quail” (FG6, Jones22). Finally, participants most infrequently discussed quail as an indicator species as motivation for conservation. One participant shared his motivation for working with quail, saying, “If I’m working with

quail, I'm helping a wide range of species and can have a greater impact. That is what drives me, is to have that wider impact on biodiversity in general, which is why I work with quail" (FG2, B96).

Economic

Financial assistance and agricultural practices were the most frequently discussed economic motivations for conserving quail (Figure 6). For financial assistance, participants discussed conservation programs, including Farm Bills and cooperatives, as either being effective or ineffective for conserving quail. One participant was motivated to use Farm Bill assistance as it was a viable option for his land: "It's [Farm Bill assistance] a lot less than it was, but still a significant amount of money for conservation, and can be applied for grassland restoration...native grassland restoration" (FG2, C12). Another described the specific funded management practices he is motivated to implement: "You can usually find funds, and other resources, to pay for brush management, prescribed burning, if there's endangered species there. So, if we concentrate our bobwhite management in places where... (it) has benefits for endangered species, that usually helps find the resources we need for brush management, prescribed burns we need to improve quail habitat" (FG7, Anderson2). Both participants were motivated to participate in these financial assistance programs because the outcomes equated to improved habitat for quail. Other participants discussed their lack of motivation to participate or continue participating in financial assistance programs due to confusion and difficulty surrounding the programs, or because the program was ineffective for their needs. For example, a participant stated, "My husband and I, both,

are wildlife biologists; we have had a lot of experience working with agencies, and as I was doing the paperwork, and going through the process, and the reporting...I thought to myself, 'This is cumbersome'" (FG4, E21). She found the inconvenience of the paperwork to be a deterrent for participating in future assistance programs, which is a barrier to her conservation motivations. Others expressed doubt in the financial assistance methods to meet their motivation of conservation quail: "We've got these huge EQIP plans and programs, and, you know, that pasture will have the same amount of quail as the one we haven't done anything in" (FG9, B9). Another added, "I don't know how much difference it really makes" (FG9, B13).

Similarly, agricultural practices were economic motivations for conserving quail. These practices, including grazing, and use of fire and herbicide treatment, were often discussed as being either effective or ineffective for creating proper quail habitat. One participant mentioned several management practices he utilizes for maintaining habitat: "We get on a cycle to where we are in a maintenance mode, where we follow a mechanical treatment up with herbicide treatment, fire; we try to leave all the tools in our toolbox to use, that are available as land management practices. I would say that's probably the number one thing that we can do" (FG 6, Welch13). Another participant described specific management practices to be effective for maintain both cattle operations and quail conservation motivations: "Grazing is an important tool, and then we build and incorporate burning, so it's keeping the system from going from a brush-dominated to a grassland. Anything that they're doing, whether it's chemical application, and grazing, those are all tools that they're applying to the ground that warrant or

maintain their production for cattle, but also maintaining the structure of the species composition for grasslands” (FG1, G13). Other participants described their lack of motivation to utilize certain agricultural practices because they are a detriment to creating productive quail habitat, and thus conserving quail. One participant described a skewed perception of what healthy grassland habitat is supposed to look like:

“Traditional...current agricultural practices, you know, most of them are very counter to anything we need for grassland birds. You know, it’s drastically over-stocking, or overgrazing, and the belief that you have to have exotic...grasses if you want to make money on quail. And then, even if you do restore native grasses, people probably don’t know how to graze them anymore. Current agricultural practice, basically, is just not amenable to grassland bird production” (FG2, C28, 29). Another drew a troubling parallel between agricultural practices, and quail and habitat conservation goals, saying, “The prevalent use of insecticides in modern agriculture has resulted in long-term toxicity, in birds, and they are dying. So, it’s more harm to birds than habitat loss” (FG2, Gonzalez55).

Policy

Federal and state policies were the most frequently discussed political motivations for conserving quail (Figure 7). One participant drew upon his experience using a federal government program, which he found effective for meeting his quail conservation goals: “We do have a little bit of CRP country, which is...you know, that’s a government program which is designed to restore native pasture. I think that is a good program, that probably helps” (FG6, Jones10). Another participant mentioned he would

be motivated to participate in a federal government if it met certain standards. He said, “I think if it was available [federal government program], and it was not too cumbersome to facilitate it on your place, then I think a lot of people, especially these large-tract landowners, would use it” (FG6, Welch9). Participants also discussed specific state programs as political motivations for conserving quail. One participant stated, “That Pastures for Upland Birds program I talked about, which is funded through the Partners program,...I think that one’s kind of unique in that it’s not a cost-share or anything like that; we pretty much give the landowner everything, and they just provide the labor” (FG7, Siegmund19). Another said, “Well, Parks and Wildlife folks, you know, you guys are in such a key position of providing...being able to provide technical guidance to those landowners that need it, and with time, and with the right relationship with that landowner, that guidance can go in the right direction, and can steer the landowner into implementing the right practices for their objectives” (FG7, B2).

Participants also discussed how federal and state policies made fulfilling conservation motivations challenging. When discussing federal policies, one participant explained how qualifications to participate in a program are too restrictive. He said, “You’ve got WHIP, EQIP, all that stuff...I mean, this side of the table, we don’t...it doesn’t qualify for that. You can’t even sniff it, because of the monetary requirements on it. You’ve got to make under so much a year, and have so less income, and certainly for the people we work for, it’s not something that’s usable” (FG6, Welch5). Another participant described how the poor practices of a federal program cost a participant more money than anticipated and resulted in non-native habitat, counter to conservation goals:

“I had one guy in Falls County, he tried to broadcast it [native grass seeds], and he couldn’t get it to broadcast right, because it was all [fluffy] seed. Then he tried to drill it, and the NRCS told him to use a traditional grain drill, and so, it took him for forever, and he had to buy seed three times, because...So, he’s like...it was hemorrhaging money, and then it all failed, because it was all planted incorrectly- they buried it under an inch of soil when they broadcast it, and planted it too deep when they drilled it. So, he spent about \$27,000 of his own money, and he got a field of giant ragweed. (FG7, Siegmund14,15).

For both of these participants, and for many others, federal policies presented barriers to quail conservation motivations when stakeholders were either uninvolved or involved in a program. State policies presented similar challenges to stakeholders’ conservation motivations. One participant shared how it is difficult to meet expectations due to different habitat/ecosystem qualifications: “You know what the Nash Prairie is; it’s a remnant prairie, and those guidelines that they use to get the one-to-one open space exemption, they come from Texas Parks and Wildlife, but it’s a whole different system. And so, even though we manage for grassland and for excellent wildlife habitat, we were having trouble fitting their checkmarks...the native grasslands existing don’t require some of those radical earth-moving, and practices, that they recommend” (FG2, E14,17). Participants also expressed some distrust toward state policies particularly regarding the potential of altering the hunting season and bagging limits. For example: "We did have a pretty big scare, four or five years ago, when they [the state] were going to alter the season and the bagging; a policy like that could have driven quail hunting into the

ground. And so, people who mean well but don't understand quail, and quail management, almost created a huge mistake on behalf of all the landowners in Texas" (FG5, Bryant22). Another added, "They were trying to show that they cared, and they were doing the worst possible thing by saying that, "Well, guns have caused this problem, and guns can fix the problem" (FG5, F27). Finally, "All that would have done is punish the people who have been sitting on their hands, and biding their time, and keeping their powder dry until numbers came back" (FG5, Brennan16). Participants felt this new policy would have destroyed motivation to conserve quail because the largest group of conservations would be punished.

