



## **Annual report summary 2002-2017**

By

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### **Background summary:**

#### **A. General**

As climate patterns shift and greater numbers of people move from the rural steppe to the bustling metropolis of Ulaanbataar, life in Mongolia is changing fast. These changes threaten the lifestyle and traditions of nomadic herding people who have lived on the Mongolian steppe for over 10,000 years.

Herders are caught in an intense spiral of environmental degradation: populations of the native gazelle, the traditional prey of large predators like wolves and snow leopards, are decreasing because of depleted grasslands and habitat destruction. The depopulation of antelope results in large predators turning to domestic livestock as a source of food. Additionally, nomads are forced to range into mountainous areas at higher altitudes land they usually do not use to graze their animals, which puts herds in the range of snow leopards and other predators.

Livestock losses to herders by large predators (such as snow leopards and wolves) are serious: families can often lose up to 40% of their annual income as a result. This can create an untenable situation for herders, which pits them against these apex predators. Pressure from predators forces nomads to confine their livestock in higher density herds much closer to the ger area, which further increases local overgrazing. To protect their herds, nomads also kill large predators, contributing to the depletion of these endangered creatures and further contributing to a unbalanced ecosystem. Between grassland loss, climate change, and predator pressure, herders struggle to exist on a daily basis or chose to leave their traditional way of life behind.

The Bankhar dog is an ancient tool that has aided the nomadic people of Mongolia as long as they have lived on the steppe. Traditionally, nomads and herders kept these specially bred large working dogs to protect livestock from predators. Studies have shown that 1) properly employed livestock protection dogs have a demonstrably positive effect on conservation of wild predators, and 2) that curtailing retaliatory killing of large predators and repopulating their natural prey are the most significant contributions conservation programs can make toward protecting these endangered species (Rigg, 2001).

Bankhar belong to a category of working dog called Livestock Guardian Dogs (LGD). These types of dogs are distinct in their ability to protect livestock that they see as their “charges”. These dogs are by nature and co-evolution with humans very nurturing animals with very low prey drive. Once a Bankhar is bonded to its livestock, it protects them in a series of steps to deter predators: 1) Territory exclusion based on scent marking; territory is possessed by the Bankhar and scent marked to announce this; 2) Auditory warnings; the Bankhar barks when it senses a threat. 3) Auditory close range; barks and growls; 4) Physical positioning: moving into a position between its livestock charges and the threat; 5) Posturing behavior and communication; to stand in profile and show dominate behaviors via body positioning (tail carriage, teeth bearing, hackle hair raising, etc.) to try and force the threat to retreat; 6) Threat charges; charge, bark, and false chase a threat; 7) Offensive chase; the Bankhar will chase after the threat; 8) Physical contact: this behavior is close posturing, auditory threatening and may include olfactory examination between two bodies; 9) Attach behavior; when all else fails a direct attack might be engaged. Studies of livestock guardian dogs show that this is the pattern most livestock guardian dogs follow. It should be noted that contrary to popular belief, livestock guardian dogs, including the Bankhar, rarely engage in anything but the first 5 behaviors. 95% of encounters rarely go past step four, and physical contact is very rare. The theory is, like all wild species, neither the predator nor the Bankhar wants to risk injury given the inherent side effects that might lead to infection, weakness, or death (Rigg R. 2001, Dawydiak and Sims. 2003, pers. obs. MBPD, pers. com).

The current Bankhar dog population is a fraction of what it was in the past because of the general loss of knowledge about how to breed, train and employ these working dogs, and the misinformation about dogs’ potential to spread disease to livestock. Additionally

the population decreased greatly during the Soviet Union era – nomad relocation left no room to keep large protective dogs.

## **B. Effects of the Use of the Bankhar**

Through the widespread reintroduction of the Bankhar dog, areas once under depredation pressure from apex predators, such as snow leopards and wolves, will be sequestered by a population of the livestock guardian dogs, effectively excluding predators from areas used by herders and their livestock. It is this area sequestering that may deter these predators from preying upon domestic livestock and force them to once again target natural prey species. In addition, the culture and traditions of nomadic people may be bolstered, helping to reduce the number of predators hunted and killed by herders protecting their livestock. While herders will always retain the traditions of predator control, the possession of a well trained Bankhar dog from a working line can help reduce or eliminate reliance on the lethal control of predators.

Lethal predator control (shooting, trapping, poison) and retribution killings of predators are major threats to predator populations in Mongolia. The use of the Livestock Protection Dog has been shown to reduce depredation on domestic livestock by 80-100%, reducing the need for lethal predator control and encouraging predators to target natural prey species instead of domestic ones. This has been demonstrated in studies around the world and our results in Mongolia are similar.

It has been shown that when apex predators are removed from an area, the subsequent territorial acquisition by the same species results in greater livestock losses to the herders in the area (Wielgus and Peebles 2014). Research shows that the new territory holder (other predators moving in after other individual predators are killed) is unfamiliar with the “local rules” and preys upon what it sees as easy prey. Retaining a level of “truce” between resident predators and the herders may make for less frequent livestock losses. The Bankhar dog increases this likelihood due to the behavioral deterrent effect of the dogs over the predators. The area held by the dogs is held more strongly than by a herder alone. The predator just learns to, in effect, not approach herds protected by dogs due to high risk of injury.

Desertification of Mongolia’s ecosystems is the greatest threat to the traditional Mongolian way of life and to the well-being of the majority of Mongolia’s threatened wildlife species. Loss of grasses and soil leads to limited grazing areas needed by both the natural communities and the human communities within Mongolia. The use of the Bankhar Dog allows a herder to practice pastoral husbandry that has a less detrimental impact on the Mongolian ecosystem (less dense herds, more frequent moves to new pastures, higher variability of livestock type, and less reliance on mono-species livestock holding).

Herders are known to hedge (increase numbers in keeping) their livestock holdings to account for losses to predators as well as losses to winter kill off. If the herder knows that they will need fewer “extra” livestock because they will lose fewer to predators, then they will not keep as many livestock (Goldstein and Beall, 1994). Lower numbers of livestock reduces overgrazing, reducing the pressure on the land and allowing for grass recovery. Nutrition levels in the grasses increase, resulting better nutrition for the livestock during the winter and spring. Increased nutrition creates healthier and stronger animals, reducing winter losses due to dzuds and ultimately allowing the herder to keep fewer “hedge livestock” in anticipation of those winter losses.

Herders move less frequently when they are concerned a new area will hold new or a greater number of predators. This forces them to corral the livestock for longer than normal or, at the very least, to increase the time spent personally guarding the livestock herd (pers. com. Noyon Soum herder collective). Hypothetically, the dog's ability to protect the herd, especially at night, allows the herder to move more often. The potential result is a reduction in grazing pressure on the local pastures as well as on seasonal nomadic areas. Again, less intense grazing leads to increased grass health thus benefiting livestock and other natural populations in the area.

Ultimately the acquisition of a Bankhar dog solves multi-faceted issues faced by the herder and the ecosystem in which he or she lives. The possession of one of these working dogs facilitates a possible reduction in predator retribution killing; affords the possibility of diversification of livestock holding, allows for a reduction in headed livestock herd size, and makes it possible for herders to move more frequently, reducing overgrazing and subsequent soil loss.

### **C. Dog Husbandry**

The proper use of a livestock guardian dog is integral to the success of their implementation (Dawydiak and Sims, 2004). These dogs must be raised with the intended livestock from birth to 13 weeks of age minimum. It is this bonding period that is the foundation of a good working dog. Additionally, the type of dog is important. The Bankhar is a Traditional Native Landrace Breed that co-evolved with its human co-workers, adapting perfectly to its surroundings and its job. The use of dogs that are not livestock guardian dogs may result in the dogs preying upon the livestock they were intended to protect. In addition, the use of other livestock guardian dogs from outside of Mongolia may still fail as these other breeds or landraces lack the physical adaptations needed to survive the very harsh and marginal climatic, nutritional, and geographical pressures of Mongolia. The Bankhar also possess a special advantage; they are widely recognized and loved by Mongolians across the country. Paramount to the success of the Bankhar centers on the initial and continuing education of the herders themselves. An established training and dog care protocol ensures that the Bankhar is raised correctly and will result in a nurturing, but fiercely protective low prey-drive dog, which will work independently from its human owner.

While Mongolians have a longstanding history of using the Bankhar as a livestock guardian dog, much of this oral tradition has been lost. Certain aspects and timing in the raising these dogs is critical. Stages in their development must be followed and progress assessed until the herder has learned the process. Once this is established the herder will pass these lessons to other herders who see their demonstrated success, and to the next generation of herders. Field researchers and other implementation team members, as well as other herders learning to use livestock guardian dogs, will be valuable resources as individuals troubleshoot with their dogs to collectively solve issues and develop skills to produce effective livestock guardian dogs. Each dog is unique and thus a variety of problems may arise, meaning that herders and researchers will stay in constant communication and collaboratively find solutions. Dogs that show poor behavior must be removed if all else fails. These dogs will be given to more experienced herders, re-trained by field researchers, or placed in homes as pet companions to non-herders.

The placement of a Bankhar dog with its herder family requires constant tending to be successful. Not all herders are successful at first, so an amicable and personal

relationship between program team and herders is essential to keep lines of communication open. Until the proper practice of raising a Bankhar as a livestock guardian dog becomes common knowledge, input and oversight from those with experience is necessary. Livestock guardian dogs in general are very slow to mature. A Bankhar may not show good guardian behavior for 2-4 years - this must be planned for and expected. Herders need to be informed of this since they may not see positive results right away.

Good nutrition is very important for the wellbeing and performance of a livestock guardian dog. Lack of good nutrition has been shown to be a major cause of livestock guardian dogs failing to do their jobs. When a dog does not have the proper nutrition it will wander from its home territory in search of food, making itself more vulnerable to injury and leaves its livestock unprotected. In addition these malnourished dogs run the risk of becoming stray or feral. Stray/free ranging and feral dogs are known to be one of the major predators of livestock and data shows them to be much more frequent predator of livestock than wolves or large cat in the USA (UDSA NASS report, 2011). This is especially true for high prey drive breeds, or breed mixes - such as Asian free ranging village dogs which are genetic mixes of modern breeds, most of which have high prey drive (Home *et al.* 2017, Shannon *et al.* 2015). Free-ranging dogs are also known to prey upon wildlife (Weston and Stankowich 2014, Home *et al.* 2017). While this is an understandable and logical result of lack of care, the user of livestock guardian dogs must be aware of the issue and plan accordingly. Livestock guardian dogs do not discriminate between wild predators and feral or stray dogs, and are highly effective at reducing depredation on livestock by free ranging dogs.

Livestock guardian dogs are long-lived animals and not prone to health issues. This seems to be especially true of the Bankhar. However, all aspects of vet care must be planned for and implemented. This includes spaying or neutering where applicable; all vaccines and boosters; emergency care, as well as attention to footpads, noses, and mouths that may be effected by harsh weather. Clearly this is no small undertaking, and in the wide spread use of Bankhar in isolated areas; it is necessary to assess the presence and availability of vets in order to ensure that researchers and herders will be able to access professional advice.

#### D. Genetics

Related and often imperative to the health and working ability of a livestock guardian dog is the genetic makeup of the dogs and the breeding program or breeding situation that exist. The genetic diversity of the Bankhar is very high, potentially one of the highest found in a landrace population. It may also be one of the oldest canine landraces known (as suggested by Shannon *et al.* 2015). Traditional native landrace breeds have very high genetic diversity relative to modern domestic breeds of animals. It is the high genetic diversity that is thought to be part of the extremely robust longevity of the Bankhar (*pers. com.* – Herder Noyon, Gobi, Byangovi). However, as stated earlier in this introduction, the population of the Bankhar suffered a heavy reduction during the middle to end of the last century. When populations decrease abruptly, the unique genes that were represented in those lost individuals are gone forever. To account for a small population, the DNA of the landrace must be understood and a breeding program developed that will aid in the retention, or even an increase, in the genetic diversity of the landrace. To this effect a strategy is required to introduce genes from other geographically juxtaposed landrace dogs (in this case Central Asian Shepherds or Tibetan Bhotia or Gaddi (**See Breeding: Genetic Considerations**)). Influx of unwanted genes must be minimized, such as stray dogs of

modern breed generic makeup (often these dogs have strong prey drive). The implementation of a stray dog control system and education initiative would further help ensure genetic security and control to the working dog population. The breeding program will be designed to be implemented by the herders themselves. The focus will be to ensure success and understanding by those that own the dogs and designed to be easy, logical and inclusive thus empowering the herder-owners to feel pride in their breeding choices which create increasingly better co-worker Bankhar for the next generation.

### **E. Ongoing Analysis**

The ability to assess, demonstrate, and replicate success of this program is a parallel goal to implementation. Results of this project will be examined and analyzed throughout the five year period in order to scientifically support the approach and validate and quantify outcomes. The program will operate a long-term data collection methodology in order to continuously assess impact and track progress. This will include livestock loss data, predator-dog interactions, dog health and fitness monitoring, and periodic interviews with herders. This data will create a diffusible understanding of the program's effectiveness, as well as to demonstrate to future programs our successes and pitfalls. A strong scientific basis will add to the organization, legitimacy, and transparency of the program.

A data collection program should be implemented to aid local officials or clubs in keeping good data. In addition, for the first few years, very detailed data in the forms of observations, survey records, interviews and such must be carried out by trained field operatives or researchers, as it is their work that will help in the design and implantation of a strong self-sustaining program. The resulting data must be analyzed on an ongoing basis so that the program has the ability to react quickly and dynamically to changes or problems.

### **E. Self-sustaining Program**

Acceptance of the program by herders and others involved is critical to long-term success of the project. All programs such as this must go through a learning curve. Once the learning curve has been passed, the goal must be to shift to the long-term implementation and data collection and analysis. Projects fail because they lose local support, do not to gain community involvement, or do not to foster a sense of ownership by those involved. For a program such as this to gain acceptance it must have community involvement from the very start. Tools to help this happen must be developed such as continuing education, education of the younger members of the community, reward systems for herder-owners who excel at raising and working with their Bankhar, and other rewards focused on the unique aspects of the community.

The main aspects to consider for a self-sustaining program are: 1) a herder controlled breeding program; 2) a support network for new herders or to troubleshoot issues; 3) an easy to implement vet care system; 4) a logical and "fool proof" breeding program; 5) instilling a sense of inclusion and ownership by the herder in the program itself. Ownership empowers and gives a sense of pride in a herder's efforts and ways. A feeling of pride in the value and ability of their Bankhar dogs to make their lives and the lives of their family better, leads to a better understanding and openness to the natural environment and the stewardship it will require in the future.

## **Summary of Techniques:**

Please reference **Genetic Grouping of Bankhar- SNPs and Dog Breeding, Raising and Placing Protocol:** of this document and the MBDP website, specifically <http://www.bankhar.org/the-program>.

