

Spring 2015

Killing to Save: Trophy Hunting and Conservation in Mongolia

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SIT Study Abroad

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Killing to Save: Trophy Hunting and Conservation in Mongolia

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Mathematics

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Mongolia: Geopolitics and the Environment

SIT Study Abroad

Spring 2015

Abstract

Since transitioning to capitalism in 1990, Mongolia's wildlife has faced growing threats from the development of infrastructure, increasing livestock populations, and the expansion of an illegal trade in wildlife products. As wildlife populations face these growing risks, Mongolia needs to develop and implement strong wildlife management practices, including tighter enforcement of existing wildlife trade laws, more frequent wildlife population studies, and better legislation. However, these revisions will require significant funding. Trophy hunting, the system through which the Mongolian government sells wealthy foreigners expensive permits to hunt species like argali, ibex, wolf, and roe deer, may be a major source for these funds. While conservationists around the world argue that trophy hunting can support wildlife protection, Mongolia's trophy hunting has failed to do so over much of its history due to corruption, a weak scientific basis, a lack of benefit to local communities, and a failure to direct revenue back to conservation. However, a number of revisions were made to Mongolia's trophy hunting system in 2012 that may have improved its potential to serve as a conservation tool.

In this report, I investigate these changes and the current management of trophy hunting in Mongolia. Is trophy hunting now better protecting Mongolia's wildlife? After performing an extensive literature review and speaking with government officials, conservationists, and hunting company representatives in Ulaanbaatar, I visited Tsetseg *soum* (district) in Khovd *aimag* (province) to investigate the real-world implications of trophy hunting by speaking to local community members and government officials. In total, I performed twenty-four interviews. Over the course of this research, I found that while the 2012 revisions to Mongolia's trophy hunting significantly improved the system's potential to support wildlife conservation, reducing the potential for corruption, increasing its ecological sustainability, and linking it more closely to local communities, it will not effectively support wildlife conservation until stakeholders' capacity increases, local community members feel involved and valued, and local governments properly redirect revenue back to wildlife conservation.

Keywords: Forestry and wildlife, Natural resources and conservation, Public and social welfare

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Acknowledgements

While my name is at the top of this research paper, it is the product of many, many people's time and effort. First, thank you so much to Munkhnast Dalannast, my ISP advisor. Not only was Munkhnast an excellent resource for relevant contacts and sources, but his input on my study topic and research questions were invaluable for streamlining my work. I had the opportunity to work with a number of very useful people in addition to Munkhnast while in Ulaanbaatar. First, thank you to L. Bayasgalan from the Ministry of Environment, Green Development, and Tourism for giving me my very first interview and also providing me with useful data on trophy hunting quotas and revenue. Next, thank you to B. Munkhchuluun and Yo. Onon at the World Wildlife Fund Mongolia for both speaking with me and giving me excellent resources on trophy hunting. In particular, thank you to Munkhchuluun for letting me interview her while on a turbulent plane! Thank you also to D. Khurtsgerel for his interview and many useful documents on trophy hunting. Next, thank you to S. Amgalanbaatar for publishing the paper that sparked my research, giving me a very useful interview, and providing me with invaluable contacts within the trophy hunting industry. Thank you also to B. Lhagvasuren from the Institute of Biology for his kindness and extensive interview. Finally, thank you so much to Ph. Zorigt for the lemonade and interview.

Next, thank you so much to all of the people who made my trip to Khovd so productive. Most importantly, thank you to Oyunbold, my translator, who graciously welcomed me into his home, helped me with interview after interview, and kept my entire visit running smoothly. Thank you so much to Baigalmaa, who was an invaluable source of information and contacts for trophy hunting in Khovd. Next, thank you to the various Khovd officials who spoke with me. Thank you in particular to Altain Nuudelchid for answering my extensive list of questions. Next, thank you to all those who facilitated my work in Tsetseg *soum*. Thank you to the Tsetseg officials who spoke with me, and particularly to the Tsetseg governor, who met with me while in Ulaanbaatar. Next, I give an enormous thank you to my host for letting me stay with him, speaking with me, connecting me to many other community members, and

driving me into the mountains to see argali. Thank you to the other many Tsetseg locals who took time out of their days to speak with me.

Next, thank you so much to my teachers at SIT for their help over the course of my ISP. Thank you, as always, to Ulzii Bagsch for her guidance and knowledge. Next, thank you so much to Shijir for translating an interview, and to his wife for her excellent translation of the revised laws on trophy hunting. Thank you also to Oyuka for helping me make logistical arrangements and contact interviewees throughout the month, and thank you to Baatar for helping me initially make contact with the governors of Must and Tsetseg *soums*. Next, thank you to Maralaa for helping me contact interviewees and translating my consent forms. I could never have completed my research without all of your help!

Finally, thank you so much to all of friends with me here in Mongolia. Whatever would I have done without you?

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III. Introduction

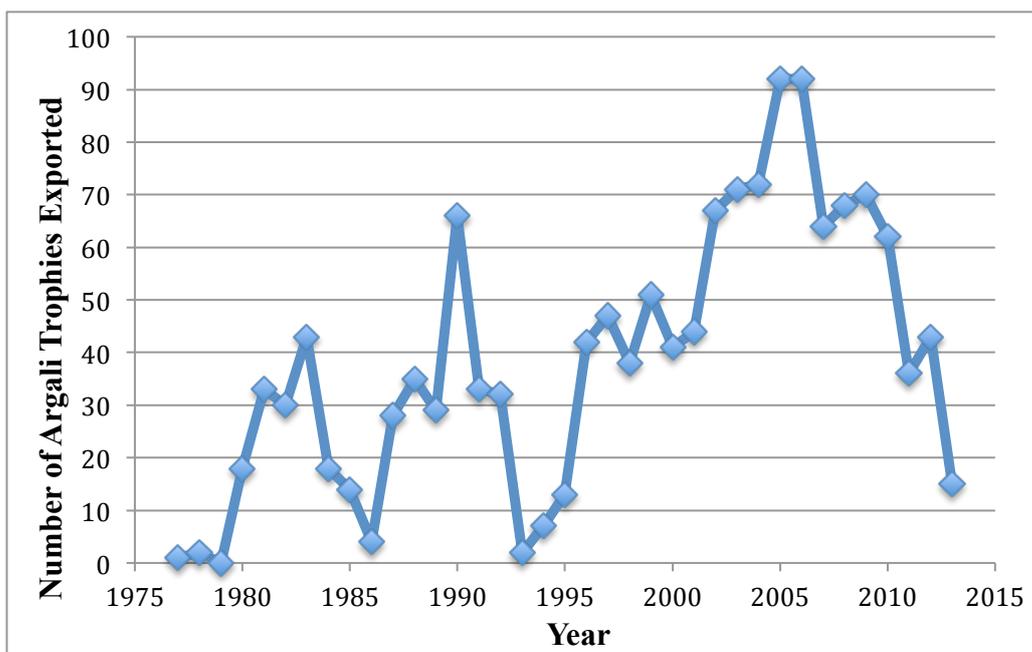
Since opening itself to foreign trade and development following its transition to democracy in 1990, Mongolia has faced serious and growing threats to its wildlife. First, wildlife habitats and populations are increasingly fragmented by the development of infrastructure associated with ever-spreading mining projects, and revenues from mining and development make it increasingly difficult to devote land to protected areas for wildlife (Chimed-Ochir et al, 2010). Next, the privatization of livestock in the early 1990s has created incentives for increasing herd sizes, putting pressure on pastureland that damages habitat and food sources for wildlife populations (Chimed-Ochir et al, 2010). Finally, since opening its borders to Chinese markets and doing away with the strict hunting and trade regulations of the socialist period, Mongolia has become home to an active illegal trade in game meat, furs, and wildlife-based medicinal products (World Bank, 2010). This trade contributed almost \$100 million to Mongolia's economy in 2004, and it drives illegal poaching of many wildlife species (Wingard and Zahler, 2006). Taken together, these threats have had significant impacts on the populations of many species found throughout Mongolia. For example, Mongolia's population of red deer fell from 130,000 to only between 8,000 and 10,000 between 1986 and 2004, a decrease of 92% (Chimed-Ochir et al, 2010), and the population of Mongolian marmots dropped from 20 million in 1990 to only 5 million in 2002 (Wingard and Zahler, 2006).

Faced by these huge losses, Mongolia needs to develop and implement strong wildlife management practices, including tighter enforcement of existing wildlife trade laws, more frequent wildlife population studies, and better wildlife legislation. However, improvements in wildlife management will only succeed if they have adequate funding, which currently is in short supply; the Mongolian state's budget for 2015 makes the MEGDT the second least funded ministry in the Mongolian government, behind only the Ministry of Foreign Affairs and Economic Cooperation (UB Post, November 17, 2014). However, other funding sources may exist. Indeed, in their 2006 *Silent Steppe* report on the wildlife trade in Mongolia, Zahler and Wingard point to trophy hunting as a source of funding that could underpin and revitalize wildlife conservation in Mongolia.

Trophy hunting is a legal system in which hunters pay to select and kill animals in order to obtain some kind of trophy, like the skin, antlers, or head. Trophy hunting became legal in Mongolia in 1967, and by 2009 foreign hunters had harvested about 2000 argali and more than 10,000 ibex, two of the most prized trophies (World Bank, 2009). Each year, the Mongolian government promotes and sells a certain number of licenses for trophy hunting of various Mongolian wildlife species, including Altai and Gobi Argali sheep (*Ovis ammon*), Siberian ibex (*Capra sibirica*), Gray wolf (*Canis lupus*), Roe deer (*Capreolus pygargus*), and Wild boar (*Sus scrofa*), which hunting and tourism companies then use to host hunting tours for wealthy foreign tourists. Despite the range of species for which trophy hunting occurs, argali trophy hunting has long been the focus of both conservationists and foreign hunters.

While it is difficult to find historical data on Mongolia's trophy hunting quotas, or the maximum number of hunting licenses to be issued each year, all exports of argali trophies must receive a permit from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), so CITES export data for argali serves as a reasonable proxy for the volume of Mongolia's trophy hunting industry over time (see Table 1) (Zakharenka, 2008).

Figure 1. CITES Exports of Argali Trophies from Mongolia



Source: CITES Database, 2015

Throughout this history, these trophy hunts have been attached to significant government fees, which currently range from \$8 for geese to \$18,000 for Altai argali. This flow of revenue has long had the potential to support wildlife protection in Mongolia, but for many years it has failed to do so.

In a series of reports between 2002 and 2012, environmental organizations and scientists described the extensive flaws both in the legal framework and implementation of Mongolia's trophy hunting system. First, while the legal mechanisms existed such that trophy hunting fees should benefit wildlife conservation, the government was failing to enforce these mechanisms. Though the Mongolian Law on Reinvestment of Natural Resource Use Fees required that the government reinvest 50% of trophy hunting revenue in wildlife conservation, it was not doing so (Wingard and Zahler, 2006). For example, while trophy hunting and Saker falcon (*Falco cherrug*) fees totaled about \$4.1 million in 2004, and thus more than \$2 million should have been allocated to wildlife management, only \$545,000 was actually made available (Wingard and Zahler, 2006). In fact, there were widespread concerns that instead of funding wildlife protection, trophy hunting revenues were going to a few politicians and their subsidiaries, along with a certain portion of hunting permits (Amgalanbaatar et al., 2002).

Besides failing to fund general wildlife protection as a whole, trophy hunting has been unsustainable both for the target species and local communities. A series of studies in the early 2000s found that though Mongolia's environmental ministry is required to set quotas with input from the Institute of Biology, it was setting quotas far above their recommendations (Wingard and Zahler, 2006). Furthermore, the government's failure to provide funds for animal population studies meant that even the Institute's recommendations for government quotas were based on anecdotal evidence from herders around Mongolia, out-of-date population surveys, and guesswork, rather than accurate studies of species populations and herd structure (Schuerholz, 2001). Finally, and perhaps most importantly, Amgalanbaatar et al. (2002) write that government financing regulations were denying local communities all benefit from trophy hunting in their areas. While trophy hunting companies might hire a few local guides and cooks, they were not required to invest in local communities in any way, and government

financing mechanisms meant that the presence of trophy hunting in a *soum* might detract from, rather than add to, its budget.

