Perspectives on Deer Hunting

Introduction and acknowledgments

Hunting is often condemned by Animal "Rights" advocates as an evil practice that not only exemplifies the worst in human conduct, but also injures populations of game animals, causing genetic damage and even species extinction.

Hunting of the White-Tailed Deer (*Odocoileus virginianus*) is often used as a primary example in the condemnation of hunting, in part, I expect, because it is a commonly known animal, and in part because, as a result of Walt Disney's expertise at anthropomorphizing animated animals, **Bambi** is a ubiquitous image in the minds of most Americans: After all, who but the most cruel and vicious bounder would set out on a fall day to kill Bambi, or worse yet, Bambi's mother?

This is an effort to clear up the misconceptions of urbanites (and others) whose knowledge of the white-tailed deer comes primarily from Disney and other sources of similar factual reliability. Although this document was written by me, I must, in fairness and humility, acknowledge the considerable assistance offered by Ms. Sue Bishop, Dr. Martin Hulsey, Mr. George Dunham, Mr. Joe Douglas, Mr. James Eckler, Dr. William Porter, and the many AR advocates who have forced me to find the actual sources rather than rely on pamphlets and propaganda...may THEY be similarly (if uncharacteristically) moved in the future.

I should note, too, that the information provided herein applies ONLY to the white-tailed deer (*Odocoileus virginianus*), and primarily (though by no means exclusively) to its existence on the northern parts of its range. Unless otherwise noted, no claims are made for other species of deer.

September 23, 1995

Rich Young
Rochester, NY

Send comments to the author at this address: reyoung@usadatanet.net.

Table of Contents

The White-Tailed Deer (*Odocoileus virginianus*)

Who hasn't seen the Walt Disney animated feature, **Bambi**? Remember how we all fell in love with Bambi's cute spotted coat, and those big soft brown eyes with the long, sweeping eyelashes? And do you remember how horrified we were when Bambi's mother was killed by that nasty old human hunter? Of course you do...**Bambi** was a near-universal experience for those who grew up in the '50s and '60s, and continues to be one of the most popular features for children even today.

There isn't much that's more adorable than a white-tail fawn (maybe kittens...or playful Giant Panda cubs) and anyone who has even a modicum of feeling falls in love with a white-tail fawn immediately (urged on, no doubt, by that lingering image of Bambi stored away since childhood).

But the white-tailed deer is just another animal, and a prey animal at that, and in order to render decisions regarding its management based on fact rather than impulse and emotion, we must separate ourselves from our memories of **Bambi**, forget we saw **The Yearling**, and treat *Odocoileus virginianus* as dispassionately as we would treat a slug. We want white-tails to survive as a species, but we want them to survive in balance with their environment, not at the expense of it. To this end, then, it behooves us (pun intended) to understand a little of the biology of the white-tail as well as to appreciate its emotional appeal.

According to 30-year Michigan white-tail researcher John Ozoga [in *Whitetail Winter*, Willow Creek Press, Minocqua, WI, 1995; pp. 23, 27-28], the white-tailed deer is one of the most adaptable animals on the planet and, although the Cervidae are thought to have arisen in Eurasia and migrated across the Alaskan land bridge, the genus *Odocoileus* is considered to be a New World descendant of those early travellers. The white-tailed deer as we know it today has (according to the fossil record) existed essentially unchanged for perhaps as much as 20 million years and is thought to be the ancestral form from which today's mule deer and black-tailed deer evolved. It has managed to colonize habitat ranging from the dense rainforests of South America to the subarctic tree lines of North America. In so doing, it has evolved into several subspecies, from the large *Odocoileus virginianus borealis* sub-species of the northern woodlands, in which a mature buck may weigh 400 pounds (almost 182 kilograms) and stand 40 inches (nearly 102 centimeters) at the shoulder, to the Margarita Islands subspecies, *O. v. margaritae*, in which a mature adult may weigh only 40 pounds (18.2 kg). Some 200 pounds (91 kilograms) is more representative of healthy bucks in the U. S., however. Such size differences related to

climate are predictable, and in fact are summarized by **Bergmann's Rule**, in which the tendency toward larger body size is seen as a natural result of selection for those individuals best able to withstand the rigors of winter cold, or alternately, dissipate body heat in a tropical climate (larger body mass results in less surface per unit volume and subsequently reduced heat loss, while a small body size, with relatively more surface per unit volume, loses excessive heat more effectively).