### *Overview*

Mongolia Bankhar Dog Project is a small, agile effort to reintroduce the use of livestock guardian dogs that once allowed nomadic herders to live stable economic lives that did not require constant conflict with predators. Our scope is narrow: we have already begun to achieve the goal of building a viable breeding program that can supply a healthy and effective population of working Bankhar to Mongolian herders. Early adopters (host herders that have already taken on Bankhar puppies to train and use them and livestock guardian dogs) will demonstrate to more skeptical neighbors that these methods are worthy of the effort. This wide scope will also be made possible by our experiments in determining not only the best training protocol, but the best way to deliver this information to herders - a task with hidden cultural complications.

### *Breeding Program*

Our breeding program is located in the buffer zone of Khustai National Park. We have had a strong and on-going relationship with the park and its rangers, as well as with area soum center. While we have not focused our placements in Khustai area, we have placed some Bankhar with local herders.

The facility houses 15-19 adult dogs and is overseen by a full-time caretaker. All of our dogs were collected from various areas in Mongolia, are unrelated and come from working (non-show dog) parents. In collaboration with Cornell's Institute of Canine Biology, we have collected and tested DNA samples from all of our dogs and confirmed their genetic viability.

We carefully select breeding pairs in advance and females usually go into heat in the Fall. Litters are typically born November to March and we follow a veterinarian-approved protocol of pre-natal and puppy care. We also adhere to a vaccination schedule for all of our dogs under the advisement of veterinarians in both Mongolia and the U.S.

### *Placement of Bankhar*

So far we have placed over 50 individual Bankhar with carefully selected herders in Nomgon, Noyon, and Gurvantes soums, as well as Terelj and Hustai National Park buffer zones. We maintain a community-focused perspective. This means that we prioritize seeking the recommendations and support from cooperatives and local leaders when selecting participating regions and herders. We collect data at multiple stages to ensure that our program is a) resulting in Bankhar working as livestock guardians, b) maintain the dogs' health and wellbeing and c) reducing predation and human-wildlife conflict.

### **Process**

Over the passed four years we have developed a community-oriented approach to selecting herders to participate in our program. Our ultimate goal is to find willing and motivated herders and families who are affected negatively by predation and are interested in owning and training a livestock guardian dog.

### *Step 1 - Identify NGO Partners and Community Leaders*

We first begin by identifying an area that has high herding activity and an issue with predation. After selecting an area, we look to identify other NGOs that operate in that area, or if there are any cooperatives there that are willing to collaborate with us. This allows us to access the advice and input from community leaders and follow whatever structure of cooperation already exists in a particular area. This method has resulted in mutual trust between our program and the communities we place dogs with, better recommendations for herders to include in our program, and therefore more successful placements. Ideally we attend a group meeting to introduce ourselves and explain our program, although this is not always possible.

After making this connection, we ask for recommendations from community leaders for herders we should interview. We give them some guidelines for what we are looking for, but mainly we simply want their opinion of who would be a successful participant.

### *Step 2 - Evaluation Interviews*

Next, we set out to find the herders that were recommended to us. This is often facilitated by a community member or individual who knows the whereabouts of most of the herders. If not, we try to obtain GPS coordinates for each herder and then find them.

The Evaluation Interview takes approximately one hour. We introduce ourselves and our program, ask our interview questions, and provide the family the opportunity to ask us questions. When possible, we also take the opportunity to see their herd and note if they have other dogs.

We leave each herder with a training protocol to review. This protocol was developed over the last three years in collaboration with livestock guardian dog experts, Mongolian herders, and our own trial and error. We follow up in this protocol by phone to make sure the herder understands it and is willing to follow it.

### *Step 3 - Selection and Placement*

Based on the information obtained in the evaluation interview the MBDP team decides who we will be placing puppies with that year. Just because someone is not picked does not mean they are ineligible and they may be considered for following years.

Despite a considerable cultural aversion to neutering male Bankhar among herders in Mongolia, we are now implementing a requirement that male dogs be neutered once they reach maturity. Several of our participating herders have been convinced of the benefits of neutering; we will draw on this momentum and their example to convince herders new to our program. Additionally, we only place spayed females.

We contact the herders we have selected by phone to confirm that they would like a dog, and then return (typically March-April) to place the puppies (we try to always place puppies in pairs as this increases their effectiveness as guardians). The herder signs a



contract with MBDP outlining their responsibilities to the dogs and the program. We require a 40,000MNT deposit upon delivery that will be returned a year later if the herder has been using the dog as a livestock guardian. This is not a payment for the dog, it is simply to encourage participation for the first year of the program and prevent herders letting their Bankhar pups become ger dogs. Occasionally in the past, a herder will receive puppies from us and shortly after decide to not continue with the prescribed protocol due to difficulty, time constraints, or other reasons. Eventually those dogs will simply act as ger dogs and not follow the herd, nor provide adequate protection to livestock. Each pup requires significant time, effort, and money on the part of our project, so we aim to limit the number of dogs that do not become livestock guardians.

#### *Step 4 - Follow Up*

We take follow up very seriously. MBDP aims to provide as much support and advice to the herders in our program as possible. We stay in touch with participating herders throughout the year by phone to answer questions and get feedback about how the protocol is working. We also try to put newly participating herders in touch with other herders who have already been successful at training livestock guardian dogs.

After placement we visit the dogs about twice a year. During this visit we do a health-check of the dogs to make sure they are not injured or ill, we observe the dogs interacting with the herd, and we conduct a Follow-Up interview with the herder that takes approximately 45 min.

During this visit we are looking to see that the dog is in good health and is progressing as a livestock guardian. We also collect data to determine if the presence of the dogs is preventing predation on the herd. If necessary, we give the herder suggestions for correcting any undesirable behavior in the dogs.

#### *Step 5: Trips and Staying in Touch*

We estimate that 4 to 5 trips per year are necessary for accessing a new area of placement. Trip One is for meeting community leaders and getting recommendations of herders. On Trip Two we conduct 'evaluation interviews' with those herders that are interested and have been recommended (usually occurs June-September). Depending on the distance between herders, we aim to access about 12-15 herders per trip. On Trip Three we actually deliver the puppies (usually March-April). After placement, one to two trips are necessary for collecting follow-up interviews with the herders to assess the success of the dogs and get feedback. As aforementioned, we remain in contact with herders between visits to check up on the dog's health and progress, as well as help herders with training questions if something isn't working out.

#### *Step 6: Data Collection and Long-Term Contact*

In alignment with our long-term goals, we plan to remain in contact with our participating herders and perpetually collect data on our placed dogs for the foreseeable future (minimum 10 years, roughly a dog's working lifespan). By doing so, we aim to collect

a body of data that demonstrates how livestock guardians can reduce predation and lead to more sustainable herding practices in Mongolia.

## **Mongolian Bankhar Dog Project - Findings to Date:**

This is a summary of the Mongolian Bankhar Dog Project (MBDP) past history and performance. We present it here in order to highlight the learning curves and lesson of the last 5 years of operation (more specifically the years 2014-2017). This information will be presented as a timeline with each year having a bullet point breakdown of the year's activity. Each year will also show any data of value to this proposal. Data will be summarized, but where possible data will also be presented in table and graph form. The end of each year section will have a summary to include lessons learned.

### **Basic background:**

- Project was conceived by Bruce Elfström the spring of 2003 while working on an IMAX film in Mongolia. Bruce witnessed the existence of the Bankhar livestock guardian dogs, but found out they were very rare.
- Bruce developed plan to start a breeding and placement project in 2005 during filming of the IMAX film.
- Various trips were made and information gathered from 2005-2012 to determine if enough Bankhar still existed to make project feasible. In addition herders were interviewed to assess interest level. The results were that there were Bankhar, though few, enough to satisfy the genetic needs. Herders and all interviewed were very helpful and enthusiastic to see the project formed.
- It was determined that the project had a good chance of success and great local support
- Staff was hired to find dogs and build breeding facilities
- Herders were chosen and given dogs
- The manner the dogs were raised and used was develop, adjusted and implemented
- 2016/2017 marked the period were most issues were identified and rectified enough that data on the affect of the dogs on the lives of the herders and predator could begin to be collected

### **Timeline Summary:**

The years leading up to 2016 were an incremental process of information gathering and troubleshooting that led to later stages of the program in which more robust data could be collected. Prior to 2016 the MBDP proceeded in a step by step manner as follows:

2003 – 2011: Feasibility study.

2012 – 2015: Step by step process to develop:

- 1) How to work with herders.
- 2) How to breed dogs.
- 3) How to raise dogs.
- 4) How to train herders.
- 5) Where to place dogs.

- 6) How many dogs per herder.
- 7) Troubleshoot all aspects.

2016-2017: The fall of 2106 was the tail end of our learning curve. It was then that the team switched focus from experimentation, growth, dog gathering, and facilities development to focus more on the implementation of the project itself:

- 1) We were choosing the right herders in the right places.
- 2) Placing dogs that reflected the manner in which they were raised, bred, and trained.
- 3) Recorded data became more regimented, organized, and reliable.
- 4) Community involvement was stable and mutually beneficial.
- 5) Areas where pups were placed were under high predation pressures.
- 6) Staffing was stable and the staff was knowledgeable and able to operate independently.

### **Timeline Specific:**

#### **2003-2011:**

Summary: Mr. Elfström took notes and photos of many dogs in Mongolia during his filming trips for IMAX. Individual dogs that displayed attributes of other livestock guardian dogs were especially examined. He researched archives and other sources to find information on the dogs of Mongolia pre 1960, primarily from the U.S. By enlisting contacts made during the IMAX film shoot, Bruce and his small team were able to get pictures, measurements, and some basic surveys done. Staff of Nomadic Expeditions (Badral Yondon, Gereltuv Dashdoorov, Jalsa Urubshurow) assisted at this stage. With their ability to frequently get to isolated areas they were a good choice to collect some basic exploratory information. Progress was slow but by 2010 the team started conducting interviews whenever possible, especially at festivals.

#### **Results:**

- Elfström data (2003 - 2005) livestock guardian dogs, called Bankhar (Banxar, Banhar, and various), were rare but did exist esp. in isolated areas (Gobi, Byangovi). These dogs were large (Up to 32 inches at the shoulder) and medium to heavily built (up to 55kg). Pictures of these were taken and archived with Mr. Elfström. All herders knew of Bankhar. Herders knew Bankhar live and work with and follow sheep. Data showed that depredation on herder's livestock holdings were 10-15% of holdings per year.
  - All herders (100%) agreed that with a dog they would lose less livestock and also not have to kill predators.
  - All herders (100%) killed apex predators either whenever seen, or as retaliation for predation on their or their neighbors livestock
  - Breeders of Bankhar were unknown until 2009. Breeding was done carefully by some families. This breeding was done with care and females were not

allowed to breed with village or “regular” dogs. This was only 3 families encountered out of a possible 50

- Archival footage, photos and written accounts: all basically showed a very tall dog (even compared to large “village” mixes). Most people thought the Bankhar of “old” was almost gone. Their “grandfathers” dogs were larger and worked with sheep better.
- Vast majority of dogs were “village mixes” and not Bankhar
- In isolated areas the dogs were found. These dogs were tall and sturdy, but also long legged and fast of foot. Showed typical tail over back, floppy ears, size. Manner of moving and other attributes of dogs that can be seen in archival materials.

### **Results:**

- Mongolia still had livestock guardian dogs
- These dogs were of a type – shared common attributes. i.e. Bankhar did exist.
- Bankhar can be found and obtained.
- The Bankhar, when they exist in an area, are treated with great respect and pride. Breeding is controlled.
- The herders understand and do not need to be convinced to adopt the dogs as work companions.

### **Discussion:**

The over reaching concerns to start the project were: 1) Are herders losing livestock to predators? 2) Are there Bankhar anymore? 3) Do the herders see the value of livestock guardian dogs? 4) Is there enough of both these points to make risking a project worth it?

The results of this somewhat loose collection of anecdotal information (necessitated by budget, distance, etc) was that herders were under great pressure from predators and they actually did all they could to kill as many as possible (wolves and snow leopards primarily).

Critical to starting a project to breed and give Bankhar back to the herders was their acceptance and involvement in the project. Without this cooperation, the project could not succeed. All herders we interviewed (100%) saw the logic and were excited and supportive of the idea. This acceptance was surprising since the concept came from a non-Mongolian outsider.

A major question was if the Bankhar exist at all and, if not, would another livestock guardian dog due? Thankfully it was clear that the Bankhar did exist though they were rare. The struggle to convince herders to use a dog other than the Bankhar would be difficult. In the past most Mongolian dogs were Bankhar, however the current dog population in the early 2000s was primarily composed of village dog mixes. The Bankhar was proving very rare and totally absent from areas in which they were once very common. These Bankhar that were found look identical to archival footage and pictures and descriptions given by herders. Pictures of “good Bankhar” were shown to herders that had not seen any for sometime; all these herders supported that these dogs were Bankhar, a Traditional Native Landrace breed.

**2011-2013:****Summary:**

*Much like the years before, but with more frequent communication with host volunteers in Mongolia. Mr. Elfström travelled to Mongolia in 2012. The goal was to confirm personally that Bankhar, worthy of a project that would establish the Bankhar in Mongolia, were still numerous enough that a breeding group could be established that would not result inbreeding and in a small gene pool.*

**Results:**

Between the expedition and the continued interviews and data collection it was confirmed that the project had what it needed: a reason to exist; namely - 1) depredation was high to very high and seriously affected herder's ability to continue to live traditionally, 2) herders often killed apex predators and carried out retribution killings, 3) herders knew the value of the use of the Bankhar and supported its implementation 4) enough Bankhar existed Bankhar to have a healthy and viable breeding population, 5) the Bankhar across Mongolia still retained high genetic diversity when measured

**Discussion:**

This period and the trip to Mongolia especially confirmed that the project had what it needed. It was at this time that Mr. Elfström official chose to start the MBDP.

**2014:****Summary:**

The Mongolian Bankhar Dog Projects (MBDP) parent nonprofit organization the Nomadic Guardians Foundation was established in the USA as a 501c3 organization. A website was built late 2014.

Mr. Elfström sent one of his employees, Doug Lally, to Mongolia in January of 2014. The goals were:

- Collect DNA samples to send to Adam Boyko's Lab at Cornell University (see Shannon et al).
- Find breeding group of 4-6 dogs of unrelated backgrounds from differing regions of Mongolia (to ensure genetic diversity)
- Find an area to build the kennels needed to breed the dogs. Also find materials and food for dog husbandry.
- Build enclosures to house dogs with sheep. Breed dogs as soon as practical and logical.
- Determine breeding habits and husbandry of dogs
- Determine husbandry of dogs with livestock
- Develop the protocol for breeding and placing dogs.
- Develop the criteria of choosing adoptee herders

- Find partners to help establish project in Mongolia and get it into the hands of Mongolians as soon as possible.

