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Exploring the Preservation of Pastoralism and the Natural World in Western Mongolia

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Exploring the Preservation of Pastoralism and the Natural World in Western Mongolia

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Abstract

At a time when Mongolia is experiencing the intense effects of land degradation, human activity, and climate change, it is crucial that a new land management framework is developed with conservation in mind. Pastoralism's unique relationship with the land serves as a method of protecting the natural world for the future. This study focuses on a pastoral community in Western Mongolia while considering a main research question: Is a herder's historically deep connection with the land enough to protect the modern pastoral lifestyle in Mongolia for years to come? In answering this question, a review of related previous studies on the environment and land management practices is conducted and 13 interviews are conducted with herders and conservationists in Bayan-Olgii *aimag* and Ulaanbaatar respectively. The mentalities of Kazakh herders are discussed and observations are made as to how land conservation and pastoralism can work together. It is clear that the Kazakh herders in Tolbo *soum* will continue the tradition of pastoralism for years to come, but there appears to be a large gap in the herders' knowledge of the Protected Area Network and environmental protection. A community-based management approach is suggested because it holds herders accountable for managing and protecting their land, incorporates crucial environmental, pastoral, and governmental perspectives, and works towards protecting the pastoral tradition in Mongolia.

ISP Topic Codes: *Cultural Anthropology, Environmental Studies, Natural Resources & Conservation*

Keywords: *Protected Area Network, pastoral culture, pastureland/rangeland conservation,*

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Introduction

Mongolia is often romantically referred to as the “Land of the Eternal Blue Sky”, which conjures visions of a land filled with nomadic people, pristine landscapes, and grazing animals. A majority of the population still maintains and protects the traditional nomadic lifestyle, but this romantic vision of pastoralism¹ is slowly being shattered by intense environmental threats, such as land degradation and decreasing natural resources. The effects of climate change exacerbate both problems. Mongolia has been described as having a distinctly different perspective on its pastoral sector because it is a country of herders, most of who have direct investment in or connections to the pastoral countryside (Honeychurch, 2010). The transition to democracy and the introduction of a free market economy in the early 1990’s has brought quick development, urbanization, and modernization in this sparsely populated nation. The steady introduction of industry threatens the pastoral lifestyle and countryside by destroying great areas of pastureland² and contributing to the decrease in natural resources.

In addition to the environmental problems, current land use regulations are promoting poor land management practices. Mongolian herders abide by the laws of open access, meaning that there are few regulations for what is allowed on large tracts of land. This situation is causing a “tragedy of the commons”³ scenario (also referred to as the tragedy of open access) because the land available is now well over its carrying capacity. Patterns of pastoral land use vary widely across

¹ Defined as the raising of livestock, or animal husbandry. In this study it will be synonymous with herding.

² An area of land used for the grazing of livestock (also referred to as rangeland).

³ Defined by Garrett Hardin as the practice of individual shepherds increasing their herds because it makes economic sense for them to do so, but this increase in livestock exceeds the pasture’s ability to regenerate itself (Vandermeer, 2006).

Mongolia depending on geography, ecology, and politics, but pasturelands are currently held and managed as common property resources in most areas (Fernandez-Gimenez, 2006). The “tragedy of the commons” and the practice of open access contribute to overgrazing and a decrease in pastureland productivity. Although changes in species composition are recognized as effects of long-term climate changes, herders also noted that changes in species composition were caused by human activities (Fernandez-Gimenez, 2000). The combination of human activity and an increased number of animals has caught herders in a detrimental situation. A balance between economic growth and environmental health is crucial in alleviating herders.

In addition to overgrazing, climate change is an enormous threat that could easily destroy the wellbeing of Mongolian herders and their pastureland in a matter of decades. Due to climatic hazards, herders are battling an increased need to migrate with their animals far from settled areas to access better pasture, a practice that increases remoteness and threatens the sustainability of the entire country (Batima, 2006). In Mongolia, the risk of climate change has dramatic impacts on the economy and natural systems, livestock being among one of the most vulnerable systems (Batima, 2006). The pastoral population is a critical part of Mongolia’s wellbeing, so the destruction and disappearance of pastureland would be detrimental environmentally, economically, and culturally. Climate change is especially relevant in Bayan-Olgii because warming is more pronounced in the mountainous areas and its valleys (Batima, 2006). This will only become more critical as the years go on and more land comes into question. The combination of climate change, human activity, and the “tragedy of the commons” are threatening the beauty and productivity of Mongolia’s natural environment.

The infrastructure of Mongolia's Protected Area Network⁴ serves as a viable and promising approach to protect against future development and promote the continuation of positive environmental behaviors for the pastoral population. A protected area is described as a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (Dudley et al., 2010). This infrastructure would greatly benefit Mongolia's landscape. It would allow herders to continue grazing their animals on the conserved land while also protecting them from development and industry.

This study will not focus on the effects of industry, but will explore the possibility of how protected areas can benefit pastoral communities amidst the multiple environmental problems they are presented with. If no action is taken, herders will continue to be caught in the "tragedy of the commons". Mongolia holds a centuries old tradition of nature conservation through the implementation of protected areas, however rangelands remain under-represented (Reading, Bedunah, Amgalanbaatar, 2006). This study will determine whether including pastureland into the Protected Area Network could extract modern herders from the situation they are currently stuck in. I will explore whether land conservation can sustainably protect and save pastoralism and pastureland for the future.

Typically, the urban population makes the decisions regarding pastureland use and management. This study will focus on the pastoral perspective, and will consider how herders can play into the decision-making process in the future. After gaining a deeper understanding of the

⁴ The land conservation system utilized in Mongolia, which includes four types of protected areas (PAs). All four types are regulated differently, which affects the activities allowed in each. The four PA's are Strictly Protected Areas (SPA), National Parks (NP), Natural Reserves (NR), and National Monuments (NM) (Moore et al., 2011). If pastureland were conserved, it would likely become a National Park or Natural Reserve.

herder perspective, the conservationist perspective will also be considered to determine the major contrasts concerning land management practices. This study will promote an approach that combines the mentalities of herders and conservationists to create a beneficial situation for both groups.

After reviewing previous studies on pastoral communities and discussing the details of land conservation culture in Mongolia, this study will focus on herders' perceptions of land conservation in Tolbo *soum*⁵, Bayan-Olgii *aimag*⁶. This case study aims to provide a relevant resource when considering the protection of land and the traditional pastoral livelihood in Tolbo *soum*. The study will provide a detailed account of the pastoral perspective, which will be a useful resource for conservationists and government officials when making land management and conservation decisions. Hopefully, with this information, the land management decisions currently forced upon the pastoral population will be more informed and better designed with the pastoral perspective in mind.

