

Predation of Deer

Keith R. McCaffery

Many years ago, Professor Durward Allen said that a primary purpose of most animals is to become food for another animal. This is rather shocking especially for those of us that tend to see many animals as “fuzzy-wuzzy, cuddly things.” We prefer the picture from Isaiah where the lion lies down with the lamb. But, as we think about Dr. Allen’s statement, we have to agree.

It is especially easy for us to agree when it comes to small animals like mice because we almost automatically think of a cat at the mention of mouse. However, for some it becomes a little more difficult to accept when they think of deer, especially if they think that the highest use for a deer is to have it end up on their dinner plate. Who then is the predator?! Lions may be king of the jungle, but humans are the top predator in America.

Clearly there is a certain amount of competition for venison; everything from the scavenging chickadees and eagles to bears and wolves. Periodically, there are waves of concern bordering on panic among citizens that predation is decimating the deer herd. One of my first exposures was during the late 1960s and early 1970s. At that time it was coyotes that were alleged to be killing all the fawns.

Admittedly, coyotes were doing pretty well during this period because there was a lot of carrion in the woods. But, it was really the sequence of severe winters that was reducing the deer herd at the same time that carcasses of starved deer were favoring coyote survival. People gravitate to simple answers and predators are easy to blame for any downward change in wildlife populations.

Predators Eat Venison

Predators can and have decimated some populations. High coyote populations have been documented to be major problems for deer, especially in areas deficient in hiding cover. Low deer densities and poor habitat quality can cause deer herds to be vulnerable to predators. However, neither of these conditions applies to Wisconsin.

Still, the publicity surrounding the gray wolf recovery and abundant bear population cause many people to question what effect these large predators are having on the deer population. Obviously, these two critters eat venison and this often is the primary food for wolves. Bears are omnivores and tend to eat almost everything including grass and insects.

Bears will not pass up an easy deer whether alive or dead and some bears become especially adept at hunting for newborn fawns. But, venison remains a small part of their diet. Wolves, on the other hand, specialize in feeding from the deer family. Caribou and moose are preferred foods in the far north whereas whitetails provide their economy in the Lake States.

Wolf packs must be large when dealing with large prey like moose. But, wolf packs in deer country may be as small as 2 wolves. But, even at that, the year-round take by wolves in WI is likely fewer than 10,000 deer when the northern deer population exceeds a half-million in the fall and the statewide deer population exceeds a million and a half.

Such a small loss is undetectable on a regional basis. The best comparison might be the statewide road-kill of deer that approaches 50,000. If we weren't actually maintaining a tally, we wouldn't notice this loss.

What makes both predation and road-kill losses especially invisible is that these losses occur year-round. It is unlike hunter harvests that occur in a relatively short period of time. Hunting harvest, especially during the gun seasons, imparts a rather dramatic and noticeable decline in deer population. But, both of these forms of mortality are compensated by lower rates of other mortality. For example, in the absence of hunting, all deer would die from causes other than hunting.

Jumping to Conclusions

A few years ago, an analysis compared deer population size and trends in deer management units containing wolf packs with units without established wolf packs. There was no noticeable difference in deer population size or trends. However, this unit-wide assessment does not mean that hunters within a pack territory might find changed deer behavior or fewer deer.

Periodically, deer populations experience poor fawn crops or observers perceive fawn crops to be low. This often leads to speculation about the impact of predation. During the 1960s and 1970s, the concern was coyotes. Subsequent to that, there were a couple of years when fishers were suspected to have affected fawn survival.

Still more recently, it has been wolves and bears that are being suspected of decimating fawn crops. Much of the concern is based upon direct observation of deer in a local area. One of the problems with direct observations is that they are often misleading. If an observer sees lots of deer, it is reasonable to assume that there are probably lots of deer. However, if one does not see any deer, it does not mean that there are no deer.

Field Sampling Problems

Direct observations are often misleading as a result of deer behavior that can be affected by many things including weather. For example, it has been found that a rainy August usually results in much more deer activity in forest openings where they can be seen during September and October.

The size of the sample used to estimate fawn abundance is also important. But, even samples that include over 200 adult does can provide misleading estimates of fawn production. Still, it is difficult and often impossible to convince someone who has seen “lots of deer” that what was seen may not be representative of what was there.

Another example is adult sex ratios. Thousands of deer observations are reported each summer by experienced observers in the DNR and US Forest Service. Typically, these results indicate an adult sex ratio of 3 does per buck when the actual sex ratio is more nearly 2 does per buck. This disparity may be explained in part by misidentification of small-antlered bucks as does, but is more likely caused by different behaviors of bucks and does. The distortion experienced is called bias. The source of bias can be observer behavior, animal behavior, or a plethora of other factors.

Some types of bias will cause random errors in sampling. Other bias, such as experienced in observed sex ratios of deer, seem to be consistent in one direction causing observers to over-estimate the number of does per buck.

So, what one sees is not necessarily what is there. This is difficult for many hunters to accept because surveys show that we depend primarily on our own experience when assessing deer herd status.

Is Predation a Problem?

Hunters often are concerned about predation because they feel that it competes for the same animals wanted by hunters. At the same time most hunters are also conservationists and do like to see all parts of the natural system operating. Predation is part of the natural system.

Predators, themselves, depend on a healthy functioning natural system. A predator population does not benefit from wiping out its primary prey. And, predators have their own problems to deal with. A case in point is mange among canids.

Best Indicator of Predation Impact

Perceived ups and downs in the fawn population are often the triggers that cause people to suspect that predation is “wiping out the fawns.” It is

logical that folks would be looking at fawn abundance as their measure of predation's effect as most predation is focused on the youngest age class of deer.

However, the frailty of a direct observation index has been described above. There is a better and less biased measure and that is to look at the proportion of yearlings in the adult doe population. By aging large samples of hunter-harvested deer, biologists can get a fairly unbiased measure of production and survival of fawns from the previous year.

Hunter harvested does provide a fairly unbiased measure of age composition because hunters are unlikely to be able to know the difference between a yearling and an older doe. This does not mean that there is no bias as some hunters may wait to see a doe with fawns in order to be assured of shooting an adult doe rather than a fawn. To the extent this is done, it will bias the sample toward older does.

However, this bias is believed to be fairly consistent from year to year. Therefore, anytime there is a significant downturn in the proportion of yearlings, one can look for reasons for a loss of fawns. The proportion of yearlings in the sample from northern Wisconsin has been highly correlated with winter severity.

Any downturn in northern yearlings that is not related to winter severity would cause one to suspect an increase in other losses including predation. To date there is no indication that yearling recruitment has been dampened in the north as a result of wolf recovery or increased bear population.

Elsewhere in the state, there is a long term slow decline in yearlings in the southernmost part of Wisconsin. Clearly, bears and wolves are not suspect here. However, there is some question about deer density effects. That is, as deer populations rise, fawn production and survival tend to decline.

Conclusion

Don't panic over allegations of predation. While it might be fun to speculate about the impact of predators on deer populations in Wisconsin and especially the effect of wolves or bears, folks should stay tuned to the best measure of predation before going off the deep end. Wisconsin annually ages tens of thousands of deer. When people see the proportion of yearlings sagging in the absence of obvious weather effects or deer density effects, then we might want to look more carefully at predators and discuss their role and future.