**Results:**

- Dogs were sampled and analysed (via SNPs -Single nucleotide polymorphisms) and showed that the dog was a Traditional Native Landrace Breed that grouped genetically into a unique population. Generically the Bankhar had 4 unique haplotypes and differed from other livestock guardian dogs, such as Tibetan mastiff and Central Asian shepherd's dog, and others. (**See Genetic Grouping - SNPs**).
- Bankhar had very high genetic diversity (see Shannon *et al*). Adam Boyko PhD at Cornell states this landrace might be one of the oldest native breeds in the world.
- Doug Lally and the MBDP receive co-authorship on landmark Canine Genetics study (See Shannon *et al*).
- Mr. Megddorj Khorolsuren had been collecting Bankhar from working herders in the countryside for the last 1.5 years. His goal was to save the breed. While this is not the primary goal of the MBDP, his ethos matched the MBDP's. With his help we found lands to lease on which to build our enclosures. In addition, we bought his group of dogs (8) to be part of our breeding group of 12-20 individuals.
- All expenses and guidance to begin the project was entirely funded and lead by Mr. Elfström.
- The MBDP invited Orysia Dawydiak, Vicki Hughs, Dr. Robin Rigg, Megddorj Khorolsuren, Dr. Carol Beuchat and Dr. Adam Boyko to be part of an advisory board for the project. All accepted but for Dr. Rigg (he was too busy with a similar project in Slovakia).
- Lands were leased, enclosures were built, and dogs were purchased.
- Mr. Elfström developed the protocol for how dogs must be bred, raised, and placed with herders. With aid of the advisory board this protocol became the early foundation template still used by MBDP today.
- Dogs were found in the countryside and purchased from Megddorj Khorolsuren

**Discussion:**

Doug Lally and Mr. Elfström via daily communication established the breeding facilities north of Ulaanbaatar on lands leased from Megddorj Khorolsuren. Doug's hard work and tenacity as well as some help from Megddorj Khorolsuren resulted in a facility of 12 large enclosures to house a dog or a pair of dogs with sheep.

Mongolian volunteers, veterinary staff, and salary MBDP staff were found to care for the dogs and facilities.

Dogs bred in the fall of 2014 gave birth in 2015 (March – June 2014). These dogs were all treated following the established Protocol (**See Genetic Grouping of Bankhar- SNPs and Dog Breeding, Raising and Placing Protocol**: for current protocol details) that is in summary:

- Dogs bred from parents with most unrelated DNA

- Dogs paired by complementary confirmation to ensure dogs behavior and physical attributes were in keeping with good livestock guardian dogs and in keeping with what the Bankhar of old is know to have been like.
- Sheep and goat were housed with all pregnant females.
- Females gave birth to puppies and puppies grew up with sheep and goats.
- Pups were socialized to people to the required level
- Dogs fed what a typical nomad herder would feel his or her dogs (Sheep innards, noodle/rice. Water all boiled together).

## 2015:

### *Summary:*

- This year was dedicated to showing herders the organization was serious, willing to work with them and the community, had good dogs, knew what they were doing, and had scientific background. Basically this year is dedicated determining if we can get the project off the ground, learn the ropes, troubleshoot placing dogs, work with herders and learn what works and does not.
- Elfström sends intern from USA to Mongolia. Devin Byrne sent to aid Doug Lally (Jan 2015)
- Developed Head Starting dog training protocol (**See Genetic Grouping of Bankhar- SNPs**)
- Develop protocol based on methods shown to work scientifically across many programs, (See Cooperage 1982, Dawydiak and Sims, 2014). (**See Genetic Grouping of Bankhar- SNPs and Dog Breeding, Raising and Placing Protocol**)
- Protocol adapted to Mongolia based on general and unique situation such as if herder has Hashaa or not. (**See Genetic Grouping of Bankhar- SNPs and Dog Breeding, Raising and Placing Protocol**)
- Spring 2015 three litters of pups were born.
- Placement of Pups at this time was done to determine correct protocols and not as much in expectation of effective control of predators. We had a realistic vision of the first 1-3 years of dogs placed being part of our learning curve.
- The spring of the year we took two trips to the Gobi. One was to interview herders about livestock losses, need or no need of a Bankhar, collect DNA samples, and to get a general idea of the husbandry techniques used in the Gobi vs. other locations in Mongolia.
- MBDP team crashes project vehicle while transporting pups to Gobi. All staff and dogs uninjured. Vehicle a total loss.
- Increased networking
- MBDP meets with director of Gorkhi Terelj National Park and enter into agreement to place pups with some herders in area. Goal: define protocol for herder raising pups. Place 7 pups Gorkhi Terelj National Park.



- MBDP meets with director of Hustai National Park and enter into agreement to place pups with some herders in area. Goal, define protocol for herder and raising pups. Place 11 pups.
- MBDP expedition to Gobi and south Gobi. Goal to find herders independent of park systems and in an area heavily stressed depredation. Goal, protocol troubleshooting in area with heavy predator density using just our own connection with herders, elders, and local community organizations. Place 4 pups.
- Determined elders and community support critical to herder choice and dog placement
- Data collection starts – limited data collected on dog effectiveness, livestock losses per and post dog.
- Interns Doug Lally and Devin Byrne leave Aug 2015.
- New intern Greg Goodfellow arrives Aug 2015
- Fall 2015 several herders refuse lighter colored dogs. Herders feel the livestock will confuse with wolves and will not run from wolves. Mostly Gorkhi Terelj National Park herders.
- Fall 2015 herders issue with males dogs that ate neutered. Herders feel neutered dogs are less effective. Herders are told all dogs will be neutered until stray/feral dogs are controlled in the future. Herders are given thorough explication other neutered dogs are as effective and intact dogs. No evidence has been shown for this and the opposite may very well be the case. (Marker et al, 2005).
- One litter in fall of 2015.
- Due to staffing issue errors were made in dog pairings for breeding. Best matches did not mate. However, erroneous matings were still more than acceptable relative to DNA and conformation.
- Issues with data – explain just trying to get going and accepted. Trying to see if protocol works.

### **Results:**

- **See Pup Placemnt Table** for pup placement chart.
- Herd sizes growing per herder – Herd sizes have been increasing over last years. This esp. true of herders bound to cashmere market. Situation common across Mongolia. Also same, though at lower rate, with project herders. (**See Livestock Holdings Over Time**)
- Herders issue with dog color. Two dogs were taken back. Herders did not receive replacement that year due to lack of puppies. Literature and research show color is not a variable of dog's effectiveness. (Coppingger and Coppinger, 1982)

- Fall 2015 herders issue with males dogs that are neutered. Herders unhappy with this aspect are not given dogs. No evidence has been shown for this and the opposite may very well be the case. (Marker *et al.*, 2005).
- Errors were made in dog pairings for breeding- team learned to be more careful with this in the future.

### **Discussion:**

This year was another stage in learning steps designed to refine aspects of the project before the project goes into full action. The following issues and lessons are of interest:

- Protocols laid out for the use of Livestock Guardian Dogs (LGD) in other areas of the world had aspects that we ill suited to Mongolia.
  - Fencing is not used in Mongolia. Much of the literature and research on LGD was done on farms that used fences to hold their livestock. We found that the bonding process of the dog to the livestock needed to be a focus to ensure the pup's proximity to the livestock at the critical age of 5-13 weeks (Coppinger and Coppinger, 1982, Dawydiak and Sims, 2014). Our solution was to ensure the pups were with livestock at all times by housing a small group of livestock fenced in with the pups until 13 weeks. This was accomplished with our own livestock at the MBDP facilities as well as with herders by the construction of "play Pen" in Hashaa or near livestock feeding areas.
  - Mongolian herders vary in their herding techniques. Some herders stay with herd and others let herd go off alone and check up on them periodically. These differences have a great affect on the pups in training. The dogs are at risk of bonding more strongly to humans that to livestock. We resolved this issue with limiting interaction of the herder and the pup, ensuring the pup is fed and watered with livestock only, ensuring pups do not stay near gers, ensuring pups sleep in Hashaa, and if a pup leaves the herd, to use a rock-filled can (noise maker) to remind pup to go back to the livestock.
  - Feeding and watering the dog with the livestock was often not done. This forced up to stress this very strongly and to adapt the protocol to stress it. Also the contract with the herder included a pledge to follow these instructions and the protocol as a whole.
- Dog color is important to herders. While they may feel that the lighter colored dogs are confusing to the livestock, no research supports this. This issue did lead to the removal of two dogs from herders. MBDP feels strongly and is supported by scientific evidence that to only choose a particular color in the offspring of any breed or species is to decrease genetic diversity and to inadvertently carry out artificial selection. MBDP will continue to breed all colored Bankhar and place those of differing color with herders that do not have a preference. The contract with a herder was modified stating color preference could not be accommodated.
- Herders we interviewed all wanted Bankhar. We assessed herders' losses due to predation and their need for improved predator deterrence. These interviews demonstrated that these herders could in fact benefit from the implementation of the Bankhar Dog. However, we did find out later that this was not always the case.

We therefore changed our protocol to include interviews and surveys about livestock losses in the area well before placing dogs. In areas of low depredation levels Bankhar were not placed. This is not to say we did not place dogs with herders that had no losses, but that we instead placed dogs only in areas that as a rule were suffering losses. For this reason we shifted focus from the Gorkhi Terelj National Park region to the Gobi and southern Gobi areas.

- General follow up. It was clear at the end of 2015 that more frequent follow up was needed even after the pups training seemed successful. Herders often fell into a pattern that did not reflect the commitment to the protocol that was needed. This was especially true regarding where dogs were fed and watered and how much pressure and effort was put on ensuring that the dogs stay with the livestock at all times and not stay near the ger. Frequent visits (1 or 2 times every quarter) seem to help herders feel supported and part of a team. Pride in doing things right comes easier if someone is told they are doing well and if they are allowed to be part of the process to succeed.
- Survey and interview format was changed to stress the dog's bonding process, training consistency and general dog care. The interviews now incorporated question targeted at future data collection: livestock numbers in holdings, losses to predators, losses to winter kill (dzuds), dog behaviors, predator sightings or sign.

## 2016

### *Summary:*

In 2016 we felt confident in our protocol, breeding, training, and management of the Bankhar. As such this year was dedicated to placing dogs in areas of need and areas we already worked in so as to have the advantage of an economy of scales. Our breeding group of dogs was even larger and more varied with many good representative dogs all conforming to the type we have set up (DNA, working stock, confirmation). Our data collection (surveys, interviews) was stable, understandable and applicable to the project and to the reality of the herder's everyday lives and unique challenges. This was also a year of tightening and solidifying partnerships with herder community's organizations, Hustai National Park, other NGOs (Wildlife Conservation Society, Snow Leopard Trust, and others), and other governing regional authorities.

This was the year the MBDP began to function as planned. Herders were happy, dogs were working well, our partnerships were positive and mutually beneficial and solid data was resulting, planned pairings of breeding adults went as planned, and our reputation as a serious scientifically based organization was being accepted by herders and scientist alike.

In addition, and perhaps most importantly, our placed dogs in high predator pressure areas were beginning to show true working ability. The dogs were showing that our work and lessons learned were paying off and these dogs were, as hoped, following herds independently, keeping predators away, and working with their human companions. Preliminary data from the Gobi dogs confirmed these facts; namely a reduction in losses to predators of 80-100%.

Unfortunately 2016 was also a period of trials and tribulations. We were forced, for unknown reasons, to leave our facilities outside of Ulaanbaatar. The expenses of building new enclosures was relatively massive and set us back from placing more dogs as we had planned. However everything has a good side. Our introduction to Hustai National Park not only turned to be beneficial for us as a new location, but we were able to hire a former park biologist, Mr. Batbaatar, Tumurbaatar to head our project. This step was critical start towards satisfying a paramount goal of the project that it would eventually be a project based in Mongolia and run fully by Mongolians. Batbaatar Tumurbaatar's connections and depth of experience with the park and the locals in the areas surrounding the park made for a seamless and co-advantageous relationship among all parties involved. Additionally, we added Mygmar Dorj, a former herder and ranger for the national park, to our team as a full-time on-site caretaker.

We cemented our relationship with Hustai National Park; without their help we would have had a more difficult time. With their aid we were able to buy/lease property adjacent to the park. We were also fortunate to have a patron donor give us a one time donation to help cover the construction of the new and improved enclosures.

Additionally, we formed a partnership with Wildlife Conservation Society (WCS) through their Cashmere Cooperative program in Nomgon Soum.

- Moved facilities to new location
- Built new and larger and more numerous enclosures for breeding group
- Solidified partnerships with communities and organizations
- Refined dog protocols based on the lessons of the past
- Refined and implemented more herder data collection in the form of interviews and surveys
- Relationship with WCS.
- Placed more dogs in areas of high predator pressure
- Formerly placed dogs now reached an age to show true working ability
- First data from working dogs in high depredation areas.
- Data supports hopes: reduced losses to predators and effective working behavior in dogs.

### **Results:**

- New facilities built – **See Facilities - Photos.**
- Dogs placed after protocol learning curve show better working ability. Dogs and herders that did not show promised decrease from years past – **See Livestock Losses Over Time: Graph**
- Livestock losses reduced - **See Livestock Losses Over Time: Table**
- Batbaatar Tumurbaatar proves to be a valuable asset to the team.
- WCS becomes a partner.
- The project is in a transitional phase between learning/troubleshooting and true implementation.

**Discussion:**

Despite the major setback of losing our original location, MBDP ended up with a much larger facility in a better location by the end of 2016. This year our team grew to include a highly capable leader, Batbaatar Tumurbaatar, and a reliable full-time caretaker, Mygmar Dorj. Our relationship with Hustai and the surrounding area became reliable, trusting, and mutually beneficial. Further developments in our placement procedures and relationships with communities set up the program to be on track for optimal implementation. Our relationship with WCS provided more legitimacy, mentorship, and better connection and access to Nomgon Soum.

**2017****Summary:**

- New in-country manager, Zoë Lieb, to work with Batbaatar Tumurbaatar.
- MBDP establishes more robust methodology and protocol for collecting data.
- The team begins to collect more data and records of puppy growth and implements improved whelping care.
- Three litters are born late 2016/early 2017 yielding 11 pups (one of our females encounters a serious health condition and loses 8 out of 9 pups).
- The program further develops a relationship with WCS, sourcing funding for three trips to Nomgon Soum.
- Trips to Nomgon Soum: Follow-Up & New Herder Interviews in collaboration with WCS team (January); Pup Placement Trip (June); Follow-Up & New Herder Interviews (September).
- The team conducts exploratory trips to Khövsgöl (March) and Arkhangai (August).
- Summer Internship - Andrew Prunk contributes to photo library of individual dogs, assists on trips, and compiles data.
- MBDP starts working with more volunteers for outreach and fundraising in Ulaanbaatar.
- Zoë and Batbaatar present their project to a general audience in Ulaanbaatar and to Snow Leopard Trust in the Summer 2017.

**Results:**

- MBDP gains credibility to its community and organization partners.
- Because of more thorough and organized data, the team is able to start analyzing interview answers and follow-up information to determine impact so far.
- The team has a smooth year of interviews and follow-up data collection because of the improved design of surveys and more experience with selecting herders and community partners.
- Interest in the project grows among laymen, online followers, herders, communities, and other programs.