The local policies and unspecified government level categories were the only categories in which participants discussed more challenges than opportunities to their conservation goals. Similar to federal and state policies, participants described the difficulty of meeting the requirements of local policies. One participant shared, "Well, we have to conduct two burns within a set amount of time; the local office is limited on leeway, and if we don't burn it, we don't get paid. But, when you're committed to absolute, and we've got things in the past that are...well, you know it's not going to work, but we have to satisfy the contractor, and that-It's a hard pill to swallow" (FG1, I14). Participants also mentioned how conservation districts do not always prioritize wildlife conservation saying, "They have these county meetings, and they determine the priorities for the county, which means that Fisher County, you'll never get anything other than cotton...And, the wildlife habitat improvement money is about tenth on the list of priorities in that county; it's way behind anything that helps cotton farmers" C14

and 16 Abilene. Similar to federal policies, local policies presented challenges to quail conservation motivations both when people were involved in the program and unable to be involved.

When discussing policies without mention of a specific government level, participants spoke about a general lack of effective policies for quail conservation. Some drew upon the lack of organization and said, “On private land, there’s not a whole lot of relationship between conservation policy and what goes on on the land, in my view” (FG5, Bryant21), and “The policies aren’t coordinated; everybody’s got their own turfs they’re concerned about” (FG8, C10). Another explained how the lack of diversity in policies is ineffective for meeting conservation goals: “And, I think that the policies are entity-dependent, but they’re also...we’re so eager for a quick fix that we say that one policy works for everybody; it’s as if it’s a cookie cutter” (FG8, Clark3) adding “One of the things that I think the policies are lacking, are to really look at the landowner’s use...not all of us are ranchers, not all of us are recreational hunters, and so the policies often fail to look at what the individual landowner wants to do with their property. I think we’re really after a quick fix, and then we want one shoe to fit all, and one size to fit all, and they don’t...it doesn’t” (FG8, Clark3).

Education

Conducting research and educating stakeholders were discussed as primary educational motivations for conserving quail (Figure 8). Stakeholders can include land owners, land managers, and agency personnel. Like many other participants, one participant explained how educating landowners as to the importance of quail is a way of

sharing his motivation for conserving the species: “I think the first thing you have to do is...and not only new landowners, but the existing landowners, is to not only educate them, but to change their attitudes on how important the quail commodity is...how important a resource that it is” (FG4, D18). Another participant explained the importance of educated field biologists, as this will increase the success of quail conservation efforts. He said, “I would say that, kind of echoing “F”, that what you don’t have on here is the successes that have been realized down here, and one thing that moved that needle was hiring well-educated biologists to manage the country instead of the guy that runs the welder for the camp” (FG5, Bryant2). Research also had an important role to play in motivating these participants to conserve quail. Research discussion revolved around the types of projects being conducted by research institutions, as well as individual research efforts on the part of land owners and managers. Like many participants, one mentioned habitat restoration research as motivational for him: “One of the things I’ve noticed everyone starting to do a lot with restoration stuff was a lot of what...AgriLife, the Texas Parks, has come up with some decent publications here lately...for grassland stuff; Tennessee has a whole bunch too” (FG7, Siegmund14). Another participant mentioned more specifically his involvement in a restoration project. He said, “We’ve got a restoration project starting now, and part of that project is going to look at actual changes in bird populations as you go from a brush complex to a grassland” (FG1, J9). Others mentioned types of research projects as well, including “the translocation of wild quail is looking very promising,” “dummy nests, we’ve done trapping studies, we’ve done burn studies,” and “we’re doing an

intestinal study...eye worm studies.” (FG9, S. Mayer6 and FG9, B42 and FG9, Hemphill29). For all these participants, learning about quail conservation issues and being actively engaged in the research served as an opportunity for them to play out their motivations of conserving quail.

As well, educating stakeholders was more frequently discussed as challenging to their motivation to conserve quail compared to conducting research. Many participants discussed the difficulty of reaching all the stakeholders, and how this lack of widespread knowledge was detrimental to quail conservation. One participant shared his personal experience of trying to share knowledge: “We do landowner workshops, and we are just constantly preaching to the choir; we get the same ten people in those rooms...But, at the same time, 90% of the people just aren’t hearing that, and we’re not even on their radar, and they’re not on ours, and that’s a big problem” (FG2, B32, 33). Others mentioned extension agents as a challenge to quail conservation, as these are the people responsible for directing quail conservation efforts, “I think this notion of training the extension agents and having specific trainings for them, I think, is a really good first start. Because, I think we’ve all seen that the advice that those guys give out is sometimes antiquated, often times misguided, even when their trying to do the right thing” (FG2, Gonzalez46). Some discussed the desire to learn more in order to fulfill their motivation of conserving quail, but the lack of information flow dwarfs the efforts. For example, one participant said:

“I know you all have your particular program that you all are trying to do, and it's for your particular Master's thesis...,but what we get out here, and what frustrates

me the most, is that, you know, we'll get something like this going, and then there are other people out there that can share information, [but] they don't share information. I'm talking about Texas Parks and Wildlife, NRCS, Saltwater Conservation Board, Texas Water Resource Institute, TCEQ, Texas Water Development Board, all of those people that can share, and you can have more of a holistic, or more of a comprehensive, plan on this stuff...if people don't come together..." (FG10, B6).

Many discussed confusion over proper conservation techniques, as they can vary by region saying, "There's been I don't know how many research articles published about how to graze quail, and manage quail and egg at the same time, and it just reaps a lot of confusion, because what works in one area doesn't work in another" (FG2, E10).

Another mentioned, "Well, like everybody said, nobody knows what to do. "We all -a lot of us, at least- try to do something, but I don't know if it really helps" (FG9, A14).

For all these participants, they were motivated to do the "right thing" for quail conservation, but the misinformation, or lack of information, challenged their efforts.

Discussion

Considering the quotations above, it is clear that these participants' motivations are intertwined, sharing multiple convergences and associations. Rarely are the motivations discussed as singular, static entities, but rather as dynamic subjects moving between each other. Though there are likely many ways to discuss the connections between these motivations, we present them in structured, coherent manner that accurately reflects the motivations that were most important to this group of

stakeholders. Starting with cultural motivation, the connections then progress to the intrinsic motivation and through to the ecosystem, economic, policy, and educational motivations, before finally circling back to cultural.

Cultural

The motivations to conserve quail through engagement in hunting practices and preservation of family heritage reflected participants' embeddedness in their community. The social interactions that occurred within these practices are a way of life for quail conservationists, and they find meaning in life by identifying with a group collectivity, as opposed to acting as individuals (Hofstede and Bond 1988, Schwartz 2006). This type of reciprocal relationship reveals the necessity of community for achieving conservation goals. As hunters are the primary advocates for quail conservation in Texas, their effort as a community is critical to their conservation endeavor. When this community effort to improve quail populations, and consequently, ensure future hunting opportunities, recurs over time, cultural heritage is preserved, providing a legacy for future generations. However, any breakdown in the community structure is problematic. Participants often expressed concern over the lack of involvement of younger hunters, and confusion on how to engage them in the hunting tradition. Engaging them becomes increasingly challenging as quail numbers continue to decline and with little promise of having a successful hunt. Implications of uninterested, or unmotivated, youth to participate in hunting traditions are a loss of heritage, and subsequently, quail conservation will lose momentum. Therefore, preserving hunting tradition through each

passing generation imbues value in a way of life, and is essential for fostering a love of the sport and the quail themselves.