In May 2012, the Mongolian government reworked the laws surrounding trophy hunting, combining the Law on Hunting, Law on Hunting and Trapping Fees, Law on Fauna, and Law on Reinvestment of Natural Resource Use Fees for the Protection the Environment and the Restoration of Natural Resources into the revised Law on Fauna and the new Law on Natural Resource Use Fees (WWF Mongolia, 2013b). Together, these revisions confined trophy hunting to designated hunting reserve zones, changed the systems for setting quotas and allocating licenses to companies, and redirected hunting fees from the national budget to *soum* budgets. To my knowledge, no studies have as yet evaluated the success of these revisions to Mongolia's trophy hunting system. In this study, I seek to address this gap by investigating the current management of trophy hunting in Mongolia. Following the 2012 revisions to the system, does trophy hunting threaten or protect wildlife species in Mongolia? Does it benefit local communities? In particular, is trophy hunting supporting wildlife conservation in Mongolia? If not, how can it better do so in the future?

IV. Methods

Overall, I investigated trophy hunting in Mongolia by studying Mongolian laws, reading literature on trophy hunting in Mongolia and around the world, and interviewing stakeholders in the trophy hunting system. These stakeholders included national and local government officials, wildlife conservationists, hunting guides, and local community members. Through this process, I sought to understand both the legislative framework for trophy hunting in Mongolia and how trophy hunting functions in the real world.

I began my research in Ulaanbaatar, where I first sought to create a conceptual framework for my study of Mongolia's trophy hunting system. Conservationists have explored the potential for trophy hunting to support conservation around the world since the 1980s, and I reviewed the many professional journal publications, magazine articles, and position papers that compose this debate. After establishing the theoretical basis for my study, I investigated the structure and workings of Mongolia's trophy hunting system, both before and after the 2012 changes to the system. First, I carefully studied Mongolia's laws regulating trophy hunting, both before and after the 2012 revisions to the Law on Fauna and the enactment of the Law on Natural Resource Use Fees. While the laws published before 2012 were available in English, I had the revised laws translated into English before reviewing them. During this period, I also read all of the available secondary sources reporting on Mongolia's trophy hunting system. These resources were primarily journal publications, both by American and Mongolian researchers, and reports published by environmental organizations working in Mongolia, like the World Wide Fund for Nature (WWF) and the Wildlife Conservation Society (WCS).

Besides studying the volumes of written material on trophy hunting in Mongolia, I devoted much of my time in Ulaanbaatar to interviews with people involved in trophy hunting management. These interviewees included a specialist from the national Ministry of Environment, Green Development, and Tourism (MEGDT), conservationists from WWF, a representative from the Mongolian Professional Hunters' Association, the director of a trophy hunting company, and several wildlife biologists. After getting contact information for interviewees from my advisor and teachers, I contacted most

of these interviewees by phone and email. In total, I interviewed eight people during my time in Ulaanbaatar. During these interviews, I asked stakeholders about specific changes in the trophy hunting system, for their opinions on the success of the current system, and for their recommendations for future changes in the system. Please see Appendix A for sample interview questions. All but one of these interviews were in English, and I hired a translator from SIT to assist with my one interview in Mongolian. Over the course of these interviews and my literature research while in Ulaanbaatar, I compiled both a comprehensive technical understanding of trophy hunting in Mongolia and a sense for what most stakeholders see as the primary benefits and flaws of the current system.

However, I ran into several obstacles in this process, primarily in setting up interviews, which may have prevented me from capturing the full range of stakeholders involved in trophy hunting. First, several representatives both of hunting organizations and wildlife organizations demanded that I pay them for an interview, and then were unwilling to accept the price that I offered. Furthermore, I was unable to meet with any representatives of the Mongolian Hunters' Association, who claimed to all be too busy to meet with me or away from Ulaanbaatar for the duration of my study. I had similarly poor luck in my attempts to set up interviews with representatives of the National Police Agency of Mongolia, who said that their work was classified and thus they could not speak with me. In total, I interviewed eight people during my time in Ulaanbaatar, though I contacted more than eighteen. Besides this trouble with setting up interviews, I struggled to obtain data on trophy hunting from the MEGDT. While I requested data on quotas, trophy hunting revenue, and reinvestment of this revenue, the ministry only provided me with limited data on trophy hunting quotas. I did my best to piece together data from books available from the National Statistical Office of Mongolia, but I was largely unable to do so. I think that my lack of concrete national data on trophy hunting is a major shortcoming in my study.

After establishing a solid theoretical understanding of Mongolia's trophy hunting system, I visited Khovd *aimag*, or Khovd province, to study how trophy hunting plays out in the real world. In particular, I wanted to investigate how trophy hunting affects local communities and wildlife

populations. Khovd has hosted foreign trophy hunters for many years and thus was a suitable study subject. Furthermore, WWF has a field office in the Khovd *aimag* center, which proved to be a valuable resource for my research. I first stayed in the Khovd *aimag* center for two days, where I interviewed representatives from the WWF field office, representatives of Altain Nuudelchid, the organization responsible for hunting management in the area, and several officials from Khovd's Department of Environment. I had arranged to meet with WWF before travelling to Khovd, and I arranged to meet with the other interviewees by approaching them in their offices. I did a total of six interviews in the *aimag* center, which provided a thorough introduction to trophy hunting administration and wildlife health in the area. Please see Appendix B for sample interview questions. All of these interviews were in Mongolian, so I worked through a local translator from the University of Khovd.

Next, I traveled to Tsetseg *soum*, or district, for one day to better understand the local reality of trophy hunting. I chose to visit Tsetseg both because it has had a trophy hunting industry for many years and because the local authorities were receptive to my coming when I contacted them in April. While I hoped to spend a longer time in Tsetseg or travel to multiple *soums*, the timing of buses between Khovd and Tsetseg made that impossible. During my time in Tsetseg, I interviewed both people directly involved in trophy hunting operations and management, like the local coordinator for trophy hunts, a local guide for foreign hunters, and government officials, and seven Tsetseg residents not necessarily connected to trophy hunting. While I was unable to interview the Tsetseg governor while in Tsetseg, I met with him when he visited Ulaanbaatar. This range of interviewees allowed me to investigate the operations of trophy hunting, the health of local ibex and argali populations, the local government's role in wildlife protection, and local perceptions of trophy hunting. While in Tsetseg, I interviewed a total of ten people. Please see Appendix C for sample interview questions. All of these interviews were in Mongolian, so I worked through a translator from the University of Khovd.

Despite this range of viewpoints, my interviews in Tsetseg *soum* were somewhat limited in scope due to my time constraints. First, I wanted to

interview many more community members than I did, but unfortunately I had to leave Tsetseg earlier than I had planned due to my bus driver's demands. Next, my sample of local residents was not random, but rather was based on convenience. I interviewed five of the seven local interviewees while on the bus rides between Khovd and Tsetseg, and the other two interviewees were the first two people that I encountered on the main street of Tsetseg. Next, six of these seven interviewees lived in the *soum* center, so I did not get a satisfactory sample of Tsetseg herders. Also, most of my local interviewees were men, unfortunately, partly because of convenience and partly because men naturally presented themselves to be interviewed over women.

Despite these and other limitations, I believe that this research process provided me with a strong understanding both of the structure of Mongolia's revised trophy hunting system and the local realities of that system. Based on my understanding of the primary flaws remaining in Mongolia's trophy hunting system, I then formulated a series of proposals for future improvements to the system.

V. Study Area

After performing a series of interviews in Ulaanbaatar, I carried out several days of fieldwork in Khovd *aimag*, which is about 1,580 km from Ulaanbaatar (see Map 1). According to the National Statistical Office of Mongolia, the total population of Khovd *aimag* was 81,479 in 2014, 68.5% of which lived in rural areas. Last year, Khovd's 11,287 herding households collectively owned a total of 2,625,577 animals, including camels, horses, cows, sheep, and goats (National Statistical Office of Mongolia).

Map 1. Khovd *Aimag* Center and Ulaanbaatar, Mongolia



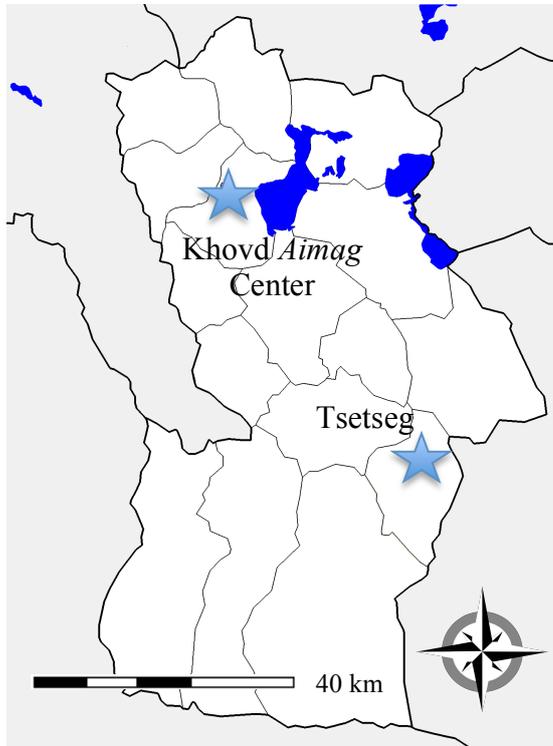
Source: Wikipedia Commons, 2011

The Altai Mountains, which are home to some of Mongolia's primary trophy hunting species, including Altai argali and ibex, pass through Khovd, so Khovd has been a prime trophy hunting destination for many years. However, argali trophy hunting has been banned in Khovd for the last four years due to struggling argali populations (Yo. Onon). In contrast, ibex populations in Khovd remain strong, and 5 *soums* in Khovd received a total of 37 permits to hunt ibex in 2015 (MEGDT, 2015).

Besides staying in the Khovd *aimag* center, I traveled to Tsetseg *soum*, one of the 17 *soums* in Khovd *aimag*. Tsetseg, whose *soum* center is about 231 km from the Khovd *aimag* center, had a population of 2,850 in 2014 (see Map 2). Last year, Tsetseg had 460 herding households who collectively owned a total of 112,039 animals (National Statistical Office of Mongolia). According to the governor of Tsetseg *soum*, there has been trophy hunting in Tsetseg since 1940, and it continues to this day. Indeed, Tsetseg residents and

politicians were very proud to report that an argali with 58-inch horns was once hunted in Tsetseg, setting a record that has not yet been broken.

Map 2. Tsetseg Soum in Khovd Aimag



Source: Wikipedia Commons, 2013

While Tsetseg *soum* has historically been renowned for its argali hunting, its argali population fell significantly in the early 2000s following several years of poor weather, and it is still recovering. In 2013, a study of argali populations in Tsetseg by Altain Nuudelchid, a local NGO, found a total population of 186 argali, 31.2% of which were adult males, 34.4% of which were adult females, 22.0% of which were lambs, and 12.4% of

which were ewes. Because of this low population, Tsetseg has not received any permits for argali hunting for the last four years (D. Tsogbadrakh).

However, ibex populations remain strong in Tsetseg, and ibex trophy hunting continues. Altain Nuudelchid's 2013 study found a total population of 276 ibex, 47.4% of which were adult males, 26.7% of which were adult females, 10.5% of which were yearlings, and 15.4% of which were kids. Based on this population data, Tsetseg *soum* received 9 permits to hunt ibex in 2015 (MEGDT, 2015).

