

LGD BONDING AND EARLY TRAINING PROCEDURES

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Figure 1. Three 8-week-old livestock guardian (LGD) puppies waiting to be taken to bonding pens.
 Photo courtesy of B. Costanzo, Texas A&M AgriLife, 2020

An effective livestock guardian dog (LGD) is the result of properly rearing a puppy with certain inherent instincts, such as lack of prey drive. Each rancher should choose the best genetic fit for their operation, such as hair coat length and guarding style.

The LGDs' behaviors are greatly influenced by how they are treated, bonded, and trained during the first year of their life. Based on preliminary data from LGDs reared by the Texas A&M AgriLife Research and Extension Center in San Angelo, Texas, dogs that are bonded just after weaning at a producer's ranch are more likely to remain with livestock than dogs bonded by a breeder and purchased at an older age.

If a producer is unable to purchase and bond the LGD puppy on their own, they need to make sure that the breeder they are purchasing puppies from follows a similar livestock production system and management style as their own. This will increase the chances of the LGD puppies being successful as adult dogs in the ranching operation.

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SELECTING YOUR PUPPY

Properly selecting a LGD puppy is a crucial first step in raising an effective and dependable LGD (Fig. 1). Additionally, it sets the stage for a successful bonding process at the producer's farm/ranch.

To select a LGD pup best suited for a specific operation, the producer should consider purchasing a puppy from a breeder that has raised the puppy from birth with the same type of livestock that will be on the farm/ranch that they will be protecting. (See AgriLife factsheet: *How to Select a LGD Puppy*.)

For instance, if the rancher raises Suffolk sheep, it would be wise to purchase a LGD from a dog breeder that raises their pups with Suffolk sheep. Anecdotal evidence suggests that LGDs raised with a specific species and breed of livestock will develop a bond to those specific animals at an early age.

Purchasing a LGD puppy from a breeder with the producer's same, specific species and breed of livestock on their property will significantly increase the chance that the puppy will bond successfully with the livestock at their new home. It is also recommended to select a puppy that will fit the operation's specific needs. For instance: If the farm/ranch is in a warmer climate, a short-haired LGD (e.g., Akbash or Anatolian Shepherd) may be a good choice.

AGE OF BONDING DEVELOPMENT

The best age to begin the bonding process is approximately 8 weeks (i.e., 2 months) old. Puppies at 8 weeks old have generally been taught social and behavior skills by their mother. These skills are important for the puppy to know, as it will likely encounter other dogs as an adult.

Generally, puppies more than 16 weeks old typically do not form permanent bonds to livestock, which may lead to roaming and LGDs developing into overall farm guardians rather than livestock guardians.

Research performed with a variety of dog breeds in the 1950s indicated that by 16 weeks old, a puppy's brain has finished developing bonds to new types of animals and experiences. Bonds formed after this time may not be as strong as those formed prior to this stage of brain development.

SOCIALIZATION

Proper human socialization of a LGD puppy is vital during the bonding process, and it becomes increasingly important as a rancher's dog matures. Spending 5 minutes, 2 to 3 times a week directly socializing with a new LGD puppy should be sufficient to properly socialize it to humans.

Spending more time than this with a LGD puppy may make them overly socialized and cause behavior issues as adults such as roaming. Direct socialization of a LGD puppy should include the rancher slowly rubbing their hands all over the dog—especially its feet.

The rancher should place their fingers inside the puppy's mouth to check tooth development and check its ears for ticks and infections. Regular brushing and even turning the LGD puppy gently over on its back will help calm and accustom it to human contact.

The LGD puppy should be named and taught basic commands such as "come," "stay," and "no." The puppy should also know its name and come when called.

While working with the LGD puppy, use its name and the basic commands to train it. By introducing treats to the puppy whenever coming in contact with it, the LGD puppy will learn to trust that person (e.g., rancher, farmer, producer).

In addition, giving treats to the puppy to reward good behavior will make administering medication easier (when necessary). Treats must be given when the LGD puppy is with livestock in the field to help reinforce the bond to the livestock.

Always make sure that positive reinforcement is done in an area with livestock. Remember: What you reward, you promote with your LGDs.

TRAINING

In addition to training a LGD to obey basic commands, it is also essential to leash train, tether train, and teach the puppy to calmly ride in a vehicle/trailer.

