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Results Of A&M Guard Dog Study Described At Recent Field Day

By Colleen Schreiber

MENARD — A summary of a yearlong livestock protection dog study implemented by the Texas A&M AgriLife Extension Center at San Angelo was provided at a livestock protection dog field day here in early May.

Reed Redden, Extension sheep and goat specialist at San Angelo, told listeners that there is limited research data on livestock protection dogs in Texas. Part of the money for the study came from a grant from the National Sheep Industry Improvement Center.

Redden was specifically interested in working with “novice” cooperators, those who had no experience with guardian dogs, and he wanted cooperators who ran livestock on pastures at least 500 acres in size. Predators needed to be a problem, which, of course, was not a difficult requirement to fill, but cooperators also had to be willing to cease trapping of any kind within a mile radius of where the dogs would be traveling until such a time that predators became an issue.

Six cooperators participated in the study. Dogs were purchased from 5R Stockdogs, Billings, Montana. Dogs were all crossbred and not of any particular breed.

Each cooperator received from two to four bonded dogs, most of which were nine to 10 months of age. All dogs were spayed or neutered, and vaccinated. The dogs they knew they could catch were affixed with a GPS collar for 30 to 60 days, though Redden acknowledged it ended up being “not very many dogs.” County Extension agents in the cooperators’ respective counties also used game cameras to monitor predator and wildlife traffic. The dogs and the cooperators were monitored throughout 2016.

Redden offered general remarks about each of the six cooperators. In January four dogs were placed with the U Ranch between Sterling City and Big Spring. General manager Cliff Caldwell had about 1000 ewes and lambs running on wheat fields right off Hwy. 87. The dogs were placed with 150 ewes and lambs for a day in a three-acre dry lot and then moved to the wheat field.

Initially the dogs remained with the sheep. A dead coyote was found in the wheat field, but cause of death was inconclusive. There was a porcupine incident with two of the dogs, but those particular dogs were gentle enough that they were able to catch them and get them to the vet.

Conflict with neighbors, however, caused the cooperator to abort the project after about two months. The first incident was when one

of the dogs barked at a young boy who was fishing on the ranch. The major conflict was that the dogs were accused of running captive deer that had been released into the wild back into a high fence, killing the high-value deer.

“The cooperator felt that was simply too high of a risk and feared if it happened again, it might be considered neglect on his part, so he aborted the project,” Redden explained.

The dogs were relocated to other ranches.

Lone Wolf Ranch, operated by Craig and Wade Demere, received two dogs to be placed with 250 ewes that had just begun lambing. The dogs were first placed in a dry lot with the sheep for a day and then were released with ewes into about a section pasture.

In this operation there was a control pasture similar in size with the same number of ewes of the same age, but conventional trapping continued in this particular pasture.

The dogs were reported being seen with the sheep most of the time. There were problems, however. For one, there was a dominant dog that didn't let the other one eat. Additionally, lamb losses were reported about two to three months after the dogs were placed with the sheep.

“Craig reported finding dead lambs and dogs eating on them,” Redden said. “We kept saying ‘No, that’s not what these dogs do,’ but then the dog was seen chasing lambs and a dead lamb was found in the same area the following day. That was the straw that broke the camel’s back.”

Redden intended to pull both dogs out of the project but was only able to catch one dog. The other dog has been there since, and “seems to be working,” he told listeners. After the lambs were weaned the dog stayed with the ewes in a new pasture, and in the fall a new set of ewes began lambing and the dog relocated to this group of ewes.

The game cameras did catch one coyote in the pasture during the winter prior to the dogs, as well as a bobcat and lots of pigs. After the dogs were put with the sheep the game cameras did not pick up much at all in the way of predators.

As for the actual results, the pasture with dogs had a 96 percent lamb crop, as the dog was thought to have killed the 12 lambs. However, in the control pasture where trapping continued, a lamb crop of 113 percent was raised. The fall lambing ewes, 80 in total, had no predator problems.

In a recent personal communication, Demere reported that for him the jury is still out on the guard dogs. This spring the lamb crop was lower in the pasture where the dog was located compared to other pastures, but he acknowledges that is also the pasture where they know more coyotes were working. Seven coyotes were killed in that one pasture, and 38 lambs were lost from marking to weaning.