VI. Conceptual Framework: Trophy Hunting as a Tool for Conservation

Trophy hunting is legal in countries all over the world, from hunts of brown bears in Croatia to hunts of pumas in South America (Hofer, 2002). Trophy hunting is particularly common in Africa, where foreigners can travel to 23 countries to legally hunt big game. South Africa has the largest hunting industry in the world, with annual revenue greater than \$100 million (Lindsey, 2006). Trophy hunting remains controversial despite this prevalence, and there is currently an active debate on the industry's role in sustainable wildlife policy. Since the 1980s and 1990s, many conservationists have argued that trophy hunting can actually protect wildlife around the world, and they point to success stories in which trophy hunting has led to significant increase in wildlife populations. For example, the IUCN African Rhino Specialist Group reports that since trophy hunting of white rhinoceros was legalized in South Africa in 1968, white rhino populations have increased from only 1,800 to over 20,000 today (Save the Rhino Foundation, N.D.). According to conservationists, trophy hunting can benefit wildlife conservation both as a source of significant revenue and by incentivizing wildlife protection and sustainable management.

First, trophy hunting can serve as a significant source of funding for wildlife management and conservation. Foreign hunters, many of them from the United States, pay thousands of dollars to hunt rare animals around the world. According to African Sky Hunting's price list, 2015 trophy fees for South African animals reach up to \$23,000 for lions and \$42,000 for elephants. While hunting companies collect any funds paid in excess of these fees, the revenue from license fees typically flows to the government. If properly managed, these funds could be devoted to conservation programs both for game species and for other wildlife. Indeed, many countries have legal mechanisms in place to divert trophy hunting revenues to wildlife conservation. For example, all trophy hunting in the United States is subject to an 11% tax under the Federal Aid in Wildlife Restoration Act of 1937, the proceeds of which are dedicated to conservation under the U.S. Fish and Wildlife Service (Macdonald and Service, 2003). Similarly, in Zambia, 50% of license fees and all hunting rights fees go to a wildlife conservation revolving fund (Lewis et al., 1997). In addition to these government

mechanisms for reinvestment of trophy hunting revenue in wildlife conservation, some countries require trophy hunting companies to contribute a certain portion of their profits to wildlife protection (Lindsey et al., 2007).

In particular, trophy hunting may generate revenue to support conservation in areas that aren't suitable for traditional photographic tourism, like areas without infrastructure, attractive scenery, or a high density of photogenic wildlife (Lindsey et al. 2007). Furthermore, trophy hunting generates more revenue per tourist than traditional forms of tourism. In 1995, Chardonnet found that trophy hunting revenues per client were 30 and 14 times greater than those per photographic tourism client in Zimbabwe and Tanzania, respectively. Thus, trophy hunting generates more money with less of the fossil fuel use, habitat disturbance, and environmental degradation associated with high traffic of visitors (Gossling 2000).

Most significantly, trophy hunting can encourage wildlife conservation by creating economic incentives for wildlife protection. First, it can fuel conservation by tying the economic interests of government, local communities, and hunting companies to the health of wildlife populations. Trophy hunting generally creates revenue for governments, creates high profits for hunting companies, and can benefit local communities if proper mechanisms exist to redirect funds to them. All of these beneficiaries of the trophy hunting system have an incentive to ensure that the system is sustainable, and that they will thus continue to benefit from it. These incentives can work through many paths. First, trophy hunting creates economic incentives for the use of sustainable offtake levels, or the number of animals harvested. In a 2007 paper on trophy hunting in sub-Saharan Africa, Lindsey et al. write that trophy hunting is "inherently self-regulating" because offtake must be sufficiently modest to ensure the availability of high quality trophies in the future. Besides ensuring that stakeholders will seek appropriate offtake levels, trophy hunting provides an incentive for all stakeholders in the system to curb threats to the health of game populations, like poaching (Lindsey, 2007). Particularly in areas where wildlife conservation represents a significant cost to local communities by restricting their access to customary foods and materials or where wildlife may threaten crops, revenue from trophy hunting that offsets these costs can significantly reduce threats to wildlife

populations from illegal hunting or irresponsible community use (Lewis and Alpert, 1997). Trophy hunting can change animals from burdens on local communities to valuable assets, thus encouraging their protection.

In the same sense, trophy hunting produces a strong incentive for the dedication of land to wildlife conservation. In a 2009 chapter in “Key Topics in Conservation Biology,” David Macdonald and Katrina Service write that hunters have been tied to habitat protection throughout the history of sport hunting. For example, they write, concern from hunters in the British colonies over widespread destruction of game habitats and populations led to the creation of parks and animal reserves (2009). Besides encouraging land protection among hunters invested in the sport, however, trophy hunting and the revenue it creates can provide a strong financial incentive for expansion of wildlife habitat, whether on private, state-owned, or communally-owned land. By creating a source of revenue from wildlife conservation, trophy hunting makes wildlife conservation economically viable as a use of land in comparison to land uses like agriculture or development. This incentive towards conservation is particularly visible in treatment of private land. During the 1960s and 1970s, legislative changes in much of southern Africa gave landowners ownership of wildlife and/or the right to derive income from hunting. Propelled by the profit to be made under trophy hunting, many landowners transitioned from livestock ranching to game ranching, significantly increasing wildlife habitats (Lindsey 2007). In Zimbabwe, for example, 27,000 km² of livestock ranches were converted to game ranches following these legislative changes, a transition that has been associated with a quadrupling of wildlife populations there (Bond et al., 2004).

While these mechanisms through which trophy hunting might benefit conservation are likely significant, there is by no means a consensus that trophy hunting does indeed protect wildlife. First, some conservationists and animal rights activists oppose trophy hunting on moral grounds. While many conservationists and writers condone hunting for self-protection, food, or for the sake of cultural tradition, few support the killing of rare animals solely for the sake of a wealthy foreigner’s enjoyment or pride (Gunn, 2001). Indeed, trophy hunting tends to provoke strong emotional responses when it surfaces on public media, particularly when it surrounds young huntresses. For

example, after L’Oreal signed a contract with 17-year old Belgian Axelle Despiegelaere when she was discovered at a 2014 World Cup soccer game, they quickly terminated it when photos of her posing with a dead animal in Africa surfaced online (Tadeo, 2014, July 11). Similarly, 19-year old Kendall Jones, a Texan cheerleader, was the subject of a media frenzy and death threats after posting pictures on Facebook of herself with animals she had hunted in Africa (Williams, 2014, July 2). For many, these ethical considerations nullify any potential that trophy hunting might have to benefit wildlife. In a post titled “Stop Senseless Trophy Hunting” for the Huffington Post, Jeffrey Flocken, the North American Regional Director for the International Fund for Animal Welfare, condemns trophy hunting for conservation because “a bullet is a bullet, whether it comes from the barrel of a rich American or a Sudanese militant” (Jeffrey Flocken, 2015). According to Flocken and other animal rights activists, killing animals to conserve them is a contradiction in terms; sacrificing animals for sport can never be part of wildlife protection.

While some object to trophy hunting on principle, much of the opposition to trophy hunting as a tool for conservation centers on problems of poor implementation. First, scientists have pointed to the possibility that trophy hunting changes the genetic composition of wildlife populations when conducted without restrictions on target age. While some countries, like Tanzania, restrict trophy hunting to animals of a certain age, others do not (Lindsey, 2013). In a study of trophy hunting in Alberta, Canada between 1975 and 2003, Coltman et al. (2003) find that trophy hunted rams tended to be heavier and have longer horns than others, as expected, and that they tended to be killed before their reproductive peak. In response to the elimination of these rams from the gene pool, population averages for horn size and weight fell over time. Thus, by selectively targeting trophy rams with high genetic quality before their reproductive peak, unrestricted trophy hunting may “push traits away from their naturally selected optima” within wildlife populations (Coltman et al., 2003, p. 657). Besides adversely affecting the gene pools for target species, trophy hunting can damage wildlife populations if quota levels are not sufficiently science-based. Wildlife departments in governments around the world typically lack the resources to

conduct frequent or careful studies of game populations, which are crucial for setting sustainable offtake levels. Instead, trophy hunting quotas set by government may be based on outdated game population surveys, anecdotal evidence, or guesswork (Lindsey, 2007). Combined with governments' short-term economic incentive to create revenue by allowing more hunting, this poor research basis sometimes leads to inappropriate, and often unsustainably high, offtake levels. For example, Caro et al. found in 1998 that offtake levels for lion and leopard were unsustainably high in Tanzania.

In addition to these biological problems, there are several social issues that frequently arise with poor implementation of trophy hunting systems. First, the significant sums of money flowing through the trophy hunting industry create opportunities for corruption at many levels. For example, governments might give preference to particular operators when granting permits or land concessions, or local governments or government scouts might be bribed into overlooking overhunting (Leader-Williams et al., 2009). For example, Lindsey et al. (2007) cite Duckworth's 2004 claims that the Ethiopian Professional Hunting Association is used solely for the benefit of the country's president.

Most significantly, though, trophy hunting often fails to serve as a sustainable wildlife protection program because it does not benefit local communities. Governments may fail to create and enforce mechanisms through which to include local communities in quota setting and wildlife management, revenue from trophy hunting may go to high levels of government rather than local levels, and communities may lack the capacity to assist hunting trips or negotiate favorable terms with hunting operators. For example, Lewis et al. (1997) found that local communities in Zambia received only 12% of trophy hunting revenue in 1994, largely because they do not own the wildlife found in the hunting areas in which they live. Also, these local communities forfeit much of the profit from trophy hunting because they lack the capacity to deal directly with foreign hunters, and thus they must work through tour operators.

In assessing the validity of trophy hunting as a tool for conservation, it is important to distinguish between flaws that are inherent to trophy hunting and those that could be avoided with proper implementation. While trophy

hunting systems around the world are troubled by inappropriate quotas, corruption, and a lack of benefit to local communities, these issues can be avoided through stronger regulation and better policy. Indeed, the only flaw in the role of trophy hunting in conservation that cannot be ameliorated with sound management is that trophy hunting involves killing animals for sport, which may be morally incompatible with animal protection.

The morality of trophy hunting does not seem to be of particular concern in Mongolia, where much of the population makes their livelihood off of raising and then killing animals. While B. Lhagvasuren, a member of Mongolia's Institute of Biology, expressed concern that Mongolians see wildlife as "running meat or horns to sell" rather than "running heritage," he and all other individuals that I interviewed supported the idea that trophy hunting can be a sustainable part of wildlife conservation if it is well managed and based in science (personal communication, May 8, 2015). Interviewees frequently pointed to the potential for trophy hunting to create incentives for the animal protection. Indeed, according to a translation of a 2009 study of mountain ungulates for the World Bank, "one of the best methods and ways to protect [species like argali] might be the development of a mechanism that could increase local people's interests in protecting [them]," or a system of "sustainable exploitation" like trophy hunting (11). L. Bayasgalan, a species specialist for MEGDT, supports this idea, saying, "If there is hunting, many people will focus on those animals—local communities, herdsman" (personal communication, May 7, 2015). Furthermore, while people voice significant concerns that trophy hunting is not currently funding wildlife protection in Mongolia, Mongolia's laws on reinvestment of hunting revenue and the work of conservation organizations like WWF function around the assumption that it can and should.

At least in the abstract, then, trophy hunting can support wildlife conservation in Mongolia. However, according to the body of work on trophy hunting around the world, it will only do so if it is based on accurate wildlife monitoring, involves mechanisms to direct funds back to wildlife protection, has community participation and support, and is implemented by capable stakeholders.

VII. 2012 Changes to Mongolia's Trophy Hunting System

In Mongolia, as in the rest of the world, then, the key to ensuring that trophy hunting fulfills this potential is to verify that it functions within a strong regulatory framework. While wildlife biologists and conservationists largely agreed that Mongolia lacked such a regulatory framework for trophy hunting before 2012, the legal revisions made that year significantly changed management of nearly all aspects of the trophy hunting system.