This study strives to answer the question: Is a herder's historically deep connection with the land enough to protect the modern pastoral lifestyle in Mongolia for years to come? It was hypothesized that the pastoral lifestyle is a sustainable practice that could be greatly shielded from the threats of development and environmental degradation by including pastureland into the Protected Area Network. But, it was also hypothesized that herders would be wary of this development because of the alterations to their lifestyle that would likely follow. While in Tolbo *soum*, it was expected that mainly negative reactions to the implementation of protected areas would be encountered during interviews with herders. Additionally, it was expected that the interviews

⁵ Translated as district, a *soum* is the second level administrative subdivision in Mongolia.

⁶ Translated as province, an *aimag* is the first-level administrative subdivision in Mongolia.

with conservationists in Olgii and Ulaanbaatar would uncover a contrasting perspective; one that suggests land conservation is the best answer for the multitude of problems that herders face.

Over 80 percent, or approximately 126 million ha, is utilized by pastoralists for livestock grazing in Mongolia (Reading, Bedunah, & Amgalanbaatar, 2006). The large amount of land that pastoralism occupies in Mongolia makes the environmental issues facing herders relevant for the remainder of the population. Effectively conserving pastureland would help to ensure a sustainable rural economy and to preserve Mongolia's cultural and natural heritage (Reading et al., 2006). In this nation with a population hovering around three million people, it is easy to observe how problems facing the rural population also involve the urban population. Half of the nation's population depends directly or indirectly on the pastoral economy for its livelihood (Fernandez-Gimenez, 2002). Much of the population, excluding herders, is only one or two generations away from family members who were herders (Honeychurch, 2010). This nation-wide connection with pastoralism runs deep and makes the impending threats to this lifestyle all the more dangerous. The threats to the environment could jeopardize the wellbeing of the pastoral lifestyle, and subsequently the nation's cultural identity.

Literature Review

Since there is currently much debate surrounding pastoralism, there is a large amount of literature concerning how the pastoral population is battling the effects of climate change, human activity, and development. However, there is very little literature on how herder populations would react to land conservation and a new land management framework. I will rely heavily on literature explaining the details of land degradation and issues with resources, but will look to interviews for cultural information surrounding land conservation and the preservation of the pastoral tradition. Much of the published literature explains the

environmental benefits of conservation, so this study will provide a source focusing on the possible cultural benefits and drawbacks. The combination of published literature and interviews will provide a well-rounded set of data that is grounded in previous works while introducing new aspects of pastoralism.

The published literature that explores the management and productivity of pastureland in Mongolia, and its relation to the wellbeing of pastoralism, focuses on three main perspectives: historical, environmental, and cultural. After discussing select studies from each perspective, and explaining how aspects of each are useful for my research, I will suggest an approach that could benefit pastoralism. This study will mainly contribute information to the cultural viewpoint, which is not as widely researched, especially when considering the combination of pastoralism, pastureland conservation, and the Protected Area Network in Bayan-Olgii.

The historical perspective considers the previous land management practices utilized in Mongolia throughout the years, and how those practices could be relevant in today's situation. It is useful in that the modern framework could potentially learn from previous practices. Maria Fernandez-Gimenez provides two studies that contribute greatly to the historical perspective and are very relevant to this study because of the detailed discussion of pastureland management. Fernandez-Gimenez's studies are titled *Land Use and Land Tenure in Mongolia: A Brief History and Current Issues* (2006) and *Sustaining the Steppes: A Geographical History of Pastoral Land Use in Mongolia* (1999). Both studies explore the land management practices historically implemented in Mongolia. Fernandez-Gimenez advocates for the reintroduction of select pastureland management practices because it would greatly benefit Mongolia and would work towards decreasing the rate of pastureland degradation.

Land Use and Land Tenure in Mongolia: A Brief History and Current Issues (2006) reviews land use and tenure by considering the

effects of privatization and the laws of the land. Fernandez-Gimenez (2006) explains how history can positively influence the current land management situation. She argues, "History matters, and that to understand current pastoral land use patterns and policies in Mongolia, a historical perspective is useful" (Fernandez-Gimenez, 2006). The practices that she specifically cites as useful are the consideration of human well-being and livelihoods, co-management between herders and a local government, and the implementation of regulatory institutions (Fernandez-Gimenez, 2006). It is clear that Fernandez-Gimenez has spent a sufficient amount of time in herding communities studying their perspectives and their knowledge of the current issues. She nicely ties the pastoral and governmental perspectives together when explaining why certain historical practices could be useful for the future of pastureland quality.

The well-being and livelihood of herders must be considered when revising pastureland management, and co-management appears to be a beneficial mechanism for all involved. However, the reintroduction of previous practices may not prove to be completely positive for pastoralism. With the rapid economic and urban growth that Mongolia is now experiencing, the reintroduction and implementation of previous practices does not seem the most sensible. The practices that once benefitted pastoralism were not competing with the uncontrolled growth of industry. Creating a new pastureland management framework would protect and benefit pastoralism while attempting to curb the uncontrolled expansion of industry.

Sustaining the Steppes: A Geographical History of Pastoral Land Use in Mongolia (1999) similarly reviews how pastoralism has been affected and altered based on the legal environment of Mongolia throughout time. This study provides a longer timeline, starting with the origins of the Mongol Empire and the emergence of Chinggis Khan's policies and ending with modern practices. Fernandez-Gimenez's (1999)

main argument states that, “once elaborate herding patterns and practices have changed incrementally over time, transforming once truly nomadic Mongol tribes into a seminomadic population of extensive livestock herders.” The study explains that the changes in the governmental structure have caused many issues for herders throughout history and suggests that a combination of formal and informal regulatory institutions could potentially solve the problem (Fernandez-Gimenez, 1999). This deep look into the history of pastoralism provides a broader picture of how pastoralism has changed throughout time.

It is clear that the drastic changes in the Mongolian governmental structure have heavily impacted the pastoral lifestyle through the frequent alterations to the pastureland management framework over the years. Fernandez-Gimenez (1999) provides a useful resource for comparing land management and pastoral practices, but does not provide a detailed account of how these suggestions would benefit *modern* pastoral communities. The concern of maintaining the pastoral lifestyle is not addressed in detail. This study will expand on modern herders’ personal perspectives, which will help to better understand how the pastoral population thinks their tradition will progress in the future. The consideration of this perspective will be based around the hypothetical situation of their pastureland being included in the Protected Area Network.