**Discussion:**

With Zoë and Batbaatar as the main in-country team, the program progressed with a newly designed approach to gathering and storing data, an online compilation of evaluation and follow-up interviews, and a systematization of recording observational information about placed Bankhar dogs. The breeding season did not yield as many pups as they hoped due to the illness of one female, but the team gained experience and knowledge of puppy care and formed a closer relationship with the veterinarians in Ulaanbaatar.

Additionally, MBDP hired Petra Elfström as head of outreach dedicated to social media and heading up communications to improve its PR and follower education with more regular newsletters, an active social media presence, and a public presentation. Three dedicated volunteers came to the program in 2017 to provide photography, networking opportunities, supply delivery, and other assistance.

The team became closer to the leadership in Nomgon Soum in 2017, meeting with the governor and the board members of the Cashmere Cooperative in the area. MBDP also formed ties with a yak-wool cooperative in Arkhangai, collecting interviews from the community and learning more about the predator deflection needs of herders in a different region. A trip to Khövsgöl also yielded new professional connections with the Mongolian Ecology Center and conservationists in the northern region.

Starting a Summer Internship in 2017 helped MBDP source additional man-power. Andrew Prunk contributed significantly in data organization and collection, helping the team troubleshoot methods and lay the groundwork for a future structured internship program.

Batbaatar, Zoë and Petra grew in their expertise and understanding of the dogs, the herding communities, the process of implementing the program into new areas, and all aspects of general outreach. They gained significant experience in how to approach new communities and articulate their intentions and expectations so that they were understood, respected, and could form effective working relationships with herders and leaders.

**2018 Current Staff:**

Batbaatar Tumurbaatar - Project Scientist and Manager

Mygmar Dorj - Caretaker

Zoë Lieb - Project Manager and Development Director

Petra Elfström - Public Relations Coordinator

Bruce Elfström – Director

**Current Advisory Board:**

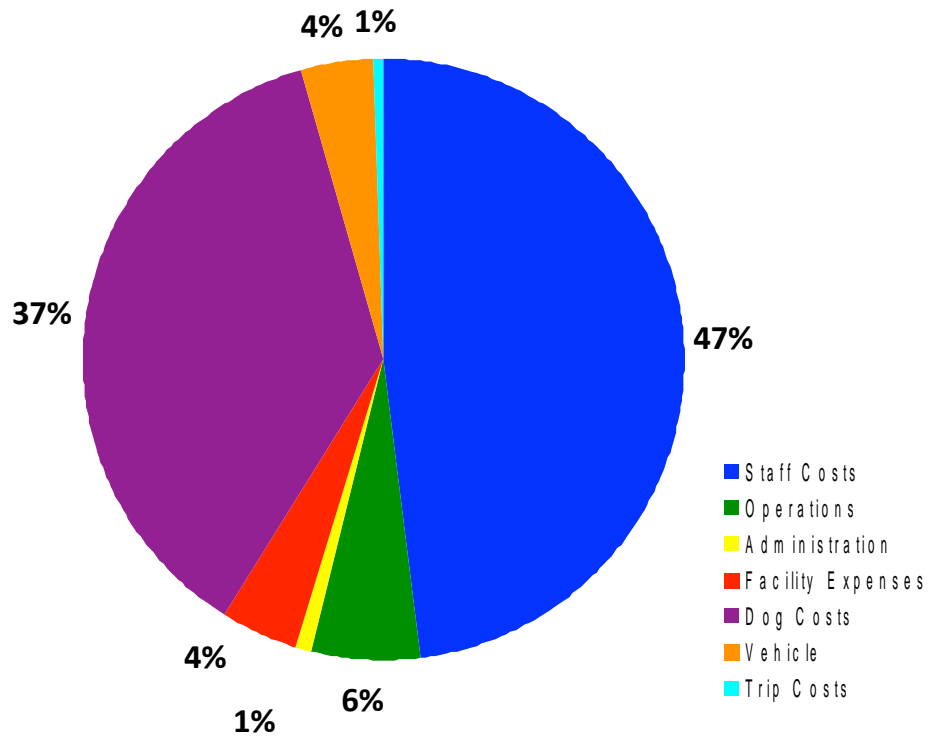
Dr. Adam Boyko PhD - Cornell University Veterinary Sciences

Oysia Dawydiak – LGD Expert, Author

Dr Carol Beuchat – Institute of Canine Biology

**Budget:**

Mongolian Bankhar Dog Project  
Budget 2017



**Budget 2017 - General**

Staff Costs	\$30,290
Operations	\$3,550
Administration	\$480
Facility Expenses	\$2,685
Dog Costs	\$23,140
Vehicle	\$2,390
Trip Costs	\$325
<b>Total</b>	<b>\$62,860</b>





Budget 2017 - Detailed	
Staff Costs	USD
Staff Flights	3500
Batbaatar Salary	16000
Mygmar Salary	3000
Social Insurance	600
Nasa (accountant) Salary	1000
Zoe Stipend	2800
Zoe Housing	1700
Zoe Visa run	590
Sugaar Salary	800
Misc. Travel Expenses (U.S. to Mongolia)	300
<b>Operations</b>	
Fuel	3100
Equipment	450
<b>Administration</b>	
Terra Viva membership	120
ACMS membership	35
Phone	300
Printing	25
<b>Facility Expenses</b>	
Grain	200
Hay	1100
Transporting Hay	140
Tools and other Equipment	500
Lands Fees	250
Soum Center Payment	250
Coal	245
<b>Dog Costs</b>	
Raising Pups (11 @ 450)	5000
Dog Food (annual)	17000
Collars (20)	75
Young Baavgai Transportation Costs	775
Vaccinations (adult dogs every other year)	175
Dewormer	115
<b>Vehicle</b>	
Maintenance & Repairs	1800
Tax, Registration & Inspection (Ranger & Delica)	250
Vehicle Insurance	340
<b>Trip Costs (excluding Fuel)</b>	
Water (annual)	30

### **Breeding: Gentic Considerations:**

Biogeographic Breeding Mimicry  
(from <https://www.bankhar.org/biogeographic-breeding-mimicry>).

It is our plan to follow a breeding protocol without project dogs that we are calling **Biogeographic Breeding Mimicry**. In a nut shell this involves purposeful breeding of, in our case, Bankhar with CAS and Tibetan Bhotia (or other landraces geographically contacting the Bankhar and having the same role) at a level that would mimic historical gene flow (natural here meaning the inclusion of people, culture, migration, as well as ecological forces) into an area of slight geographic isolation. While this influx of genes from other landraces will be very small indeed, by genetically analyzing the current DNA of dogs (ones we know have not been part of the pet or dog fighting lines – these are under very different selection and selective breeding forces than native working dogs) we can see to what degree genetic exchange has occurred over time.

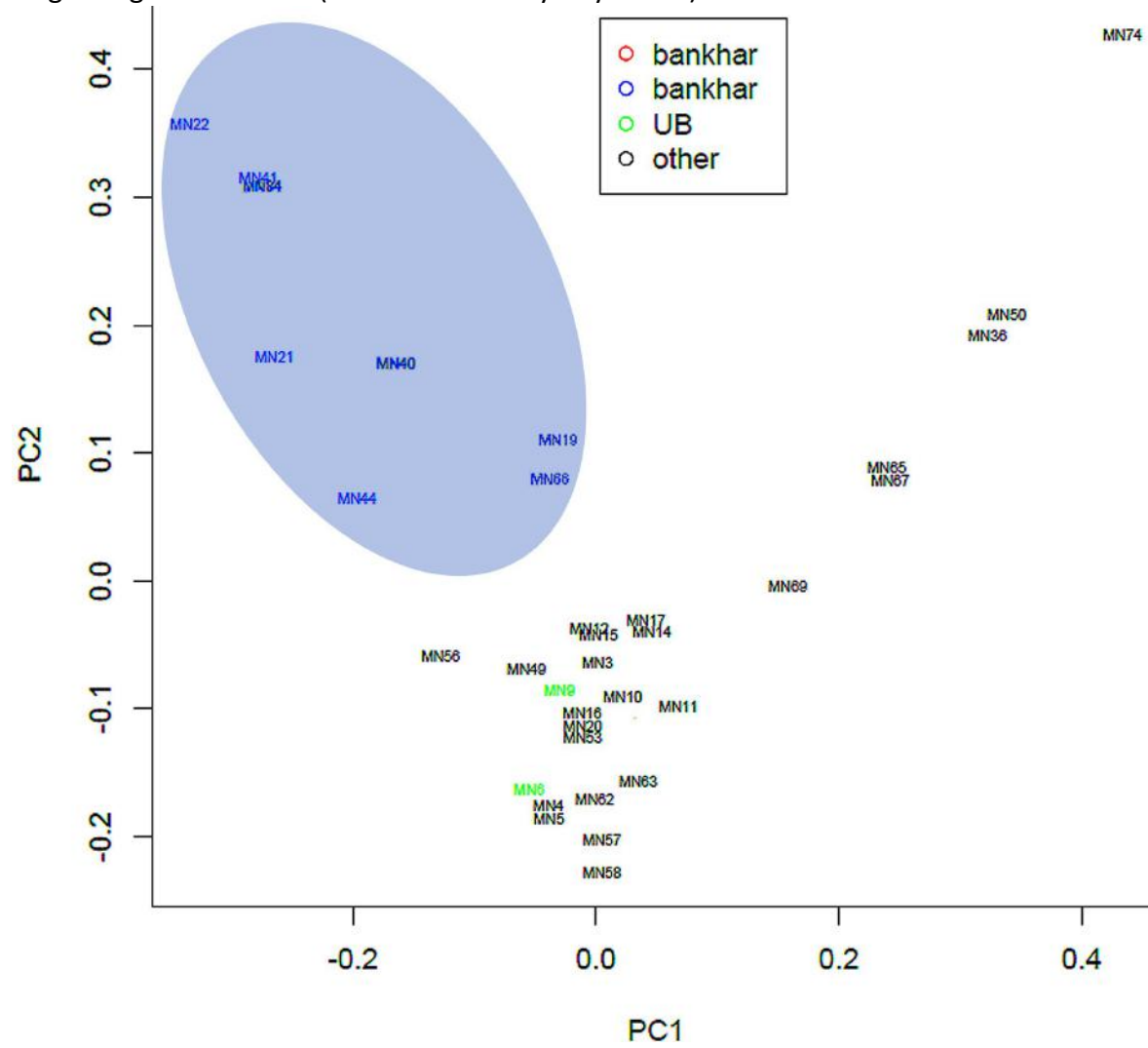
In summary we plan to breed our dogs in a manner that simulates on some level how landraces are created and sustained. The goal is to retain the landraces attributes and at the same time retain or increase its genetic diversity. This does not mean that we will be mating Central Asian Shepherds with Bankhar, but instead finding those Bankhar in areas near the geographic line between themselves and the Central Asian Shepherd, or Tibetan Bhotai or other. Through DNA analysis we will be able to

determine a relatedness scale between the landraces and use this to identify areas of overlap and gene exchange. We also hope to quantify how much gene flow has occurred in the past and it occurring presently.

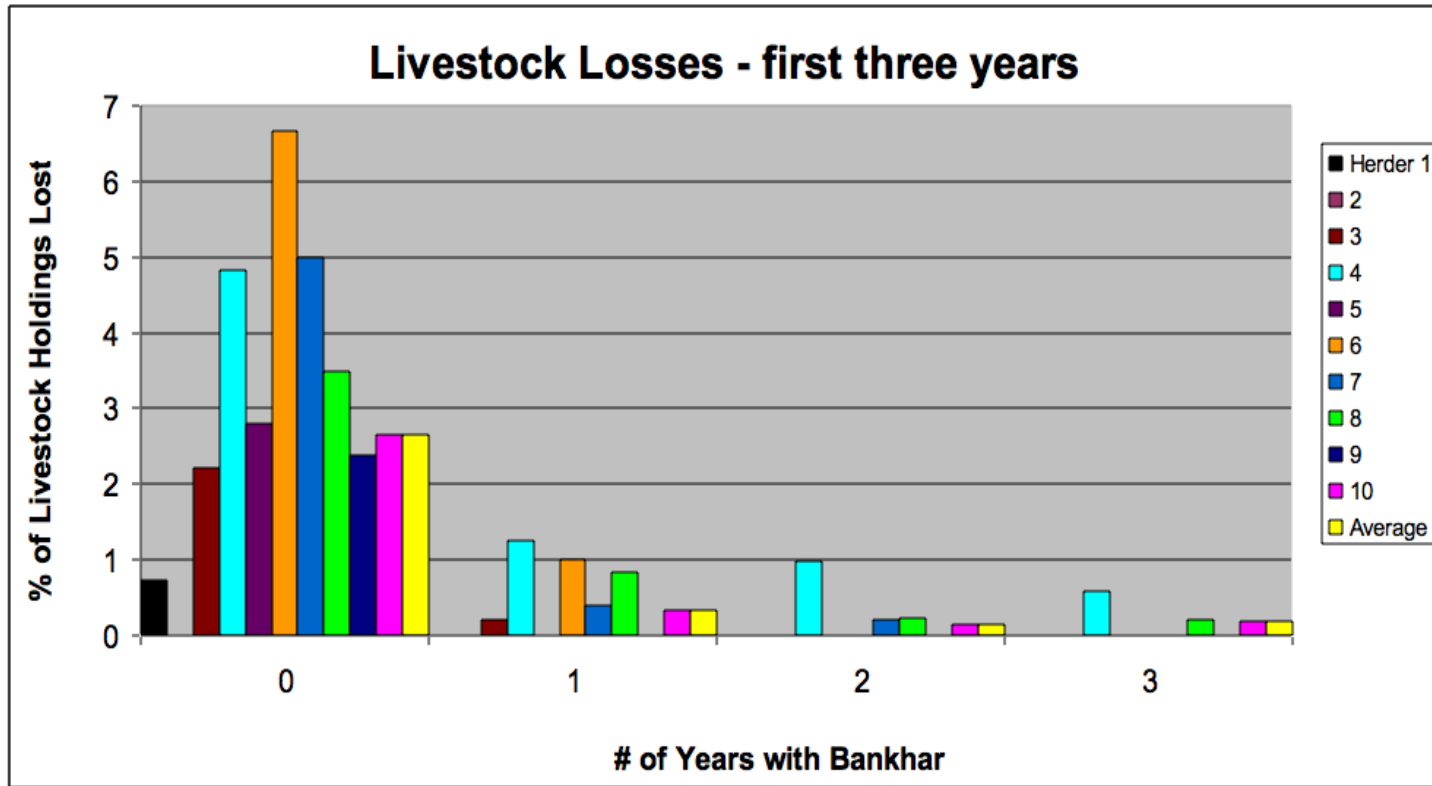
This coefficient can be used to incorporate new genes into the breeding group so that over time populations of landraces that have been reduced in number can be sustained as "unique" parts of the whole and also still be used to help sustain other landraces in turn. By combining this with a general breeding program that favors generic diversity, the traditional role of the dog and the general attributed needed for the dog's work, we hope to avoid the issue of dog "Breeds" as well as the inbreeding seen in many species in the wild and in zoos.

