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Background on Urban Deer Management

Urban Deer Management Plan

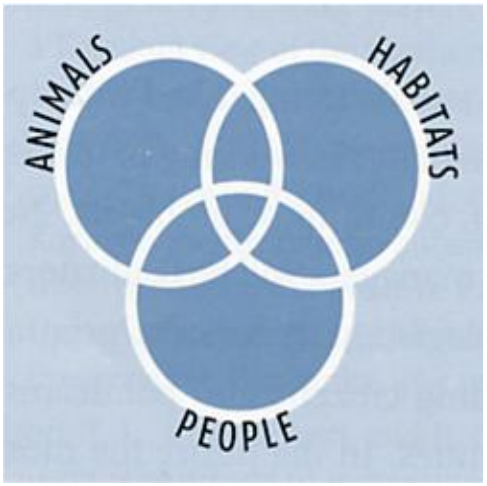
Whitetail deer are one of the most widespread and popular wildlife species in North America. They are found anywhere from wilderness areas to urban parks and neighborhoods. While Whitetails provide significant public recreational and aesthetic value and are a valued by most of our society, considerable controversy exists concerning their management, especially in urbanized areas. Urban Deer Management must address a myriad of public values and arbitrate public controversies at the same time.

Components of Deer Habitat

To have healthy populations, wildlife need healthy habitats. The quality of the habitat will have an effect on the population dynamics – birth rates, survival and movement. The proximity and quality of food, water and cover are normally considered the chief components to a habitat. The closer together these components are to each other, the smaller the movements needed on a daily, seasonal or annual basis. A lactating doe or a buck growing new antlers can consume up to 10 pounds of food per day. Deer feed on a variety of plant species that include grasses, herbs, agricultural crops, trees, shrubs and ornamental plants. Water requirements are met through drinking from natural sources such as lakes, ponds, and streams. Water is also obtained through their food that has high water content. Cover provides shelter from extreme temperatures and precipitation, as well as concealment from predators.

Population Growth and the Concept of Carrying Capacity

Wildlife management requires consideration of biological, environmental and human dimensions – the management lies at the intersection of these dimensions.



Deer populations have the potential for rapid growth. This is an evolved response to high mortality often related to predator hunting. In the absence of predators or hunting, this kind of reproduction can result in a deer herd doubling its size in one year. This fact was illustrated on the 1,146 acre George Reserve in southern Michigan where biologists at the University of Michigan have been studying the deer population since 1928. The deer herd grew from six deer in 1928 to 162 deer by 1933. More recently, the George Reserve herd grew from 10 deer in 1975 to 212 deer in 1980.

The number of animals that can be sustained in an area is often called the biological carrying capacity. When that number is exceeded, we see an effect in the population's health. We monitor the deer herd by looking at certain indicators such as antler beam diameters and antler points in one and a half year old bucks, fawning ratios, and fawn survival trends, presence of disease in the herd, incidence of parasites in the deer and other signs of social stress in the deer herd.

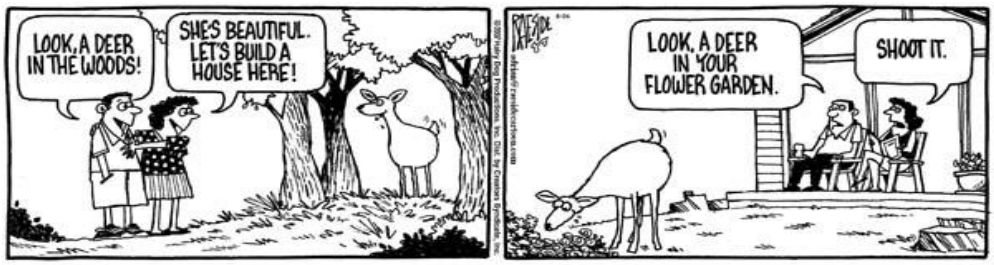
Deer populations in urban areas can grow rapidly because all of their needs are met. Urban deer typically have high reproductive rates (all their needs are met – food, water, shelter), low mortality rates (no natural predators) and small home range sizes (do not need to move to find food, water, and shelter).

Urban landscapes often have natural areas, greenways, and parks that provide bedding areas, escape cover and birth sites for deer. Homes are landscaped with trees, shrubs, and herbaceous cover, which

are appetizing and nutritious for deer. Wild and domestic predators have been exterminated or controlled so deer are safe.