The historical viewpoint helps to understand the progression of pastoralism within a greater historical context, and explains the current land management framework. Moving from specific land management practices, there is a large section of literature concerning the legal environment of land management and conservation. This perspective also includes the historical perspective to a degree because of the consideration of previous land laws and policies. A majority of the published literature centered on the legal viewpoint provides suggestions for the revision of current legislation. Although herders’ perspectives must

be considered if large revisions to the current legislation are to be made in the near future, this study will not focus on the legislation associated with environmental and pastureland protection.

In addition to the historical and legal viewpoints, the environmental perspective is widely utilized when discussing pastureland issues. This environmental evaluation focuses heavily on explaining the protection of biodiversity, rangeland health, and the current land management framework. The conservation of species brings many studies within the environmental viewpoint to consider conservation and the implementation of protected areas as an option for protection. This perspective typically is much more focused on the preservation of the environment compared to the preservation of inhabitants of the land.

One brief, but relevant example of the environmental viewpoint is a study titled *Is Rangeland Health Relevant to Mongolia?* (2008). In this study, Damdinsuren, Herrick, Pyke, Bestelmeyer, and Havstad (2008) uncover some causes of rangeland degradation and briefly consider the future challenges facing Mongolia's pastureland. The article outlines the importance of pastureland to the wellbeing of the entire Mongolian population. Mongolia is the least-densely populated nation in the world and has one of the smallest economies, which explains why the country relies so heavily on pastureland to support its growing population (Damdinsuren et al., 2008). The main solution that the study suggests is the implementation of rangeland assessments.

The study outlines the correlation between rangeland health and the Mongolian population, but does not elaborate on how to fully solve the impending threats to this valuable resource. The importance and relevance of the problem are made clear, but the study does not provide detailed information beyond this. In comparison, this study will explicitly explain why pastureland is important when considering pastoralism. The consultation of conservationists will incorporate another perspective for how rangelands can be better managed to promote the wellbeing of

herders and the general Mongolian population. This study will incorporate degrees of the environmental perspective while remaining centered on the cultural viewpoint.

Reading, Bedunah, and Amgalanbaatar provide a study (*Conserving Biodiversity of Mongolian Rangelands* (2006)) that discusses the possibility of improving the conservation of biodiversity by strengthening the management of protected areas. After explaining the importance of biodiversity to pastureland conservation, the study explains the need for an increase in the amount of rangeland currently included in the Protected Area Network. The study conducted by Reading et al. (2006) is similar to this study in that it explains how conservation can alleviate many pastureland issues while simultaneously protecting important species. The article addresses threats to biodiversity, protected area management, and the conflict between pastoralism and conservation, making the study unique in that it smoothly incorporates degrees of the cultural perspective in addition to the environmental viewpoint. It is briefly stated that, “pastoralists remain among the staunchest supporters of conservation initiatives in Mongolia” (Reading et al., 2006). This study will dispute that broad statement by elaborating on herders’ perspectives. Instead of focusing on how conservation can protect important species, this study will focus on how conservation can protect an important culture (pastoralism). The study conducted by Reading et al. (2006) covers many topics that all fall under the environmental perspective, but does not delve deeply into the mentalities behind pastoralism.

A final study from the environmental perspective is *Reversing Grassland Degradation and Improving Herders’ Livelihoods in the Altai Mountains of Mongolia* (2004). The study is particularly relevant to my research because it was conducted in Deluun *soum*, a neighbor *soum* of Tolbo (shown in Figure 3, Page 16). The researchers interviewed herders, community leaders, community-level government officials, and

provincial level staff at two different ministries. They identify three main challenges: how to unlearn a centrally planned society, how to handle the current economic and political situation, and how to develop a pasture management system that is sustainable in the long run and across the country, while considering the interests of all stakeholders (herders, government officials, and Mongolian society) (Ykhanbai et al., 2004). It is admitted that the only way out is collective reflection and action with the involvement of all stakeholders (Ykhanbai et al., 2004).

My study will address many of the same issues as the studies from the environmental perspective, but instead of focusing on the importance of biodiversity, I will focus on the cultural perspective, or how herders view the potential inclusion of pastureland into the Protected Area Network. The herders' perspective is of great importance as they are the inhabitants of the affected land and deeply understand the details of its health. In order for any changes to occur in the management of the land, it is crucial that the occupants be consulted. This study will tie together the pastoral and conservationist perspectives to determine an approach that combines the two and allows for a healthy balance between environmental health and economic growth. I will build off the research of Ykhanbai et al. (2004) in *Deluun soum* by expanding on how herders respond to conservation and current land management practices while also consulting conservationists on their thoughts for ideal approaches to the conundrum of pastoralism and pastureland health.

Mongolia naturally attracts research relating to the cultural viewpoint because the maintenance of the traditional nomadic lifestyle is considered incredibly unique and rare. Although there is much literature published on the cultural aspects of the pastoral lifestyle, few studies contemplate the effects of conservation on the pastoral livelihood within Bayan-Olgii. The cultural perspective is mostly constituted by studies conducted on the lifestyle and traditions of the unique population of pastoralists.

Within the cultural viewpoint, Maria Fernandez-Gimenez provides two additional studies, *The Role of Mongolian Nomadic Pastoralists' Ecological Knowledge in Rangeland Management* (2000) and *Spatial and Social Boundaries and the Paradox of Pastoral Land Tenure: A Case Study From Postsocialist Mongolia* (2002). The first study addresses how pastoralists' ecological knowledge (domestic livestock-climate-vegetation interactions) influences current pastureland management practices, and how it can be harnessed to promote the successful self-regulation of pasture use. After explaining the prevalence of pastoralists' ecological knowledge, Fernandez-Gimenez (2000) admits that, "herders may lack the necessary incentives to reorganize institutions to coordinate pasture use among themselves." She goes on to discuss how this ecological knowledge can be utilized, but does not provide a detailed explanation of how it could be incorporated in the future.

The second study, *Spatial and Social Boundaries and the Paradox of Pastoral Land Tenure: A Case Study From Postsocialist Mongolia* (2002), looks into the difficulties of defining boundaries around resources when considering the combination of flexibility and reliability needed to be a successful pastoralist. After defining pastoral land use terms and providing an historical background of pastoral tenure, Fernandez-Gimenez (2002) criticizes the current pastoral land use style. She states it is a "downward spiral of decreasing mobility and increasing out-of-season grazing" (Fernandez-Gimenez, 2002), which is validated through her time spent researching in Bayankhongor *aimag*. After criticizing the current methods, Fernandez-Gimenez (2002) suggests three possible approaches: tenure formalization through land registration and leasing, pastureland comanagement, and regulation of seasonal movements. The study concludes by elaborating on each approach.