Intrinsic

Heritage is necessary for instilling in future generations an intrinsic appreciation for quail as a species. The intrinsic motivation to conserve quail for this group of stakeholders was demonstrated by their efforts to recognize and understand the inherent value of quail in their capacity as an element of the natural world, rather than the possibilities held by their exploitation (Schwartz 2006). According to Clewell and Aronson (2006), this is the idealistic rationale for conserving nature. Intrinsically, stakeholders were primarily interested in the persistence of quail for the sake of their continued existence, and relied on sensory experiences to acknowledge the value of their presence. They did not measure the worth of quail in the context of self-gain, but rather acknowledge the value of quail that exists independently of the human consciousness (Worster 1977, Callicott 1985). Without intrinsic appreciation for quail instilled in younger generations, the existence of quail will likely be taken for granted, making support for conservation efforts challenging. In order to perpetuate the intrinsic motivation to conserve quail, the entire community must be involved directly in preserving cultural heritage that teaches appreciation for the existence of quail.

Ecosystem

For many of these stakeholders, their passion for quail grew into a broader appreciation for nature, and instilled in them a more holistic perspective of the value of the environment. The holistic benefits from a healthy ecosystem often motivated

participants to implement conservation efforts that would both improve quail survival, and ultimately have lasting effects on the functionality of the land. This practice is also referred to as the biotic rationale for conserving nature in order to maintain biodiversity (Clewell and Aronson 2006). Benefits from a “diverse, healthy, and resilient natural environment” include the “well-being, health, and prosperity of everyone, now and in the future” (Bradbury et al. 2010). ‘Everyone’ includes all biotic and abiotic factors existing in the ecosystem. Participants recognized the inter-linkages between biotic and abiotic factors, and their functioning, and how the health of the system as a whole are essential for helping to conserve quail. Again, however, if initial interest and appreciation for quail is absent, it is unlikely that the youth will develop an interest in wildlife overall, and conservation efforts will be less impactful. “Lacking this psychological attachment, natural areas are taken for granted, and the benefits that may accrue from them go unacknowledged. Little impetus exists to protect and preserve such underappreciated lands” (Clewell and Aronson 2006).

Economic

Participants also recognized themselves as part of the ecosystem, not apart from it, and their consequent responsibility to preserve the holistic benefits provided by the ecosystem. It is this motivation to perpetuation biodiversity that is often a reason for conducting ecological restoration (Clewell and Aronson 2006). Participants were economically motivated to engage in various agricultural practices for restoring grassland habitat, which would in turn support viable quail populations. For many, these land management practices work hand in hand cattle production. Following Clewell and

Aronson's (2006) pragmatic rationale to restore natural capital, the utilization of these practices resulted in the simultaneous economic and conservation benefits participants strived for. "Although wildlife may be a public good that is not traded in markets, it often provides the foundation upon which other markets and economic activity depend" (Ready 2012). One of those markets is financial assistance. Through financial assistance programs, stakeholders were motivated to engage in prescribed agricultural practices that simultaneously maintained cattle production and aided in quail conservation. For those land owners and managers who do not utilize financial assistance programs and the prescribed agricultural practices, and rather conducted their own practices, participants expressed concern. Often cattle ranching became the priority over quail conservation efforts, due to lack of interest or lack of monetary ability on part of the land owner. Whatever the case, the habitat requirements for the quail were ignored in favor of the profits made by focusing solely on cattle.

Policy

These financial assistance programs used often by our participants for conserving quail are developed through policy, primarily federal and state government agencies. As public policy is intended to create and implement guidelines that respond to citizens' voices, some stakeholders were motivated to participate in the financial assistance programs as they felt their needs were responded to (Bovbjerg 1985, Dryzek and Torgerson 1993, Schneider and Sidney 2009). This is referred to as the technocratic rationale for conserving nature (Clewell and Aronson 2006). Technocratic restoration is conducted by government agencies to help restore the value of nature to society through

mitigation, and is essential for a large and complex endeavor like reversing the decline of quail population in Texas. Though some participants were politically motivated to participate in government programs, others were not, simply because they could not qualify. According to stakeholders, requirements to participate in government programs are too rigid, leaving many land owners and managers to take quail conservation into their own hands. If technocratic restoration is to be effective, it is essential for Texas government agencies to coordinate their biologists, have agency oversight for the disbursements of funds, and to ensure relevant policies are satisfied (Clewell and Aronson 2006).

Education

Even when participants qualified for a government program, some shared with us that the practices recommended to them by government personnel were ineffective, or produced poor quail habitat. They participants discussed how policies and programs assumed matching conservation practices across many ecoregions, and explained that there is no “silver bullet” to fit all landscapes. For these reasons, participants were motivated by education and research opportunities for both themselves and government personnel, to learn more about proper land management techniques and an understanding of the varying ecosystems across Texas to meet quail habitat requirements. This closely parallels the heuristic rationale of ecosystem restoration as the purpose is to “elucidate ecological principles from the ecosystem undergoing restoration and to serve as a pedagogic aid in ecological sciences (Clewell and Aronson 2006). There is currently an information overload on quail biology, but a lack of

information as to the specific requirements of quail in each ecoregion in Texas. Therefore, research aimed at understanding the different habitat types across the ecoregions in Texas, and types of quail conservation practices specific to each area will help government agencies to produce informed policies with a more holistic approach to conservation.

Returning to Culture

As discussed previously, the community effort to preserve the quail hunting heritage involves instilling conservation practices in the youth. This societal influence is critical for conservation, as the message shared will have a great impact for many generations to come. Therefore, accurate information and proper education of all stakeholders, land owners and government personnel alike, are crucial. Some participants discussed the idea of ‘peer pressure’ and land owners falling back on old land practices “their granddaddy used” when they distrusted the information coming from “outsider” sources. Even though the land owners are “just trying to do the right thing,” perpetuating old practices that are not viable, and engraining poor practice into the culture could be devastating for quail conservation. However, with a more knowledgeable government and public, good information can be disseminated through societal influence. As this collective education and outreach occurs, relationships between stakeholders, their peers, and agency personnel will develop further, fostering cooperative efforts that will ensure the continuance of quail across borders, “because a quail doesn’t care about a fence.” In this way, the entire community of quail

conservationists will take part in preserving the heritage and hunting opportunities for generations to come.

CHAPTER III

CONCLUSIONS

Identifying and responding to stakeholder motivations strengthens NRM processes by enabling managers to demonstrate respect for stakeholder identities, which contributes to stakeholder satisfaction and empowerment. Successful NRM and participant motivations are interdependent, with each contributing to the others' success, to the success of future NRM initiatives, and ultimately to biodiversity conservation. Though the two NRM processes I have presented have different contexts of marine and terrestrial systems, in both cases, humans remain the same. Much of our concern about conserving wildlife has to deal with managing people. These two cases provide the opportunity to look at stakeholders' motivations in different ways. The NERR process is a specific type of stakeholder process that involves organized workshops to work toward collaboration between participants. The quail focus group project continues with the concept of motivations, but helps us understand that motivation for participation in NRM goes beyond the individual process. Conservation may have less to do with the particular process, but more with the specific species in question. These studies provide not only a theoretical contribution to social science knowledge of what motivates stakeholders to participate in conservation and NRM, but also provides practical guidance for management of people involved in NRM.