Though there are differences in the effects of habitat and climate on the various sub-species, there are many, many similarities as well, and we shall explore some of those characteristics in the following paragraphs.

Reproductive Characteristics

As a prey animal, the white-tailed deer has evolved with several adaptations that allow it to survive the predations of the many carnivores that consider it a dietary prize. In the words of Dr. R. J. Warren [*Trans. 56th N. A. Wildl. & Nat. Res. Conf.*; 1991]:

"White-tailed deer possess a wide variety of antipredator adaptations (Mech 1984), which obviously indicates that they evolved as a prey species. Thus, acute mortality (e. g., predation) probably always has been a major component in the complex of factors that control deer populations. Behavioral interactions and social pressure among conspecifics, which control some animal populations (Wynne-Edwards 1964), do not seem to be operative in deer."

One of these adaptations is a relatively high reproductive rate FOR AN ANIMAL OF ITS SIZE. Obviously rabbits or mice reproduce much faster, but each individual has far less impact on its environment. Even among deer, the white-tail is a champion: The mule deer (*Odocoileus hemionus*), for example, takes an estimated two to three years longer for an unmolested population to reach environmental carrying capacity than does the white-tailed deer, according to Dr. Dale R. McCullough ["The Theory and Management of *Odocoileus* Populations" in *Biology and Management of the Cervidae*, edited by C. M. Wemmer (1987)]. And according to studies done by Louis Verme and John Ozoga, the white-tail reproductive rate is high even under adverse conditions, though fawn mortality under such conditions may also be high. In a study by Verme and Ozoga [*J. Wildl. Man.* 46(2):281; 1982], it is stated that:

"...acute malnutrition of pregnant does commonly results in heavy neonatal mortality (Verme 1977) which can disrupt herd dynamics for years."

The age of the doe is an equally important consideration. Verme [*J. Wildl. Man.* 33(4):882-3; 1969.] states that yearling does on poor diets averaged 1.14 fawns per pregnancy while prime-age does on the same diet averaged 1.58 fawns per pregnancy. He says of one test population:

"Only 11 of 19 litters consisted of twins, a comparatively small proportion for physically mature female deer."

Verme also notes, however, that yearlings on poor diets have a much lower pregnancy rate (their advance to sexual maturity is delayed by poor nutrition...a similar phenomenon is seen in human females). In addition, he notes that the ratio of male fawns to female fawns changes from roughly 46% males for well-fed prime-age does to nearly 80% for

poorly-fed prime-age does. Nevertheless, it is clear that the reproductive rate of even poorly-nourished white-tailed deer is sufficiently high that the birth rate will more than simply replace the parents: In Verme's example, 19 poorly-nourished does bore 30 fawns. Even if we assume that the number of bucks in the herd equalled the number of does who bore fawns, the herd's population increased by nearly 80%. And these were poorly-nourished does; the implications regarding reproduction rate for deer that are NOT poorly-fed are obvious. In a summary of his previous work, Verme (1969, op. cit.) lists the average reproduction rate of prime-age does (as determined from three studies) as 1.15 fawns per doe for poorly-nourished does, and 1.73 fawns per doe for well-nourished does. In one of these studies [*Trans. 32nd N. Am. Wildl. Conf.*, p. 412; 1967.], the rate was as high as 1.85 fawns per prime-age doe when the diet was at least adequate.