The three approaches mentioned by Fernandez-Gimenez (2002) are valid options for pastureland management, but seem to trap the pastoralists in a rigid structure. Pastureland would likely benefit from

minor alterations to pastoralist behavior, but would subtract from the traditional pastoralist practices that the herders have implemented for decades. A combination of traditional and modern methods could help herders to maintain the quality of their pastureland. Conserving pastureland would provide this balance between traditional and modern because the approach allows for more independence and accountability from the herders while certain harmful practices are simultaneously removed.

After considering climate change, human activity, and “tragedy of the commons, this study addresses how herders can improve the quality of their pastureland through inclusion in the Protected Area Network and the implementation of a community-based approach. This approach will hopefully provide a situation where herders are accountable for managing their land properly. Exploring the ideas of herders and conservationists is more likely to produce an optimal situation for both groups. This study discusses the environmental issues that herders now face while describing a viable method that can protect pastureland and the pastoral lifestyle in Mongolia for the future.

Methods

Reason for Study

I explore whether a herder's connection with the land is enough to save their pastureland and the natural landscape from future degradation, and how land conservation could positively impact this situation. With a little preliminary research, it became apparent that there is a large gap in the conservation mentalities between the rural and urban populations in Mongolia. This naturally led me to develop a study that included interviews in both rural and urban areas. I look into the idea of a herder's sense of place and how this historically significant lifestyle can benefit Mongolia in the future.

But, I also discover what the conservationist population thinks is best for Mongolia's pastureland. Since the urban population typically makes most conservation decisions for rural areas, I explore how the herder's voice can play into this decision-making process. I developed an interest in the conservation culture of Mongolia, and wanted to learn more about what is being conserved and why. All of these interests culminate in a study that includes consulting herders in the Altai mountains and conservationists in the nation's capitol.

Reason for Location of Study

This study was mainly conducted in Tolbo *soum*, Bayan-Olgii *aimag* in Western Mongolia (Figures 2 & 3). I chose to conduct the majority of my research in Bayan-Olgii because I was interested in learning more from the small, unique Kazakh population living in this region. This location allowed me to compare the Kazakh culture and perspective to what I have previously observed of the rural Mongolian population and to better understand the perspectives on land conservation in an area containing such natural beauty. It allowed me to build on the Mongolian

perspective I have briefly encountered, and also simultaneously allowed for the exploration of a new tradition (the Kazakh culture).



Figure 1: Bayan-Olgii is the westernmost *aimag* in Mongolia (country shown in green between Russia and China). Bayan-Olgii is located only about 40 km from the eastern border of Kazakhstan.

Time & Length of Study

The research for this study was conducted in early winter (November) in Bayan-Olgii and Ulaanbaatar. The families in Tolbo *soum* were living in their winter houses at this time. November 7 – 8 and November 14 – 16 were spent in Olgii. While in Olgii, I lived with my guide/translator and his family. November 8 – 14 was spent living with a Kazakh herding family in Tolbo *soum*. My guide/translator accompanied me to Tolbo *soum* for the duration of my time there. November 18 – 30 was spent in Ulaanbaatar interviewing conservationists and composing my written report.

Participants

During my time in Bayan-Olgii, I conducted a total of eleven interviews. Ten interviews were conducted with Kazakh herders in the mountains of Tolbo *soum* and one interview in Olgii with a local conservationist. Of the interviews conducted in Tolbo *soum*, all participants were Kazakh herders between the ages of 24 and 88. The participants were both male and female. All participants in Tolbo *soum* were contacted by the translator and all verbally agreed to participate in the study prior to the interviews. The interviews in Tolbo *soum* were conducted in the participants' homes. The interview with the conservationist was held in his office, in Olgii, upon appointment. My academic advisor provided me with his contact information beforehand.

Monetary compensation was offered for all interviews in Bayan-Olgii. It was recommended by my guide/translator beforehand. After each interview, the participant was offered 10,000 tugrik for their participation. The same amount was offered to the conservationist in Olgii, but was refused. Besides that encounter, all families in Tolbo accepted the compensation.

While in Ulaanbaatar I conducted interviews at two international Non-Governmental Organizations (NGO's). I worked from the same list of questions that I developed for the interview with the conservationist in Olgii. Both interviews were held at the participants' offices. The contact information for the participants was found online on their organizations' websites. Emails as well as phone calls were used to contact the participants. No monetary compensation was provided for these interviews.

Procedure

Every interview was recorded using a portable recording device. All interviews in Bayan-Olgii were translated from Kazakh to English with the help of my translator. The interviews in Ulaanbaatar were conducted in English, so no translator was hired. Additionally, I took notes during every interview and transcribed the recordings from all interviews. I developed separate lists of interview questions for herders and conservationists prior to my trip to Bayan-Olgii. I also prepared a consent form that informed all participants of the intentions of my research. Every participant physically signed a consent form, and I did as well. My translator translated the consent form verbally for all participants in Bayan-Olgii. I sent my interview questions and consent form to my translator before my arrival in Olgii, which allowed him to become more familiar with my research and my aims for the study.

I traveled to Bayan-Olgii with a fellow researcher from the group of SIT students, Kathryn Middel-Katzenmeyer. Our research topics are very similar, and due to the cost of the interviews we decided to conduct joint interviews while in Bayan-Olgii. This allowed us to collaborate on transcribing and note taking. For the ten interviews in Tolbo, Kathryn took handwritten notes in my journal while I interviewed the participants, and I also took handwritten notes for her while she interviewed. I personally took handwritten notes during the interviews in Olgii and Ulaanbaatar.

Reason for Data Collection Method

Interviews were chosen for this study because this method allows for a more personal conversation about the topic. They provide the researcher with a visual picture of how the participant feels towards the questions and the research overall. They also visually display how the translator is portraying the questions and the reaction of the participant to the questions. Additionally, interviews allow for a more spontaneous approach to participants' responses. If a participant provides an interesting or vague response to a question, interviews provide a suitable environment for follow-up questions.

Surveys were contemplated, but eventually decided against because of how sparsely populated Tolbo *soum* is. It would have been extremely difficult to disperse enough surveys throughout the area and collect them with the time and monetary constraints of the research period. Surveys also posed the problem of translation. The time constraints of the trip would not have provided ample time for the translator to translate the surveys before my departure from Bayan-Olgii.

Although interviews allow for personal interaction with the research participants, the problem of direct translation is automatically presented. Based on the consistency of answers from most participants, it was clear that a few questions were misunderstood by the translator, and were not being translated correctly. Specifically, one question concerning whether herders had a say in what land was conserved instead produced responses of *why* protected areas were in place within Tolbo. Interviews also have the possibility of intimidating participants because of the close interaction of the participant and the researcher. Participants may feel pressured to produce certain answers for the researcher, which made it particularly important to remain non-judgmental when hearing participants' responses during the interviews.