Supplemental feeding to take pressure off of natural food resources does not prevent deer damage problems and may increase problems near feeding sites. Feeding is expensive; it increases risks for disease transmission (close contact in large numbers); it decreases the wild behavior of deer and makes them accustomed to human activities and environment. When an urban deer sees a human, it may associate the human with good food and no consequence, since this is the behavior the deer has been conditioned to. Since the onset of Chronic Wasting Disease (CWD) the feeding of deer in the Lower Peninsula has been banned.

The compatibility between people and deer populations in urban areas also justifies consideration of another aspect of carrying capacity. "Social Carrying Capacity" can be defined as the maximum number of deer that can coexist compatibly with local human populations. Social Carrying Capacity is a function of the sensitivity of local human populations to the presence of deer. The Social Carrying Capacity can be considerably lower than Biological Carrying Capacity. The optimal number of deer is determined by the values of the people. Some will want less, some will want more and others will think the current population is just right.



The sensitivity of the human population to deer is dependent on local land use, local deer density and the attitudes and priorities of the local human populations. Excessive deer/vehicle collisions, agricultural damage and home/gardener complaints all suggest that Social Carrying Capacity has been exceeded. It is important to note that even low deer densities can exceed the Social Carrying Capacity; a single deer residing in an airport-landing zone is too many deer. As development continues in many areas of North America, the importance of Social Carrying Capacity as a management consideration increases.

Consequences of Deer Overpopulation

As previously indicated, deer populations have the ability to grow beyond the Biological Carrying Capacity. When Biological Carrying Capacity is exceeded, competition for limited food resources results in overbrowsing. Severe overbrowsing alters plant species composition, distribution, and abundance, as well as reduces the structural diversity of the understory (due to the inability of seedlings to grow beyond the reach of deer). These changes have a negative impact on other wildlife species, which also depend on healthy vegetative systems for food and cover. In time, overbrowsing results in reduced habitat quality and a long-term reduction in the Biological Carrying Capacity. In most natural cases, overbrowsing leads to the decline in herd health. The decline is caused by decreased body weights, lowered reproductive rates, lowered winter survival, and increased disease prevalence. In the absence of a marked herd reduction, neither herd health nor habitat quality will improve, as each constrains the other. Such circumstances enhance the likelihood of mortalities due to disease and starvation. In Grand Haven's case, however, the herd health decline has not occurred as there has been plenty of food and cover to keep them all well and breeding strong.

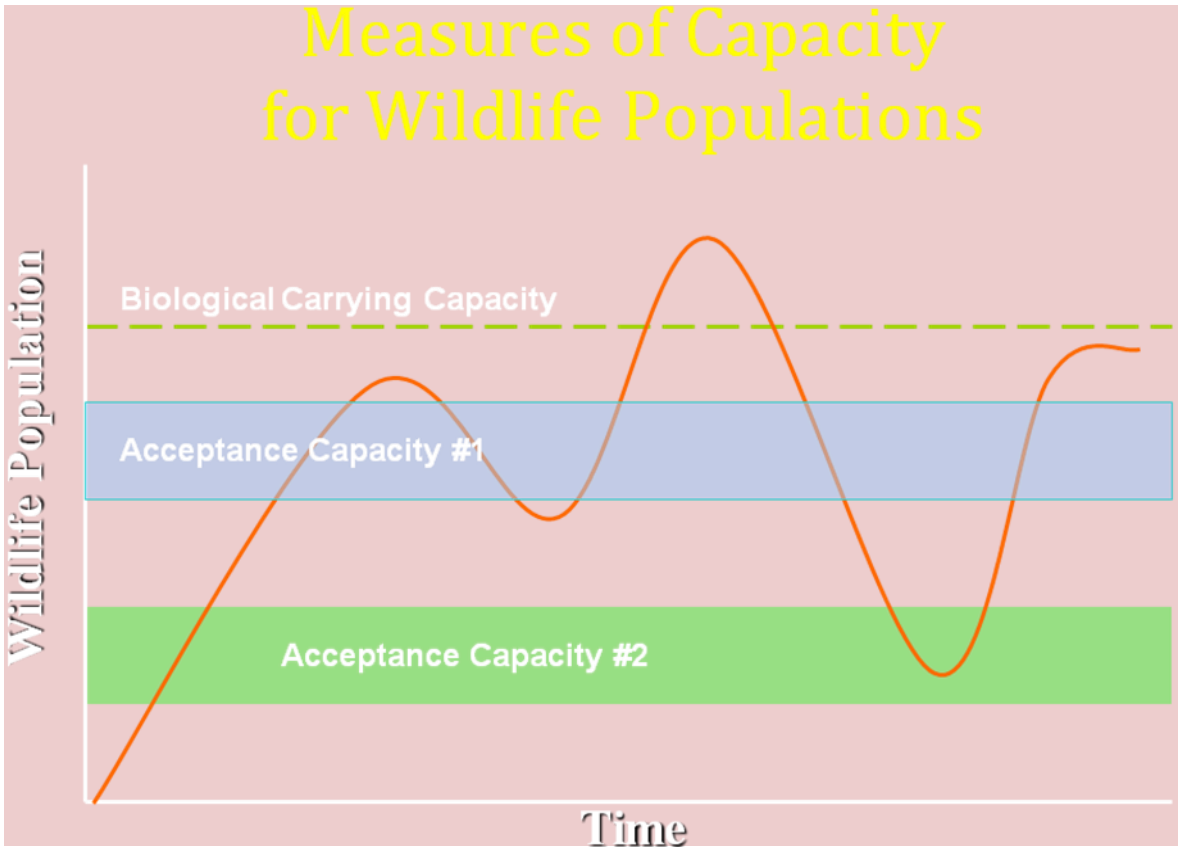
A Justification for Deer Population Management