On the Jernigan Ranch near Sheffield in Pecos County, four dogs were to be placed with 400 or so pregnant hair sheep ewes in a 2500-acre pasture. This particular property was a leased operation from which Jernigan had removed all sheep three or four years prior because predators were so bad even with a fulltime trapper. Prior to the initiation of the research project he was running strictly cattle on this place.

“We figured if ever there was a place to test the viability of guard dogs, this was the place to do it,” Redden told listeners.

Redden noted that the pasture was trapped heavily just before the guardian dogs arrived.

On arrival the dogs were kept with a few ewes and lambs at the ranch headquarters for a couple of weeks before being moved to the pasture, and then the sheep and dogs were transported to a 100-acre trap located on the leased property. After a few days the dogs were released with all of the sheep into a 2500-acre pasture, where they remained until August. After that they were moved to another 2500-acre pasture on the eastern side of the property.

One dog went missing within the first month of being released. A replacement dog was provided in April. At the onset it was reported that the dogs were not eating well from the feeders, something Redden said was reported by all cooperators in the study. He also pointed out that the guard dog provider did not use self-feeders in his operation, and it was self-feeders that A&M provided to all the cooperators.

During the winter just prior to the arrival of the dogs, a bobcat and some gray fox were captured on the game camera. However, few predators were caught on the game cameras through the spring, summer and fall. In June a couple of lambs were killed and a coyote was snared out of the 2500-acre pasture.

Before offering the results from the lamb crop, Redden pointed out that this particular system is a low-management one in that no supplementation is provided, bucks are left out year-round, and lambs are typically gathered and sold twice a year. Before the guardian dogs Jernigan estimated a 25 percent lamb crop before he removed all sheep and goats. One year with the dogs his best estimate was a 70 percent lamb crop.

Researchers were able to get a GPS collar on the dog that replaced another in April. Recordings of the dog’s location were taken every hour on the hour for 60 days in this 2500-acre pasture. The data indicated that the dog well covered the 2500 acres with a lot of work around the perimeter. The dog only left the property once.

“There is a water source down there, but that is also where the coyote was snared,” Redden told listeners.

Overall, the dog traveled an estimated 3.5 miles per day, and 95 percent of its time was on 1265 acres.

“We want to investigate further how much country the dogs can physically cover.”

On the Lewis Ranch, near Del Rio in Val Verde County they have about two dozen pastures in a contiguous unit. Blake Lewis, who operates the ranch with his dad, described the country as relatively thick Cenizo, guajillo ridge type country.

“It’s not rough like Comstock, but it’s not open by any means,” Lewis told the crowd.

It was decided that the project would start out on the far north end where predators had been particularly troublesome. Prior to the dogs, the cooperater reported about a 10 percent loss from predation from marking to weaning.

Lambing had already begun when four dogs were initially placed. The dogs were held in a water lot with some sheep for the first day, and the following day were released into an 800-acre pasture with 250 ewes.

On the first day one of the dogs killed two newborn lambs in the water lot.

“I have to give it to the Lewis'. They didn’t pull the plug but rather chose to stick with us,” said Redden.

The problem dog was pulled out and three dogs were released into a pasture with fairly dense brush. Soon after, two of the dogs were seen eating on a dead lamb. It was thought to be a caracara kill, as the lamb’s eyes were pecked out, but then another dead lamb was found. In the end two replacement dogs were provided in May.

In the research synopsis Redden reported that one of the original dogs was not well bonded with the sheep, as it was seen at the headquarters during the day and roamed the pasture at night. The other dog from the original replacement left the pasture it was placed in and was put with a group of ewe lambs, but soon left them and bonded with a group of lambing ewes. One of the dogs placed in May bonded to a group of ewes and is normally seen with the sheep. The second dog placed in May was also reported not to stay with the sheep at all times and was often seen at a second ranch headquarters.

Redden said the game cameras didn’t capture much in the way of predators in the winter, summer and fall, but in the spring two coyotes, a bobcat and a couple of gray foxes were caught on camera.