It is possible that if a survey had been distributed, the participants may have felt more comfortable sharing their negative views of protected areas and current land management practices. But, given the variety and the timing of the responses, this study did not seem to experience this problem too deeply. Another benefit of surveys is that they allow for a more direct translation. But, given the timeframe of the research period, the number of interviews conducted in Bayan-Olgii and Ulaanbaatar are sufficient for this study.

Results & Discussion

Results

In the ten interviews conducted with herders, I encountered many of the same answers to questions posed (Appendices A), which provides this study with fairly uniform data for the herder viewpoint. The three interviews conducted with conservationists provided much more varied perspectives (Appendices B). All three conservationists stated that they grew up in Western Mongolia close to the Altai mountains (Olgii, Khovd aimag, and not specifically stated). When interviewing the herders, both husband and wife were typically present for the questioning. However, the husband's perspective was the one voiced while the wife remained silent for a majority of the conversation, providing small comments intermittently. As a result, the information from each interview with a herder will be derived solely from the male participants.

All interviews with herders were translated, and it was apparent from the consistency of answers that some questions were not translated correctly. Additionally, the consistency of answers was likely influenced by the similar ages of participants in Interviews 1 – 10 (Figure 4). The herder under the age of 30 did not provide concrete answers to many questions and instead stated that his father (also interviewed) still made decisions for the family regarding their pastoral livelihood.

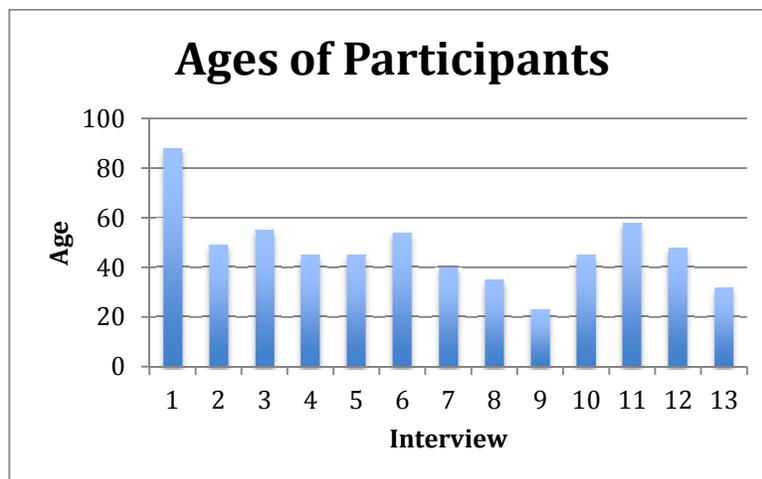


Figure 4: The average age of interview participants is 47.46 years old. Interviews 1-10 include participants who are herders, and Interviews 11-13 were conducted with conservationists. (Appendices A, Question 1 / Appendices B, Question 1)

Occupations of Participants

Herder	10
Conservationist	3

Table 1: Three herders stated that they had previous jobs (two electricians and one elevator attendant). The conservationists specifically stated their positions were Executive Director, Director of Conservation, and Program Implementation Manager of their respective organizations. (Appendices A, Question 2 / Appendices B, Question 2)

Length of Time in Tolbo soum - Herders

From Birth	8
30 years	1
Lives in Deluun soum	1

Table 2: A majority of participants stated they have spent their whole lives in Tolbo. This was partially due to the fact that five of the ten interviews with herders were with men from the same family. One participant stated that he lived in Kazakhstan and Russia for brief periods of time after his birth in Tolbo, but has since returned and plans to stay. Another participant stated that he moved from Deluun *soum* to Tolbo because his relatives are buried in Tolbo. The participant that lives in Deluun came to Tolbo to take us eagle hunting; he lives just over the *soum* border. Consult Figure 3 (Page 16) for a map of Tolbo and Deluun *soums* in relation to Bayan-Olgii *aimag*. (Appendices A, Question 3)

Consideration of Moving From Tolbo soum - Herders

Yes	0
No	5
Maybe	4
Don't Know	1

Table 3: Of the participants that stated “No”, one herder explained that he has complete trust in his land. The herders who responded “Maybe”

suggested that they would consider moving to Kazakhstan or Olgii during a bad *dzud*⁷. (Appendices A, Question 6/7).

Purpose of Protected Areas - Herders

To protect rare animals and/or medicinal plants	9
N/A	1

Table 4: This question was not translated correctly for a majority of the interviews with herders. Based on the consistency of answers shown, it was translated to ask herders *why* protected areas are in place instead of if herders have a say in what land is conserved in Tolbo. The question was translated correctly for Interview #1, and the participant responded that he had no say in what is conserved (this response is shown as N/A). Of the participants that stated protected areas are for animals and plants, one also included that they are for natural resources, one stated that they are to keep the grasses long to prevent against a potential *dzud*, and one stated that they are a potential resource for the future. (Appendices A, Question 13)

Interest in Conserving Pastureland - Herders

Yes	0
No	6
Maybe	2
Don't Know	1

Table 5: When the herders were asked if they would ever want their pastureland included in the Protected Area Network, a majority of the participants replied “No”. The reason stated by five of the herders was that their pastureland did not contain the rare animals or plants that require preservation, so essentially there is nothing to protect on their land. (Appendices A, Question 15)

Interest in Conserving Pastureland – Conservationists

Yes	1
No	1
Maybe	1

⁷ Extreme weather conditions for an extended period of time (a summer drought followed by a severe winter). This often results in a serious loss of livestock.

Table 6: All three conservationists provided different answers to this question. The participant that said “Yes” explained that setting aside land could help herders to protect their grasslands and water. One participant stated “No”; his reasoning being that the daily lives of herders would be crushed, so education for herders is more important. The third participant stated “Maybe” because of the different types of protected areas, which correlate with varying degrees of strictness; according to this participant, the decision would depend on the activities allowed in the protected area. (Appendices B, Question 12)

Visible Changes in Land of Tolbo soum - Herders

No	5
Yes	5

Table 7: The participants were asked if they have witnessed noticeable changes in the land of Tolbo over the years. Two participants stated that the land has changed because of bad *dzuds*. Four participants explained that they saw changes in the weather (two explicitly stated the reason is global warming). Of those four participants, one stated that the land was changing negatively as a consequence; the other three participants only cited changes in weather. (Appendices A, Question 10).