Population Dynamics

The implications of such a high reproductive rate should be patent. In the absence of other controlling influences, white-tailed deer population normally will continue to expand until the increasing lack of nutrition begins to bring some of the controlling influences (such as fawn sex ratio, neonatal mortality, and winter deeryard mortality) to bear. The typical "balance" that is reached was summarized by Dr. William Porter of the State University of New York (SUNY) at Syracuse who said (in a personal communication regarding an unhunted area he has monitored):

"Our work in the Adirondacks shows that MOST of the fawns die EVERY winter. Deer persist in the region because adults live a long time (12-15 years) and only need one or two mild winters in their lifetime to replace themselves." [emphasis his]
Note that this statement supports the observation of Verme and Ozoga, above, regarding the heavy neonatal mortality characteristic of poorly-nourished deer. And as Warren said [op. cit.]:
"Behavioral interactions and social pressure among conspecifics, which control some animal populations (Wynne-Edwards 1964), do not seem to be operative in deer."
The lesson to be taken home here is that deer will die. In a herd at environmental carrying capacity, the only question to be resolved is in what ratio the fawns will die of starvation compared to other herd deaths. As adults die (from whatever causes), fawns will live; those that do not will generally die of malnutrition. When it comes to food distribution, as Dr. Dale R. McCullough says ["Lessons From The George Reserve, Michigan" in *White-Tailed Deer: Ecology and Management*, edited by L. K. Halls; 1983]:
"It makes no difference whatsoever to the survivors in the residual population whether the individuals no longer present fell to bullet, fang, radiator grill, or the vagaries of time."
Harris [*J. Wildl. Man.* 9(4):320; 1945.] describes a starving deer:
"First the fat over the rump and saddle disappears, and then gradually the fat that lies between the hide and body cavity will be absorbed...The next step of fat absorption occurs within the body cavity proper. That around the kidneys and on the intestines disappears, and the last to be absorbed within the body cavity is the spot of fat on the heart. A really critical stage in the life of our deer is now approaching. He can still jump and run, and he looks bright and snappy, although his coat is looser and rougher. You

think he is in good condition, but the truth is that he has only one more reserve of fat to use...Now the deer begins to absorb those fat cells [in the bone marrow]. Gradually the marrow turns [from solid and creamy-white to] red and finally becomes jelly-like, which means that the fat cells have been absorbed.

The deer is still apparently full of life. He can jump and run, but he is only living on borrowed time, and in a few days when you jump him from his bed he springs up and starts off but soon staggers and falls; he gets up and tries again only to stagger and fall again, this time to stay down. The next day or so, you find his body..."

Fifty years later, according to John Ozoga (in *Whitetail Winter*, op. cit., p. 136), not much has changed:
"Death from malnutrition is an insidious, pathetically slow process. Fat depletion and physical weakening progress with nearly undetectable signs, until it's too late for recovery. In the final stages, however, a deer's coat roughens, its hip bones show, and hollows appear in its flanks. The starving animal spends most of its time bedded down in a curled head to tail position to minimize body surface exposure. It adopts a lethargic, uncaring attitude, no longer bounding away, flag waving, as danger nears. Small deer, especially, stand hump-backed, their front legs spread slightly, back legs close together, [holding] their heads up at a 45 degree angle [below horizontal]....At some unknown time during starvation, rumen attrition and adrenal exhaustion become irreversible. Thereafter, a deer so stressed could no longer handle the metabolic stress of feeding."
And perhaps the most poignant observation is from Curtis Stadtfeld [*Whitetail Deer: A Year's Cycle*. Dial Press, New York, 1975]:
"They are likely to die in March. And they die unmourned, untended, unnoted."
In Harris's study, which describes a harsh North Dakota winter, this progression began in mid-January and ended only in late March or April.
"By March 15, evidence of extreme malnutrition was found, and during the rest of March and all of April malnutrition was the chief cause of death in a good many deer...The greatest loss occurred in April after the snow had gone, when green grass and forbs were available. All the deer then found dead had full stomachs."
Cheatum [*New York State Conservationist*, April-May 1949, p. 22] addresses the phenomenon of death from starvation with full stomachs, and the inability to recover even with proper rations:
"Deer have been collected while still able to move around on their feet and with the femur marrow reduced to 1.5 per cent fat. These animals would probably not have recuperated even had they been treated with the best of shelter and food."
Clearly, this tendency of *Odocoileus virginianus* to increase its population will cause great suffering when food supplies become insufficient, and as Warren notes, non-predator controls are simply not adequate to prevent this suffering. Both Harris (1945) and Verme and Ozoga (1982) document 63% fawn mortality in undernourished white-tailed deer herds, Ozoga reports that winter mortality consists of as much as 90% fawns [*Whitetail Winter*, op. cit.], and Porter [op. cit.] has noted that in one area, "...MOST of the fawns die EVERY winter." The fawns are among the most vulnerable to food shortage, since they have not been able to store fat over the summer (most of the energy consumed goes toward growth in the first months of life), and their body size is not yet

large enough to minimize overwinter energy loss or to reach diminishing food resources overhead; they are therefore selected according to **Bergmann's Rule**.