REFERENCES

- BBEST, S. 2009. SN BBEST Environmental Flows Recommendations Report.
- Bernacchi, L. A., C. J. Ragland, and T. R. Peterson. In press. Engaging active stakeholders in implementation of community based conservation: Whooping Crane management in Texas, USA. *Wildlife Society Bulletin*.
- Bovbjerg, R. R. 1985. WHAT IS POLICY ANALYSIS? *Journal of Policy Analysis & Management* 5:154-158.
- Bradbury, R. B., C. Stoate, and J. R. Tallwin. 2010. FORUM: Lowland farmland bird conservation in the context of wider ecosystem service delivery. *Journal of Applied Ecology* 47:986-993.
- Brady, S., C. Flather, and K. Church. 1998. Range-wide declines of northern bobwhite (*Colinus virginianus*): land use patterns and population trends. *Gibier Faune Sauvage* 15:413-431.
- Brennan, L. A. 1991. How can we reverse the northern bobwhite population decline? *Wildlife Society Bulletin*:544-555.
- Brennan, L. A., and W. P. Kuvlesky Jr. 2005. Invited Paper: North American Grassland Birds: An Unfolding Conservation Crisis? *Journal of Wildlife Management* 69:1-13.
- Buskey, E., T. R. Peterson, K. Stanzel, L. Scheef, and K. Tunnell. 2015. Freshwater inflows: Determining flow regimes in the face of land use change, climate change, and other unknowns. National Estuarine Research Reserve System Science Collaborative. Mission-Aransas National Estuarine Research Reserve.
- Callicott, J. B. 1985. Intrinsic value, quantum theory, and environmental ethics. *Environmental ethics* 7:257-275.
- Church, K., J. Sauer, and S. Droege. 1993. Population trends of quails in North America.
- Clarke, T., and T. Milburn. 2009. Smells like folk life: Participants' identity construction at step it up. Pages 309-336 in D. Endres, L. Sprain, and T. R. Peterson, editors. *Social Movement to Address Climate Change*. Cambria Press, Amherst, New York.

- Clewell, A. F., and J. Aronson. 2006. Motivations for the Restoration of Ecosystems
Motivaciones para la Restauración de Ecosistemas. *Conservation Biology*
20:420-428.
- DeCaro, D., and M. Stokes. 2008. Social-Psychological Principles of Community-Based
Conservation and Conservancy Motivation: Attaining Goals within an
Autonomy-Supportive Environment. *Conservation Biology* 22:1443-1451.
- Decker, D. J., S. J. Riley, and W. F. Siemer. 2012. *Human Dimensions of Wildlife
Management. Volume 2.* The Johns Hopkins University Press, Baltimore, MA,
USA.
- Droege, S., and J. R. Sauer. 1990. Northern bobwhite, gray partridge, and ring-necked
pheasant population trends (1966-1988) from the North American Breeding Bird
Survey.
- Dryzek, J. S., and D. Torgerson. 1993. Democracy and the Policy Sciences: A Progress
Report. *Policy Sciences* 26:127-137.
- EPA. Environmental Education (EE). *in.* www2.epa.gov/education.
- Ernst, T., and G. N. Wallace. 2008. Characteristics, Motivations, and Management
Actions of Landowners Engaged in Private Land Conservation in Larimer
County Colorado. *Natural Areas Journal* 28:109-120.
- Gould, F. W., G. O. Hoffman, and C. A. Rechenthin. 1960. Vegetation Areas of Texas.
in Texas Agricultural Experiment Station, Leaflet No. 492. Texas A&M
University.
- Hofstede, G., and M. H. Bond. 1988. The Confucius connection: From cultural roots to
economic growth. *Organizational dynamics* 16:5-21.
- Kabii, T., and P. Horwitz. 2006. A review of landholder motivations and determinants
for participation in conservation covenanting programmes. *Environmental
Conservation* 33:11-20.
- Lincoln, Y. S., and E. G. Guba. 1985. *Naturalistic Inquiry.* Sage, Newbury Park, CA,
USA.
- Lindlof, T. R., B. C. Taylor. 2011. *Qualitative Communication Research Methods.* 3
edition. SAGE Publications, Inc., California.
- Lokhorst, A. M., C. Hoon, R. le Rutte, and G. de Snoo. 2014. There is an I in nature:
The crucial role of the self in nature conservation. *Land Use Policy* 39:121-126.

- Paloniemi, R., and P. M. Tikka. 2008. Ecological and social aspects of biodiversity conservation on private lands. *Environmental Science & Policy* 11:336-346.
- Peterjohn, B., and J. R. Sauer. 1999. Population status of North American grassland birds from the North American breeding bird survey.
- Peterson, M., X. Wu, and P. Rho. Rangewide trends in landuse and northern bobwhite abundance: an exploratory analysis. 2002.
- Peterson, M. N., and S. L. Ramirez. 2012. Human dimensions of wildlife management. Pages 1-20 *in* N. J. Silvy, editor. *The wildlife techniques manual: Management*. Johns Hopkins University Press, Baltimore Maryland, USA.
- Peterson, T. R., M. N. Peterson, M. J. Peterson, S. A. Allison, and D. C. Gore. 2006. To play the fool: Can environmental conservation and democracy survive social capital? *Communication and Critical/Cultural Studies* 3:116-140.
- Ramirez, R., and M. Fernandez. 2005. Facilitation of collaborative management: Reflections from practice. *Systemic Practice and Action Research* 18:5-20.
- Ready, R. C. 2012. Economic Considerations in Wildlife Management. *in* D. J. Decker, Riley, S. J., and W. F. Siemer, editor. *Human Dimensions of Wildlife Management*. The Johns Hopkins University Press, Baltimore, MA, USA.
- Ryan, R. L., D. L. Erickson, and R. De Young. 2003. Farmers' Motivations for Adopting Conservation Practices along Riparian Zones in a Mid-western Agricultural Watershed. *Journal of Environmental Planning and Management* 46:19-37.
- Schneider, A., and M. Sidney. 2009. What Is Next for Policy Design and Social Construction Theory? *Policy studies journal* 37:103-119.
- Schuett, M. A., and S. Selin. 2002. Profiling Collaborative Natural Resource Initiatives and Active Participants. *Northern Journal of Applied Forestry* 19:155-160.
- Schuett, M. A., S. W. Selin, and D. S. Carr. 2001. Making It Work: Keys to Successful Collaboration in Natural Resource Management. *Environmental Management* 27:587-593.
- Schwartz, S. H. 2006. A theory of cultural value orientations: Explication and applications. *Comparative sociology* 5:137-182.
- Senecah, S. 2004. *Communication and Public Participation in Environmental Decision making*. University of New York Press, New York.

- Shanahan, J. E., M. L. Gore, and D. J. Decker. 2012. Communication for Effective Wildlife Management. *in* Human Dimensions of Wildlife Management. The Johns Hopkins University Press, Baltimore, Maryland.
- Texas Water Code Annex 11.0235: Texas Statutes - Section 11.0235. POLICY REGARDING WATERS OF THE STATE.
- Texas Water Code Annex 11.02362: Texas Statutes - Section 11.02362. POLICY REGARDING WATERS OF THE STATE.
- Vickery, P., P. Tubaro, J. Cardoso da Silva, B. Peterjohn, J. Herkert, and R. Cavalcanti. 1999. Conservation of grassland birds in the western hemisphere. *Studies in Avian Biology* 19:2-26.
- Wagner, M. W., U. P. Kreuter, R. A. Kaiser, and R.N. Wilkins. 2007. Collective action and social capital of wildlife management associations. *Journal of Wildlife Management* 71:1729-1738.
- Worster, D. 1977. *Nature's Economy: A History of Ecological Ideas*. 2 edition. Cambridge University Press, New York, NY, USA.
- Yaffee, S. L., and J. M. Wondolleck. 2000. Making collaboration work: lessons from a comprehensive assessment of over 200 wideranging cases of collaboration in environmental management. 1:1-8.