Desire to Change Land Management Practices - Herders

No	8
Yes	2

Table 8: A majority of the participants stated that they did not want to change the current land management practices. Of the two that responded “Yes”, one stated he would want to own his land instead of the current government ownership, while the other explained that the management system would probably change over the years regardless. One of the participants that responded “No” explained that the current framework allowed him to voice his concerns to the government if he encountered any issues. (Appendices A, Question 19)

Is a Herder’s Connection With the Land Enough to Save the Pastoral Lifestyle in the Future? - Herders

No	0
Yes	10

Maybe	0
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Table 9: All herders stated that their current practices protect pastoralism and the land. Five participants stated that they need to protect the land for their descendants, and they have complete trust in their descendants to carry on the pastoral tradition. One participant briefly mentioned that the only situation that might cause him to stop protecting the land would be a *dzud*. (Appendices A, Question 17)

All herders were asked the same set of questions, but follow up questions were posed if further explanation was needed. The interviews with herders developed and changed as I met with more people. I discovered that framing my questions slightly differently usually provided me with more detailed responses. It was often difficult to get the herders to elaborate on their answers. This often occurred when I posed hypothetical questions.

The interviews with conservationists varied greatly from one another, and all three participants provided much longer answers to all questions. The set of questions was not as concrete because the background and positions of the conservationists varied, which led the interviews in different directions making it more difficult to create charts that succinctly display their responses. This also makes the interviews almost impossible to compare to each other. It does not provide uniform data, but instead provides personal opinions on a variety of environmental and conservation topics.

All three conservationists were born in Western Mongolia, near the site of my research, which appears to correspond with a strong desire to protect the natural world of their birthplace. Every interview I conducted with a conservationist began with a description of their position at their organization to better understand their background and relation to pastoral communities. When asked what they would change about the current land management framework, the first participant stated that he would like to see an official transfer of land to herders. He also strongly advocated for the education of herders instead of the conservation of pastureland.

The second participant stated that the current framework must change to accommodate a framework that is balanced and better planned for multipurpose land uses. The third conservationist advocated strongly for community-based management and an increase in the consideration of herders and locals. The variety of answers related directly to the projects that their respective organizations are currently implementing.

The three conservationists elaborated on the projects that their organizations are currently working on implementing. The first conservationist explained that his organization is working with local governments in Bayan-Olgii to transfer land to herders, an approach that supports co-management. The goal is to implement this project throughout Bayan-Olgii and all five western *aimags* in Mongolia. This relates directly to his desire to promote education over conservation.

The second conservationist is working towards the national goal of protecting 30% of Mongolia's grasslands, a project largely focused in the eastern steppe region. Additionally, he mentioned that his organization helps to mitigate impacts of development and helps to ensure effective management in protected areas. This conservationist would like to see large areas of pastureland included in the Protected Area Network in the near future. This inclusion will work towards the goal of 30% and will prevent against future development.

The third conservationist stated that his organization focuses on high-priority regions concerning species conservation and protected area management in Mongolia. He works to implement a community-based approach in the Altai and in the eastern region of Mongolia. This conservationist was hesitant to say "Yes" to the conservation of pastureland, and instead spoke positively and passionately about community-based management approaches as an effective method of educating and involving herders.

Interviews #1 – 10 provide uniform data while Interviews #11 – 13 display varied data. The perspectives of herders and conservationists

differ greatly from each other, and the conservationists' perspectives vary greatly from each other as well. It is difficult to identify patterns from the information gathered from interviews with the conservationists. However, the perspectives that the conservationists provide are useful for the consideration of how their respective organizations could be involved in the implementation of a restructured land management framework.

Discussion

The purpose of this study is to explore whether the pastoral lifestyle is a form of conservation in itself, whether herders view the possibility of conserving their pastureland as a positive option, and how the conservationist perspective factors into the preservation of pastoralism and pastureland. When considering the interviews conducted with herders, it is easy to observe significant patterns because all herder participants share very similar backgrounds. The age, occupation, and place of birth were almost identical for all herders interviewed. It is much harder to make solid connections between the conservationists because most of their responses were guided and influenced by the differing aims and goals of their respective organizations. A limitation of this study is the nonexistence of interviews with participants from the same organization, which would have allowed for more of a comparison between responses.

The difference between the herders' and conservationists' perspectives is likely due to their drastically different backgrounds. Conservationists are well educated on the details of the environment and the conservation framework, while herders are well informed on the productivity of their land (through years of observation and knowledge that has been disseminated through families and communities) and the details of animal husbandry. After reviewing the information from the interviews conducted, there are significant findings that explain the herder mentality in more detail. Meanwhile the conservationist perspective displays

individual opinions on the conservation of pastureland and the natural world.

Overall, it is likely that the Kazakh herders interviewed will never give up herding, the reason being that they want to protect their tradition. The culture and tradition that they are working so hard to preserve naturally includes the protection of pastureland. These Kazakh herders are essentially keeping pastoralism alive because their culture and tradition incorporates the practice of animal husbandry. The knowledge that their ancestors successfully protected their tradition is enough to make these herders guard the Kazakh culture for their descendants. One participant accurately represented this by stating, “We will protect it [the land] until we die” (Personal Communication, November 11, 2014).

It quickly became clear that Kazakhs place an enormous emphasis on family. It was explained to me that it is traditional for everyone in Kazakh culture to know the names of the past seven generations of ancestors (starting with father, grandfather, and so on). Another cultural tradition that promotes the significance of family is the tradition that the youngest child in a family is responsible for the parents until their deaths. The focus on family and preservation of the Kazakh culture is crucial for the protection of pastoralism and pastureland in Bayan-Olgii.

However, this desire to preserve the Kazakh lifestyle and tradition results in a noticeably hostile attitude towards any degree of change. Any question that inquired about possible changes to the herders’ daily lives received predominantly negative responses. This made it apparent that the herders interviewed are wary of transformations to their lifestyle. It appears that the Kazakh herders are content with their lives, extremely proud of their culture, and want to continue their lifestyle without change. This is a positive aspect of the Kazakh tradition because it results in the inevitable protection of pastoralism and pastureland. However, it also results in vulnerability; the herders are currently vulnerable to the

degradation of natural resources and the introduction of industry in Bayan-Olgii (predominantly the threat of mining).

An encouraging thought that could soften the Kazakhs' dislike of change is conservation culture in Mongolia. In his book, *Fragile Environment, Vulnerable People and Sensitive Society* (2007), Batzhargal states "Nature conservation activities in Mongolia are based on the concept 'nature with man' and 'nature with nature', unlike the concept 'nature for man' that is being followed in many industrialized countries". This study accepts and supports that notion and provides an approach that will be based around this idea. When implementing a community-based approach, this idea promotes the maintenance of the Kazakh tradition with little change to their lifestyle.