McCullough describes the dilemma [Wemmer, op. cit.]:

"...high recruitment rates ['recruitment rate' is the number of fawns that survive to adulthood, not the number that are born --RY] usually are realized at low population densities, and these rates decline as population size increases because of intraspecific competition for food. Usually in deer the competition is not based on the amount of forage consumed, but rather the quality of forage consumed. The problem is not finding enough vegetation to fill the rumen (deer dying of malnutrition usually have full rumens), but the net energy and nutrient balance possible on the diet obtained. If the better plant parts of the most digestible species are readily available, the net gain can be put to growth and reproduction. If the net balance is negative, the loss has to come from the body mass, and this condition cannot be sustained for long or death by starvation will result."
We should be clear about the implications of a "low recruitment rate." Many will be tempted to equate this with a low *reproductive* rate, but this is not the case: "Low recruitment" means that while many fawns may be born, few live to adulthood. This differs significantly from the [incorrect] idea that few fawns are born, and this important difference should be carefully noted.

Curtis Stadtfeld [op. cit., pp. 34-35] relates an interesting example:

"The fecundity of deer -- potentially tragic because of the artificial imbalances in nature -- can be illustrated again in the case of South Fox Island, a little more than 3,000 acres, about 5 square miles, some 17 miles from the northern Michigan mainland into Lake Michigan...Owners of the timberland who were logging the island [in 1962] convinced game officers to plant deer on the island. In September 1962, the Michigan Department of Conservation, now the Department of Natural Resources, released six bucks and eleven does. At least two died that winter, so no more than fifteen deer were alive on the island to begin its repopulation.

In 1969, seven years after the first deer were planted on the island, the herd numbered at least five hundred. At least forty more deer had been taken by hunters.

A special hunting season was established, as the DNR decided that the herd was too large for the available food. Hunters killed 188 deer that fall. Conservation officers believed the herd was still too large.

In the fall of 1970, an even more intense effort was made to harvest deer from the island so that the herd would again be in balance with food supplies. The DNR issued licenses to 612 persons, who killed 382 deer, including bucks, does, and fawns. In the spring of 1971, a check showed that the island had 194 deer; a population that fall of 400 was expected.

In eight years, the original 15 deer had produced a herd from which at least 620 deer had been killed and the herd still numbered 15 times larger than the number put there in the first place.

If continued intense hunting is not practiced, the herd will double each fall. The island once could provide food for approximately eight hundred deer. Its carrying capacity has now dropped to possibly four hundred."

And finally, on the subject of population dynamics, Warren (1991) again:
"Some might argue that starvation and poor reproduction demonstrated by deer in overpopulated herds is evidence that the herd is regulating itself. However, natural regulation of most large ungulates should include predator-ungulate interactions as well as ungulate-habitat interactions (Peek 1980). Starvation and disease are not acute mortality factors, but rather provide only chronic control over a population (Eve 1981). Under these conditions, deer herds can remain at high levels for many years until starvation, disease, or severe winter weather reduce the herd. By this time, adverse ecological effects can have already occurred. Short-term reductions (2-5 years) in the deer herd as a result of these natural die-offs probably will not allow recovery of the natural communities in the area. Plant and animal community recovery may require several decades to occur, especially in areas where seed banks may have been depleted because of chronic overbrowsing by deer."
Which brings us to the next issue: What do the deer affect besides themselves?

Environmental Impact

Until now, we have been looking at the white-tailed deer as an entity essentially independent of the environment in which it lives, and although the white-tail can be fairly selective about the choice of vegetation it eats, its diet becomes less selective as hunger increases and it can, if populations increase to environmental carrying capacity, have a notable impact on the environment in which it lives as it proceeds down its list of edible foods from those that are nourishing to those that are merely filling. We have seen that *Odocoileus virginianus* reproduces rapidly, and that non-predator controls do not seem to be sufficient for proper population control in this species, but what of the impact of these animals on the other life forms with which they share their environment?