Before these revisions, trophy hunting was primarily regulated by the Law on Hunting, the Law on Fauna, the Law on Hunting and Trapping Fees, and the Law on Reinvestment of Natural Resource Use Fees for the Protection the Environment and the Restoration of Natural Resources. In 2012, the State Great Khural annulled the Law on Hunting and Trapping Fees, the Law on Hunting, and the Law on Reinvestment of Natural Resource Use Fees for the Protection the Environment and the Restoration of Natural Resources, replacing them with a revised Law on Fauna and the new Law on Natural Resource Use Fees (WWF Mongolia, 2013). These revisions changed nearly all aspects of the trophy hunting system. In the following sections, I will outline and analyze these revisions.

A. Designation of Hunting Reserve Areas

First, and perhaps most significantly, the 2012 revisions restricted trophy hunting to specific hunting reserve areas. Before these revisions, hunting companies could lead hunts anywhere, except in protected areas where hunting was never allowed. There are currently 58 hunting regions in Mongolia, 40 of which were awarded trophy hunting permits in 2015 (MEGDT, 2015). For example, Tsetseg *soum* now has three areas reserved for trophy hunting, which are in the buffer zones for Myaangan Ugalzat National Park. Kharnuud Olon Khudag is an argali hunting reserve area with a total area of 380.0 km², Khajing is an ibex hunting reserve area of 268.3 km², and Ikh Belchiir is a marmot hunting reserve area of 125.05 km² (Altain Nuudelchid, 2013).

Throughout Mongolia, each of these hunting reserve areas has a management body, which can be a local non-governmental organization (NGO), a community-based organization, a partnership between the local community and a trophy hunting company, or a trophy hunting company alone

(Yo. Onon, personal communication, May 27, 2015). According to Yo. Onon, about 10% of hunting reserve areas are managed by local NGOs. For example, Altain Nuudelchid, a local NGO, manages trophy hunting in Tsetseg *soum*, as well as in hunting reserves in Must and Duut *soums* (Altain Nuudelchid, 2013). Next, about 20% of hunting reserve areas are managed solely by community-based organizations (Yo. Onon, personal communication, May 27, 2015). For example, in Gulzat area in Uvs *aimag*, seven community-based organized have combined to form Gulzat Initiative NGO, which is responsible for trophy hunting management. While this NGO initially included a variety of trophy hunting stakeholders, including specialists from the government and from organizations like WWF, it is now entirely composed of local community members. This organization now includes 60% of local herders (B. Munkhchuluun, personal communication, May 21, 2015). Next, about 50% of hunting reserve areas are managed by a cooperative between a hunting company and the local community, and about 20% of hunting reserves are managed by hunting companies alone (Yo. Onon, personal communication, May 27, 2015). For example, I spoke with Zorigt, director for a hunting company called Ajiinbolor, which is responsible for trophy hunting management in hunting reserves in several *soums* in Bayankhongor and Dornogobi *aimags*.

Each management body makes a contract with the governor of the *soum* in which the hunting reserve area is found, first for one year and then for 10-year increments for a total of up to 30 years. These contracts must be approved by the *aimag*'s environmental agency. The hunting reserve area management body is then responsible for creating a hunting management plan for the hunting area every four years, incorporating input from a professional organization. These hunting management plans typically include plans for reducing threats to the game species, like illegal hunting and pasture degradation, and for improving pasture conditions, perhaps through the provision of salt licks or water sources (Altain Nuudelchid, personal communication, May 21, 2015). While the professional organizations involved in creating these management plans need not be directly connected to the Institute of Biology under the Mongolian Academy of Science, about 50% of the registered professional organizations are indeed connected to the

Institute of Biology. Others are frequently connected to trophy hunting companies. These professional organizations must be certified by the MEGDT according to their human capacity, technical capacity, and methodology (Yo. Onon, personal communication, May 27, 2015). Thus, while trophy hunting was previously allowed anywhere except for protected areas and thus the areas in which hunting was taking place were free from any directed management, trophy hunting now takes place only in designated areas subject to a management plan directed by a managing body and aided by a certified professional organization.

The confinement of trophy hunting to specific areas equipped by management plans is a significant improvement in Mongolia's trophy hunting system. Before these revisions, no management plans were being made for wildlife populations, and no particular individual or body had responsibility for the health of those populations. According to Yo. Onon, former senior official for animal species management with the MEGDT, Mongolia has a "very huge area and a small population. We cannot monitor, we cannot manage a huge area." Now, the relatively small area open for trophy hunting makes this sort of management possible. By confining trophy hunting to specific areas, the government has made it possible to actually monitor all wildlife populations and land areas that may be subjected to trophy hunting. This increased monitoring capability should make it possible for Mongolia's trophy hunting system to be more science-based and sustainable.

However, the system of hunting reserve area management is not without flaws. Generally, the revised trophy hunting management system suffers from poor implementation and low capacity across all types of hunting management. Mongolia's hunting reserve area system is only a few years old, so as yet no management bodies have much experience in their roles. So far, these hunting reserve management bodies have done a fairly poor job of implementing the hunting management plans. Each year, the MEGDT rates each hunting reserve area with a number from 0 to 5 according to the level of implementation of its hunting management plan. In 2014, the MEGDT awarded argali hunting reserve areas an average score of 1.62, falling between a score of 1, meaning that the hunting reserve area has created a hunting management plan but has not begun implementing it, and a score of 2,

meaning that the management body has begun implementing a hunting management plan, but has reached fewer than 20% of the goals in that plan (MEGDT, 2015).

It is likely that the implementation of hunting management plans will improve across hunting management areas as the system matures and hunting management bodies grow more experienced in their roles. However, some portion of this poor implementation likely relates to low capacity within the bodies responsible for managing the hunting reserve areas. While hunting area management contracts must currently be approved by the *aimag*'s environmental agency, providing some measure of quality control over the hunting area management bodies, the MEGDT should consider designing a certification program for hunting reserve area management bodies. This certification system would evaluate community groups, hunting companies, and NGOs on their potential to successfully implement a hunting management plan based on a review of the entity's human capital, technical capacity, and, if applicable, history of hunting management and conservation.

While such a certification system would help ensure that all hunting reserve management bodies are qualified, it would particularly help to address concerns over the use of trophy hunting companies as management bodies. Currently, there is significant opposition to the role of trophy hunting companies in management of hunting reserve areas, since these companies might suffer from a conflict of interest. Indeed, these trophy hunting companies profit from higher trophy hunting quotas, so they might have an incentive to make management plans that involve unsustainably high offtake levels, particularly if they have the freedom to move to another hunting area after the expiration of their 10-year management contract. According to S. Amgalanbaatar, a conservationist at the Argali Wildlife Research Center, "It shouldn't be the same people receiving quotas and making management plans" (personal communication, May 16, 2015). However, a certification system for hunting management bodies might help ensure that trophy hunting companies only become hunting management bodies if they have demonstrated the capacity and commitment for sustainable wildlife management.

B. System for Setting National Hunting Quotas

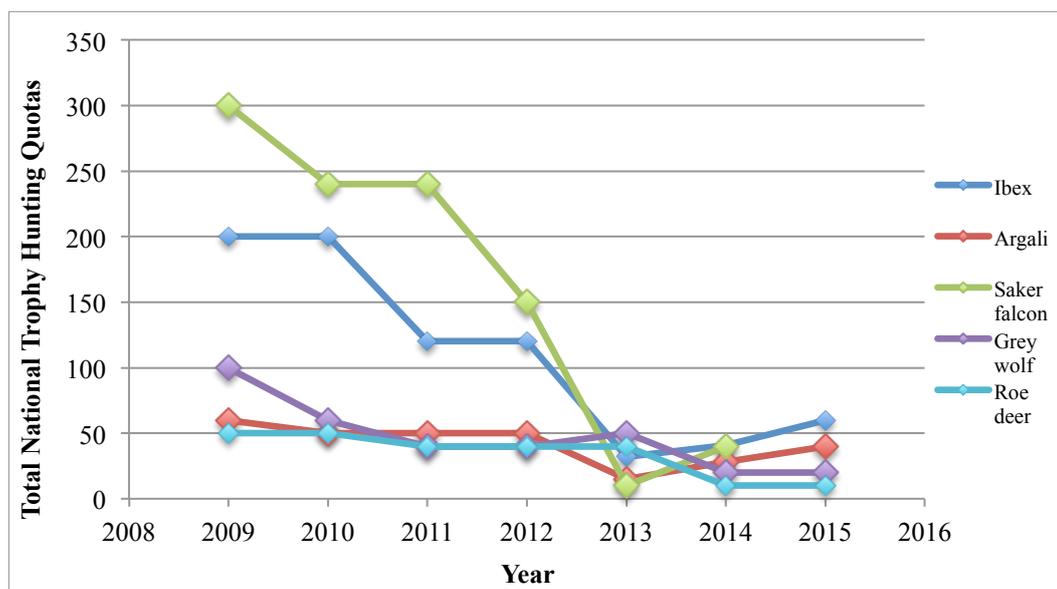
The creation of hunting reserve areas has also led to significant improvements in the system for setting hunting quotas, or the number of animals that can be hunted in a season. In the past, the national ministry for environmental management, currently the MEGDT, was responsible for proposing national trophy hunting quotas based on game population inventories, advice from *aimag* governors, and input from the Mongolian Academy of Sciences. Then, the ministry would pass these recommendations to the Mongolian cabinet, which would set national quotas (Wingard and Zahler, 2006). In the past, there was widespread concern that these quotas were not scientifically-based or sustainable. First, while the ministry was required to base quotas on recommendations from the Institute of Biology, several studies in the early 2000s found that hunting quotas were being set significantly above scientific recommendations. For example, Amgalanbaatar et al. (2002) report that the argali quota was set at 80 for 2002, while the Institute of Biology recommended only 60, and Wingard and Zahler (2006) report that 2004 argali quotas were set at 80 for 2004, when the Institute of Biology recommended only 40. Furthermore, even this input from the Institute of Biology was only loosely science-based. While the old Law on Hunting required the ministry to conduct game population surveys every 4 years funded by the federal budget and hunting fees, such national surveys were only conducted in 1975, 1985, 2001, 2002, and 2009, and only those performed in 2002 and 2009 were performed using reproducible methods (Frisina et al., 2010, B. Lhagvasuren, personal communication, May 8, 2015). Thus, even the Institute of Biology's recommendations were based on largely out-of-date population information and guesswork.

Now, management bodies for hunting reserve areas are responsible for doing population surveys each year with the help of a professional organization; these studies then form the basis for hunting quotas. Typically, hunting management bodies coordinate population studies done by volunteer local rangers once each season, and then representatives from professional organizations supervise a population study annually. These population studies produce estimates of the herd's total population, sex ratio, age structure, and breeding rate. This professional organization is typically a group of scientists

like the Institute of Biology, but it may also be a trophy hunting company. Based on this population study, the hunting reserve area management body then recommends a quota for the hunting area to the MEGDT. Next, the ministry proposes a total national quota for trophy hunting of each species based on these recommendations and input from the Institute of Biology. As in the past, then, the ministry passes these recommendations to the Mongolian cabinet, which decides official national quotas (L. Bayasgalan, personal communication, May 7, 2015).

First, this revised system is an improvement on past methods in that it involves local people in the process of setting quotas. Local people can participate in population studies as volunteer rangers, increasing their stake in the trophy hunting process. In Tsetseg *soum*, Altain Nuudelchid pays these volunteer rangers a total of 80,000 ₮ each month for their work in population censuses (D. Baigalmaa, personal communication, May 18, 2015). Thus, the 2012 revisions made quota-setting a source of both income and a sense of partnership and involvement within local communities. Next, by determining quotas based on focused, annual studies of animal populations in specific hunting reserve areas rather than on outdated national data, the revised 2012 system allows for national quotas that are likely much more accurate than in the past. Quotas for key species have fallen since the 2012 revisions, perhaps approaching more ecologically appropriate levels (see Figure 2).

Figure 2. National Trophy Hunting Quotas 2009-2015



Source: Ministry of Environment, Green Development, and Tourism, 2015

Indeed, several conservationists with whom I spoke, including B. Munkhchuluun of WWF and S. Amgalanbaatar of the Argali Research Center, reported that recent quotas have been sustainable for wildlife populations and no longer pose a threat to wildlife, and in particular, to argali (B. Munkhchuluun, personal communication, May 21, 2015, S. Amgalanbaatar, personal communication, May 16, 2015).

