



Where does the buck stop?

Habitat influences buck movements

As late summer days of September pass into the first cool days of October, preparations for upcoming deer seasons begin in earnest. Hunters begin scouting their favorite spots, and evening spotlighting trips are used to assess the current deer population.

Pre-season scouting efforts will often provide information on the quantity and quality of bucks in one's hunting area. After weeks or sometimes months of watching a particular buck, hunters may become familiar with "their" buck. Then sometime in mid-October, the buck disappears. They don't see him in his usual hangout. There is no longer fresh sign in areas where just a week ago the buck was a regular visitor. Now the questions begin. Where did it go? Is it dead or alive?

The abrupt disappearance of a Pennsylvania buck in the fall could very well be the result of dispersal. Dispersal, or movement away from a buck's area where it was born, is common in Pennsylvania. Research results indicate between around 70 percent of all yearling bucks will disperse. Although some dispersal occurs in the spring, when bucks are 11 – 12 months old, most dispersal occurs in the fall during October and November prior to the peak of the breeding season.

Mixing it up

Dispersal results in substantial mixing within the deer population. Comparing capture locations of 8 to 10 month old bucks, or button bucks, in Armstrong County (Figure 1) with locations of these same bucks after dispersal at 17 to 18 months of age (Figure 2) demonstrates how bucks spread out across the landscape. Capture activities occurred in 3 local areas; however, once bucks start moving, they provided data from across Armstrong County and beyond.

If one considers movements of this sample of marked bucks and multiplies them by all the bucks in Pennsylvania, the magnitude of movement within Pennsylvania's deer population becomes clear. A lot of young bucks are on the move leaving familiar haunts and traveling into unfamiliar areas.

Sometimes lack of familiarity with new surroundings has unusual consequences. Last year in Armstrong County, dispersal for one buck ended abruptly when it fell off of a cliff to its death. For those bucks surviving dispersal, habitat plays an important role in their travel plans.

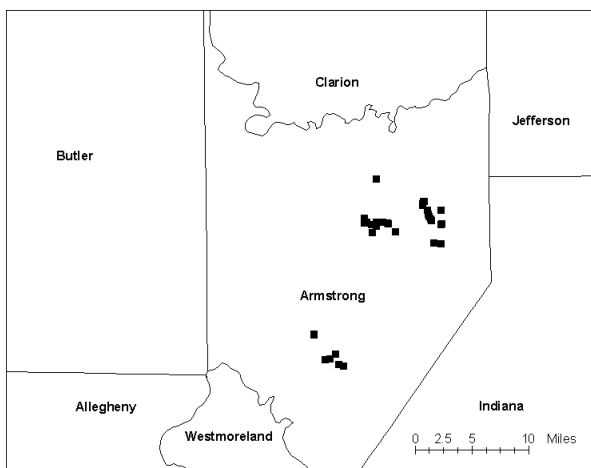


Figure 1. Spring or pre-dispersal locations of yearling bucks in Armstrong County, 2002.

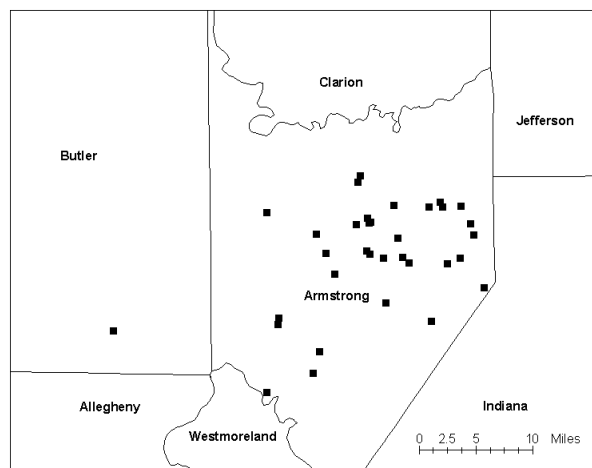


Figure 2. Fall or post-dispersal locations of yearling bucks from Figure 1.

Habitat and dispersal

Once a buck begins to disperse, where will it stop? No single reason is likely to explain why a buck ends dispersal where it does, but habitat and man-made obstacles certainly influences dispersal movements. For instance, it is not uncommon to find dispersal movements end when a buck nears a large river. This has been seen in Armstrong County where bucks encounter the Allegheny and Kiskiminetas rivers and establish their new adult range on the near side, choosing never to cross. . We have seen similar patterns involving major roads, as many bucks have ended dispersal and established home ranges directly adjoining but never crossing highways.

On the other hand, what are barriers to many deer barely slow the movements of others, as the travels of two particularly adventurous deer confirm. Buck #49 in Centre County crossed five mountain ridges and many roads before establishing his adult range 20 miles away from where he was caught. In Armstrong County, Buck #1080 swam across the Allegheny River, which is about 300 – 400 yards wide, and crossed two major highways before setting up his adult range 25 miles from his natal range.

Deer population density does not appear to influence dispersal. In a recent analysis, we investigated the effects forest cover and deer population density have on dispersal. Using data from Armstrong and Centre counties and from other deer populations across the United States, we learned deer population density has little affect on the percent of young bucks that disperse or dispersal distance.

Forest cover, however, did influence dispersal distance. As percent forest cover decreased, dispersal distance increased. In Armstrong County, which is less forested than Centre County, bucks dispersed farther, and on average, bucks in Armstrong County dispersed about 5 miles while bucks in Centre County dispersed 4 miles. The relationship between less forest and longer dispersal distance was consistent across other studies as well.

Buck age and movements

Dispersal may make hunting a particular buck very difficult. A hunter may have done all of his homework scouting the movement patterns of a buck only to have it disperse during or prior to hunting season. A hunter could spend hours second guessing himself and searching for the buck. In fact, the buck may have dispersed miles away from the hunter's area and is not likely to return.

Fortunately for hunters, older bucks' movements are more predictable than yearling bucks. Based on research results from the buck study, most dispersal occurs when bucks are between 11 and 17 months old, so yearling bucks that survive hunting seasons will likely be found in the same general area the following year. Although, an older buck is by no means an easy animal to hunt, the risk of losing it to dispersal is much less.

Conclusion

Dispersal of yearling bucks has important effects on deer population dynamics and is influenced by habitat more than deer population density. Dispersal may also impact deer hunters' efforts. First, disappearance of a buck in the fall may not indicate death of a buck, rather the buck may have dispersed, in some cases as far as 20 to 25 miles away. Second, for every buck that disperses from one's hunting area, there is a chance a buck from somebody else's hunting area may move in and fill the void. Finally, following implementation of antler restrictions, the chance to pursue an older buck has increased. Along with the greater chance to pursue an older buck comes the advantage of knowing an older buck is not as likely to pick up and begin a long distance dispersal some autumn evening.