In terms of the actual lamb crop Redden said that in the pastures where dogs were present no lambs were lost from marking to shearing. Other pastures without dogs had an estimated 10 percent loss over this same time period. Lambs were weaned in May, but because multiple pastures were combined an actual weaning rate was difficult to calculate.

Researchers were not able to catch a dog to get a collar on during the lambing season. However, they did so in the fall on one dog that was in a 600-acre pasture.

“This dog traveled more than the Jernigan dog,” Redden told listeners, “but on the Jernigan Ranch there were no sheep around in other pastures, so no other sheep or goats were attracting the dog’s attention elsewhere, unlike at the Lewis Ranch.”

In the research synopsis Redden reported that the dog traveled an average of 3.3 miles per day and had a home range of 909 acres, the latter of which was calculated by assessing where 95 percent of the GPS points were located.

In personal correspondence, Blake Lewis said he views livestock protection dogs as something of a last resort.

“I didn’t know what a coyote was growing up,” said 46 year-old Lewis.

However in the last 10 years the coyotes have gradually invaded, and in the last five they’ve really begun to impact the operation. He attributes that to several factors, but one is that four of their six neighbors no longer have sheep and goats and there are more absentee landowners who either don’t believe in trapping or who like to hunt hogs and they don’t want Lewis “killing their hogs.”

The Lewis' lamb in January, and lambs are marked in February and March and weaned in May before the heat sets in. In 2014 Lewis said he knows he lost 61 lambs from marking to shearing; in 2015 it jumped to 280 lambs, and in 2016, 220 lambs were lost to predators. This year, even with five dogs, that number climbed to 320 lambs lost, and these numbers do not include those that didn’t make it to marking.

Still, Lewis is all in with the dogs because he knows the coyote problem is only going to get worse. His goal now is to increase the number of dogs so that he has enough to adequately cover their country. He has already purchased more dogs and has spoken for more when they are ready in the fall.

During the study, what he noticed was that he never knew where the dogs were going to be. Sometimes there would be two or three hanging out on one fence line. He assumes that they were there to keep the coyotes from the neighboring property at bay.

“That’s where the coyotes live,” said Lewis. “They come and kill on us and go back to where they have no pressure and can feel safe.”

Originally he placed the dogs in pastures where he’d had problems in the past, but he acknowledges that it was kind of like putting your finger in a dike.

“I need enough dogs so that they don’t have to cover three to five miles a day running back and forth when they hear a problem,” said

Lewis.

He thinks it will likely take three to five years to really show an impact with the dogs, but he sees no other options.

“They started these rabies drops in South Texas several years ago, which is stupid to me. On one hand, we’re paying the government to keep these dang things alive, and then on another we’re paying them to go out and kill them. That’s government at its finest,” said Lewis. “If they’ve found something to keep them alive, I don’t see why we can’t come up with something to sterilize them and these pigs like they did with the screwworm,” he continues, “but there are not enough of us left in the industry to really raise enough of a voice to do anything like that now. So this is what we’re left with, limited trapping and dogs.”

The Price Ranch near Robert Lee in Coke County had a situation similar to that on the Jernigan Ranch in that the predators had gotten so bad that sheep and goats had been removed years before and only cattle were being grazed. One of the reasons the cooperators were interested in the program was because they wanted to incorporate sheep again into their grazing program.

On arrival two dogs were kept with 150 crossbred hair sheep ewes in a two-acre water lot overnight. The following day dogs and sheep were released in about a section pasture. Livestock are rotated on a monthly basis on mostly section pastures, Redden said.

Both dogs remained with the sheep and were typically only seen in pastures where the sheep were located. Six lambs were reported lost to coyote predation, but it was pointed out that the losses occurred when the livestock were moved closer to the neighbor’s property, where the predator problem was said to be severe. Redden said the dogs were blamed in part for the problem, meaning that the guardian dogs pushed the coyotes off to the neighboring ranch. Once the sheep were moved, the killing stopped.

The game cameras only picked up feral swine, and one interesting discovery was that the pigs avoided the pastures where the dogs were present. When the sheep and dogs moved out, the feral pigs returned.