However, the new protocol for creating national trophy hunting quotas is not yet without flaws. Most importantly, many interviewees with whom I spoke voiced concerns that the quotas are still not sufficiently grounded in accurate data on wildlife populations. L. Bayasgalan, current species specialist with the MEGDT, says that the largest problem remaining in the trophy hunting system is a lack of capacity for accurate population studies, particularly at local levels (personal communication, May 7, 2015). Yo. Onon, former senior official for animal species management with MEGDT, voiced similar concerns, saying that while the trophy hunting system provides for a high quantity of data on wildlife populations and distribution, the quality of this data varies with both the professional organization leading the survey and the volunteer rangers that assist in it (personal communication, May 13, 2015). Moving forward, it will be important to ensure both that professional organizations use sound methodology for population studies and that local community members have the tools and training to contribute accurately to these surveys. Furthermore, some conservationists remain concerned that trophy hunting companies are sometimes involved in these population studies as professional organizations. As in the creation of hunting management plans, these companies suffer from an inherent conflict of interest. Thus, according to S. Amgalanbaatar, it is crucial that in future all annual population surveys be supervised by trained wildlife biologists (personal communication, May 16, 2015).

Next, there is some concern that by setting new quotas each year, the ministry discourages the formation of longer-term contracts between hunting reserve areas and hunting companies. That is, in any given year there is no guarantee that the ministry will allocate licenses to that hunting reserve area the next year, so a company cannot be confident that it will be able to continue hunting in that area the next year or years beyond that. Thus, while some

hunting reserve areas make multi-year contracts with hunting companies, as in Gulzat, which makes 4-year contracts with hunting companies, others continue to make annual contracts. Setting quotas for several years, rather than every year, would facilitate the creation of multi-year contracts with hunting companies, which might then encourage more sustainable behavior by those companies. That is, since companies would be relying on the same game populations and local community cooperation in future years, they would have an incentive to ensure that they maintain sustainable wildlife offtake levels and have a strong relationship with the local community. According to Yo. Onon, former MEGDT specialist on trophy hunting, the ministry should set maximum quotas for four-year periods, during which the hunting management body for hunting reserve areas should determine the number of animals to be hunted each year (personal communication, May 27, 2015).

C. Allocation of Licenses to Hunting Companies

The system for then allocating these quotas to trophy hunting companies has also changed. In the past, trophy hunting companies would make contracts with *soum* governors before national quotas were set, and then submit these contracts to the ministry. Then, after the cabinet decided national quotas, the ministry would assign licenses directly to hunting companies (Amgalanbaatar et al, 2002). According to Zorigt, who worked for Mongol Tour and Juulchin for many years and now directs his own hunting company, these assignments were not based on which companies were the best hunters or which areas had the best management. Indeed, he said, “Who knew how they chose companies?” (personal communication, May 22, 2015).

In the past, there was significant concern that the ministry was assigning licenses to companies with no past experience in hunting. Indeed, Amgalanbaatar et al. (2002) report that in 2002, only 12 of the 70 argali licenses were assigned to companies that had hunted in the past, and B. Lhagvasuren said that many trophy companies were actually UB-based hotel or newspaper companies with no past hunting experience. These companies could then sell these licenses to more experienced operators for a quick profit. For example, Zakharenka (2007) reports that in 2007, the ministry initially granted licenses to 45 companies, but these licenses ultimately were transferred to 5 or 6 experienced operators. Besides facilitating this widespread profiteering, this non-transparent system for distributing hunting licenses also provided opportunities for corruption at higher levels. For example, Amgalanbaatar et al. (2002) report that the *Seruuleg* newspaper claimed in 2002 that only 70 of the 80 argali hunting licenses allowed for that year had been assigned to trophy hunting companies, and that the remaining ten would be distributed amongst Mongolian politicians.

Following the 2012 revisions, the ministry assigns licenses to hunting reserve areas based on the recommendations made by the hunting reserve management bodies. Then, the hunting reserve area management bodies allocate licenses to trophy hunting companies by making trilateral contracts including both the hunting company and the *soum* governor (B. Munkhchuluun, personal communication, May 21, 2015). Since quotas are now assigned to hunting areas rather than to hunting companies, the

distribution of animal hunting around Mongolia is now tailored to the spatial distribution of argali around the country, rather than on arbitrary allotments to companies. Thus, provided that the hunting reserve area studies are sufficiently science-based, this system for assigning quotas should produce a distribution of trophy hunting that is more sustainable for animal populations.

Besides likely making quotas more sustainable, this new system gives local areas much more power to ensure that they will be working with trophy hunting companies that give back to the local community and wildlife populations. While the old system relied on *soum* governors to choose trophy hunting companies with whom to make contracts, hunting reserve area management bodies now have the duty and capacity to choose responsible hunting companies. Furthermore, while contracts between *soum* governors and hunting companies in the past contained no requirements for hunting companies to support local wildlife protection or community development, these trilateral contracts now frequently include such requirements.

For example, when companies make contracts to hunt in Tsetseg *soum*, they are required to give a donation to Altain Nuudelchid for each animal hunted. For each argali hunted, for example, companies are required to donate either \$500 or 500,000 ₮. Then, 80% of this donation goes to improving hunting management in the area, perhaps through population censuses, improved living conditions for foreign hunters, or vehicles for rangers, and the remaining 20% supports Altain Nuudelchid's staff and activities (Altain Nuudelchid, personal communication, May 21, 2015). Similarly, in Gulzat, companies are required to donate \$5000 to the community-based NGO responsible for hunting management, all of which goes to the NGO's operating budget (B. Munkhchuluun, personal communication, May 21, 2015). Finally, in the hunting areas in which Zorigt's hunting company operates, his company is required to donate money to both community development and hunting management in addition to fees owed to government by law (Ph. Zorigt, personal communication, May 22, 2015). Thus, the 2012 revisions to the trophy hunting system have given local areas the tools to set the terms of their relationships with trophy hunting companies.

Finally, the new license allocation system has reduced the potential for corruption within the trophy hunting system. First, licenses now go only to

experienced operators, rather than to UB-based companies seeking a quick profit. That is, since companies are now chosen for their capacity to lead hunts, work with local communities, and contribute to wildlife conservation, rather than off of a list as in the past, companies with no hunting experience are now “outside of trophy hunting management” (Yo. Onon, personal communication, May 27, 2015). Next, there is much less opportunity for upper-level government to give preferential treatment to certain operators because the ministry no longer allocates licenses directly to companies. Local governments now make final choices between trophy hunting operators, which could theoretically give rise to corruption. However, hunting companies are now given trophy hunting licenses through trilateral contracts, including both the *soum* governor and the body responsible for management of the local hunting reserve area. The presence of these three parties likely increases accountability and significantly reduces the likelihood of corruption between any two parties.

However, all of the benefits associated with giving hunting reserve management bodies the power to choose responsible hunting companies, particularly the potential to reduce corruption, will only be realized if those management bodies have the capacity and the power to contribute to those choices, which may often not be the case. For example, B. Munkhchuluun of WWF reported that though the Gulzat Initiative NGO is the hunting management body responsible for Gulzat, and thus should be involved in choosing sound hunting companies, the *soum* governor in the area effectively decides which hunting companies to hire without considering input from the organization (personal communication, May 21, 2015). Such a situation provides ample opportunity for corruption. This problem is particularly prevalent in hunting reserve areas managed solely by community groups, which may not have the capacity to make demands of hunting companies or to evaluate the relative merits of different operators (Yo. Onon, personal communication, May 27, 2015). In these cases, licenses may go to the hunting companies with the best connections, rather than to the most responsible or skilled operators.

D. Structure and Recipients of Trophy Hunting Fees

Before the 2012 changes to the trophy hunting system, foreign hunters paid two fees for trophy hunting, both of which went to the national budget. These two fees were a reserve use fee, set at 60-70% of the current price of the trophy or as established by the government, and a license payment, set at 20-30% of the current price of the trophy or as established by the government. Besides these fees paid to the government, trophy hunters also paid a relatively small fee to the trophy hunting company. The actual fees paid for trophy hunting were set by a government Resolution 264 in 2001. The total fees paid by trophy hunters for a license to hunt Altai argali are highest, reaching \$20,000 per animal (Table 1).

Table 1. Trophy Hunting Fees for Prime Game Species

<i>Game Species</i>	<i>Total Fees</i>	<i>Reserve Use Fee</i>	<i>License Payment</i>	<i>Payment to Company</i>
Altai argali	\$20,000	\$14,000	\$4,000	\$2,000
Gobi argali	\$10,000	\$7,000	\$2,000	\$1,000
Altai ibex	\$2,500	\$1,500	\$500	\$500
Gobi ibex	\$2,200	\$1,320	\$440	\$440

Source: Government Resolution 264, Annex 4, 2001

Before the 2012 revisions to the trophy hunting system, the license payment passed to the *soum* budget and the larger reserve use fee passed to the national budget (Yo. Onon, personal communication, May 13, 2015). However, the passage of the Public Sector Finance and Management Law in 2002 effectively redirected all funds for *soum* budgets back to the national budget. This law, which was meant to distribute money evenly between *soums*, consolidated local funding and budgets at the national level. Then, in redistributing budgets, the national government would decrease a *soum*'s allocation by the amount that it was expected to receive from hunting fees. Thus, trophy hunting produced no net financial gains for the *soums* in which it occurred. Indeed, there was no guarantee that all licenses would be sold, so a *soum* with trophy hunting might be forced to operate on a smaller budget than it would without trophy hunting (Amgalanbaatar et al., 2002). Amgalanbaatar et al. (2002) report that due to this lack of financial benefit from trophy hunting, there was significant opposition to trophy hunting within *soums*. Apparently, some *soum* governors were even trying to convert their territory to protected areas in order to ban trophy hunting.

Following the 2012 amendments to hunting laws, the structure of hunting fees has not changed. Companies still pay a hunting reserve use fee and a license fee for each license they receive, and the amount of these fees has not been updated since they were last set in 2001. However, the recipients of these fees have changed drastically. While in the past all fees paid by trophy hunting companies passed to the national budget, they now pass directly to and remain in *soum* budgets (WWF Mongolia, 2013). This change in the recipients of trophy hunting fees has been a major improvement in the trophy hunting system. While *soum* governors used to actively oppose trophy hunting in their territories, they now support it as a significant source of revenue. According to the governor of Tsetseg *soum*, trophy hunting accounts for 4% of the *soum*'s annual budget (personal communication, May 26, 2015). Not only does trophy hunting now benefit the governments of the *soums* in which it occurs, but the new system of fee allocation may also make the system more ecologically sustainable. Since *soums* are tied financially to trophy hunting under the revised system, they now have an incentive to ensure that trophy hunting remains sustainable and thus continues producing revenues to bolster their budgets.

However, the system of fees for trophy hunting is far from perfect. First, the trophy hunting fees have now stayed constant for over a decade, failing even to keep up with inflation. Indeed, if the total government fees for an argali hunt had been adjusted for United States inflation, since most argali hunts are sold to Americans, it would have increased from \$20,000 in 2001 to about \$26,730 in 2015 (World Bank, 2015). As fees paid to the government for trophy hunting stay constant each year, they diverge farther and farther from the market value of a trophy hunt in Mongolia, or the price that foreign hunters pay to hunting companies. By now, *soum* governments are receiving only a small proportion of total revenue from trophy hunting.

