

South Carolina Department of Natural Resources Study Answers Questions about Deer, Ammo, Guns and Dogs

By Chuck Hawks

Charles Ruth, Wildlife Biologist and Deer/Turkey Project Supervisor for the South Carolina Department of Natural Resources (SCDNR--what we in the west would call the Fish and Game Department) has published an article on the SCDNR website explaining the results of a recent study that should be of interest to all deer hunters. The URL of the article (<http://www.dnr.sc.gov/wildlife/deer/articlegad.html>) was sent to me by *Guns and Shooting Online* reader Paul Tofolo, who suggested I write an article to help call attention to the important information revealed by the SCDNR study. This study should be of interest to all deer (and similar size CXP2 game) hunters.

In his article, Mr. Ruth explained the purpose of the study this way:

"We attempted to determine; the importance of a trained dog in locating dead and wounded deer, the distance deer traveled when shot, the effects of shot placement and differences in the effectiveness of various firearms and ammunition. Statistical significance was based on a probability level of $P = 0.05$."

The SCDNR study was conducted with the cooperation and assistance of a 4,500 acre private hunting club on the SC coastal plain. The terrain is mostly forested and intensively managed for deer hunting. Management practices include burning, mowing, planting, fertilization and direct feeding. Hunting/shooting was done from permanent elevated stands. The stands have seats and rests for shooting, a luxury seldom seen in the far west, but a great asset for accurate shot placement. A total of 603 shots were fired and 493 deer, both bucks and does, were harvested in the course of the study. All deer were shot with scoped, centerfire rifles. I cannot quote Mr. Ruth's entire article explaining the study in detail here, so I urge you to go to the URL mentioned above and read it for yourself. I will just try to hit the highlights.

Trained deer tracking dogs

Before I read this study I had never heard of a dog trained to track wounded deer. They are almost unknown in the Pacific Northwest, where I mostly hunt, because our hunting conditions and circumstances (no private club, no permanent stands, public forest land not managed for hunting, no feed plots and hunting from a vehicle, horseback or on

foot) are very different from those described in the study. However, where circumstances permit, a trained dog was found to be very useful.

The study showed that a dog trained to track wounded deer is generally unnecessary if a mortally wounded deer remains within sight of the hunter or travels less than 46 yards. This was the case with the majority of the deer killed in the study, a total of 408 recovered animals.

On the other hand, a trained dog is a great asset if a mortally wounded deer runs a significantly longer distance and leaves little or no clear sign, particularly if the animal runs into heavy cover. 85 deer were in this category and were recovered with the aid of a trained dog. Another 19 deer, wounded in a manner not immediately fatal, were recovered by use of a trained dog. In Ruth's words, "These deer suffered wounds to various body parts including legs, mandible, lower abdomen, etc." 15 additional deer were superficially wounded (judging by the dog's behavior) and not recovered. These deer were trailed by a dog for an average distance of about 300 yards without being found and with little likelihood that they would be overtaken. Altogether, a trained dog helped recover between 15% and 20% of the deer in the study. It is clear that trained deer tracking dogs should be used where and when possible.

Shot Placement

It will certainly not surprise *Guns and Shooting Online* readers that shot placement was found to be critical in the SCDNR study. Shots to the shoulder, heart and lungs almost always resulted in recovered deer that traveled 50 yards or less after being hit. The study found that a broadside shoulder shot deer traveled an average of only three yards. That shot proved essentially as effective as a direct hit in the central nervous system!

Charles Ruth additionally noted in his article that habitat affects recovery and deer are often shot in poor light that reduces the chance of recovery. He wrote, "It can be difficult for hunters to determine where the deer was standing and the direction it traveled. Particularly on long, narrow roads or food plots."

Range

Range definitely mattered in terms of clean kills and recovered deer. The mean distance at which the deer were shot in the study was 132 yards. It was found that deer shot at 125 yards or less were normally recovered, while those shot at 150 yards or more were much more likely to be missed or wounded. This merely reinforces our belief here at

Guns and Shooting Online that 150 yards is a long shot and even the most exceptional marksmen should never shoot at game animals beyond the maximum point blank range of their rifle and cartridge.

Bullet types and performance

The SCDNR lumped bullets into two basic groups. The first included all bullets of appropriate deer hunting weight for caliber (.30/150 grain, for example) designed for rapid expansion. These were conventional soft point, Ballistic Tip, Bronze Point, etc. The second group included heavy for caliber bullets designed for large game (for example .30 caliber/200 grain) and premium bullets designed for deep penetration: Barnes TSX and all other solid copper bullets, Partition, Grand Slam, etc.

The study showed that deer shot with Group 1 bullets, which might be described as explosive on impact, traveled a mean average of only 27 yards. Deer shot with Group 2 bullets, hard or heavy projectiles, traveled an average of 43 yards.

58% of the deer shot with Group 1 bullets dropped in their tracks, while only 40% were knocked down by Group 2 bullets. Of the deer that were able to run after being hit, only about 12% shot with Group 1 bullets left little or poor sign and were hard to track, while over 21% hit by Group 2 bullets left poor sign.

All of these differences are statistically significant, showing that Premium and heavy for caliber bullets are not only unnecessary for deer hunting, they are clearly inferior to conventional soft point or tipped soft point bullets. This is consistent with what I have written in several articles about hunting bullets.

Caliber

Over 20 different cartridges were used to harvest the deer in the study. These included calibers .24 (6mm), .25, .270, .284 (7mm) and .30. To quote Mr. Ruth's article directly:

"We found no significant difference in the performance of these caliber groups when comparing how deer reacted. Mean distances deer traveled varied between 14 and 40 yards, but there was no apparent relationship with increasing or decreasing caliber size or the inherent differences in velocity or energy that is related to the different caliber groups."

This conclusion matches the experience of the *Guns and Shooting Online* staff when hunting CXP2 class game. We have found that with a double lung shot a .30-30 or 7x57

kills just as surely and quickly as a .338 Magnum. Bullet placement is what counts, assuming the use of an adequate caliber (.24 or larger) and an appropriate bullet.

Factory verses custom rifles

Super accurate custom rifles demonstrated no advantage in the SCDNR study. Deer shot with ordinary hunting rifles and super accurate rifles all traveled about 30 yards before expiring. Extreme accuracy is superfluous in the field. This is a point I have tried to make in several articles.

Conclusions

After the raw data was collected and analyzed, author Charles Ruth offered these conclusions in his article:

- *Shooting percentages about 82%.*
- *The farther the shot, the lower the chance of getting the deer.*
- *Deer ran about 62 yards on average.*
- *Shot placement is determining factor. All things considered, broadside shoulder shot worked best compared to others.*
- *About 50:50, deer run vs. deer don't run.*
- *Trained dog expedited recovery of all deer that ran.*
- *Dog very important in recovering 61 deer that left poor/no sign, 24 deer judged unrecoverable, and 19 live/wounded deer.*
- *Dog accounted for approximately 15 – 20% of total harvest on hunting area, i.e. 75 – 100 deer.*
- *No difference in effectiveness of various calibers.*
- *No difference between factory vs. custom firearms.*
- *Significant difference between bullet types. This study indicates that rapidly expanding bullets lead to deer running less often and less distance and when they run they leave better sign.*