Researchers were able to get GPS collars on both dogs. Data indicated that the dogs clearly worked the perimeter of the property. They did visit the neighbors a time or two, Redden said.

In the research synopsis it was noted that the dogs traveled an average of 3.3 miles per day and their home range was 576 acres.

As for the results, six lambs were lost but the cooperators still reported a 130 percent lamb crop.

“They originally gave up on sheep when the lamb crop dropped below 50 percent, so on this operation we saw better than a 50 percent improvement in the lamb crop after the dogs,” Redden told listeners.

In personal communications Frank Price reiterated that this particular place hadn't had sheep for more than 10 years and that coyotes are prevalent in the area.

"I doubt we could have raised a decent lamb crop without the dogs, 132 percent that first year," Price said.

Price and his son, Sims, have since purchased more dogs and continue to have good success.

He offered three reasons for that success. First, he noted that there are no other guard dogs in the area and only one ranch with sheep adjoins them, giving the dogs less reason to roam.

Additionally, their sheep are run in a one-herd grazing system. Thus, the dogs have less area to patrol. He also noted that the dogs have adapted well to the continual pasture moves.

Finally, Price credited his employee in charge of the dogs.

"He took it upon himself to make the 'experiment' successful," Price said. "Good dogs (stock as well as guard) are just like good saddle horses. As a rule, they are only as good as their handler-trainers, albeit they can make the handler really look good."

On the Zuberbueler Ranch near Comstock in Val Verde County, two dogs were initially placed with 10 ewes and six lambs and kept in a dry lot for 24 hours, then were released into a 30-acre water lot for another few days.

"We saw severe predator problems right away," Redden told listeners. "To get the dogs adjusted we just gathered the first 10 sheep we could get in the pen, and two of the lambs had blood on their ears and under their throat, so some predator was working on them."

Some 300 ewes moved from the trap into a 2000-acre pasture that was densely covered with brush and pretty inaccessible by vehicle.

The dogs roamed between pastures and onto the neighbors, Redden said, and a couple of months in, one of the dogs went missing.

In the spring a couple of kills were found and a helicopter was called in. The coyote was killed and another four coyotes were caught on the fence line or within neighboring pastures.

In this operation there was no improvement in the lamb crop.

"Probably the most telling thing was that GPS data showed that the dog did not cover much country," Redden told listeners.

The dog traveled an average of 1.7 miles per day and had a home range of only 193 acres in a 2000-acre pasture.

"In that situation we would not expect the dog to be very effective," said Redden. "The operator did report that the dogs were

pretty tender-footed in the first month. The country has lots of dogpear.”

Summing up the results of the study, Redden said that five of the six cooperators who participated remained in the project and “see value in it moving forward.”

Three noticed a significant improvement in lamb crop and three have purchased more dogs and/or are looking to expand their dog program.

“The important thing to know is that 50 percent of the dogs that were bonded somewhere else and brought in and used by naïve operators didn’t work out,” Redden admitted.

Also, in most all cases the dogs did not eliminate predation completely in the first year.

“There was still some predation occurring in the larger pastures, some more than others,” he added, “but the big issue of major concern for the cooperators was they couldn’t catch the dogs. Also, they didn’t know where their dogs were or what they were doing, and it was hard for them to assess how effective the dogs were, especially in the beginning.”

John Tomecek, Extension wildlife specialist also based in San Angelo, shared the results of a project he initiated on the Martin Ranch at Menard. The ranch is used as a research ranch. Tomecek was interested in learning more about how the livestock protection dogs interact with wildlife, specifically the deer and the turkey. Additionally, he was interested in learning about how the coyotes react to the presence of the dogs.

GPS collars programmed to take a GPS point every hour on the hour were attached to the guardian dogs. The collars also have a radio beacon attached so that if the dog went missing it could be found relatively easily.

Additionally, “a good many” of the livestock also had a collar with a UHF beacon.

“That beacon broadcasts a signal that the dog’s collar listens for,” Tomecek explained. “Every time the dog’s collar takes a GPS point it turns on its antenna and listens for that UHF beacon in order to take an accounting of the livestock that are within a couple hundred yards of the dog.”

Over the course of a year his technology essentially enabled him to determine which dogs were staying with the livestock.