Table 2. Comparison of Fees Paid to Government and Market Values

<i>Game Species</i>	<i>Reserve Use Fee + License Payment</i>	<i>Market Value of Hunt</i>	<i>Percent of Fees Going to Soum Governments</i>
Altai argali	\$18,000	\$80,000	23%
Gobi argali	\$9,000	\$50,000	18%
Altai ibex	\$2,000	\$13,000	15%

Source: Yo. Onon, personal communication, May 27, 2015

According to Yo. Onon, the government has received a particularly small percentage of the money paid by foreign hunters since the 2012 revisions to the hunting system, when hunting quotas fell and the market value of Mongolian trophy hunts rose significantly (personal communication, May 27, 2015). Currently, then, most of the revenue from trophy hunting is just feeding high profits for hunting companies. In future, if trophy hunting is to benefit wildlife and local communities to the greatest extent possible, it will be important to redirect more of these funds from hunting companies to whichever entity is currently responsible for providing funds for conservation and community development, which is currently the government.

In particular, work should be done to better align trophy hunting fees with the market value of trophy hunts. This adjustment could take several forms. First, the government could simply define the hunting fees more frequently, using information from the MEGDT on the market prices for trophy hunts of different species. However, according to Yo. Onon, even this information is vague and partially based on guesswork, since trophy hunting companies do not publicly release the prices of their hunts (personal communication, May 27, 2015). Alternatively, Mongolia could adopt a system for defining the price of trophy hunts that relies on market forces. For example, Mongolia could auction off hunting licenses, as has been done in countries like Namibia (Yo. Onon, personal communication, May 27, 2015). After receiving hunting license quotas from the MEGDT, hunting reserve areas could auction these licenses off to hunting companies to then sell to foreign hunters. Instead of subjecting all trophy hunts to static and inflexible fees, this auction system would allow the cost of hunting licenses in each hunting reserve area to reflect the market value of those trophy hunts, and would capture these market values for the *soum* government rather than for hunting companies. However, such an auction system might face legal obstacles. According to former MEGDT official Yo. Onon, she tried to implement such a system around 2007, but was unable to proceed because the government is not legally permitted to hold auctions in Mongolia (personal communication, May 27, 2015). However, under the revised trophy hunting system, it might be possible for community-based organizations or local NGOs to hold such auctions.

E. Reinvestment of Trophy Hunting Revenue

However, any work to redirect funds from trophy hunting companies to the government will only support wildlife conservation or community development if there are mechanisms in place to ensure that the government then spends these funds properly. Both the previous and the revised Mongolian laws on trophy hunting have required that a certain portion of revenue from trophy hunting be reinvested in wildlife conservation. In 1995, the Hunting Fee Law required that 10% of the reserve use fees for trophy hunting be transferred to an Environmental Protection Fund, from which they should be reinvested in wildlife protection. Then, in 2000 the Law on Reinvestment of Natural Resource Use Fees for the Protection the Environment and the Restoration of Natural Resources was enacted, increasing the amount to be reinvested to 50% of reserve use fees (Wingard and Zahler, 2006). Since these reserve use fees passed to the national budget, these laws obligated the ministry to reinvest large sums of money in wildlife conservation.

However, there was very little evidence that the ministry was indeed reinvesting funds of any significance in wildlife management. In 2002, Amgalanbaatar et al. cited claims from the ministry that they spent thousands of dollars on argali conservation each year by funding population surveys, anti-poaching activities, habitat management and establishment of protected areas, but they write that they “believe that little money from trophy hunting has supported argali monitoring, conservation, research, or management” to date (p. 139). In their 2006 *Silent Steppe* report, Zahler and Wingard write that while hunting and saker falcon revenues totaled \$4.1 million in 2003, and thus more than \$2 million should have been reinvested in wildlife conservation in 2004, the national government dedicated only \$545,000 to conservation for all natural resources, including wildlife, forests, water, land, and plants.

In the past, even that money which was supposedly spent on conservation of game species like argali was primarily spent in ways only tangentially related to those species. According to Andrew Zakharenka (2008), about 90% of the revenues from hunting revenues reportedly spent on wildlife management in 2005 and 2006 were dedicated to the management of

newly established protected areas, where trophy hunting is not even allowed (Table 3).

Table 3. Spending Report on Total Income from Argali Hunting and Trapping Fees for 2005-2006, in \$1000 USD

Activity	2005	2006
Research on Argali habitat and population	5.0	6.0
Research on other species (musk-deer, snow leopard, marmot)	6.0	28.0
Anti-poaching and protection, equipment for self-defense and communication	7.2	9.0
Argali management (equipment for self-defense and communication, habitat protection, provision of supplemental food sources)	2.5	4.0
Establishment and management of new protected areas	200.0	210.0
Administration of hunting programs	0.4	0.4
TOTAL	221.1	247.4

Source: Zakharenka, 2008

Following the 2012 revisions to trophy hunting, the Law on Natural Resource Use Fees requires that, as before, 50% of reserve use fees be reinvested in wildlife conservation. In particular, these funds should be dedicated to implementation of the hunting management plan. Thus, these funds should go to things like protection of food and water sources for wildlife, management of pasture use, and anti-poaching activities. Since these revenues now pass to *soum* budgets, *soums* governments are responsible for enforcing this reinvestment requirement.

The mechanism by which this money should be reinvested depends on the structure of hunting management for the hunting reserve area. In many areas, the local government should spend money directly on implementation of the hunting management plan. In Tsetseg *soum*, where Altain Nuudelchid is responsible for making a hunting management plan, the *soum* government spends money to implement the hunting management independently of Altain Nuudelchid (D. Baigalmaa, personal communication, May 18, 2015). In Gulzat, the *soum* government should deposit at least 50% of trophy hunting revenues into an environmental fund, from which they should then directly spend money on the hunting management plan (B. Munkhchuluun, personal communication, May 21, 2015). In the areas in which Ph. Zorigt's hunting company works, on the other hand, the hunting company, local government,

and a group of local community members make spending decisions together. The *soum* government deposits 50% of hunting revenues in a foundation account along with the donations for hunting management from the hunting company, which the government, hunting company, and a group of local people then jointly allocate to aspects of the hunting management plan (Ph. Zorigt, personal communication, May 22, 2015).

To date, it seems that there has been very poor enforcement of this reinvestment requirement. While Zorigt, director of Ajiinbolor, a hunting company, said that the *soum* governors in the areas in which his company works contribute 50% of hunting revenues to wildlife protection, most people with whom I spoke reported that very few *soum* governments reinvest as much money as Mongolian law requires (Ph. Zorigt, personal communication, May 22, 2015). For example, a specialist for the Khovd Environment and Tourism Agency said that in 2014, twenty-eight ibex were hunted in five *soums* around Khovd. This volume of hunting generated 78 million ₮ for local budgets, so 39 million ₮ should have been spent on implementation of hunting management plans. However, these *soums* collectively spent only about 16 million ₮ on wildlife conservation, or around 20% of the trophy hunting revenues. In particular, the government of Must *soum*, where 11 ibex were killed in 2014, spent only 5% of its revenue from trophy hunting on implementation of hunting management plans in its hunting reserve areas (personal communication, May 18, 2015).

Similarly, while the governor of Tsetseg *soum* asserts that the government has indeed met the requirements for reinvestment, it seems that little money from trophy hunting has gone directly to wildlife protection. The governors claimed that Tsetseg had met its 50% reinvestment requirement, but acknowledged that most of the revenue had not been spent specifically on argali or ibex conservation. Rather, he claimed, Tsetseg has met its reinvestment requirements by planting trees in the *soum* center, supplying rangers with motorcycles, and repairing land from ninja mining (D. Tsokhbadrakh, personal communication, May 26, 2015). Indeed, several Tsetseg locals involved with trophy hunting reported that the Tsetseg government has so far dedicated almost no money to wildlife conservation or

implementation of the hunting management plan (personal communication, May 20, 2015).

According to many people with whom I spoke, including conservationists from WWF, several Tsetseg *soum* locals, and a local hunting guide in Tsetseg, poor enforcement of this reinvestment requirement is the primary flaw remaining in the trophy hunting system. The reinvestment of trophy hunting revenue is arguably the most significant, and certainly the most direct, method by which trophy hunting might support wildlife conservation, so failing to follow through with it is largely nullifying the conservation benefit of trophy hunting. If trophy hunting is to continue as a sustainable part of conservation in Mongolia, it is crucial that we find some mechanism by which to ensure that local governments reinvest trophy hunting revenue in wildlife protection.

Many stakeholders attribute this lack of enforcement to the relative newness of the system. Former MEGDT specialist Yo. Onon emphasized that the laws on hunting were changed only two years ago, so “of course the level [of enforcement] is low” (personal communication, May 27, 2015). Baigalmaa, director of WWF’s Altai-Sayan field office, agreed that this poor enforcement is largely a result of local government’s lack of experience with trophy hunting revenues and hunting management, and she voiced hope that *soum* governments’ compliance with the reinvestment law would improve within a few years (personal communication, May 18, 2015). In particular, the trophy hunting system is now so new that there has not yet been time to create a body of legislation to regulate its implementation. According to Munkhchuluun, a wildlife specialist at WWF, the primary obstacle to proper reinvestment of trophy hunting revenue in Gulzat and other local areas is the lack of regulation on spending by *soum* governments (personal communication, May 21, 2015). Rather than relying on *soum* governors and financial officials to spend trophy hunting revenues according to their discretion, the ministry should require local governments to develop concrete regulations for dedicating these funds to conservation as a prerequisite for receiving trophy hunting licenses. The ministry should also institute a system of annual audits to monitor the enforcement of these spending regulations.

Furthermore, it will be important to create some enforceable mechanism by which to encourage compliance or punish noncompliance with the reinvestment law. Rather than relying on *soums* to voluntarily dedicate 50% of trophy hunting revenues back to wildlife conservation, the national government should create a system of penalties for *soums* that do not reinvest 50% of hunting revenues in wildlife conservation. According to a specialist in Khovd, no such penalty mechanism exists (personal communication, May 18, 2015). While both L. Bayasgalan and Yo. Onon, current and former species officer at the MEGDT, claim that the ministry reviews *soums*' reinvestment and then adjusts license numbers accordingly, it seems that these adjustments have not been significant enough to change *soums*' behavior (personal communication, May 7, 2015 and May 27, 2015). According to S. Amgalanbaatar, the ministry should penalize noncompliance with the reinvestment law by strengthening this penalty; he suggests that if *soum* governments do not follow the reinvestment requirement, the MEGDT should deny them all trophy hunting licenses for the next year (personal communication, May 16, 2015). Alternatively, the national government could penalize improper spending of hunting revenues through a financial mechanism. For example, if the ministry's audit found that a *soum* contributed \$10,000 less than required to hunting management, it could remove \$10,000 from the *soum*'s budget allotment for that year.

Finally, it would be useful to encourage a more streamlined reinvestment processes. That is, rather than relying on *soum* governments to make a series of individual purchases or investments totaling to at least 50% of trophy hunting revenues, it may be preferable for *soum* governments to deposit the total sum in a fund or repository that is jointly supervised by the hunting management body responsible for that *soum*. First of all, it would be much easier to evaluate whether the *soum* government was fulfilling its reinvestment obligations under a system based on a central repository for hunting management funds than under one based on expenditures scattered throughout the year. Such a system based on a central fund for hunting management would also facilitate efficient expenditure on hunting management. Rather than relying on several different bodies to independently contribute to trophy hunting management and wildlife protection, as in

Tsetseg *soum*, where both Altain Nuudelchid and the local governor claim to have purchased new motorcycles for rangers, one body should be responsible for allocating money from this central fund to implement the hunting management plan (personal communication, May 21, 2015 and May 26, 2015). This body could be either the hunting management body alone or a joint committee including some combination of government officials, the hunting management body, and local citizens. Streamlining expenditure for implementation of the hunting management plan in this way would likely make the process more efficient, as well as making it easier to monitor the total sum of money spent on implementation of the hunting management plan.