The potential for deer populations to exceed carrying capacity, to impinge on the well-being of other plant and animal species, and to conflict with land-use, human safety and health dictates the need for efficient and effective herd management.

Values associated with urban deer management are diverse and extensive. Ecological benefits derived from regulated hunting include protection of our environment from overbrowsing, protection of flora and fauna that may be negatively impacted by deer overpopulation and the maintenance of healthy viable deer populations for our benefit and that of future generations. Social benefits that result from regulated hunting include: increased land-use compatibility stemming from fewer land-use/deer conflicts, human safety benefits resulting from reduced deer/vehicle incidents, diverse educational and recreational opportunities, and emotional benefits associated with a continued presence of healthy deer herds.

The goal of Urban Deer Management is

- a **healthy** deer herd that is
- in balance with the **habitat** and
- in line with **social** tolerance limits.



To reduce human-deer conflicts you must increase the human tolerance of deer and decrease negative interactions with deer. There is not "quick fix" or one time solution, and it requires a multi-prong approach. A successful deer management program will require sustained effort and commitment from residents and the local officials in the community.

Common Techniques for Urban Deer Management

Mgmt. Techniques	Description	Humaneness	Cost	Effectiveness	Major Pros	Major Cons
Contraception (DNR does not allow in MI)	Allowing deer to eat fertility control products to limit the number of deer fawns born each year	Very humane; deer feels no pain or discomfort of any kind.	Very expensive; most communities cannot afford this method.	Not very effective; researchers have not had very good results in testing this method.	Very humane and deer are not hurt	Is not a reliable method of removing deer; very expensive
Bow Hunting-Professional	Deer are removed from the population by professional archers	Humane; deer is killed quickly. Can become inhumane if a poor shot is taken.	Fairly expensive; archers may charge up to $200 per deer.	Fairly effective; deer can become wary and it may be time consuming to remove enough deer.	Very safe for human residents	Can be expensive and take a long time
Bow Hunting-Recreational	Deer are removed from the population by recreational bow hunters (members of the public) that put in for tags.	Humane; deer is killed quickly. Can become inhumane if a poor shot is taken.	Very cheap; local residents pay the city for tags to remove deer instead of the city paying archers.	Fairly effective; deer can become wary and it may be time consuming to remove enough deer.	Safe for human residents and the cheapest method	May take a long time
Rifle Hunting	Deer are removed from the population by professional sharpshooters.	Very humane; deer is dispatched quickly and without pain.	Fairly expensive; sharpshooters may charge up to $200 per deer.	Very effective; several deer can be removed in a very short time	Removes the most deer in the smallest amount of time	Can be expensive
Trapping & Relocation (DNR does not allow in Michigan)	Deer are trapped in the city and then released in rural areas.	Not very humane; deer suffer from stress of relocation and many die anyway.	Very expensive; relocating deer takes a serious effort to transport a live deer.	Not very effective; most deer either die from stress or move back to the spot where they were originally trapped.	Deer may live happily somewhere else	Many deer die anyway or return; very expensive
Trapping & Euthanasia	Deer are trapped in the city and euthanized at the site of the trap.	Fairly humane; deer suffers some stress in the trap but is dispatched of quickly and painlessly.	Fairly expensive; trappers may charge up to $200 per deer.	Fairly effective; traps can be used where other methods cannot, however it is not always easy to get deer to enter traps.	Can be used much closer to homes than other methods; can be used 24 hours a day/7 days a week	May not always be able to lure deer into traps