There appears to be a large gap in the herders' knowledge and awareness of Mongolia's Protected Area Network. Every participant is aware of the location of the protected areas within Tolbo *soum*, but no response displays a deep knowledge of the extent of the Protected Area Network. For example, no response elaborates on the four different categories of protected areas, the degree of regulation/strictness in each, or the reasoning for a protected area beyond preserving rare animal and plant species. The study conducted by Reading et al. (2006) defies this mentality by stating that "there is evidence of progress toward improved management and establishment of a system of protected areas is a good first step for protecting and conserving natural resources and may help pastoralists to maintain their livelihoods." Reading, Bedunah, and Amgalanbaatar (2006) identify that the conservation priorities in Mongolia go beyond protecting just animals and plants. This study builds off that idea by expanding on the possibility of incorporating a community-based management approach, which would contribute to protecting pastoralism, pastureland, and natural resources.

The gap in knowledge of protected areas also highlighted the herders' mentalities that there is nothing to protect on their land. During

one interview a participant stated, “There is nothing to protect where I am sitting” (Personal Communication, November 12, 2014). This mentality explains why an overwhelming number of the herders interviewed stated they do not want their pastureland included in the Protected Area Network. The sense that there is nothing to conserve does not contribute to an interest in or desire to protect pastureland. If a majority of herders in Tolbo possess the mentality that there is nothing of value on their land, they will remain vulnerable to development and resource degradation.

However, herders will likely continue to protect the land because of the cultural significance the land holds for its inhabitants. The land in Tolbo is the birthplace and homeland for these herders and their future descendants. Rights to pasture acquired through direct inheritance hold the greatest force because lineal inheritance is a longstanding basis for pasture rights in Mongolian society (Fernandez-Gimenez, 2002). This tradition of inheritance and connection to one’s homeland subconsciously force herders to protect their land and continue their tradition. Herders know their land better than any outsider, but the impacts of climate change will inevitably change the traditional pastoral practices. In the near future, herders will need to adjust to the changes in land and resource abundance and quality.

There was little mention of the degradation of land or resources in Tolbo or Bayan-Olgii. Global warming is mentioned as a possible cause for the change in weather, but is never associated with land degradation or pastureland quality. Bayan-Olgii is a region that does not struggle as greatly with the scarcity of resources compared to other regions of Mongolia (the Gobi desert being an obvious example). However, all areas of the country are feeling the effects on their resources to an extent. It was surprising to hear nothing about changes in the land quality, except for the effects of the *dzud* years from 1998-2007 (Personal Communication, November 13, 2014). The impression that the pastureland quality is still good and there is nothing to protect on the

herders' land in Tolbo contributes to the impression that a protected area would be pointless. This mentality is disputed in the study titled *Is Rangeland Health Relevant to Mongolia?* It is argued that rangeland health can be used to help increase short-term productivity and long-term sustainability of Mongolian rangelands (Damdinsuren et al., 2008); a view that supports the recommendations made in this study to conserve pastureland to promote productivity in the future. So amidst the threats of land and resource degradation and the importance of the pastoral tradition, is educating herders or including them in the Protected Area Network more important?

The interviews with the conservationists help to answer this question, but all three express different opinions on the future of pastoralism. Given their backgrounds, the conservationists are very informed and educated on the effects of conservation and land degradation on pastoralism. Essentially, one advocates for education and the other two advocate for conservation (of the two that advocate for conservation, one is much more adamant). The responses vary based on the level of interaction between their respective organizations and herding communities. The participant that advocates for education interacts closely with herders through education programs his organization offers to herders. The participant that tentatively advocates for conservation works closely with herders to implement community-based management programs. He stated he is wary of conservation because of the alterations that conservation would bring to the pastoral lifestyle. The participant who definitively states that conservation is the best option does not work closely with herders. He believes that conservation will benefit herders because it will protect their land and resources. The degree of interaction with herders appears to greatly impact the opinions of the conservationists and their thoughts on an optimal situation for the future.

The community-based management method mentioned by two of the conservationists would create a balance between education and

conservation because herders would be held accountable for the management and wellbeing of their land within a protected area. These findings are supported by the study conducted Reading, Bedunah, and Amgalanbaatar (2006). The authors state that, “Community-based approaches to conservation offer a variety of methods to help local people and conservationists avoid and manage conflict.” Community-based approaches would bring together herders, conservationists, and government officials and would result in a healthier future for pastureland and pastoralism.

Additionally, the study conducted in the Altai mountains by Ykhanbai et al. (2004) also advocates for a community-based approach in Bayan-Olgii. The study promotes the formation of *bag*⁸ level herder groups, the formation of *soum* level co-management teams (composed of *soum* and *bag* governors and community leaders), and joint pasture improvement practices (Ykhanbai et al., 2004). The community-based management framework appears very effective as mentioned in the two studies mentioned. This framework involves all stakeholders and helps those involved to all agree upon terms for the management of the land. If proven effective, this framework has the potential to be implemented nationwide. The potential for community-based management is great, and based on the findings of this study, it proves to be a method that would incorporate all factors needed for the revision of the current land management framework.

⁸ A subdivision of *soums* that divides families in the *soums* into groups.

Conclusions

This study discovers how pastoralism can be utilized as a form of environmental and cultural conservation, and how the conservationist perspective can contribute to the herder mentality on current land management practices. The focus of this study was determined after the consideration of multiple environmental and economic problems that are currently threatening the pastoral lifestyle. There is a great opportunity for Mongolia to achieve a healthy balance between environmental health and economic growth, and the conservation of land and resources is a viable method that can help to achieve this goal.

The consideration of the historical, environmental, and cultural perspectives incorporated in past literature provides a base to expand on. After interviewing multiple Kazakh herders, it became clear that the connection to their culture and tradition is strong enough to help protect pastoralism and pastureland in Bayan-Olgii for years to come. But, these pastoral communities are still very vulnerable to the threats of development and industry (mainly mining). Although the Kazakh pastoral communities represent their tradition proudly, they are not fond of change or the possibility of their pastureland becoming a protected area. This mentality appears to be caused by a lack of understanding of the extent of Mongolia's Protected Area Network.

This introduces the question of whether education or conservation is more important to the future of pastoralism. The conservationists' provide useful and varied perspectives on this question. It appears that their answers depend on the amount of interaction their organizations have with herders. After considering the current mentalities of the herders and the conservationists, as well as previous literature on pastoralism, it is clear that a community-based approach would greatly benefit all stakeholders (herders, conservationists, and government officials)

because of the required involvement of all participants in managing the land.