On Non-humans

One of the most interesting papers on the impact of deer is the paper by R. J. Warren [op. cit.], from which the following is taken:

"The best evidence of the adverse effects of an overpopulation of deer on plant communities and ecological succession was provided in a recent study of a 60 to 70-year-old Allegheny hardwood forest in Pennsylvania where deer densities were controlled experimentally in 160-acre enclosures that had been clearcut, thinned, or uncut. Tilghman (1989) demonstrated significant reductions in tree seedling height, density, and diversity

in all enclosures where deer densities reached 40-80 [per square mile]. At these higher deer densities, she documented a shift in forest succession to a near-monoculture of black cherry (*Prunus serotina*), and profound changes in the composition of herbaceous ground cover, all of which were the direct result of overbrowsing by deer."

"In a study of plant communities in Great Smoky Mountains National Park in Tennessee, Bratton (1979) documented a reduction in the number of plant species, a loss of hardwood species, and a predominance of conifer species in an area of the park heavily populated by deer compared to an ecologically similar control area with fewer deer."

"Perhaps one of the most significant plant indicators of an overpopulation of deer in an area is the occurrence of 'bark stripping' on trees. During winter in Catoctin Mountain Park, Maryland, deer strip significant amounts of bark from elms (*Ulmus* spp.) (Warren and Ford 1990). Bark stripping has been proposed as an indicator of low forage availability for ungulates (Miquelle and Van Ballenberghe 1989). Bark stripping by deer represents an exacerbation of the overbrowsing problem in forests. The adverse effects of overbrowsing on understory vegetation and seedlings are further compounded by the effect of bark stripping on midstory and overstory trees via increased susceptibility of trees to disease and mortality (Miquelle and Ballenberghe 1989)."

"On Saratoga National Historical Park, New York, deer browsing prevented recruitment of tree seedlings to saplings...(Soukup, et. al. 1990). Bratton and Kramer (1990) determined that overbrowsing by deer on Cumberland Island National Seashore, Georgia, was helping suppress live oak (*Quercus virginiana*) seedlings, sprouts and saplings in the forest that dominates the island."

"Scott and Yahner (1989) found greater use by snowshoe hares (*Lepus americanus*) and Dessecker and Yahner (1987) found greater breeding-bird community species richness and diversity on recent (<= 6 years old) clearcut stands in north-central Pennsylvania that had been successfully regenerated (>= 70 percent of plots stocked with desirable tree species <= 5 feet tall) as compared to those not successfully regenerated (<= 50 percent stocking level). Overbrowsing by deer was the major cause of unsuccessful regeneration."

"One well known natural preserve decided decades ago to control deer to prevent vegetation damage. The 1,146-acre George Reserve in Michigan was established so the area could 'follow its natural course without interference by Man' (McCullough 1973:3). In the mid-1930s after deer had been reintroduced to the area for less than 10 years, 'it was imperative the the deer population be artificially controlled by Man, even though such action ran counter to the basic philosophy of noninterference in the natural processes of the area. It was recognized that part of the problem was lack of natural predators in the area, and the role of predator had to be played by Man' (McCullough 1979:8). Interestingly, 'deer are the only animals (or plants) on the Reserve that are artificially controlled' (McCullough 1984:239)."

On Humans

Where there are populations of humans encroaching upon, or even sharing, living space with the white-tailed deer, there are bound to be conflicts. The deer need space to live and food to eat, as do the humans, and as the deer search for both living space and food in an area populated by humans, there will be interaction on a variety of levels. In the words of Dr. Warren again [op. cit.]:

"Deer overpopulation can be defined simply as too many deer in a particular area. Yet the concept of 'too many' can include a variety of social, biological, or ecological definitions. There can be too many deer in an area from the standpoint of public safety (e. g., excessive deer/vehicle collisions), agricultural damage, and damage to landscape plantings..."