To get a handle on the predator population, game cameras were placed at various locations across the ranch. Scat was also collected to try to get a handle on what the prey species were eating.

Based on GPS data, Tomecek learned that the dogs were pretty well staying on the ranch, though there were some GPS points off the property. He was able to learn more about when the dogs were indeed off the property by programming the technology to take a GPS location every minute.

What he found was that one dog was off the property for 27 hours, another for 30 minutes. It turns out that the one that was off the property for 27 hours followed the sheep onto the neighbor's property after a gate had been left open.

"The dogs were attached to their charges, not the fence line," Tomecek remarked.

The other dog that had taken up residence with the goats on the ranch left the property for 21 minutes on one occasion and for nine on another.

"We do see coyote traffic coming through the ranch," he told listeners. "I have no idea if the dog was perhaps chasing a coyote, but that is an area where we do have quite a lot of coyote activity."

Tomecek also noted that the dog took the jaunt off the property in mid-February, which coincides with peak coyote breeding season.

"Perhaps we had some new coyotes that haven't yet learned where the dogs are and so the dog is addressing that issue."

The GPS data also revealed how the dogs interacted with each other. For example, the data indicated that two dogs tended to work together; the others didn't overlap much. However, during lambing and kidding, the territory that the dogs covered shrank. This was noted in particular during kidding with the dog that guarded the goats.

"The dog had a very small, discreet area that he was covering then, and so I drove out to personally see what was going on. I found the dog laid down nearby where several nannies had kidded or were just about to kid," Tomecek said. "The dog was there watching. Admittedly, he was also cleaning up the afterbirth."

When the goats began to wander more again, the dog began to move again with them.

"What that showed me was his protection detail was not necessarily a discreet boundary but rather, it was a roving movement as the livestock moved around."

The camera data, he contended, showed that the coyotes avoided the dogs.

"That doesn't mean that they are necessarily always avoiding the pasture that the dogs are in," he qualified. "The dogs really work the pasture boundaries pretty heavy, and sometimes we see no coyote activity in a pasture until the dogs and the sheep rotated out of the

pasture. Sometimes, too, we had coyote activity in the pasture while the dogs are there, but we've got reason to believe that the coyotes are not eating on the lambs or the kids in those situations."

Tomecek also commented that "near as they could tell" the deer and turkeys did not change their behavior based on the location of the dogs.

"I've seen dogs lay down in the shade of a roost tree that the turkeys were beginning to come back to as evening came on," he said. "I've also walked around the water troughs that the dogs water at and seen a preponderance of turkey scat."

Responding to a question from the audience, Tomecek said they have not yet investigated whether the dogs have any impact on turkey nests.

As for the scat diet analyses, they've evaluated 32 scats out of 160 collected thus far. Their primary focus was on coyote and bobcat scat. Thus far they've determined that the bobcat diet consisted primarily of jackrabbits, lots of rodents, lots of skunks, some birds, and some white-tailed deer. One scat had wool in it.

The coyote scat did not reveal much difference. There was wool in some of the samples, but Tomecek said there was no way to determine if it was scavenging or from a predation incident. However, because the wool was found in a limited amount in his mind that was "proof positive" that having the dogs with the sheep was limiting predation.

In response to a question, Tomecek said they did not have any data on the impact of fawn crops with and without livestock protection dogs, but he acknowledged it is something that needs to be done.

Menard rancher Bob Rieck, who has used dogs for several years with good success, said the problem he runs into with new hunters is that their first request is that he get rid of the sheep and goats.

"When they go to complaining, my defense has always been, 'fine, get rid of me, my livestock and my dogs, and your fawn crop is going down to nothing.'"

Tomecek added that they have found deer hair in the dogs' scat, but it usually showed up during hunting season, which he attributed to the dogs being in and around the gut pile.

"We have not seen any deer hair in the dog scat during fawning season."

Some axis deer have also shown up recently. Axis tend to lamb year-round, and still they have not found any axis deer hair.

Overall, the consensus was that there is much to be learned about the use of livestock protection dogs in the Texas ranching environment, and A&M has plans for the program to continue.

Questions? Comments? Suggestions?

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