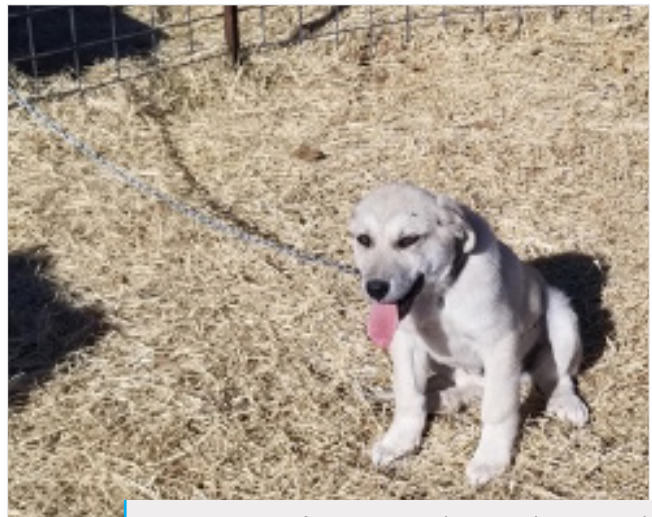


Figure 2. AgriLife LGD puppy being tether trained.
Photo courtesy of B. Costanzo, Texas A&M AgriLife, 2021

Leash training a LGD will be necessary when they need to be taken to a local veterinarian. Start leash training with the LGD puppy for just 2 to 3 minutes at a time using an anti-pull collar.

Slowly increase the time a couple of minutes each week until it heels without pulling or straying away from the handler. Continue this training procedure regularly throughout the bonding phase and reinforce it whenever possible as an adult dog—leash-trained dogs are also easier to work with and transport to new locations. Leash training also aids in LGD tether training, which is another important training aid.

Tether training a LGD is crucial in case they are ever caught in a snare. Start tether training the LGD puppy using a normal collar for 1 to 2 weeks, for 2 to 3 minutes, three times a week. Increase the time the puppy is tethered each week by 2 minutes (Fig. 2).

Then, change collars and use an anti-pull collar that tightens if the puppy pulls on the tether. As the puppy becomes accustomed to the tethering, gradually increase the time until the dog will calmly lay for 1 to 2 hours or longer. Tethering should be taught 2 to 3 times each week during the bonding phase and repeated whenever time allows.

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Figure 3. LGD puppies being given their first truck ride.
Photo courtesy of B. Costanzo, Texas A&M AgriLife, 2019

The final, critical training aid for a LGD during the bonding phase is riding in vehicles. The LGD puppy should start by riding inside the truck cab (Fig. 3) so that it can be comforted if it becomes scared or needs to be restrained if it tries to jump out while the vehicle is moving.

Puppies can easily fall out of a vehicle and break a leg, shoulder, or hip if not supervised closely. This training should be done once or twice weekly for 5 to 10 minutes at a time. As the puppy matures, it can be moved to the back of the truck and/or into a trailer for longer rides.

Teaching a LGD to ride in a vehicle will prove to be valuable when moving livestock to new locations or taking the LGD to a veterinarian. Most LGDs get very anxious when removed from their charges, therefore teaching it to calmly ride in a vehicle will make these events less stressful and safer for the dog.

If the LGD needs to be moved a long distance, taking a few head of livestock along in the trailer will help the LGD from becoming overly anxious.

BONDING YOUR LGD

During the bonding process, it is important to regularly supervise the new LGD puppy from a distance and watch for evidence of prey drive, submissive behavior to livestock, and demonstrating a calm temperament.

While some misbehaviors (e.g., chasing livestock) can be corrected if dealt with sternly and immediately, other traits such as dominant behavior toward livestock are more difficult to change in a LGD puppy.

A time lapse or game camera is an excellent way to observe the puppy's behavior when the rancher is not nearby. Displays of these behaviors should be recorded and closely monitored during the bonding period.

While some misbehaviors (e.g., chasing livestock) can be corrected if dealt with sternly and immediately, other traits such as dominant behavior toward livestock are more difficult to change in a LGD puppy. If dominant or aggressive behaviors from the LGD are often observed, such as biting and chasing, a new LGD puppy may need to be chosen to bond with the livestock on the ranch if correction methods have failed.

Puppies tend to be easily excited when humans are with them, but when observed from a distance, the new LGD puppy should slowly approach livestock and remain calm—unless they are alerted to a predator or unknown animal at their location.

The LGD puppy should not exhibit evidence of prey drive, which is the instinctive inclination of a carnivore to find, pursue, and capture prey. In Europe, this instinctive drive has been bred against for several thousands of years in livestock guardian dog breeds.

LGDs have been bred to guard and protect livestock from predators (e.g., wolves, coyotes, and other predators). A LGD pup that stalks, chases, or bites livestock should be corrected immediately. However, these traits may or may not be exhibited in younger puppies.