Often it is farmers concerned about their crops, and suburban residents tired of replacing ornamental plants and afraid of potentially lethal collisions who first complain about deer overpopulation. And their complaints are not made entirely without justification: As already mentioned, a collision in a vehicle, while often lethal to the deer, is also potentially lethal to the humans in the car, either because of inappropriate avoidance maneuvers, or by direct impact of the animal upon the vehicle's occupants (as in the case of one incident with which I am familiar in Delmar, New York, some years ago, in which the skull of the passenger was penetrated by the deer's hoof). In 1993, the State of Pennsylvania recorded 45,954 car-deer impacts in which the dead deer was recovered. There were probably many more in which the deer was not killed, and undoubtedly some incidents in which the deer was killed and the event not reported nor the deer recovered, but even aside from the loss of human (and Cervid) life such collisions cause, the economic impact of these collisions (as vehicle damage is repaired and human injuries treated) should not be ignored. Indeed, as stated in *Deer Management Recommendations for the State and Local Governemnt, and the Citizens of DMU 96*, prepared by Dr. Paul D. Curtis, of Cornell University, in 1993:

"Decker, et. al. (1990), estimated that 57,000 deer-car collisions occurred in New York during 1988, resulting in property damage in the range of $50 million. Any other method of deer control is safer, more humane, and more cost-effective."

Those who favor protection of [especially suburban] deer herds, whether animal "rights" advocates or simply anti-hunting activists, should pay particular attention to the last sentence of the preceding quote from Dr. Curtis.

Compared to such horrific incidents, damage to shrubbery certainly seems benign enough, but there is a significant economic impact from the cost of repeated attempts at landscaping, implementation of protective measures, or, failing all that, the reduction in estimated real estate value. These factors may seem crass, but they are both real and significant. And the increased cost of food caused by the appetites of scavenging deer in midwestern grain fields or the fruit orchards of the east is a direct cost to the consumer as well. Probably none of these compares favorably with the National Debt, but deer do cost us millions each year, and not all citizens are willing to pay these costs unflinchingly, based on philosophical principle alone.

The Role of Humans in Population Control

It is clear that the environment in which the white-tailed deer evolved is nothing like that in which it now finds itself. One may, of course, judge this to be either good, or bad, or of no particular consequence, but it could be argued that most Americans today would agree that humans should attempt to find a way to live with other species, and to attempt to compensate for past "indiscretions," i. e., anthropocentric (and thus often short-sighted) wildlife management decisions. To that end, a large network of official and unofficial organizations dedicated to "conservation" and/or "ecology" has arisen. The goals of these various organizations are often quite varied, and some even find themselves in conflict, but few would disagree that the white-tailed deer should both exist AND be healthy...no one wants a huge population of starving runts any more than a tiny but rarely-seen population of incredibly healthy specimens...and so, those we call "wildlife managers," charged with the responsibility of making the goals Society sets a reality, often walk a thin line, trying to please many, and often failing to please even some.

Wildlife Management

The goals of the wildlife manager are often conflicting; in today's world, he or she must balance the desires of hunters who want opportunities to complete their hunt successfully, farmers and home-owners who don't care about harvesting (or even seeing) the deer, and animal-protectionists who feel that the death of an animal at the hands of anything other than a non-human is morally bereft. As McCullough states [in Wemmer, op. cit.]:

"The tradeoffs in deer population management...are that one can have low residual populations yielding high recruitment rates, intermediate residual populations yielding intermediate rates, or high residual populations yielding low, zero, or at times, negative recruitment rates. Which of these cases is most desirable depends on the goals of the management program."

"If the objective of the [management program] is to minimize deer-car collisions or crop damage, heavy harvests of either sex and any age will be required to maintain low residual populations."

"If the goal of the program is a high residual population then total protection can be implemented. In extremely stable environments, this may result in stable residual populations, but in fluctuating environments variation in residual populations that exceed K cause considerable risk of vegetation damage." [K=the population at which recruitment exactly equals chronic mortality in adults...the point at which the available resources in a given environment can no longer support a larger stable population. In a fluctuating environment, K will change from year to year. --RY.]

"Tradeoffs, depending on where they are made, will more or less satisfy or anger the various interest groups. Whether balances of this kind will result in mutual satisfaction or mutual dissatisfaction is hard to say. Given the completely different philosophical views

of hunters and protectionists, tradeoffs between these groups seem unlikely to be mutually satisfactory."