APPENDIX

Table 1: Questions used during focus group discussion.

1. What do you think are the most relevant opportunities associated with Bobwhite conservation? And what about other Grassland birds?

2. What do you think are the most relevant challenges associated with Bobwhite conservation? And what about other Grassland birds?

3. From your perspective, how do current bobwhite conservation policies meet conservation needs? And what about other Grassland birds?

4. What about current practices on private land? From your perspective, how do they contribute to bobwhite conservation? And what about other Grassland birds?

5. What financial incentives are available for bobwhite conservation? How do they work? And what about other Grassland birds?

6. Do you know of any nonfinancial incentives that are available for bobwhite conservation? How do they work? And what about other Grassland birds?

7. What motivates you participate in bobwhite conservation?

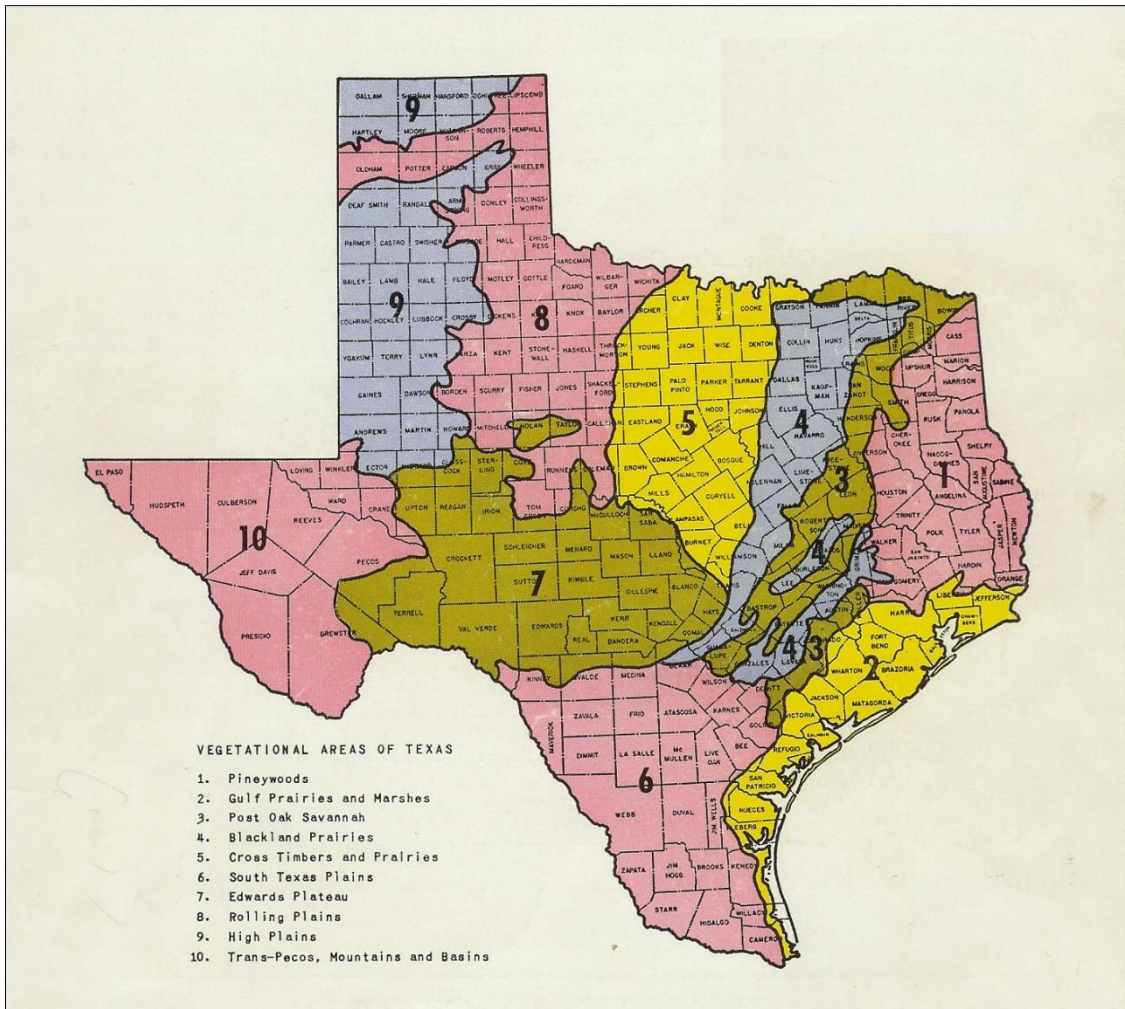


Figure 1: Gould et al. (1960) map of Texas ecoregions.

Table 2: Codebook nodes and sub-nodes and the corresponding definitions and keywords used to guide our analysis.

Nodes and Sub Nodes	Definitions and Keywords
Cultural	
Hunting	Refers to the social connections with themselves and/or others while hunting quail or grassland birds
Recreation	Activities involving quail that are unrelated to hunting, i.e. photography, birdwatching
Heritage	Maintaining tradition, teaching their children, future generations, legacy
Personal Satisfaction	Having pride in their work, their work is rewarding or gratifying
Social Influence	“What would the neighbors think?” or “This is the way it is supposed to be,” or “I want to be a part of this.”
Intrinsic	
Existence Value	Refers to the value of quail being present outside of the economic context; “I love them,” “they are charismatic”
Sensory Value	Refers to being able to see or hear quail as satisfactory
Ecosystem	
Quail as an Indicator Species	Refers to quail as a benefit to the ecosystem, or that the health of quail is a reflection of the health of the ecosystem
Grassland Bird Connection	The impacts felt by quail from conservation efforts are the same for grassland birds, and vice versa
Holistic Connections	Refers to other species of animals or vegetation benefiting from quail conservation efforts; someone’s actions of restoring grasslands or any ecosystem scale; mention the value or benefits of the grasslands in the ecosystem; “Biodiversity”
Quail Specific	Refers to the impacts from conservation efforts on quail specifically, without including other grassland bird species
Economic	
Hunting Source	Refers to the stimulation of local economies or money made through leases due to hunting quail or grassland birds

Table 2 continued

Nodes and Sub Nodes	Definitions and Keywords
Recreation Source	Refers to the stimulation of local economies or money made through leases due to activities unrelated to hunting, i.e. photography, birdwatching
Financial Assistance	Co-ops, Farm Bills, general funding, research funding, tax/ag exemption
Agricultural Practices	Refers to cattle grazing, ranching, burning, and fertilizing used to alter habitat construction
Other Sources	Includes land values, employment opportunities, and unspecified management practices
Unspecific Quail Source	Refers to a source of money derived from quail, but is not explained specifically
Policy	
Federal	Farm Bills, NRCS
Local	Locally organized programs for conservation
NGOs	Audubon, Wildlife Heritage Foundation
State	TPWD, agriculture exemption
Unidentified Government	Mention policy generally, but are not specific about the enforcing body of the policy
Education	
Stakeholders	Educating those directly involved in conservation efforts, including agency personnel, land owners, and land managers
General Public	Educating anyone uninvolved in conservation, for example, through the publication of a newspaper article
Unspecified Audience	Mention the education of people has occurred, but the speaker does not specify the audience
Research	Conducting research for the purpose of conservation; it can include funded research done by an agency, or research done “recreationally” by a landowner or land manager

Table 3: Our weighted Kappa scores for each node and focus group, and overall average weighted kappa score for 7 focus groups.