The findings of this study provide multiple opportunities for future research. Exploring the legal framework around conservation and a community-based approach would explore and promote the relationship between herders and government officials. Meanwhile a study concerning what land should be included in the Protected Area Network would greatly benefit herders and conservationists in that both groups would better understand the importance of specific areas. An additional study focused on the implementation of community-based management would be very beneficial in understanding what all stakeholders (herders, conservationists, and government officials) are seeking in this agreement. There are many prospects for future research that stem from the findings presented in this study.

Since the pastoral communities share such a close relationship with the land, they are experiencing the harsh effects of land and resource degradation, human activity, and climate change. In addition, the pastoral population feels the weight of supporting the remainder of the Mongolian population. During this crucial time, when urbanization, development, and economic growth seem advantageous, the Mongolian population cannot turn their backs on pastoralism. This livelihood that supports such a large majority of the population is the backbone of Mongolia's culture and tradition. Pastoralism has largely contributed to the maintenance of a healthy environmental balance for centuries; it is time to take action to restore that balance for the future.

References

- Batima, P. (2006). Climate Change Vulnerability and Adaptation in the Livestock Sector of Mongolia. *Assessments of Impacts and Adaptations to Climate Change*, 1-105.
- Batzhargal, Z. (2007). *Fragile Environment, Vulnerable People and Sensitive Society*. Tokyo: Kaihatsu-sha.
- Damdinsuren, B., Herrick, J., Pyke, D., Bestelmeyer, B., & Havstad, K. (2008). Is Rangeland Health Relevant to Mongolia? *Rangelands*, 30(4), 25-29.
- Fernandez-Gimenez, M. (1999). Sustaining the Steppes: A Geographical History of Pastoral Land Use in Mongolia. *Geographical Review*, 89(3), 315-342.
- Fernandez-Gimenez, M. (2000). The Role Of Mongolian Nomadic Pastoralists' Ecological Knowledge In Rangeland Management. *Ecological Applications*, 10(5), 1318-1326.
- Fernandez-Gimenez, M. (2002). Spatial and Social Boundaries and the Paradox of Pastoral Land Tenure: A Case Study from Postsocialist Mongolia. *Human Ecology*, 30(1), 49-78.
- Fernandez-Gimenez, M. (2006). Land Use and Land Tenure in Mongolia: A Brief History and Current Issues. *USDA Forest Service Proceedings*, 30-36.
- Hilty, J., Chester, C., & Cross, M. (2012). *Climate and conservation: Landscape and seascape science, planning, and action*. Washington, D.C.: Island Press.
- Honeychurch, W. (2010). Pastoral nomadic voices: A Mongolian archaeology for the future. *World Archaeology*, 42(3), 405-417.
- Mackinnon, K., Dudley, N., & Sandwith, T. (2010). Natural solutions: Protected areas helping people to cope with climate change. *Oryx*, 461-462.
- Moore, J., Antenen, S., Davaa, G., Ferree, C., D, B., DePhilip, M., ... McCready, R. (2011). Biodiversity Gap Analysis of the Grasslands and Forest Steppe of Central and Eastern Mongolia: Setting the stage for establishment of an ecologically representative protected area network for Mongolia. 11-36.

- Reading, R., Bedunah, D., & Amgalanbaatar, S. (2006). Conserving Biodiversity on Mongolian Rangelands: Implications for Protected Area Development and Pastoral Uses. *USDA Forest Service Proceedings*, 1-17.
- Vandermeer, J. (1996). Tragedy of the Commons: The Meaning of the Metaphor. *Science & Society*, 60(3), 290-306.
- Ykhanbai, H., Bulgan, E., Beket, U., Vernooy, R., & Graham, J. (2004). Reversing Grassland Degradation and Improving Herders' Livelihoods in the Altai Mountains of Mongolia. *Mountain Research and Development*, 24(2), 96-100.

Appendices

Appendix A: Interview Questions For Herders

General Background Information:

1. What is your age?
2. What is your occupation?
3. How long have you lived in Tolbo *soum*?

Lifestyle/Cultural Information:

4. How often do you move your ger?
5. How does your lifestyle change based on the season and location of your ger?
6. Have you ever considered moving outside of Tolbo *soum*?
 - 7. Would a lack of resources or land degradation ever cause you to do so?
8. Would you consider making changes to your pastoral lifestyle, such as herd composition or migratory patterns, if it meant positively impacting the land and the surrounding environment?

Historical Conservation Information:

9. If you grew up in Tolbo *soum*, does your current lifestyle differ greatly from when you were growing up?
 - 10. Has the land in Tolbo *soum* changed, positively or negatively, over the years?
 - 11. How have the land management practices changed since the transition to democracy?

Current Land Practice Information/Herder Perspectives:

12. What areas of land within Tolbo *soum* are being conserved?
 - 13. Do herders have a say in what is conserved?
 - 14. Do you feel that your perspective is heard in issues concerning the land you live on?
 - 15. Do herders generally want their pastureland conserved? Why?

16. Do you think protected areas are effective?
17. Do you think that a herder's historically deep connection with the land is enough to protect the modern pastoral lifestyle in Mongolia in the future?
 - 18. Or, is adding pastureland to the Protected Area Network the best solution to the threat of environmental degradation?
19. What changes would you like to see happen in the management of the land and the environment in Tolbo *soum*?

Appendix B: Interview Questions For Conservationists

General Background Information:

1. What is your age?
2. What is your occupation?
3. How long have you lived in Bayan-Olgii? OR How long have you lived in Ulaanbaatar?

Lifestyle/Cultural Information: (Olgii)

4. Have you ever considered moving outside of Tolbo *soum* or Bayan-Olgii?
 - 5. Would a lack of resources or land degradation ever cause you to do so?

Historical Conservation Information:

6. Has the land in Tolbo *soum* or Olgii changed negatively over the years?
7. How have the land management practices changed since the transition to democracy?

Current Land Practice Information/Herder Perspectives:

8. What areas of land within Bayan-Olgii are being conserved?
 - 9. Do herders typically have a say in what is conserved?
 - 10. Do herders want their pastureland conserved? Why?

Occupational Information:

11. Do you collaborate with conservationists in other areas of Mongolia facing the same land and environmental issues?
12. Do you think land conservation is helpful or harmful to the pastoral lifestyle?
13. Do you think that a herder's historically deep connection with the land is enough to protect the modern pastoral lifestyle in Mongolia in the future?
 - 14. Or, is adding pastureland to the Protected Area Network the best solution for the threat of environmental degradation?
15. What changes would you like to see occur in the management of the land and the environment?
16. Is your work well received by herders in all areas of the aimag?
17. What are some examples of conservation projects being implemented in the area?
18. Are there initiatives to educate herders on proper pastureland management?