Besides these flaws in the implementation of the existing reinvestment mechanism, this mechanism may be flawed in that it only provides funds for conservation of the species being hunted in the location in which it is hunted. Thus, while conservationists like Wingard and Zalher (2006) originally intended trophy hunting to provide funding for all forms of wildlife protection in Mongolia, the current system, even if perfectly implemented only provides funding for protection of the target species in areas with trophy hunting. In particular, the current trophy hunting regime does not provide funding for Mongolia's extensive network of protected areas, where trophy hunting is not permitted, except to the extent that these areas include game species and might be included in hunting management plans. In a 2013 report on protected areas, WWF reports that the protected areas receive a budget of only \$25/km² per year on average, a level of funding that "is inadequate and presents a serious constraint to the capacity to manage" (pg. 12). Some, like Maroney (2006), have suggested amending Mongolian law to allow sustainable trophy hunting in protected areas as a source of funding for those areas, but others, like S. Amgalanbaatar, argue that these changes would contradict the purpose of protected areas and would hamper the develop of burgeoning photo-tourism (personal communication, May 22, 2015). Barring the possibility of introducing trophy hunting to protected areas, it would be beneficial to develop a mechanism by which to divert some portion of trophy hunting revenues to a centralized fund for protected area management or more general wildlife protection.

F. Involvement of Local Communities

In their 2007 article on trophy hunting in Africa, Lindsey et al. write that the “greatest threat to the sustainability of trophy hunting on communal land is the failure of governments and hunting operators to devolve adequate benefits to local communities, which reduces incentives for rural people to conserve wildlife” (pg. 2). Historically, one of the primary problems in Mongolia’s trophy hunting system was that it offered very little benefit to local communities. Not only did trophy hunting provide no financial benefit to *soum* governments, but hunting companies hired few local people and thus provided minimal benefits from employment. Furthermore, many local people attributed declines in argali numbers in the past to trophy hunting, and they resented the fact that only wealthy foreigners could afford to hunt the game species (Amgalanbaatar et al., 2002).

The 2012 revisions to the trophy hunting system significantly improved the benefit of trophy hunting to the local communities in which it occurs. First of all, local communities are much more involved in the trophy hunting system. First, the new system requires frequent monitoring of local wildlife populations, for which hunting management bodies rely on the participation of local herders as volunteer rangers (D. Baigalmaa, personal communication, May 18, 2015). In Tsetseg *soum*, the local hunting guide and trophy hunting coordinators with whom I spoke emphasized that they are crucial to these studies, since they have a deep knowledge of the area and the animal populations within it; while the professional agencies that come to supervise these studies have technical expertise and scientific methodology for these studies, they rely on local knowledge to execute this methodology (personal communication, May 20, 2015). In this sense, the new trophy hunting system validates the knowledge and experience of local community members.

Furthermore, the new trophy hunting system often allows local community members to participate in the management of hunting reserve areas. Not only are some protected areas managed solely by community groups, as in Gulzat, where about 60% of local herders participate in hunting management (Munkhchuluun), but hunting management primarily supervised by a local NGO or hunting company often includes local contributions as well.

For example, in the areas managed by Ajiinbolor, Ph. Zorigt's trophy hunting company, Zorigt's company cooperates with both the local government and local community members in determining how to spend the money from a foundation account on hunting management. After making these decisions, the company then makes contracts with local people to implement various aspects of the hunting management plan. According to Zorigt, the company typically works with between 11 and 15 community members, hiring them to provide salt licks and conduct anti-poaching activities (personal communication, May 22, 2015).

Besides sometimes involving local herders in implementation of the hunting management plan, the revised trophy hunting system can provide money for community development. While national law does not require trophy hunting companies to contribute to community development, specific hunting reserve areas can create such requirements. For example, in the areas in which Zorigt's company is responsible for hunting reserve management, his company is responsible for donating money both to hunting management and to community development (Ph. Zorigt, personal communication, May 22, 2015). In Gulzat, companies themselves are not required to donate money directly to community development, but the government is required to spend all revenue from trophy hunting that is not dedicated to hunting management on community development. By creating a framework for contracts and requirements like these, the new trophy hunting system has made it possible for trophy hunting to fund improvements in local communities. According to D. Munkhnast, a species officer with WWF, the new system's potential for local participation and investment in the community has revolutionized the system's relationship with local communities: "If you live in the game reserve area, you are lucky. According to the revised law, you will benefit from the trophy hunting activity" (personal communication, May 9, 2015).

However, there is room for significant improvement in the role of local communities in trophy hunting. First of all, it seems that most community members are very detached from trophy hunting in their communities. In Tsetseg *soum*, nearly every community member with whom I spoke commented that local people know nothing about trophy hunting in Tsetseg. While they may see foreign hunters or serve them food in a restaurant, most

community members know nothing of how much money these hunters pay or of where that money goes. Many people also commented that they know nothing of how many animals trophy hunters are killing each year. While some Tsetseg locals expressed outright animosity to trophy hunting, complaining that only foreigners can hunt Mongolia's natural birthright or that they receive no benefit from hunting, most expressed only ignorance about the system (personal communication, May 19, 2015 and May 20, 2015). In the future, hunting reserve area management bodies should make it a priority to educate local communities about trophy hunting, since that knowledge will be crucial to local participation.

Not only will local communities need to be better informed about trophy hunting systems, but they must also be better integrated into those systems. Indeed, in some *soums*, hunting companies seem not to be working well with local communities. For example, there is significant tension between local community members and Altain Nuudelchid, the NGO responsible for hunting management in Tsetseg *soum*. According to a representative from Altain Nuudelchid, the organization's primary problem is that they are constantly receiving requests for money from local community groups seeking to manage the wildlife themselves. Altain Nuudelchid apparently never grants these requests, preferring to give community groups methodology or tools (personal communication, May 21, 2015). The organization's refusal to entrust money to community groups has created resentment among local people. When I spoke with a local hunting guide, he expressed skepticism that money from trophy hunting would ever go to wildlife protection, not because the government is failing to meet its reinvestment requirement, but rather because Altain Nuudelchid never gives community groups money to implement what they see as necessary for wildlife protection (personal communication, May 20, 2015). Tsetseg's governor also pointed out this rift, saying that in the future Altain Nuudelchid needs to better work with local herders, who could prove to be an excellent resource for hunting management (personal communication, May 26, 2015). Indeed, trophy hunting in Tsetseg will only be sustainable if all stakeholders, including local community groups, feel like valued participants.

More generally, many conservationists and officials with whom I spoke agreed that local communities are currently held back from fully participating in the trophy hunting industry because they lack capacity. According to D. Tsogbadrakh, governor of Tsetseg *soum*, most local residents do not have the business skills, ecological knowledge, or familiarity with western living standards and customs to deal directly with trophy hunters or as permanent employees of hunting companies (personal communication, May 26, 2015). Thus, hunting companies continue to only permanently hire a few local community members. While many Tsetseg locals had worked with trophy hunters at one time or another, like one woman who had once served a group of trophy hunters in her ger restaurant and one man who had worked as a local hunting guide for a few hunting trips in the 1980s, almost everyone with whom I spoke commented that trophy hunting had made a few people in the community rich while leaving everyone else behind (personal communication, May 19, 2015 and May 20, 2015). Moving forward, it will be important to find ways to involve a larger proportion of the community in trophy hunting in a significant way. For example, local NGOs or hunting companies could provide training in wildlife management to enhance community members' capacity to help implement the hunting management plan, and local governments could use trophy hunting fees or donations from hunting companies to fund business education courses, improving the capacity of local people to provide services to foreign hunters.

While it may be possible to significantly improve community involvement within the existing trophy hunting system, many conservationists hope to ultimately move to a program based almost entirely on local communities, as Schuerholz (2001) and Amgalanbaatar et al. (2002) suggested in the early 2000s. Today, wildlife conservationists like D. Baigalmaa and Yo. Onon from WWF speak of such a system as a possibility ten or twenty years from now (personal communication, May 18, 2015 and May 27, 2015). A community-based trophy hunting system would be similar to that currently in force in Gulzat, where a community-based group is responsible for managing hunting reserve areas and executing wildlife population studies, though with advise and oversight from a professional organization. In the long run, however, several important changes could be made. First, trophy hunting

could provide much more benefit to local communities if they were able to market hunts directly to foreign hunters, rather than working through hunting companies. While this change would require a significant increase in local community's capacity both to deal with foreign markets and to coordinate hunters' trips from Ulaanbaatar to rural areas, it would redirect the large sums paid by trophy hunters from companies' profits to funds for wildlife conservation and community benefit. Next, while the Mongolian government currently owns the country's wildlife, conservationists around the world argue that devolvement of wildlife ownership to local communities substantially increases the benefit of trophy hunting to those communities and creates a strong incentive to ensure sustainable management (Lindsey et al., 2007). While such a change might pose significant legislative and logistical problems, particularly in a country where land is state-owned and the wildlife could not be fenced in, community-based ownership of the game could make Mongolia's trophy hunting system significantly more sustainable, both for wildlife and local communities.

VIII. Conclusions

In 2012, the Mongolian government made a series of major revisions to the country's trophy hunting system. According to these revisions, trophy hunting is now restricted to reserved areas under the surveillance of a management body, which can be a local NGO, a community-based organization, a hunting company working with a community-based organization, or a hunting company alone. While in the past the MEGDT set national quotas based on sparse national data and then distributed licenses to individual hunting companies, the ministry now determines national quotas based on annual studies of wildlife population in hunting reserve areas, and then assign hunting licenses to these areas. The management bodies of these hunting reserve areas then make tri-lateral contracts, including hunting companies and the *soum* governor, for hunting rights in those areas. The fees for trophy hunting have not changed since the 2012 revisions, but while they used to pass to the national MEGDT, they now go to *soum* budgets. Then, *soum* governments are required to spend 50% of trophy hunting revenues on implementation of the hunting management plan, just as the MEGDT was required to spend 50% of hunting revenue on wildlife protection in the past.

Have these changes brought Mongolia's trophy hunting system closer to being a source of protection for wildlife, rather than a threat? Again, trophy hunting can only fulfill this role if it is based on accurate wildlife monitoring, involves mechanisms to redirect revenue back to wildlife protection, has community participation and support, and is implemented by capable stakeholders. Indeed, the 2012 revisions to Mongolia's trophy hunting system have brought it much closer to meeting these criteria.

First, while in the past the opportunity for corruption in the trophy hunting system compromised the system's potential to work for the best of wildlife populations, the new system of allocating licenses to hunting reserve areas rather than directly to companies, and then to companies only through trilateral contracts, has reduced that possibility. More significantly, the revisions to the hunting system have improved the relationship between trophy hunting and the local communities in which it occurs, largely by encouraging local participation in decision-making and implementation of hunting management. In some hunting reserve areas, local community members are

part of the hunting reserve management body, either as part of community-based management or as members of a partnership with a trophy hunting company. Even in areas where community groups are not officially involved in hunting management, community members are often hired as volunteer rangers to assist in wildlife population studies or to implement aspects of hunting management plans. Next, the revised trophy hunting system has significantly improved the financial benefit of trophy hunting to local communities. Not only do all trophy hunting fees now go to *soum* budgets, but the new system of choosing and making contracts with trophy hunting companies gives local communities the power to set the terms of their relationships with hunting operators. While increasing the benefit of trophy hunting to local communities is an improvement in itself, it has also contributed to the sustainability of trophy hunting for wildlife populations by increasing local peoples' incentives to preserve the game populations that provide these benefits.

The 2012 revisions to trophy hunting have also strengthened the system's ecological sustainability by creating the opportunity for much more targeted management of wildlife populations and hunting levels. While trophy hunting was once allowed anywhere in Mongolia except for protected areas, its confinement to smaller areas with management bodies has made it possible to directly monitor and manage all animal populations that are subject to trophy hunting. Instead of relying on the national ministry to manage all wildlife, this new system delegates responsibility to bodies that can tailor management and protection plans to specific areas. In particular, the creation of these hunting zones has made it possible to develop hunting quotas that are actually tailored to the distribution of wildlife populations around Mongolia, rather than being based on out-of-date national data and guesswork.