Older LGD puppies (6 to 8 months old) and yearling dogs (12 to 14 months old) should not display these behaviors. If they do, a replacement LGD may need to be substituted to adequately fit the producer's program if the producer cannot correct these behaviors in the puppy.

Submissive behavior toward livestock is an important trait to distinguish in a LGD puppy. Quietly watch the new puppy interact with livestock. The puppy may be curious but should be somewhat cautious the first few days. Avoiding eye contact with livestock is an excellent indicator of "submissive behavior."

Some LGDs possess this instinct naturally, while others need to be trained by livestock and/or owners. LGDs need to tolerate pokes and prods by livestock. If the LGD puppy barks at, jumps on, or bites livestock—even if stepped on accidentally—it needs to be corrected immediately.

LGD puppies with this behavior can inadvertently injure livestock or cause the livestock to fear guardian dogs. Puppies from 6 to 8 months old should be submissive and calm around livestock.



Figure 4. LGD puppy on its back showing submissive behavior to the handler.
Photo courtesy of B. Costanzo, Texas A&M AgriLife, 2020

These behaviors should always be observed in LGDs: walking up to livestock (rather than running), dropping to the ground or rolling over (Fig. 4), lowering their head and tail as they approach livestock, licking at the mouths of livestock, and choosing to sleep next to the livestock. These actions reveal that the LGD puppy is bonding well and demonstrating submissive behavior to its charges.

A calm temperament is important in a new LGD puppy. However, it is important to remember that puppies kept in small pens, kennels, or enclosures will be more excitable at first from pent up energy and a lack of stimulation. When selecting for a calm temperament, make sure to observe LGD puppies in an open area.

Preferably, look for a puppy that is interested in you, but not overly aggressive, fearful, shy, or clingy. The puppy that runs up to you first or insists on being “in your face” is not always the best choice for an LGD. Full time LGDs used on ranching operations should be more independent-minded problem-solvers that are not dependent on human companionship. Puppies that walk off by themselves after meeting are often better choices.

Look for puppies that are calm and thoughtful yet show vigilance toward new things or loud noises. Puppies should be alert and exhibit guardian behaviors—such as barking at unfamiliar objects, noises, and scents. Avoid puppies that chase balls, growl, bite, or struggle when they are handled. Correct human socialization before 14 weeks old will help future LGD puppies form a positive relationship with humans.

Do not rule out a puppy that shows 1 or 2 less than ideal traits mentioned previously. They may still become a successful LGD with the proper training and time. Many older pups often exhibit biting and chasing behavior during puberty (or “teenage months”) from 8 to 18 months old. However, with proper and timely behavior correction, they generally turn into excellent LGDs when fully mature at 18 to 24 months old.

Also, puppies kept in small enclosures will demonstrate more energetic behavior than puppies left in larger pens or small traps with livestock during the bonding phase. Extra energy in the puppies may lead to chasing and biting of livestock.

It is relevant and important to increase the pen size, number of animals, and the ages of animals as the LGD puppy matures. This will ensure that the puppy will have exposure to different animals and bond to the species and not specific animals.

BONDING PENS

Based on a multi-year LGD puppy bonding project currently being conducted at the Texas A&M AgriLife Center in San Angelo, Texas, (Fig. 5) preliminary data suggests that bonding puppies in pens containing “hot wire” (i.e., electric fence) increases the likelihood that these LGD puppies will stay in the pastures to which they are later released in.



Figure 5. Texas A&M AgriLife Center (San Angelo, Texas) 1-acre bonding pens. The pens contain a LGD feeding station, water trough, livestock feeder, and shelter.
Photo courtesy of B. Costanzo, Texas A&M AgriLife, 2019

During this study, weaned puppies (approximately 8 weeks old) were initially placed with sheep and goats into 60-foot by 60-foot pens containing hot wire at the base for 1 month. The LGDs and livestock were then placed into 1-acre pens—again with hot wire at the base, for another 3 months. When the puppies were 6 months old, they were released into larger pastures with the livestock to which they had bonded with.

The puppies were then tracked in these pastures via GPS trackers until they were 8 months old.

The first round of puppies that were bonded in hot wire versus non-hot wire pens were much less likely to leave the final trial pasture than the puppies bonded without hot wire. The puppies bonded in pens with hot wire were placed with sheep in a section-size pasture at a cooperating producer's ranch.

After being placed in the pasture for more than 6 months, the LGD puppies had not left it for any reason. All LGD puppies in this project will be tracked until 18 months of age via GPS trackers for additional data gathering.