### Genetic Analysis of Bankhar dogs (Mongolia) - SNPs:

Genetic parameters – Bankhar dog Mongolia - Dataset (Cornell University Boyko Lab)



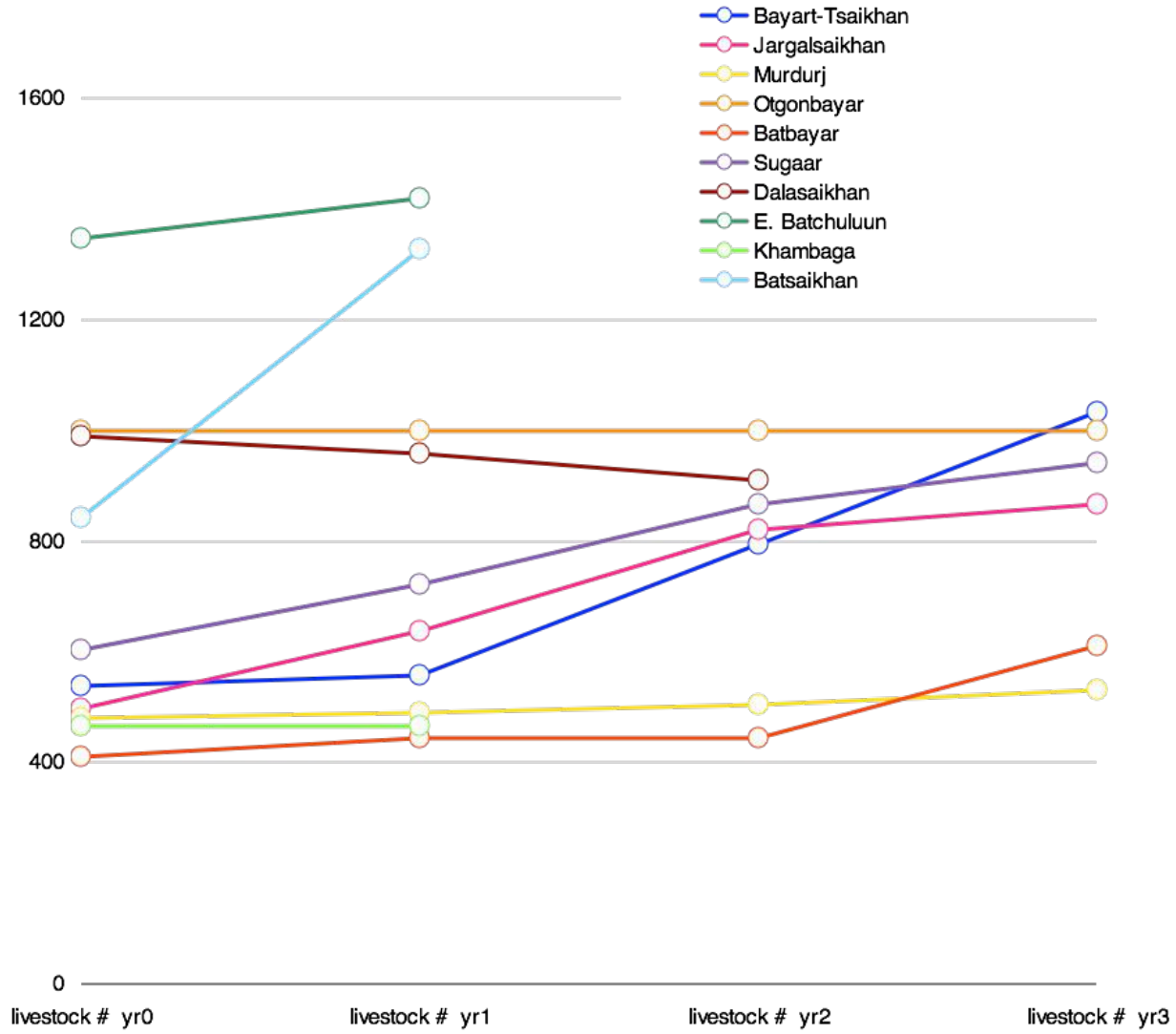
Livestock Losses: three years:



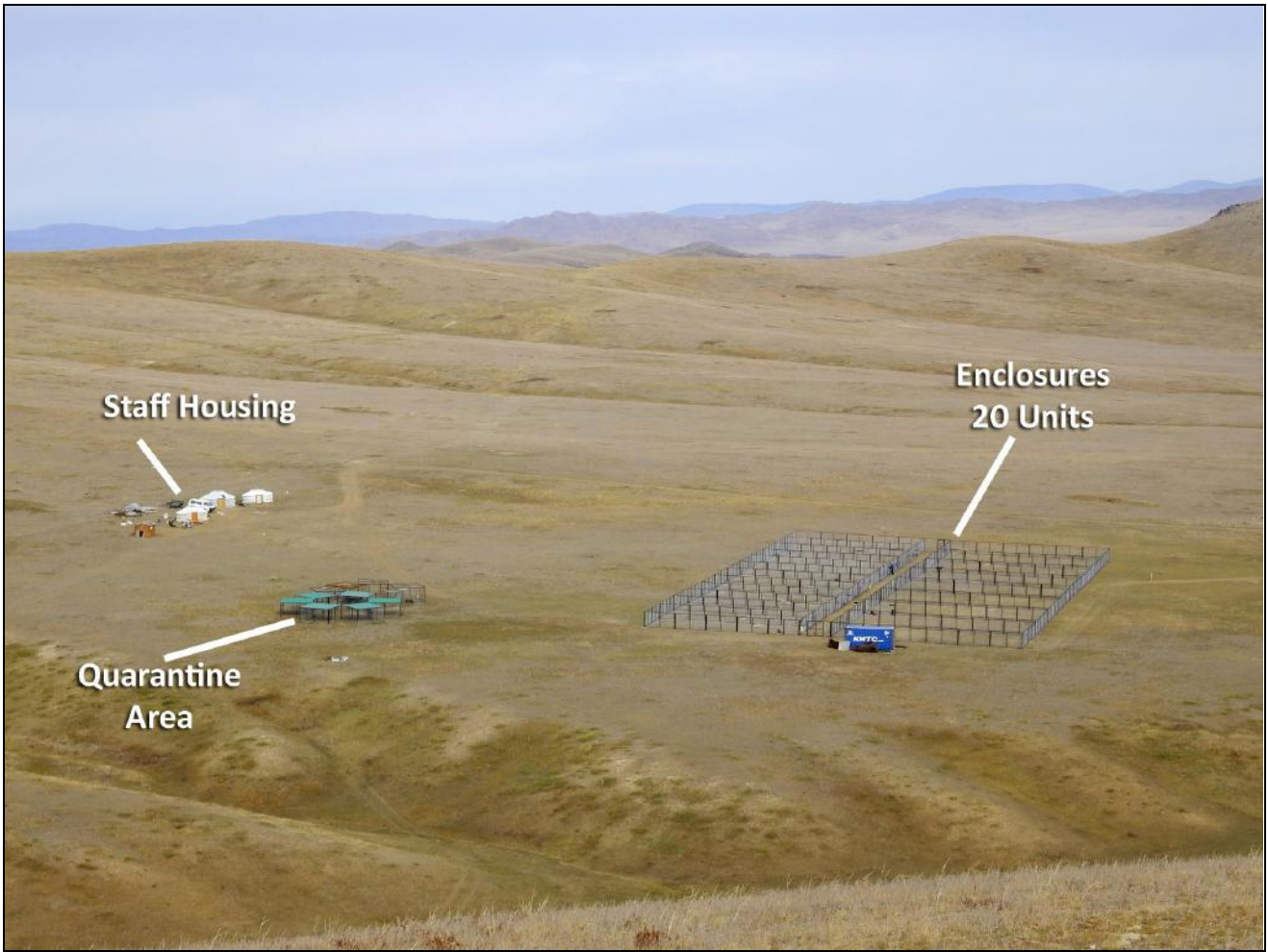
**Livestock Losses: three years: Data Table:****Date for above graph – Losses per 2015, 2016, 2017**

Herder																				
Name	location	Year placed	# Stock yr0	# Stock yr1	# Stock yr2	# Stock yr3	Years w/ Dog	# Dogs Yr1	# Dogs Yr2	# Dogs Yr3	Stock Loss yr0	Stock Loss yr1	Stock Loss yr2	Stock Loss yr3	% lose yr0	% lose yr1	% lose yr2	% lose yr3	Average Lose/yrs	
Batbayer	Nomgon , South Gobi	2017	411.0	445.0	445.0	610.0	3.0	1.0	2.0	1.0	3.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	
Bayart-Tsaih	Terelj	2015	539.0	557.0	795.0	1032.0	3.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Dalasaikhan	South Gobi	2016	989.0	958.0	911.0		2.0	2.0	2.0		22.0	2.0	0.0		2.2	0.2	0.0	NA	0.1	
E. Batchuluun	Nomgon , South Gobi	2017	1346.0	1418.0	1418.0		2.0	2.0	2.0		5.0	0.0			0.4	0.0	0.0	NA	0.0	
Jargalsaikhan	Khustai	2015	498.0	637.0	820.0	867.0	3.0	1.0	1.0	1.0	24.0	8.0	8.0	5.0	4.8	1.3	1.0	0.6	0.9	
Khambaga	Khustai	2017	466.0	466	466.0		2.0	2.0	2.0		13.0	0.0	0.0		2.8	0.0	0.0	NA	0.0	
Murdorj	sec1, r1	2016.0	300.0	600.0	650.0	550.0	2.0	1.0	1.0	1.0	20.0	6.0	0.0		6.7	1.0	0.0	NA	0.5	
Otgonbayar	South Gobi	2015	1000.0	1000.0	1000.0	1000.0	2.0	1.0	1.0	1.0	50.0	4.0	2.0		5.0	0.4	0.2	NA	0.3	
Sugaar	South Gobi	2016	603.0	722.0	867.0	942.0	3.0	1.0	2.0	2.0	21.0	6.0	2.0	2.0	3.5	0.8	0.2	0.2	0.4	
Batsaikhan	Nomgon , South Gobi	2017	842.0	1328.0			1.0	1.0			20.0	0.0			2.4	0.0	NA	NA	0.0	
Enkhtur	Terelj	2015	600.0	663.0			1.0	1.0	1.0		4.0	0.0			0.7	0.0	NA	NA	0.0	
<b>Total Ave</b>			<b>761.3</b>	<b>928.3</b>	<b>819.1</b>	<b>878.2</b>	<b>2.2</b>	<b>1.3</b>	<b>1.6</b>	<b>1.1</b>	<b>16.5</b>	<b>2.4</b>	<b>1.5</b>	<b>1.8</b>	<b>2.6</b>	<b>0.3</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	

Livestock Holdings Over Time:



**Facilities – Photos:**







**Mongolian****Bankhar Dog****Project****Whelping and Young Pup Protocol**

This protocol outlines MBDP's protocol for care and scheduling for pregnant females and their pups. Created December 20, 2016, edited April 5, 2017.

**Pregnant dogs**

During pregnancy- previously were receiving two extra scoops per day. Now we will feed more frequently and larger quantity (book says "as much as they want unless they're getting fat"). Use your best judgement and feel their bodies frequently for boniness, becoming over-weight, or any abnormalities.

Check mammary glands for swelling. Any hardening or lumps in mammary glands should be closely monitored. Hardened glands can be a sign of serious and painful infection - seek a vet's opinion if this occurs.

Ensure that the shelter is warm enough and not drafty. Extra felt can be added for insulation and reinforced with planks of wood to keep the dog from tearing it.

Check the ground inside the shelter for any debris like nails or fallen bits of wood. Cover ground in shelter with manure.

Livestock should be in enclosure during the pregnancy to acclimate the female.

Birth to 2 Days - After giving birth, the female's appetite will lessen for the first day or two, make sure to bring water directly to them inside their shelter. Make sure they drink, offer food.

Birth - 7 weeks (?)/Weaning - provide mother with extra food. Some females can eat up to 4X normal amount of food. Make sure she is well hydrated; if water is freezing, offer multiple times per day.

\*There appears to be some extra assistance we can give mothers during birth. Not sure if our dogs would allow that kind of involvement, but possible. See Dwydiak & Sims chapter on Breeding.

**Pups**

Day 1 - As soon as possible (as soon as mother allows) get a visual of puppies.

If possible in first day, count and sex pups. Look for dead or sick-looking pups.

(Is shelter warm enough? Is there enough space that mother won't crush puppies? are they nursing? Are they making a lot of noise? A lot of noise-making could be a sign of a problem.)

Day 2 or 3 -

-Start taking puppy measurements (head circ. and nose to head length, body length, weight).

-Determine sex.

-Note distinct marking or issues, assign each pup their number in the litter (devise a method of differentiating puppies)

-For larger litter or where it is hard to tell pups apart, mark them with tattoo or shaving section of leg.

While taking measurements, start bio-sensor method (holding gently in both hands, tip pup downwards, hold upside down, tickle between one toe, hold upright). Handle gently and avoid exposing them to the weather.

\*\*\*From here until 16 weeks\*\*\* continue taking body length and weight every 3 days and head measurements every 7 days. Note any issues or any distinct behaviors. Should be recorded in Puppy Growth data sheet.

2 weeks -

Being socialization handling if not already started (touch nose, ears, put finger in mouth, open mouth, hold puppy on back, cradle by the chest and lift the puppy off the ground until she calms. Touch every part of body, touch feet thoroughly, touch belly, pet gently, make eye contact)

Begin collecting behavioral observations

3 weeks - provide stimulation - toys, obstacles, etc.

5 weeks - vaccinations (Multi-Vac Round 1)

6 weeks - possible for a pup to learn to sit at this age - try beginning 'sit' training

7 weeks - apply PAT for each pup individually. (Beginning weaning between 7 and 8 weeks)

Separate from mother

8 Weeks - Vaccination (Multi-Vac Round 2), Microchip implant

8-9 weeks - Spay/neuter as soon as possible (weather and schedule permitting)

11 weeks - Vaccination (Multi-Vacc Round 3)

12-14 weeks - Rabies Vaccination between 3 and 3.5 months

Place ASAP from 12 weeks. Have herders already arranged and make travel plans to place puppy as close to 3 months old as possible.

Around 4 Months - teething is occurring, provide chew toy. Warn herder to prevent puppy from chewing on livestock and provide something else to chew on instead.