	Training			Kappa						
	1	2	3	4	5	6	7	8	9	10
Cultural Neg.	0.25	0.59	0.42	0.27	0.59	0.91	0.69	0.63	0.81	1.00
Cultural Pos.	0.81	0.61	0.76	0.68	0.63	0.83	0.80	0.89	0.87	0.82
Economic Neg.	0.64	0.64	0.51	0.66	0.73	0.69	0.76	0.78	0.77	0.75
Economic Pos.	0.61	0.61	0.61	0.72	0.78	0.76	0.85	0.95	0.88	0.71
Ecosystem Neg.	0.48	0.66	0.28	0.53	0.65	0.59	0.80	0.75	0.52	0.73
Ecosystem Pos.	0.57	0.62	0.51	0.58	0.80	0.64	0.80	0.80	0.70	0.84
Educational Neg.	0.38	0.58	0.46	0.60	0.31	0.67	0.72	0.80	0.44	0.72
Educational Pos.	0.82	0.66	0.77	0.69	0.65	0.70	0.72	0.87	0.89	0.67
Intrinsic Neg.	1.00	1.00	0.05	1.00	1.00	1.00	0.69	1.00	0.91	1.00
Intrinsic Pos.	0.46	0.75	0.24	0.71	0.24	0.65	0.87	0.78	0.62	0.68
Policy Neg.	0.70	0.69	0.67	0.82	0.69	0.74	0.86	0.86	0.82	0.68
Policy Pos.	0.24	0.79	0.67	0.74	0.93	0.90	0.84	0.84	0.75	0.71
Average	0.64	0.67	0.60	0.69	0.73	0.75	0.81	0.83	0.77	0.77
	No Kappa			Overall Average Kappa: 0.77						

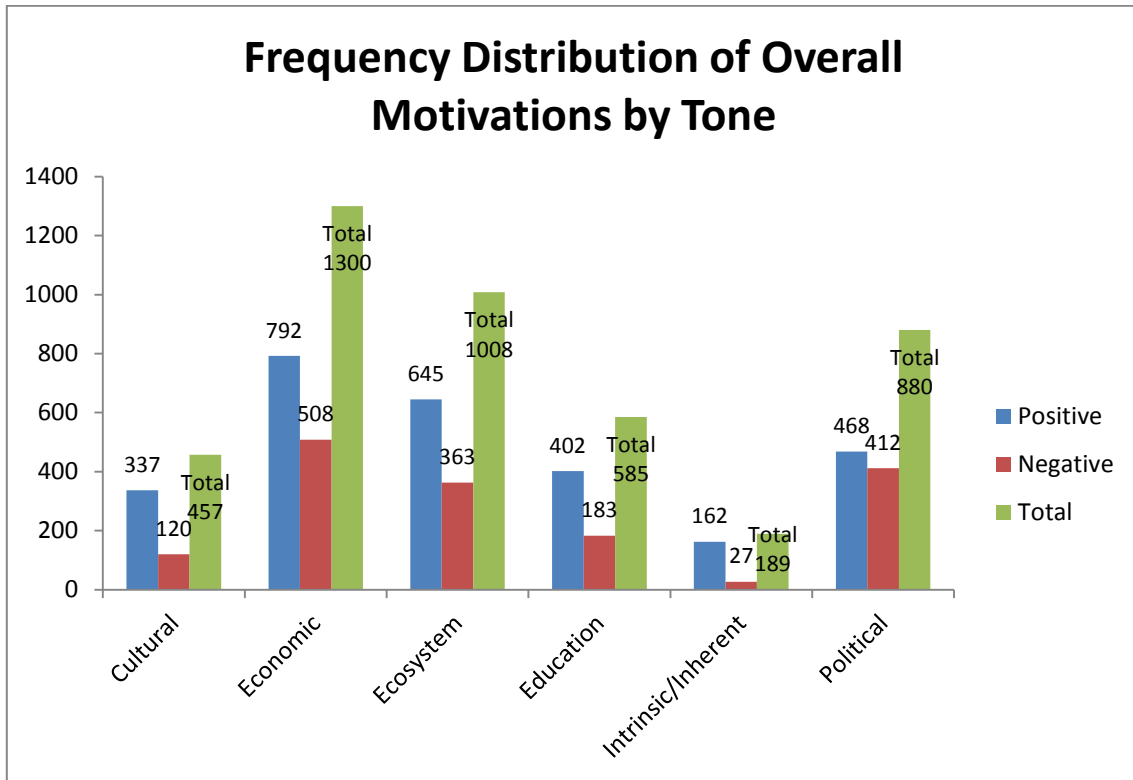


Figure 2: The frequency distribution of overall motivations by tone.

Table 4: The number of references coded per node by tone.

Number of References Coded per Node by Tone			
	Positive	Negative	Total
Cultural: Heritage	90	44	134
Cultural: Hunting	168	44	212
Cultural: Recreation	27	2	29
Cultural: Personal Satisfaction	26	1	27
Cultural: Societal Influence	26	29	55
Economic: Agricultural Practices	167	165	332
Economic: Financial Assistance	302	168	470
Economic: Hunting Source	120	62	182
Economic: Recreation Source	26	12	38
Economic: Unidentified Quail Source	62	35	97
Economic: Other Source	115	66	181
Ecosystem: Grassland Bird Connection	153	62	215
Ecosystem: Holistic Connection	357	222	579
Ecosystem: Quail-Specific	115	78	193
Ecosystem: Quail as an Indicator	20	1	21
Educational: Stakeholders	151	112	263
Educational: General Public	15	14	29
Educational: Unidentified Audience	23	10	33
Educational: Research	213	47	260
Intrinsic: Existence Value	128	27	155
Intrinsic: Sensory Value	34	0	34
Political: Federal	179	175	354
Political: State	135	108	243
Political: Local	33	36	69
Political: NGO	59	22	81
Political: Unidentified Gov. Level	62	71	133