Hunting

Though it may or may not be obvious to most of as we pursue our daily tasks, largely unaware of the non-human world that surrounds us, the increasing population of humans in the U. S. has conspired with the success of wildlife management practices to produce an increasing problem of human/deer interaction. While the white-tail was well on its way to extinction at the turn of the century, there are now 52 times as many as there were in 1900 (or some 25 to 30 million, depending on the source of the estimate) [*American Rifleman* 143(9):36; 1995]. The reduction in forested area caused by the expanding human population has produced more "edge" habitat (which the deer prefer), restrictions on human predation have been enacted for safety as well as protectionist reasons, and non-human predators have been removed from most natural ranges, all of which has allowed the population of deer to explode.

In addition to the deer, there are 6 times as many wild turkeys, 18 times as many elk, and 30 times as many bison today (compared to populations in 1900), due in large part to the contributions of hunters to conservation efforts through license fees and the Pittman-Robertson Trust Fund [*American Rifleman,* op. cit.]. There is no intent to imply, nor should it be inferred, that hunters in general are in the field for purely altruistic purposes; they are not. They hunt because they enjoy it. But these data DO point out that hunting is not necessarily the purposeful extinction of species it is so often characterized to be, especially as practiced today in the U. S.

There are those who claim that hunting leads to family violence...a theory put to rest by the simple example of our last several Presidents, all of whom hunt, and none of whom are known to have beaten their wives, abused their children, or attacked random strangers. There remains a continuing effort by the anti-hunting community to develop a causative link between hunting and child and/or spousal abuse, and while many correlations have been identified, no causative link has been isolated from these correlations. Poverty and rural location seem to be about as closely related to domestic violence as hunting, and it makes sense that poor people who live where the game animals do, and who may take out the frustrations of hopelessness and poverty on those closest at hand, may be more likely to hunt for subsistence and/or recreational purposes than the average suburbanite, simply because the opportunity exists.

There are also those who assume that hunting of white-tailed deer results in a genetic disadvantage to the species, a theory that does not explain the recovery of the species from the population lows of the late 19th century while under constant hunting pressure, localized recoveries under watchful scientific eyes, such as at the George Reserve in Michigan, or the lack of genetic disability in areas where the predominant "genetic flaw" is youth and, in Dr. Porter's words, "...MOST of the fawns die EVERY winter." There is another recurring theme related to the "genetic flaw" theory in which it is often pointed

out (falsely) that "natural" predators do not take any but the old and sick, but McCullough says, regarding predators [in Halls, op. cit.]:

"There is strong evidence that predators take the young, the old, and [the] unfit. This is not to say that healthy deer are not killed sometimes. In fact, they are, and review of wolf predation on deer showed clear evidence that success in taking a greater proportion of prime deer is related to lower deer density (that is, wolves can kill healthier deer by greater effort)...And because large predators have higher reproductive potential than do deer, a vulnerability variable has to be present to account for the long coexistence of prey and predators."

Protectionists often urge that deer in overpopulated areas (when they actually admit that these areas exist) should be captured and moved, but the data show that captured deer have a significant mortality rate from the stress and trauma of capture [Curtis, op. cit.]. And besides, where, in a land of chronic overpopulation, would such deer be taken?

Contraception is a regularly-suggested option as well, but it is expensive, might have to be done twice a year (at $200 to $800 per deer -- Curtis, op. cit.), has implementation problems in wild deer herds (which deer are already done?), and will not immediately improve an existing overpopulation problem. In the realm of population control, contraception has, perhaps, the most encouraging future, but it is not yet a practical solution. Curtis [op. cit.] says:

"Reproductive inhibition is the preferred long-term strategy when appropriate techniques become available. Currently, reproductive drugs and delivery systems for free-ranging deer are experimental."

Finally, hunting is often characterized as a mismatch between man and his technology and a helpless animal. In fact, however, it is a match more equal than any non-hunter might believe. Stadtfeld again [op. cit.]:

"And so, with the deer rather more relaxed and unconcerned than the more tender observer might expect, with the balance of the contest between hunter and deer rather more even than one would anticipate, the season ends. The hunter had prepared himself with all the power of his technology, and the deer responded with their tens of thousands of years of instincts and their superb senses, and the battle had been a rather fair one after all. The hunt was not such a thing of horror -- the real horror lay ahead, in the deep snow and bitter nights of winter.