**Dog Breeding, Raising and Placing Protocol:**

**Mongolian  
Project**

**Bankhar Dog**

**Early Pups Placement  
Host family raising instructions**

**General Guidelines – life of dog:**

- 1.** Dogs must be with sheep all day and all night for all their lives
- 2.** Dogs are to be bonded with Sheep or Goats, not people or ger
- 3.** Dogs are never away from Sheep or Goats
- 4.** Dogs must never be allowed in Ger
- 5.** NEVER tie up dog
- 6.** Never hit dog
- 7.** Never throw things at dog
- 8.** Feed dog with sheep in Hashaa or in the pasture with sheep twice a day
- 9.** DO NOT feed dog near Ger
- 10.** Never pet dog over the fence or corral walls
- 11.** Never pet dog when the dog is away from sheep and do not pet much. Petting is only when next to sheep.
- 12.** It is good to have children and strangers pet dog if you have introduced the people to the dog. Make sure dog is with sheep or in Hashaa with sheep.
- 13.** Dog needs to be used to walking on a leash in Hashaa area or in pasture but ONLY with sheep.
- 14.** DO NOT allow dogs that do not work the sheep right come with you out to pasture unless these dogs stay with sheep all the time. A dog that wants to be with you will teach this bad habit to your new pups – this MUST not happen.

**Arrival - 8 weeks old:**

1. Pups must be kept in play pen inside Hashaa.
2. Pups house needs bed of your own sheep's wool. (From experience, dogs/pups chew and rip apart the sheep's wool. Might be learning bad habit – they don't assume a rug and sheep are the same. Smell is most important and they actually smell different)
3. Sheep must be in Hashaa with pups at all times - weak or baby sheep or goats are fine to be with pups.
4. Feed pups in play pen 2 times a day - 12:00 and evening after sheep come back to Hashaa. Take food away once or twice a week so pup knows you are allowed to do this and will prevent food aggression later on - yes. Give back after 30 seconds of pup waiting.
5. Give large uncooked bones to dog to chew on and play with. Take bone away once or twice a week as you do with food.
6. Allow pup to growl and defend its food from sheep or goats - but it should not do this to you!! (if it does see corrections on last page).
7. Place sheep hay troth near pups play pen so pups see and are near sheep as much as possible.
8. Check over pups body (look at eyes, feel feet, check teeth, check ears, rub stomach) once a day when pups are near sheep. This gets dog used to you being able to do that any time you want when it is older.
9. At 7 or 8 weeks, if sheep or goats are not aggressive, allow dog to leave play pen and sleep or be near sheep when it wants to. Make sure tunnel is open for pups to hide if it wants to.

## **8 - 16 weeks – Bonding and Care:**

1. Pups can now go with sheep and goat to pasture
  - a. Until pups can keep up with herd you will carry the pup to pasture and place pup in herd and walk away from pup leaving it alone with herd.
  - b. Tell pups “Pups name - Go to Sheep” when you place pup on ground in herd
  - c. If pup follows you as you walk away, pick pup back up and place back in herd saying “Pups name - Go to Sheep”
  - d. If this does not work over 8-10 attempts, put pup in portable wire pen, say “Pups name - Go to Sheep” and make sure pen is in middle of sheep herd – move pen and pup throughout day to keep pup in middle of herd.
  - e. Next day try same things without pen
  - f. As the herd leaves the pup in its portable pen behind, let pup stay alone until you see it wanting to follow herd, then move it and the pen back into herd.
2. When you think pup can walk and run fast enough to keep up with herd then carry pup more than ½ way to pasture and place in herd saying “Pups name - Go to Sheep”. Now make it walk and run with herd (NOT with you), say “Pups name - Go to Sheep” if it falls behind and wants to walk with you instead.
  - a. If pup wants to walk with you, put it back with sheep over and over as you walk or ride to pasture saying “Pups name - Go to Sheep” each time.
  - b. If pup turns around to go back to Hashaa, pick up pup and walk or ride out to pasture and place pup in herd like when it was young saying “Pups name - Go to Sheep”.
  - c. If pup falls behind, keep herd going and watch for pup going with you, or turning back to Hashaa
3. At middle of day feed pup with herd. If Sheep or Goat or other dogs want to eat food then feed pup away from herd – Place food on ground and walk away from pup toward herd leaving pup with food. Make sure to stop Sheep or Goat from eating pups food by chasing them away. DO NOT stand near pup when it’s eating or make any talk or gesture to it.
  - a. If pup follows you, place it back by food and say “Eat your food”
  - b. If pup goes back to herd (this is a GOOD thing), try feeding again in herd and keep sheep and goats away. If it’s too hard to keep sheep and goats away, move pup away from herd once again and if it goes back to herd just let it and put food away for evening meal. Pups will get hungry enough to learn it needs to eat right away or it does not get anything.
4. Give dog 5 minutes to eat and then take food if it is done or not.
5. Allow pup to growl and defend its food from sheep or goats AND other dogs - but it should not do this to you!! (if it does, see corrections on last page).
6. Pup must stay with herd. If pup comes to you tell it “Pups name - Go to Sheep” and walk away. If it still follows place it with herd and tell it “pups name - Go to Sheep” and leave it there.
  - a. If this does not work use portable pen again as when it was younger.
7. Pup DOES NOT always have to be inside the herd, it can be away from herd in area, BUT pup MUST NOT be with you! Pup can watch herd from nearby hill tops, or shade areas. But pup must follow herd – if not call “Pups name - Go to Sheep”
8. Pup stay with herd all the time now 24 hours a day every day.
9. Feed pup in evening when sheep come back to Hashaa area. Feed with sheep near hay or water or in Hashaa. DO NOT feed near Ger and not in site of the Ger door. Best place to feed in near sheep and way from Ger and people somewhere.
  - a. Keep Sheep and Gats away from dogs food until dog learns to defend food. Its is OK if dog does not defend food for a long time it means the dogs favors sheep.
  - b. Not all dogs will defend food. In this case feed dog in an area next to sheep that the sheep and goats cannot get into – again not near ger or in site of ger door and people.

10. Stray dogs – if other dogs come into herd to say hello to you or your dogs you MUST chase them away if your pups do not do this. Allow your dog to interact with the stray dog only if the pup is showing this dog “who is boss”. Chase dog away if your dog seem to want to play or follow dog, and say to your dog “Pups name - Go to Sheep”.
11. Anything attacking the herd or looking like it will - Dogs, Foxes, Eagles, Vultures, Wolves, Bear – allow your pup to bark and chase if it wants. DO NOT force it to do anything. If it runs call to it and say “Pups name - Go to Sheep”. If you chase predator, tell pup to “Get Him” and you act aggressively toward predator.
12. If you kill predator let pup smell, crew, and drag body around say “Good –Pups name”. If you want to skin this predator let pup eat it and give it some fur or piece to play with. Praise pup for smelling or biting dead predator. DO NOT play with predator parts with pup though.
13. At night have pup sleep in Hashaa with weak sheep and goats and lambs in play pen, but with tunnel open, so they can sleep with herd if they like.
  - a. If Hashaa has large number of sheep and goats and is dangerous to pup, then keep pup in play pen until it is old and tough enough to be in Hashaa with herd
    - i. If Hashaa it too dangerous and dog is old enough to be lose out of corral at night then make a manure pile against corral wall outside of the corral for dog to sleep on. Place manure pile away from and **out of site** of Ger and in a spot pup/dog can see all territory.
  - b. Play pen need to be strong enough to last year and keep herd out. This is the dogs safe place anytime it sleeps in the Hashaa with herd.

### **Signs that things are going well with the bonding process throughout dogs life:**

1. Pup stays with livestock instead of running and avoiding them.
2. Pup is licking faces of livestock.
3. If there is disturbance, pup will run to livestock, not run away – unless chasing predator.
4. Puppy is docile/submissive to livestock.
5. Pup is reluctant to leave stock.

### **Behavior that needs correcting:**

1. Pup is chasing livestock.
2. Pup is biting livestock.
3. Pup is pulling wool.
4. Pup is following people
5. Pup is trying to sleep near Ger
6. Pups is trying to dig out of play pen or corral to get to people or way from livestock
7. General harassment of livestock.
8. Pups teaming up and chasing livestock.

### **Correcting behavior:**

1. DO NOT hit dog or throw objects at dog.
2. Correct with same term ALWAYS “pups name - NO!!!”
3. Or just say loud fast (to surprise pup) “HEY!!!”
4. Make eye contact with dog as fast as you can after correcting. Hold eye contact until dog looks away and stops behavior.
5. Correct by a yell “pups name –NO” and shake of a can of rocks, or a similar noise maker.
6. Correct by a toss of a can of rocks near the pup, but never directly at pup.
7. Pick pup up from scruff of his neck, just a bit off the ground, and yell/make noise in growling tone at pup.
8. Pick up by scruff a bit off the ground and gently but firmly pinch ear.
9. Roll and pin the pup onto his/her back - as we have shown you. Afterwards, leave the pup alone and walk away but stay within eyesight to make sure the behavior isn't repeated.

### **16 weeks - 6 months – Bonding and Care:**

1. At this age, dogs will no longer require constant supervision and can be left alone with the large herd out at pasture, but the herder must continue to monitor behaviors of the dog, and continue to correct unwanted behavior
2. Pups now sleep with the sheep, or at least no longer sleep in a separate shelter
3. Dogs are old enough to follow sheep out to pasture everyday, and should remain with them at pasture until the herd comes back at the end of the day

## **Socializing**

1. Once a week teach dog to walk on a leash. Do not cuddle or pamper the dog during this training. Simply place dog on leash and walk with it around the pasture and livestock for 20 minutes or so. Then remove dog from the leash and continue regular activities.
2. Place your dog in a vehicle at times and bring it for a 20 minute ride so the dog becomes accustomed to riding in the vehicle.
3. When you have guests, allow them to see and pet the dog but only briefly. Your dog should not be aggressive towards people but it should not have an interest in them either. Remember that this is a working dog, bonded to your livestock as a guardian. **GOOD**





## **БАНХАРЫГ ХЭРХЭН МАЛЧ, ХОНЬЧ НОХОЙ БОЛГОХ ТУХАЙ ЗААВАРЧИЛГАА**

Манай төслийн зорилго нь банхарыг үнэнчээр мал даган хариулдаг нохой болгон ашигладаг уламжлалыг сэргээхэд оршино. Энэхүү гарын авлагад оруулсан аргачлал нь банхарыг олон мянган жилийн турш малч, хоньч нохой болгон ашиглаж ирсэн Монголчуудын уламжлал ба туршлагад тулгуурласан болно. Банхар нохойгоо зөв өсгөн, сургахад тодорхой хичээл зүтгэл, цаг хугацаа зарцуулж байж сая гэрийн нохой биш жинхэнэ малч, хоньч нохой болгож чадна.

Банхар нохой тань мал сүрэгтэй нэгэнт ижил дасал болчихвол тэднийг насан туршдаа үнэнчээр элдэв аюул ослоос хамгаалах юм. Анхнаас нь зөв өсгөвөл танай нохой зүгээр гэрийн гадаа хэвтдэг бус жинхэнэ “ажилч” нохой болно. Нохой малыг зөнгөөрөө хамгаалдаг бөгөөд малч нохой болгохыг тулд жаахан л чиглүүлэх шаардлагатай. Мал сүргийг тань чоно, ирвэс, үнэг, бүргэд болон бусад махчин амьтдаас үнэнчээр хамгаалдаг нохой болгохын тулд эхний 2 жил анхааралтай ажиглаж, зөв сургах нь чухал. Монгол банхар төслөөс боловсруулсан банхарын гөлгийг хэрхэн зөв зохистой сургах, зан авирыг нь засаж, малч, хоньч нохой болгох энэхүү зааварчилгааг сайтар дагаж мөрдөөрэй.

### Банхараа хоньч, малч нохой болгон өсгөхөд чухал санамж

1. Танай банхар **өдөр, шөнөгүй буюу насан туршдаа** мал сүрэгтэй ойр хамт байх ёстой. Ингэснээр нохой тань хүн ба гэрт дасахаас илүүтэй танай мал сүрэгтэй ойр болно. Шаардлагатай бол нохойг гадаа мал сүрэгтэй байнга ойр байлгах үүр бэлдэж өгч болно.
2. **Банхар тань таныг биш малаа дагах ёстой.** Гөлгөө эхлээд малынхаа дунд оруулаад “нохойгоо нэрээр нь дуудаад хониндоо яв!” гээд хэлээд үз. Тэгээд гөлгөө тэнд нь орхиод холоос ажигла. Сүргээс салж холдох бүрт нь буцааж мал руу аваачаад магтаж, мөрөнд нь гараа хүргэ. Малаа орхиж явлаа гэж нохойгоо шийтгэж **БОЛОХГҮЙ**, нохой таатай таагүй ч бай ямар ч байсан өөрт нь анхаарал хандуулахад дуртай байдаг. Нохойг шийтгэвэл яваандаа малаа орхиж явдаг занд сургачихдаг гэмтэй.
3. **Нохойдоо ямагт бэлчээрт хоол, ус өгч бай, хэзээ ч гэрийн ойр бүү хооллоорой.** Нохой зөвхөн өлсөж, цангасан үедээ л гэрлүүгээ ирдэг. Сүргийн ойр хоол, ус өгөөд байвал (бэлчээрт эсвэл хашаанд байхад нь) нохой мал сүрэгтэй ойр байдаг.
4. **Банхараа өөр бусад ажлын бус нохойтой ойр байлгахгүй байх нь чухал.** Банхараа бусад нохойтой ойр байлгавал таагүй зан авир сурч болзошгүй. Нохойгоо мал сүрэгтэйгээ ойр байлгаж байж хоолыг өгөөрэй. Гэрийн нохойтой хамт хооллож болохгүй. Банхараа буруу зан сурахаас нь хамгаалах үүднээс, өөр ноходтой тоглож эхлэх үед нь болон бусад гэрийн нохойруу татагдаж эхлэх үед нь мал харах ажлыг нь сануулж үг хэлээрээ болон биеийн хэлээрээ засч залруулж байх нь зүйтэй. Малч нохойгоо гэрийн нохойноос муу зан сурахаас нь сэргийлэх үүднээс гэрийн нохойтой тоглож

болохгүй гэдгийг зааж ойлгуулаарай. Үүний тулд гэрийн нохойтой тоглож эхлэх үед нь үг хэлж, ойр хавьд нь чулуу нүүлгэж болно. **НОХОЙГОО ЦОХИЖ БОЛОХГҮЙ** учир нь танаас дөлж, айдаг болчихож мэднэ. Бусад ноходтой үүсгэх аливаа харилцааг хязгаарлаж байх нь зүйтэй.

5. Хийсэн ЗӨВ үйлдлийг нь үгээр магтаж хэлж өгч байвал хамгийн сайн. Муу үйлдлийг нь дандаа засаад байх бус сайн хийсэн зүйлийг нь эелдэг үгээр магтаж, хүзүүг нь илж урамшуулж байх хэрэгтэй.
6. Онцгой тохиолдлоос бусад үед **огт уяж гинжилж болохгүй**. Уяатай малч нохой мал сүргээ хамгаалах ажлаа хийж чадахгүй.
7. Нохойг **хэзээ ч цохиж** (хүчээр) **болохгүй** ба санаатайгаар нохой руу ямар нэг зүйл шидэж болохгүй. Нохойг сургах өөр аргууд байдагийг анхаараарай.
8. **Малч нохойгоо хэт их эрхлүүлж, хамт тоглох хэрэггүй**. Таны нохой гэрийн тэжээмэл биш ажилч нохой тул ажлын нохой мэт харьцах хэрэгтэй. Нохойныхоо зөв үйлдлийг магтан сайшааж, эрхлүүлэх бол зөвхөн хонь малын ойр байх үед нь л эрхлүүлж байгаарай. Тэгэхгүй бол нохой тань хүн харахаараа малаа орхиод тоглох гээд гүйгээд ирдэг болох муу талтай.