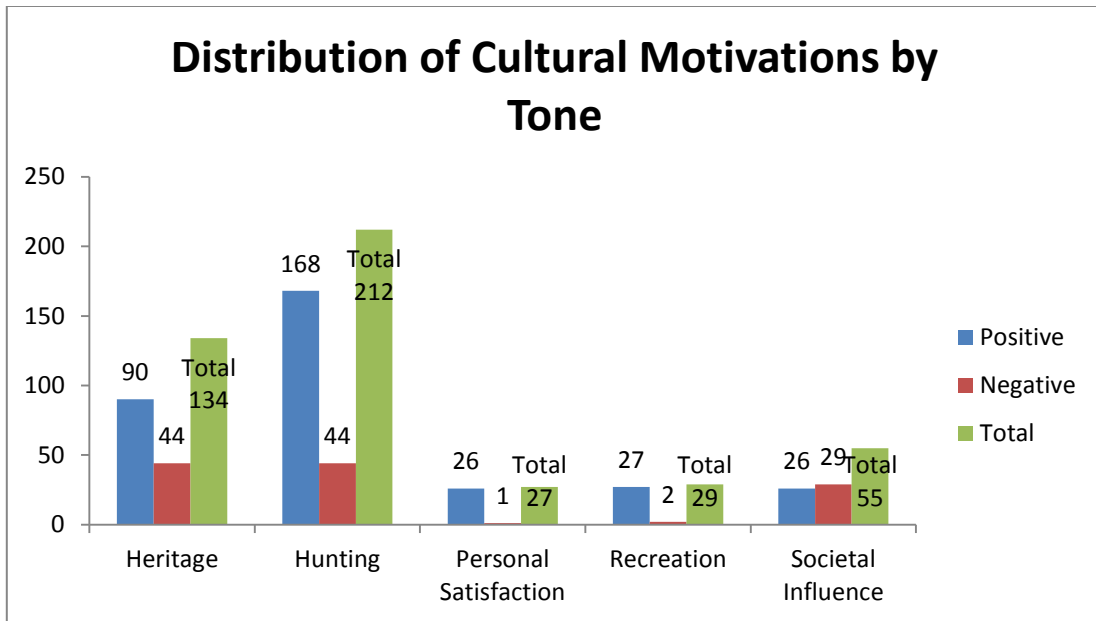


Figure 3: The frequency distribution of cultural motivations by tone.