By making Mongolia's trophy hunting system more sustainable for wildlife populations and more tied to local communities, these revisions have indeed brought Mongolia's trophy hunting system much closer to being an effective part of wildlife protection. However, it is not there yet. First, Mongolia's trophy hunting system currently suffers from a major lack of capacity among stakeholders, largely because it is still so new. For example, while the system provides the opportunity for strong area-specific

management of wildlife populations, the bodies tasked with this management may lack the financial and technical skills to effectively design and implement a hunting management plan. Furthermore, while the new system of annual population studies in each hunting reserve area should provide a strong scientific basis for hunting quotas, both the professional organizations and the local rangers that perform these studies may not have the scientific and practical knowledge to make them accurate. Ensuring that Mongolia's trophy hunting fulfills its potential as a tool for wildlife conservation will require improving stakeholder capacity at all levels, perhaps through a certification program for management bodies or workshops for local rangers, for example.

Next, while trophy hunting's relationship to local communities has been one of the system's primary improvements, it seems that these ties are not yet strong enough to sustain trophy hunting as a tool for conservation into the future. Based on my observations of Tsetseg *soum*, more work must be done to ensure that local community members are both informed about trophy hunting in their areas and feel that their input to wildlife protection and hunting management is valued. While community members now participate in hunting management in some areas, they should be involved in the management of all hunting reserves in future, either as an independent entity or in a partnership with a company or local NGO. Ultimately, trophy hunting might best protect wildlife in Mongolia through a system of community-based trophy hunting management, where local community members would manage, and perhaps even own, wildlife, though such a system would take significant time and effort to develop.

The primary problem preventing Mongolia's trophy hunting system from supporting wildlife protection is that the existing mechanism for reinvestment of trophy hunting revenues in conservation has not been implemented. While *soum* governors are required to devote 50% of trophy hunting revenues to implementation of the hunting management plan, conservationists and official report that little money has gone to wildlife protection so far. As long as *soum* governments disregard this requirement and fail to reinvest trophy hunting revenue in wildlife protection, trophy hunting has little potential to protect animal populations. Moving forward, it will be crucial to both require the establishment of local finance regulations and

national penalty mechanisms to ensure that *soum* governments spend trophy hunting revenues properly. Once money from trophy hunting is indeed going to wildlife protection, the Mongolian government should reset trophy hunting fees or alter the mechanism by which fees are set to better align them with the market value of trophy hunts, thus redirecting money from hunting companies' profits to wildlife conservation. Even if the current reinvestment mechanism were perfectly enforced and based on updated fees, however, it would only provide funding for conservation of the game species in areas that benefit from trophy hunting. In order for trophy hunting revenues to support conservation in Mongolia more broadly, it might be necessary to develop a mechanism by which to divert some portion of trophy hunting revenue to a central fund, which could then be used to support conservation in protected areas or for non-game species.

Thus, while the 2012 revisions to Mongolia's trophy hunting significantly improved the system's potential to support wildlife conservation, reducing the potential for corruption, increasing its ecological sustainability, and linking it more closely to local communities, it will not effectively support wildlife conservation until stakeholders' capacity increases, local community members feel involved and valued, and reinvestment mechanisms are enforced. Progress has been made, but work on Mongolia's trophy hunting system is far from complete. In particular, while I have made a series of broad recommendations here, there is still much research to be done to identify the best ways to address these remaining problems. For example, what mechanism can be designed to enforce the reinvestment requirement for trophy hunting revenues? What specific changes can be made in the allocation of hunting revenues so that they benefit conservation in Mongolia more generally? How would a community-based trophy hunting management program function, and what legal changes would be required to fully implement such a program? While it will take time to both identify and implement these changes, doing so is crucial to the long-term sustainability of Mongolia's trophy hunting system.

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X. Appendix A: Sample Interview Questions for Ulaanbaatar-Based Interviewees

Sample Interview Questions for Wildlife Conservationists, Government Officials, and Biologists

1. Are populations of most wildlife species decreasing or increasing in Mongolia? What are the biggest threats to wildlife in Mongolia today? What species are most at risk?
2. Will Mongolia's continuing development create more threats for wildlife populations? Infrastructure from mining, roads etc.?
3. Do you think that the Mongolian government is effectively managing and protecting wildlife populations? Why or why not?
4. Do you think that the trophy hunting system is currently well-managed? Do you think it improved following the 2012 revisions?
5. My understanding is that the MEGDT is supposed to take input from the Institute of Biology in determining quotas. Is that happening?
6. Do you think that the trophy hunting system is ecologically sustainable? Do you think that offtake levels are appropriate?
7. Do you think that the system of annual population studies in hunting reserve areas is working well? In particular, do you think trophy hunting companies can do reliable population surveys?
8. I believe that Mongolian law requires that data on animal populations and trophy hunting harvests be in a publicly accessible depository. Is that happening?
9. I have heard that one benefit of trophy hunting that is frequently proposed is that it could provide funding for conservation activities and research on the target species. Do you agree with that concept?
10. Do you think that is happening in Mongolia? Is revenue from trophy hunting going to wildlife conservation or research? Are local governments following the 50% reinvestment law?
11. Do you think there is any corruption in the trophy hunting system, and have the 2012 revisions reduced the potential for corruption?
12. Do you think that the 2012 revisions have improved the benefit of trophy hunting to local communities? Do you think that is enough, or does more work remain to be done to improve the benefit to local communities?
13. Do you think there's any possibility of actually giving ownership of wildlife to local community groups? Do you think that would be a positive thing for Mongolia?
14. Do you think the trophy fees need to be raised to reduce the profit that companies can make and divert some of that profit to the state?
15. Are there still any concerns about operators doing illegal things, like driving animals out of protected areas or onto hunting reserves? Hunting from vehicles etc.?
16. Do you think a certification program based on hunting companies' past records of anti-poaching work, investing in local communities, following good hunting practices etc. would be a positive thing for Mongolia's trophy hunting system?
17. What obstacles are there to a program like that?

18. Do you think it is a problem that revenue from trophy hunting is not going to general wildlife conservation or protected areas? If so, how could it be rectified?
19. In general, do you think trophy hunting is protecting species or serving as another threat to them?

Sample Interview Questions for Hunting Company Representatives

1. Where does your trophy hunting company work? Is your company responsible for hunting management in that area?
2. Does your company typically hire people from the local communities to help guide the hunts, skin animals, work at the hunting camps etc.?
3. How does your company relate to or work with the local community in which you hunt?
4. How much revenue does the trophy hunting industry generate in Mongolia each year?
5. Is trophy hunting a profitable industry for trophy hunting companies?
6. Is it still true that there are many more hunting companies seeking licenses than there are licenses available?
7. Is trophy hunting a risky or reliable industry for trophy hunting companies?
8. Do most trophy hunting companies that are being given licenses have experience with trophy hunting?
9. What countries do most trophy hunters come from? Are they mostly men?
10. Do most trophy hunting companies have hunting camps in local areas? Do hunting companies work in particular areas for many years, or do they tend to move around?
11. Are there any requirements for hunting companies to invest in the local community or hire local community members? If not, do any companies do so voluntarily?
12. Is poaching a major problem for trophy hunting operators? Do trophy hunting companies ever voluntarily do anti-poaching work?
13. I understand that hunting reserve areas are responsible for doing population surveys every year. I have heard that trophy hunting companies sometimes are responsible for these population studies. Is that true?
14. Have you noticed any change in wildlife populations in recent years? Has it gotten easier or harder to hunt animals?
15. Do you think that the current trophy hunting system is well managed? If you are familiar with the 2012 revisions to the Law on Fauna, do you think they improved the trophy hunting system?
16. What issues do you think remain in trophy hunting management?
17. Many conservationists say that trophy hunting can support wildlife conservation by generating revenue for conservation programs. Do you see trophy hunting as part of conservation efforts?

XI. Appendix B: Sample Interview Questions for Khovd-Based Interviewees

1. How long has there been trophy hunting in Khovd? What species do trophy hunters hunt in this area?
2. What are the biggest threats to wildlife populations in Khovd? Which species are most at risk?
3. How have animal populations changed over recent years? Why have they been changing?
4. How many *soums* in Khovd allow trophy hunting? About how many animals are hunted each year?
5. About how much revenue does trophy hunting bring to Khovd?
6. Are you familiar with the revisions made to the trophy hunting system in 2012? Do you think those changes were improvements?
7. Who is responsible for trophy hunting management in Khovd?
8. Do you think that trophy hunting quotas are appropriate and sustainable for wildlife populations in this area?
9. Are you familiar with the hunting management plans in this area? What do they include?
10. Are the hunting management plans being implemented? Is money from trophy hunting being reinvested in wildlife protection?
11. Is there any corruption in the trophy hunting system?
12. Have the same hunting companies worked in Khovd for a long time?
13. Do trophy hunting companies devote any money to community development? Do they engage in anti-poaching?
14. Do you think that trophy hunting benefits local communities? What do local community members think of trophy hunting?
15. Are there any problems remaining in Mongolia's trophy hunting system? If so, how can they be addressed?

XII. Appendix C: Sample Interview Questions for Tsetseg-Based Interviewees

Sample Interview Questions for Tsetseg Locals Connected to Trophy Hunting in Tsetseg:

1. What are the primary wildlife species in Khovd? What are the largest threats to wildlife?
2. How have wildlife populations changed over time in this area?
3. What hunting companies work in Tsetseg *soum*? Have they worked there for a long time?
4. About how many hunters come to Tsetseg each year? What countries do they come from? What animals do they hunt?
5. Do the hunting companies work from hunting camps? Are these camps permanent, or do they change every year?
6. What are the hunting quotas for this year? How have the quotas changed over time? Do you think that the hunting quotas are sustainable?
7. Are you familiar with the 2012 changes to the trophy hunting system? Do you think those changes were improvements?
8. How often does the management body do wildlife population studies? Who is involved in these studies?
9. Do trophy hunting companies hire people from the local community? How many people do they permanently hire?
10. Are there any problems with poaching in Tsetseg? Is poaching a problem for trophy hunting companies?
11. Does the Tsetseg government reinvest 50% of trophy hunting revenues in implementation of the hunting management plan? If so, what kinds of things do they fund?
12. Are there ever concerns of hunters doing illegal things, like perhaps driving animals into hunting reserve areas?
13. Do you think trophy hunting benefits Tsetseg *soum*? Do you think most people like or dislike having trophy hunters come?
14. What problems do you think remain in Mongolia's trophy hunting system?

Sample Interview Questions for Tsetseg Locals Not Directly Connected to Trophy Hunting:

1. How long have you lived in Tsetseg *soum*? Do you think wildlife populations are increasing or decreasing?
2. Are you aware of foreign hunters coming to Tsetseg? If so, for how long have you been aware of them?
3. Have you ever worked with the foreign hunters?
4. Do you know about how many trophy hunters come to Tsetseg each year? Do you know how many animals they kill each year?
5. Do you know if any money from trophy hunting is going to fund wildlife protection or community development?
6. Do you think that trophy hunting is good for Tsetseg *soum*? Do you like that foreign hunters come to Tsetseg?

Sample Interview Questions for Tsetseg Government Officials:

1. How long have you lived in Tsetseg? How long have you been involved in government in Tsetseg?
2. Do you think that wildlife populations in Tsetseg are increasing? Do you think that it is important to protect wildlife populations?
3. What do you think are the biggest threats to wildlife populations? Which species are most at risk?
4. Does Tsetseg have trophy hunting? Do you know how long there has been trophy hunting in Tsetseg?
5. Do you think that trophy hunting is a threat to local argali and ibex populations?
6. Are you familiar with the changes made to the trophy hunting system in 2012? Do you think that these changes were improvements?
7. Do you think that Altain Nuudelchid does a good job of managing trophy hunting in the area?
8. How long have you worked with these trophy hunting companies?
9. Do you think trophy hunting is a good thing for Tsetseg *soum*?
10. Does revenue from trophy hunting go to the *soum* budget? How much of the *soum*'s budget comes from trophy hunting?
11. Are you required to spend some of that money on wildlife protection?
12. Does the *soum* spend the required 50% on wildlife protection? What do you spend it on? If not, why not?
13. Is the local community involved with trophy hunting at all?
14. Do you think trophy hunting benefits the local community in Tsetseg *soum*? How?