### Банхар нохойн түгээмэл зан араншин

Нас бие гүйцсэн малч Банхар нь мал сүрэгтэй зөв ижилдэн дассан бол дараах зан авирыг гаргадаг. Нохойгоо зөв өсгөсөн бол ямагт малыхаа дунд эсвэл тодорхой зайнаас малаа хараад байж байдаг болдог. Малч нохой нь сүргээ харуулдаж, дунд нь орж нуугдах, зайнаас харуулдах г.м байж болно. Малч нохой ийм зан авир гаргах нь ердийн зүйл. Банхар тань магтуулах, эсвэл тантай мэндлэх гэсэндээ танруу гүйж ирэх боловч, сургийнхээ ойр байхыг илүүд үзэх ба малаа орхиж явах дургүй байна. Өөр нэг түгээмэл гаргадаг араншин нь өөрийн сүрэгт орж ирсэн айлын малыг сүргээсээ хөөх үйлдэл юм. Зэрлэг амьтад эсвэл айлын хонин сүрэг танай малын бэлчээрт бэлчиж байвал банхар нохой тань хуцаж, тэднийг хөөж элдэх нь бий. Мөн өөр адуу, үхэр, гадны хүн харахаараа мөн ийм үйлдэл гаргадаг. Нохойгоо сайн ажиглавал болзошгүй аюулын дохиог урьдаас мэдэж авч болно. Мал ирсэн боловч Банхар тань буцаж ирэхгүй удаад байвал энэ нь шархадсан эсвэл явж чадахгүй байгаа, хээлтэй малаа хараад үлдсэний дохио байж болох юм. Банхар нохой их ухаантай бөгөөд түүний зөн совинд итгэж болно. Мөн банхар нь малын эхэс иддэг бөгөөд бусад малын шархыг долоодог, тэр ч байтугай махчин амьтанд идүүлсэн малын сэг идэх нь бий. Нохой тань сүргээсээ мал хороож идсэн байж болзошгүй гэж бодож байвал үхсэн малынхаа байдлыг сайн шинжээрэй. Малч нохой өөрийн хамгаалдаг сүргээсээ мал барьж идэх нь маш ховор байдаг. Нохойгоо сайн хооллоод байвал сүргээсээ мал барихгүй. Цаашлаад, шинэ мал сүрэгтээ нэмэхдээ тухайн шинэ мал, нохой хоёрын харилцааг сайн ажиглах хэрэгтэй. Шинэ малыг та өөрөө гардаж сүрэгтээ оруулж, таниулж өгөхгүй бол банхар тэр малыг сүргээсээ гадуурхаад байж магадгүй юм. Шийтгэх бус магтаж байх ёстойг санаарай.

### Банхарын гөлгийг малтай ойр байлган дасгах үйл явц

Гөлөг тань дараах зан авирыг гаргавал магтан сайшаах хэрэгтэй. Ийм зан авир гаргаж байгаа бол гөлөг сайн малч нохой болж байна гэсэн үг. Эдгээр шинжээс аль нь ч ажиглагдахгүй байвал төслийн зааварчилгааг сайтар нягтлаж гөлгөө зөвхөн малтай ойр байлгахад анхаараарай.

1. **Гөлөг нь малаас зугтах биш харин хамт тоглох (хэт ширүүн биш байх, малтай нөхөрсөг байх).**

2. **Малын нүүрийг долоох.**
3. Гадны ямар нэг таагүй зүйл мэдэгдвэл **гөлөг зугтахгүй харин мал руугаа очих** (махчин амьтны араас хөөгөөд сүргээ орхиж явж байгаа бол болно).
4. **Гөлөг малд дуулгавартай бөгөөд зөөлөн хандах.** Зөөлөн зан авир гэдэгт: сүүлээ буулгасан, чихээ унжуулсан (тайван байгаа нь тэр), нүүрээ долоох, газар өнхрөх г.м орно.
5. **Гөлөг сүргээ орхиж явах дургүй.**
6. **Гөлөг сүрэгтэйгээ хамт байж, бэлчээрлэж байгаа газрыг хянан, аюулын дохионд сэрэмжтэй байх.**
7. **Гөлөг сүргийн урд орж явах - нохой хонин сүргийн очих гэж байгаа газрыг урьдчилан харж хянана. Сүрэг нь нохойг дагаад байгаа мэт санагдавч угтаа бол нохой нь сүргийнхээ хөдөлгөөнийг урьдаас мэдээд ийн хянаж байгаа нь тэр юм.**
8. Малч нохой нь сүргээсээ тасарч хоцорсон хээлтэй, шархадсан малтайгаа хамт үлддэг. Мал хотондоо ирсэн боловч нохой харагдахгүй байвал сүргээсээ тасарсан малаа хараад үлдсэний дохио байх магадлал өндөр.

### Засч залруулвал зохих буруу зан авир

Дараагийн хэсэгт гөлөгнийхөө буруу зан авирыг хэрхэн засах тухай заавар оруулсан болно. Гөлгөө сургаж байхдаа тэвчээртэй, хүлээцтэй хандаарай. Буруу зангаа засахгүй гөжүүдлээд байсан ч гөлгөндөө уурлаж болохгүй учир нь дахин дахин давтан сургаж байж л засч авна шүү дээ.

1. **Мал элдэж хөөх**
2. **Мал хазах**
3. **Малын ноос зулгаах**
4. **Малын дээгүүр харайх**
5. **Сүргээ дагахгүй, хүн бараадах**
6. **Сүргийн хажууд биш гэрийн ойр унтахыг хичээх**

### Буруу зан авирыг нь засах

Нохойгоо буруу зан авир гаргасан даруйд нь зааж сурган залруулж байх хэрэгтэй. Засахгүй удвал нохой тань юу буруу байсныг ойлгож авахгүйгээр барахгүй юу ч сурахгүй. Засч залруулна гэдэг нь гөлгийг сүрдүүлэх замаар дахин муу авир гаргахаас нь сэргийлэхийг хэлж байгаа юм. Энэ аргыг хэт олон удаа эсвэл шаардлагагүй байхад дахин дахин хэрэглээд байвал нохойгоо хэт догшин, дуулгаваргүй болгочих эрсдэлтэй.

1. **“1” удаагийн маггаал “20” удаа залруулж сургасантай тэнцэх үнэтэй**
2. **Нохойгоо БҮҮ зод, нохой руугаа ямар нэг зүйл бүү шид.**
3. **Нохойгоо сургахдаа нэг л үгийг дандаа ашигла тэгвэл нохой тань тэр үгийг өөрийн буруу авир болон шийтгэлтэй холбон ойлгодог болно. Жишээ нь, “Үгүй!” “Боль!” “Хөөш!” гэх юмуу эсвэл өөр чанга дуугаар загнаж болно. Нэг удаа алгаа чанга ташиж ч болох юм. Хашхирахын оронд лаазанд члуу хийгээд түүгээрээ чимээ гаргаж болно. Гөлгөө холоос зэмлэх бол гөлгөнийхөө хажуу тал руу лаазтай чулуугаа шидэж буруу үйлдлийг зогсоож болно.**
4. **Хүзүүнээс нь чангахан дугтарч, үг хэлэх замаар нохойныхоо буруу үйлдлийг**

буруушаан болиулж болно. Энэ нь нохойнууд хоорондоо харилцдаг арга юм. Үгээр болон биеэр ийнхүү дохио өгсөний дараа ямар нэг команд өгч болно. Жишээлбэл, нохой мал хазаад байвал: 1) энэ үйлдлийг нь болиулах, 2) нохойгоо энэ үйлдлээ больж, тайвширтал нь анхааралтай харах (чихээ хойшлуулж, сүүлээ буулгана), 3) зөв занг нь эерэг дуугаар сайшааж, хүзүүг нь зөөлөн илэх, сүүлд нь 4) нохойд “хониндоо яв!” гэх зэрэг команд өгч болох юм.

5. Буруу занг зогсоох өөр арга бол **нохойны ташааны урд хэсэгт буюу хавирга руу өвдгөөрөө зөөлөн ёврох (өшиглөж болохгүй)**. Бас үг хэлж болно. Тайвшрахыг нь хүлээж байгаад “хониндоо яв!” гэх зэрэг команд өгч болно. Ингэж биед нь хүрэх нь ямар ч ууртай, догшин авир гаргаж байгаа нохойны анхаарлыг татах бөгөөд ингэснээрээ та нохойдоо энэ үйлдлээ боль гэсэн сануулга өгч байгаа хэрэг юм.
6. **Нохойгоо ийнхүү залруулсаны дараа харцаараа ярилцах хэрэгтэй**. Нохой харцаа буруулж, буруу үйлдлээ больж, тайвшран, дуулгавартай болох хүртэл өөдөөс нь ширт.

**Эхлээд дээр дурьдсан зөөлөн аргуудаас ашиглан засч залруулж байхыг хичээгээрэй. Ингээд үр дүнд хүрэхгүй бол доор заасан аргуудаас туршиж үзэж болно:**

7. **Гөлөгний хүзүүн дээрээс татан урд хоёр хөлийг нь өргөх**. Гөлгөө ийн газраас хөндийрүүлэн хэсэг өргөн, нүд рүү нь харж байгаад үгээр зэмлэ. Дараа нь газар буулга.
8. Гөлөгний хүзүүн дээрээс базаж өргөөд чихрүү нь бага зэрэг хүчтэй цохин үгээр зэмлэ.
9. Энэ аргыг буур арга мухардсан уед ашиглах бөгөөд байга ашиглаад байж болохгүй. Гөлөг малд байнга ширүүн догшин хандаад байвал гөлгөө хоёр хажуугаар нь өнхрүүлж, гэдсийг нь дээш нь харуулж байгаад үгээр зэмлэ. Дараа нь гөлгөө ганцааранг нь үлдээгээд холд, гэхдээ хараандаа байлгах ба муу занг нь давтуулахгүй байх талаас нь анхаар.

**Аль болох шийтгэхгүй магтаж байхыг хичээгээрэй! Муу авирыг шийтгэж байснаа сайн үйлдлийг нь магтан урамшуулж байвал илүү үр дүнтэй байдаг.**

## 8 - 16 долоо хоногтойд нь - Холбоо тогтоох ба асарч сувилах

1. **Долоо хоногт нэгээс хоёр удаа, гөлөгнийхөө биед бүрэн үзлэг хийнэ**. Хөлийг нь тэмтэрч үзэн, шүд, буйл, чихийг нь шалгаж, гэдсийг нь үрж үзнэ. Энэ нь гөлгийг иймэрхүү бие махбодийн хүрэлцэх харилцаанд дасгаж огох бөгөөд нохой том болохын хэрээр түүнд малын эмч эрүүл мэндийн үзлэг хийхэд илүү амар хялбар болох болно. Мөн нохойны эрүүл мэндийг өөрөө ч давхар сайтар шалгаж байх хэрэгтэй. Хэрвээ гөлөг тайван байвал магтаж урамшуулаарай. Харин тайван бус байвал тайвширтал нь хүлээж байгаад магтаж урамшуулаарай. Нохойг энэ насанд нь хэзээ ч шийтгэж болохгүй.
2. Гөлөг мал сүргийг гүйцэх хэмжээнд хурдан гүйдэг болох хүртэл **гөлгөө бэлчээр дээр авчирч**, мал сүрэгтэй хамт байршуулна. Гөлгөө сүрэгтэй нийлүүлж тавиад холдон явна. Мал сүрэгтэй нохойгоо нийлүүлээд “[гөлөгний нэр] хониндоо яв!” гэж чангаар хэлнэ. Энэ нь нохойг команд биелүүлж сурахад тусална.
3. Хэрвээ таныг орхин явах үед **гөлөг дагаад байвал барьж аваад буцааж сүрэгт тавина**. Ингэхдээ мөн командаа хэлнэ ( гөлөгний нэр- хониндоо яв!!).
4. Хэрвээ ингэж наймаас арван удаа оролдож үзээд болохгүй бол **гөлөгний зөврийн үүрийг** ашиглаад үзээрэй. Гөлгөө үүрэнд нь тавиад, “[гөлөгний нэр] хониндоо яв!!” гэж чангаар

хэлнэ. Өдрийн турш гөлгөө үүрэнд нь хийгээд сүргийг дагаж явна.