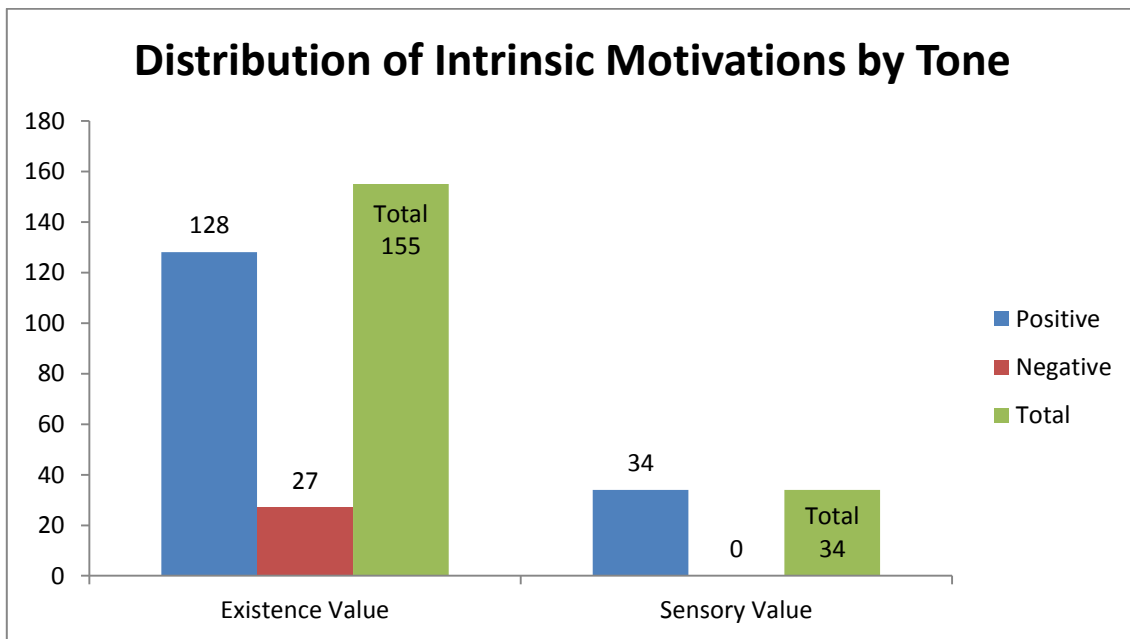


Figure 4: The frequency distribution of intrinsic motivations by tone

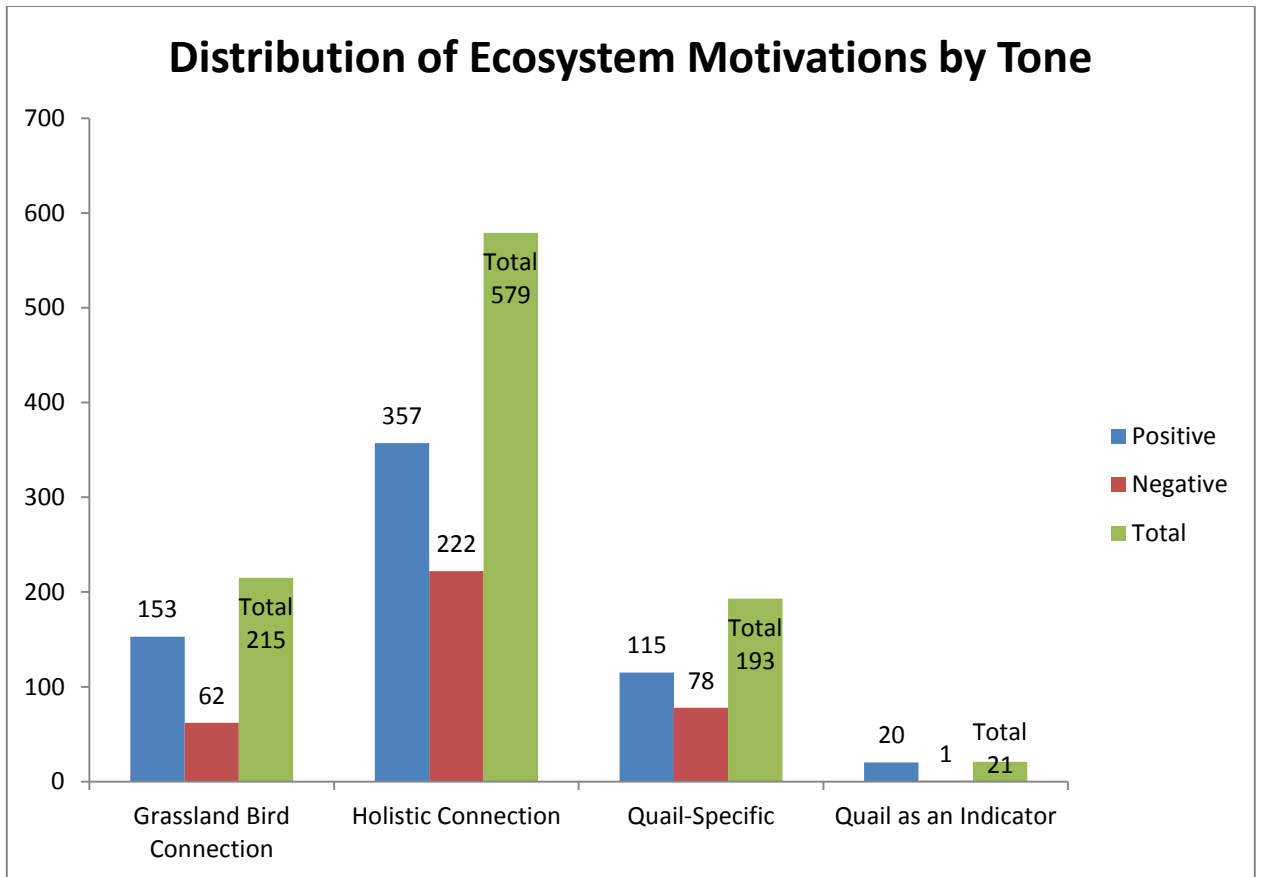


Figure 5: The frequency distribution of ecosystem motivations by tone

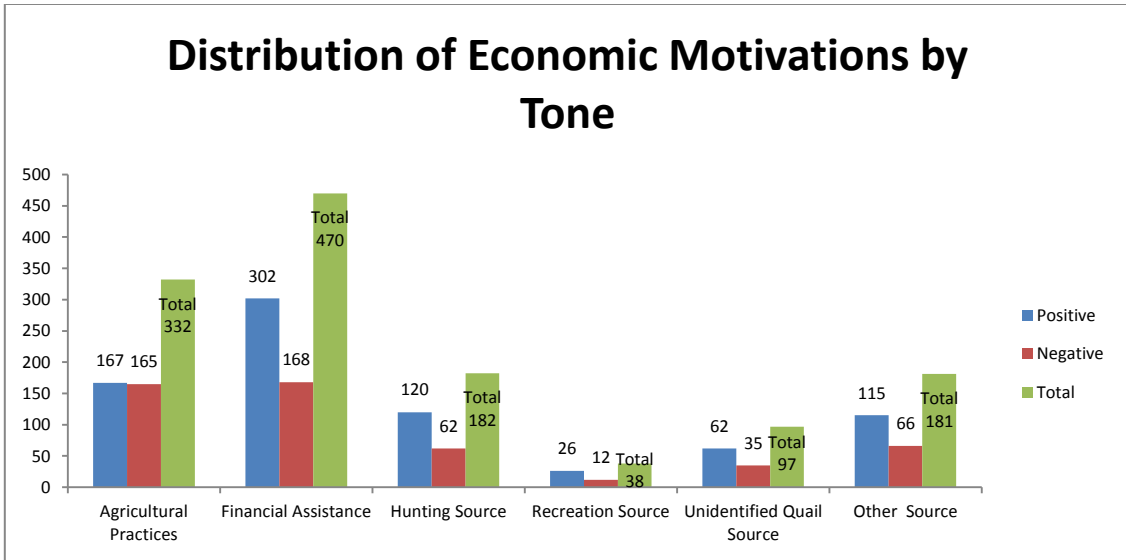


Figure 6: The frequency of distribution of economic motivations by tone.

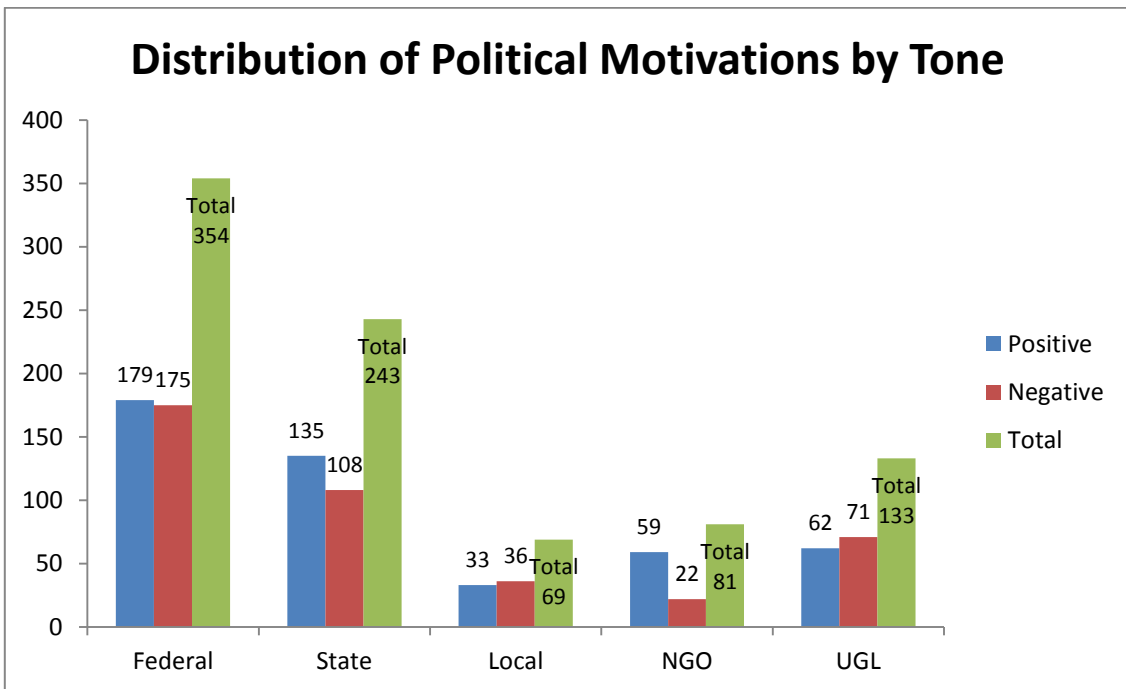


Figure 7: The frequency of distribution of political motivations by tone.

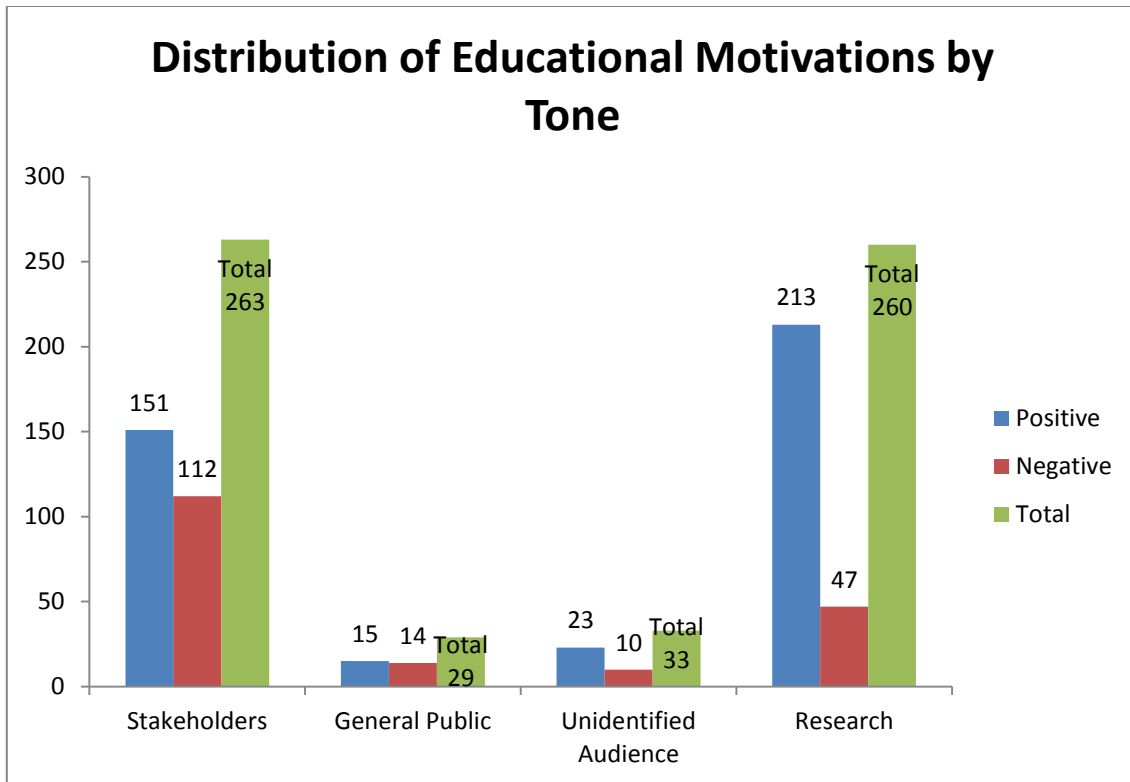


Figure 8: The frequency of distribution of educational motivations by tone.