But is it not unkind to take the life of a deer violently, with a firearm, letting the lifeblood out on the land? It is a choice we must make, for we are, artificially, the major surviving predator. We have driven the others away, and with our instincts to preserve the life of the deer, we feed and protect and care for them and they multiply. It is a simple choice then to kill them as quickly and as cleanly as possible, more neatly than the wolves and mountain lions do sometimes, perhaps with less terror in pursuit and anguish in dying, or let them grow old and die when their teeth are worn away or to suffer from their own tendency to overpopulate and starve slowly in the cold.

It is not a choice that can be avoided; inaction leads to overpopulation and starving, the cycle is inexorable."

From a species management standpoint (taken by wildlife managers), the human hunter is, as Stadtfeld points out, essentially another predator (indeed, often the sole remaining predator) that can be taken into consideration when planning the appropriate management approach, but one that can be controlled and directed, one that will pay for the privilege, and often the only source of acute [rather than chronic] mortality available to simulate historical predator/prey interaction.

From R. J. Warren [op. cit.]:

"When one component of the ecosystem (e. g., deer) jeopardizes the other native plant and animal communities in an area, then drastic and non-traditional actions are justified to ensure the natural functioning of all communities in the ecosystem."
It seems clear that it is entire ecosystems that deserve our attention, not simply this animal or that one. When there are no predators except humans, predation by humans, on a species designed by millions of years of evolution to be prey, by those willing to pay for the privilege, is a reasonable alternative (at least in the case of white-tailed deer). Considering the status of the white-tailed deer today, there is no truly compelling reason, philosophical or otherwise, to prohibit the hunting of deer in areas in which the non-hunting populace will not be subjected to undue danger.

Especially in the northern ranges, deer will always starve, and as Ted Kerasote said regarding elk [*Bloodties: Nature, Culture, and the Hunt*. Random House, 1993; p. 218]:

"Elk have starved with grace and dignity for thousands of years, and don't need Florence Nightingales with rifles to sanitize their deaths."
So it is with the white-tailed deer, as well. There is nothing humans can do to prevent deer from starving, whether we hunt them or not, and from a hunter, the idea of hunting to prevent deer from starving is an excuse, not a reason. But it is equally true that compassion is not limited to protectionists, who, in the throes of anti-hunting zeal, unwittingly advocate starvation as a choice less painful than that which the hunter is prepared to offer. Those who would advocate the abolition of deer hunting must understand the consequences of their actions, as the hunter does every time he or she is successful.

McCullough notes [in Halls, op. cit.]:

"[Protectionists] are not in the white cedar swamps in late February and early March when deer reap the devastating rewards of the protection afforded them....When deer are starving in the cedar swamps or elsewhere, protectionists want to feed or move them....It is as if doing something, no matter how absurd, will absolve these people of the guilt of their benevolence turning out to be less benevolent than they had expected from their 'model' of how deer populations work."

Lest hunters succumb to the temptation to nurse a feeling of superiority from McCullough's remarks, however, it would be prudent to finish this article with another of his comments:
"...many [hunters] also have some rather quaint beliefs about deer populations."
Perhaps, in some small way, this has helped to eliminate some of those "quaint beliefs," as well as ignorance drawn from pamphlets and propaganda.

This article is dedicated to the late Dr. Martin Hulsey, whose life and research were terminated all too soon.

Note from the author: Although some of the data in this article is clearly dated, it remains both accurate and applicable. If anything, the problem of too many deer has become increasingly worse, as wild areas are encroached upon, or even destroyed, by homes of ever-increasing dimensions, limiting both living space for the deer and acceptable hunting area for the deer's necessary human predators. RY - 18 Jan 04

REV. 1 -- 5 Oct 95
REV. 2 -- 22 Oct 95
REV. 3 -- 30 Oct 95
REV. 4 -- 11 Nov 95
REV. 5 -- 18 Jan 04