5. Хэрэв та малаа хариулахдаа мотоцикл эсвэл машинаар явдаг бол унаандаа нохойгоо, нохойныхоо хоолыг үүртэй нь мөн өөрийнхөө өдрийн хоолыг авч явж байх хэрэгтэй. Банхараа хоточ нохой болгож зохих ёсоор өсгөхийн тулд та гөлөгтэйгөө өдрийн турш хамт байж. сүргийг даган явж чадаж байгаа эсэхийг шалгаж байх хэрэгтэй. Гөлөг мал сүргийг даган явж сурах хүртэл нь алхах эсвэл морь/тэмээ унаж хажууд явах нь маш зөв бөгөөд энэ бүхний дараа мотоциклондоо суугаарай.
6. Гөлөг тань мал сүргийг дагаж явдаг болж сурмагц бэлчээр лүү хонио дагуулж ганцааранг нь явуулна. Хэрэв гөлөг хонин сүргийг дагаж явахгүй байвал замын аль нэг хэсэг хүртэл зөөж аваачин тавих хэрэгтэй. Сүрэгтэй нийлүүлсний дараагаар гөлгөө мал сүргийг **даган явуулж гүйлгүүлэх хэрэгтэй** (**гэхдээ өөрөө хамт явахгүй** - алсын зайнаас ажиглаарай. Хэрвээ сүргээс тасарч, тантай хамт явах гээд байвал “[гөлөгний нэр] хониндоо яв!!” гэж хэлнэ.
  - а. Хэрэв гөлөг цаг үргэлж тантай хамт байх гээд байвал та алхангаа эсвэл унаагаар явж байх үедээ хонин сүрэгт буцааж тавин ирэх тоолонд нь “[гөлөгний нэр] хониндоо яв!!” гэж хэлнэ.
  - в. Хэрэв гөлөг хашаа руугаа буцаад хүрээд ирвэл гөлгөө аваад, бэлчээр дээр авчран, сүрэгтэй нийлүүлэн “[гөлөгний нэр] хониндоо яв!!” гэж хэлнэ. Зарим тохиолдолд хэсэг хугацаанд зөөврийн үүрийг дахин ашиглах хэрэг гарч магадгүй.
1. Гөлөг сүргээс зайтай байхыг хүсэмжлэх нь хэвийн зүйл бөгөөд харин таныг дагах гээд байж хэрхэвч болохгүй. Сайн малч нохой мал сүргийг толгодын орой дээрээс эсвэл сүүдэртэй талаас манах нь байдаг бөгөөд гагцхүү сүргээ л даган явж байх ёстой юм.
2. Энэ насанд нь гөлгийг **хорин дөрвөн цагийн турш** сүрэгтэй хамт үлдээх хэрэгтэй.
3. Өөр бусад нохойг өөрийнхөө нохой эсвэл мал сүрэгт ойртуулж болохгүй. Хэрэв таны Банхар бусад нохдыг хөөж явуулахгүй байгаа бол та өөрөө хөөж явуулах хэрэгтэй. Гөлөг чинь жоохон байхын хэрээр хамтдаа өөр нохойг хөөж явуулах хэрэгтэй болдог бөгөөд - энэ бол хэвийн л зүйл юм. Нохойгоо өөр лүү чинь чиглэн ирж байхыг харах бүртээ магтан урамшуулж, тайвшруулж байх хэрэгтэй бөгөөд ингэснээр нохой өөрөө энэ ажлыг хийж чаддаг болно.
4. Хэрэв махчин араатан сүрэг рүү дайрч ирвэл гөлгөө хуцуулж, **ардаас нь хөөхийг зөвшөөрч** байх хэрэгтэй. Гэхдээ гөлгөөрөө хэзээ **ч ямар нэг зүйл хүчээр хийлгэхийг** оролдох хэрэггүй. Хэрэв гөлөг зуггвал дуудаад “[гөлөгний нэр] хониндоо яв!!” гэж хэлнэ. Хэрэв та махчин амьтныг хөөж байгаа бол гөлгөндөө “барь” гэж хэлээд махчин амьтны эсрэг довтолж буй мэт үйлдэл үзүүлнэ. Энэ нь гөлгийг хөөргөж өгч, махчин амьтан руу зөнгөөрөө дайрахад нөлөөлдөг. Гэхдээ та гөлгийг энэ насан дээрээ араатан амьтныг хөөх **хэмжээнд хүрээгүй байгаа** гэдгийг сайтар ойлгох хэрэгтэй бөгөөд **гөлгөө хамгаалахад бэлэн байх** хэрэгтэй.
5. Хэрэв та махчин араатныг агнасан бол гөлгөндөө үнэртүүлж, сэг зэмийг нь тойруулан явуулж байгаарай. Гэхдээ үүнийг зөвхөн албал зохи махчин араатан дээр л хийх ёстой. Хэрэв та махчин араатны арьсыг нь өвчсөн бол гөлгөндөө идүүлж, арьс, үс ноосоор нь тоглуулж байх хэрэггүй. Гөлгөө үхсэн махчин артааныг үнэртэх эсвэл хазаж байвал маггаж урамшуулан “[гөлөгний нэр] сайн байна” гэж хэлнэ. Махчин араатанг алаад гөлгөндөө авчирч өгч **БОЛОХГҮЙ**. Голог иймэрхүү зүйлийн ялгааг мэдэрч чаддаг. **Махчин араатныг алахаас илүүтэйгээр хөөж явуулж сургах нь чухал.**
6. Шөнийн цагаар гөлгийг туниа муутай эсвэл нялх малтай хамт хашаанд **хонуулна**. Гөлгөнд аюулд орсон үедээ орж нуугдах боломжтой газрыг мөн бэлтгэж өгнө.
  - а. а. Хэрэв хашаанд олон тооны мал байрладаг бол энэ нь гөлгөнд аюултай байж мэдэх бөгөөд гөлгийг хашаанд малтай хамт чөлөөтэй байж сурах насанд хүрч,

бие даах хүртэл нь аюулгүй, бат бөх үүрэнд байлгана.

- b. Б. Хэрэв хашаа хэтэрхий аюултай байгаа бол хашааны гадна талд малын өтөг бууц овоолж нохойндоо унтах хэвтэр барьж егөөрэй. Энэ нь хашаанд ойр байх ба мал сүрэг рүү дайрч буй махчин араатанг харж чадахуйц зайд байрлаж байх ёстой.

## 16 долоо хоног - 6 сар- Холбоо гогтоох ба асарч сувилах

1. Хэрэв та малч Банхараа зохих ёсоор өсгөж чадсан бол таны нохой энэ насанд хүрээд бэлчээр дээр мал сүрэгтэй **хараа хяналтгүй үлдэх чадвартай** болсон байх ёстой. Гэхдээ та нохойгоо өдөрт хэд хэдэн удаа шалгаж, ямар нэг муу авир байгаа бол засахыг хичээж байх ёстой (ингэхдээ дээр дурьдсан аргуудтай ижил зарчмаар явах хэрэгтэй). Байнга санаж явах дүрэм бол: шийтгэх биш магтаж урамшуулах!!!
2. **Банхар мал сүрэгтэй хамт унтаж байх ёстой.** Ерөнхийдөө ноход хонины эргэн тойрны газрыг хамгаалж, хөгшрөх тусмаа хашаан дотор унтдаг болдог. Хэрвээ нохой чинь хашаан дээгүүр харайж эсвэл гарч сураагүй байгаа бол нохойгоо хашаанаасаа гарч чадаж байгаа эсэхийг шалгаж байх хэрэгтэй.
3. Банхарыг **гэрийн ойролцоо унтахыг зөвшөөрч болохгүй.** Хэрэв ийм үйлдэл гаргаад байвал “хониндоо яв!” гэж хэлээд мал байрлаж буй газарт аваачиж тавина. Хэрэв энэ нь үр дүнгээ өгөхгүй бол зөөврийн үүрээ дахин ашиглаарай.
4. Нохой **бэлчээрг гарч буй мал сүргийг өөрөө дагаж явах ёстой.** Нохой өдөржингөө мал сүрэгтэй **хамт байж,** орой болоход мал сүрэгтэй хамт буцаж ирнэ.
5. **Хоточ нохойгоо зохих ёсоор хооллож байгаарай,** эс тэгвээс нохой мал сүргийг хамгаалахаасаа илүү өөртөө хоол олж идэхийг илүүтэй сонирхож эхэлнэ. Та мэдээж нохойгоо гэртээ хоол хайж буцаж ирүүлэх бүр цаашлаад өөр хоол олж болох газарруу явахыг хүсэхгүй нь лавтай. Тиймээс хөрш айлууддаа нохойгоо хооллож болохгүй гэдгийг сануулж, танай Банхарын тэднийд очсон тохиолдол бүрийг мэдэгдэж байхыг хүсээрэй.

### Банхараа хооллох

Таны хоточ Банхар хоол идэж байхдаа ч тэр цаг үргэлж мал сүрэгтэй хамт байх ёстой. Та Банхараа өдөрт хоёр удаа буюу: өглөө/өдөр мал сүрэг бэлчээртээ гарахаас өмнө эсвэл бэлчээрт нь өгвөл илүү сайн ба орой буцаж ирэх үед нь нэг удаа хооллож байгаарай. Мөн нохойгоо биеэ дааж сургах нь чухал бөгөөд ингэж сургаснаар нохой өөрийн хоолыг хэт түрэмгий байдлаар мал сүргээс ялангуяа танаас харамлан хамгаалах гэж хэзээ ч оролдохгүй.

1. **Хооллох** үедээ хоол өгөхөөсөө өмнө нохойг **тайван болтол нь** хүлээх хэрэгтэй. Хэрвээ тан руу үсэрч цовхочдог бол энэ занг нь засах хэрэгтэй. Хэрэв үсэрч цовхочсон хэвээр байвал нохойны цээжин биений доохон талд хөнгөхөн алгадаж хэлж ойлгуулах хэрэгтэй, Нохойг тайван болмогц магтан сайшааж, илснийхээ дараагаар хоолоо өгч эхэлнэ. Хоолоо идэж эхэлмэгц нь **хоолыг нь холдуулж,** гучин секунтын дараа буцааж өгөх замаар дадлага хийнэ. Энэ нь гөлгөнд энэ бол чиний хоол, чи авах бүрэн эрхтэй гэдгийг ойлгуулж өгөх бөгөөд цаашид хоолоо алдахгүй болж сургахад нь туслах болно. Гөлөг тань хонь эсвэл ямаанаас хоолоо хамгаалж архирах нь хэвийн үзэгдэл хэдий ч - танд хэзээ ч ийм үйлдэл гаргах ёсгүй! Хэрэв тан руу архирвал дээр дурдсан “зан авир засах”-тай холбоотой хэсгийг үзнэ үү.
2. **Хашаан дотор гөлгийг хонины хажууд байрлаж буй үүрэнд нь хооллох**
  - а. хэрэгтэй. Энэ нь малыг нохойны хоолыг хулгайлж идэхээс сэргийлэх болно.
3. Хэрэв та хашаа ашигладаггүй бол сүргийн дунд нохойгоо хооллож байх хэрэгтэй. Ингэж байх үедээ ч та малыг нохойны хоолыг хулгайлахаас сэргийлж байх ёстой. Өөр нэг хувилбар бол нохойгоо хооллохдоо зөөврийн үүрийг ашиглах арга юм.

4. **Нохойндоо заримдаа идүүлж эсвэл мэрүүлж байх зорилгоор том хэмжээтэй яс өгч байгаарай.**  
**Нохойндоо чанаж болгосон яс өгөх нь нохойны дотоод эрхтэнг цоолж, гэмтээх аюултайгаас гадна үхэлд хүргэж ч мэдэх учраас нйм яс өгөхгүй байх нь дээр.** Гөлөгнийхөө шүдийг ургаж байх үед нь ямар нэг зажлах зүйл өгч байх нь маш чухал. Учир нь ургаж буй шүднийхээ өвдөлтийг намдаахын тулд яс эсвэл жижиг мод гэх мэт хатуу зүйл зажилж байх нь гөлгөнд маш хэрэгтэй байдаг.
5. Хониндоо өвс тавьж өгч байх үедээ хажуудаа гөлгөө байлгаж, зэрэг хооллож байх нь чухал.  
**Гөлөг, мал сүрэг заавал хамтдаа хооллож байх ёстой!**
6. Бэлчээр дээр хонины хажууд нохойныхоо хоолыг тавьж өгч **хооллох үед** мал сүрэг нохойг **тойрон хүрээлж** эхэлдэг. Нохой мал сүргээс хоолоо хамгаалах нь хэвийн үзэгдэл бөгөөд мал сүрэг ч гэсэн үүнд дасах хэрэгтэй. Хэрэв нохой мал сүргээс зай барьж чадахгүй байгаа бол сурах хүртэл нь үүрээ ашиглах хэрэгтэй бөгөөд - сурсан эсэхийг нь долоо хоногт нэг удаа шалгаж байх хэрэгтэй. Гэхдээ хонь руу дайрах үйлдэл гаргахыг нь сайшааж болохгүй. Мөн хоолоо идэж байх үед нь гөлөгнийхөө хажууд зогсож болохгүй.
7. Мал сүрэг хашаандаа эсвэл хэвтэртээ буцан ирсний дараагаар гөлгөө дахин хооллоорой. Нохойныхоо хоолыг өглөө яаж өгдөг тэр зарчмаараа **мал сүргийн дунд нь тавьж өгсөн** хэвээр байна. Хэзээ ч гэр эсвэл хүмүүсийн хажууд хооллож болохгүй.
8. Нохой хоолоо мал сүргээс тэр даруй **хамгаалж** эхлэхгүй байх нь **хэвийн** үзэгдэл юм. Энэ нь нохой мал сүрэгт хүлцэнгүй хандаж сурч байгаагийн илрэл юм. Гэхдээ л нохой хоолоо хамгаалах хэмжээнд хүртлээ хангалттай их өлсдөг.

### Банхараа нингэмшүүлэх

1. **Нохойгоо хүүхэдтэй харьцуулж сургах.** Банхараа гөлөг байх үед нь хүүхэдтэйгээ болон өөр хүний хүүхэдтэй хамт мал сүрэгтэй хамт байлгагдгийн адил хамт байлгах хэрэгтэй. Хүүхдүүдээ нохойтойгоо тоглохыг эвшөөрч болох бөгөөд хүүхэд тэдэнтэй ноцолдож, хөл, чих, ам, сүүл болон тавхайнд нь хүрч болно. Нохой нь мал сүрэгт ханддагийн нэгэн адил хүүхдүүдэд ч мөн адил хүлцэнгүй хандах ёстой. Хүүхэддээ нохойг айлгахыг зөвшөөрч болохгүйгээс гадна тоглож дуусах бүртээ нохойг магтаж урамшуулж байх хэрэгтэйг сануулаарай. Хэрэв та гөлгийг хүүхдийн буруу хандлагаас болж ядарч байна гэж бодож байгаа бол тоглоомыг дуусгаж гөлгийг магтаж болно.
2. Зарим тохиолдолд **голгоо тээврийн хэрэгсэлд** хорин минут орчим авч явж байх хэрэгтэй. Энэ нь нохойг малын эмчид аваачиж үзүүлэх үед тээврийн хэрэгслээр авч явахад нь дасгаж өгөх болно. Зарим ноходод тээврийн хэрэгслээр явах нь таалагддаг бол зарим нь ихэд сандардаг гэдгийг санаарай.
3. Хэрэв та **зочин** хүлээж авч байгаа бол тэднийг нохойн дээрээ аваачин нохойндоо “[нохойны нэр] нааш ир” эсвэл “айх хэрэггүй ээ” гэж хэлэх хэрэгтэй. Таны нохой танаас гадны хүмүүсийг хүлээн авч болох эсэхийг мэдэхийн гулд танруу харах болно. Хэрэв та өөрөө байхгүй бол нохой зочид руу тань дайрч мэдэх юм. Зочныг хүлээн авахыг нохойдоо хэлснээр та түүнд зочид руу дайрахгүйгээр хүлээн авахад нь сургаж байна гэсэн үг юм. **Гаргасан муу зан араншинг нь шийтгэхээс илүү сайн зан араншинг нь магтаж өгөх хэрэгтэй гэдгийг санаарай.** Хэрэв нохой тань зочныг хазахыг оролдвол энэхүү зааварчилгаанд дурдсан хүрэлцэх болон аман хэлбэрээр команд өгөх зарчмыг ашиглан зан араншинг нь засахыг хичээгээрэй.
4. Хэрэв таны нохой таны урьж авчирсан гадны хүмүүс рүү хэт их зүтгээд байвал (нөхөрсөг



эсвэл дайрах хэлбэрийн аль алинаар нь) “боль” гэж хүчтэй зандраад, мал сүрэг рүүгээ зааж “хониндоо яв!” гэж хэлнэ. Хэрэв ингэж хэлээд таны нохой хонь руугаа явахгүй байвал түүнийг урьсан зочноосоо аль болох түргэн холдуулах хэрэгтэй. Хамгийн гол нь нохойгоо хонь руу аваачин энэ бүхнийг маш эелдэг байдлаар дуусгах хэрэгтэй гэдгийг санаарай.

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