It has been suggested by some researchers that bonding away from the headquarters may reduce LGD roaming issues. One-acre bonding pens are placed in separate 100-acre pastures at the AgriLife Center in San Angelo, Texas (Fig. 6).



Figure 6. Bonding pens in 100-acre pastures away from the headquarters.

Texas A&M AgriLife photo modified from Google Maps

These areas were distanced from each other by approximately a quarter mile and approximately 1 mile from the AgriLife Center headquarters so that it was difficult for the dogs to hear vehicles, humans, or the puppies in other pens. LGDs bonded away from the AgriLife Center headquarters appear to be less likely to roam and look for human contact.

The proper pen design is important when bonding a new LGD puppy. Pens should contain strong fencing from which the puppy cannot escape or dig out.



Figure 7. Texas A&M AgriLife bonding pen with hot wire at the base of the pen.

Photo courtesy of B. Costanzo, Texas A&M AgriLife, 2019

Welded mesh wire (e.g., 4-inch by 2-inch) makes an excellent fence to contain young puppies. Pen sizes should be large enough to comfortably accommodate the puppy and livestock—plus items such as stock feeders, dog feeding station, shelter, puppy escape area, and water troughs. It is recommended to start the LGD puppy out with 4 to 6 head of female animals in a small 60-foot by 60-foot pen.

As the LGD puppy matures, the size of the bonding pen and the number and variability of ages of livestock animals should be increased. It is very important to change out livestock on a regular basis so the LGD bonds to a species and not to specific animals.

LGDs that bond to specific animals can suffer unneeded stress if those animals are sold or moved to another location. This may also cause the LGD to start roaming, as it searches for the “lost members” of its herd. Both feed and water should not be located in this secure area (Fig. 8).



Figure 8. A small bonding pen. Note: Feeder and shelter behind a safe space, water outside of the safe space for the puppy.

Photo courtesy of Walker, Texas A&M AgriLife, 2017

This ensures that the puppy will need to exit the safe area to interact with the livestock at some point each day. If the livestock are being too rough with the LGD puppy, replace them immediately. Likewise, if the puppy is being too rough with the young livestock—change to older animals to teach the puppy to be submissive to livestock.

After about a month, the LGD puppy should be bonded well to livestock and can be moved into a larger pen. The pen size should be half- to 1-acre in size for the next 2 months. Do not forget to closely watch the LGD puppy during this time, as they will have more room to explore and may start chasing livestock in this larger area.

Often during this period, livestock will move away from the puppy without the dog noticing. This often causes the LGD puppy to run toward the livestock, and this behavior can then turn into a chasing game for the puppy. If this behavior is observed, it should be corrected immediately.

A strong, verbal “NO” often will work. If it is not possible to regularly supervise the LGD puppy, a dangle stick or drag may be used to keep them from chasing livestock. An electric training collar may also be used if the puppy is older. Game cameras may also be used in the bonding pens to help supervise the LGD puppies.

As the puppy approaches 6 months old, it can be moved into a larger pasture of 10 to 25 acres. Again, more livestock with a variety of ages should be added to the pasture for the LGD puppy to guard. Puppies should continue to be regularly monitored for behavior issues until 18-months-old.

At approximately 9 to 10 months old, the LGD puppy should be developed enough to guard livestock in larger pastures up to 50 acres on its own—or in larger pastures with other mature LGDs. It is often helpful to have an older LGD paired with a younger dog to provide further training and assistance with predators. A young LGD puppy is no match for larger predators and should never be left on its own to defend the livestock flock.

SOMETHING NEW IN THE LGD ENVIRONMENT

Any time something new is introduced to a LGDs’ environment, it is important to acclimate the LGD to the new situation. For example: If a new feeding station design is implemented, make sure the LGDs know how to enter and exit it.

The LGDs may need to be physically shown the entrance and be placed into the feeding station so they understand how to get in and out.

The process may need to be repeated several times until the LGD(s) learns the new system.

New livestock species (or additions to the livestock herd) should also be introduced to the LGD(s) gradually so that the LGD(s) can adjust to these changes. LGDs are smart, independent, and courageous animals, but they are often hesitant to try new things.

Keeping this in mind, it is always wise to familiarize LGDs with new objects and situations—carefully and patiently—until they adjust and lose their fear of them.

In conclusion, bonding and training a LGD can take multiple months of dedicated work, but with proper training and bonding, the result of a successful LGD will be worth the effort and time taken. Texas A&M AgriLife Research will continue to conduct research with LGDs to help small ruminant livestock producers protect their livestock and ranching traditions.