



Education

Deer Impact Other Wildlife

This is the third of a four-part series on problems that can result where there are too many deer.

Overbrowsing of habitat is the inevitable result when deer numbers exceed about 50 per square mile of wooded areas and fields. Altered plant species composition, less plant diversity, and lack of small trees and shrubs are obvious characteristics of landscapes where there are too many deer. This, in turn, affects nearly all wildlife species that share space with deer.

The impacts of deer have been studied on the Manitou Islands, part of the Sleeping Bear Dunes National Lakeshore along Lake Michigan. David Flaspohler and others from Michigan Technological University's School of Forest Resources and Environmental Science recently looked at the differences between the wildlife community of North Manitou, which has had many deer for 75 years, and South Manitou which has been historically deer-free. They found a lack of bird species that depend on the understory on North Manitou.

The same thing was evident on islands off the Coast of British Columbia, where Sitka black-tailed deer had been introduced by colonists in the late 1800s. The islands studied there had various deer densities over different time periods, but it was consistently found that bird species that rely on the forest understory for nesting and food were greatly reduced by the overbrowsing. On islands crowded by deer for more than 50 years, bird abundance was 55 to 70 percent lower than on deer-free islands.

The wood thrush is among the species adversely affected by deer. Young thrushes depend on a brushy understory and rates of survival plummet when browsing increases.

Some wildlife species do benefit from a reduced understory. On North Manitou Island, eastern chipmunks were found in much higher densities than on deer-free South Manitou. That's probably related to the greater abundance of American beech and other nut-producing trees that benefited when maples were eliminated by overbrowsing. On the British Columbia islands, fox sparrows were more abundant where deer had removed the understory, and promoted a grassy understory.

Grasses and sedges also increase the frequency and severity of wildfires, and that can influence wildlife in many ways. When woody debris is lost to wildfire, habitat value is diminished for ground-dwelling mammals, reptiles, and insects. Furthermore, some birds and small mammals that depend on habitat patchiness can be greatly reduced or eliminated by overbrowsing.

Good forest management often requires maintaining small openings and that is difficult to do where the deer density is high. Birds that nest along the edges of forests such as hooded and Kentucky warblers, and indigo buntings, and those that need small forest openings for brood-rearing, like wood thrushes, are all hurt by high deer numbers. Over-browsing by deer tends to make openings larger and while that may benefit song birds such as golden-winged and chestnut-sided warblers and white-eyed vireos, it generally lowers overall song bird diversity.

Ironically, management of ruffed grouse and deer habitat has traditionally been considered as a "hand-and-glove" situation, since cutting of aspen and other fast-growing trees is done for both species. Grouse flourish where there is a mix of mature trees and three to ten acre areas with dense growths of new trees used for brood-rearing. Deer also benefit from that type of habitat. But where there are too many deer, the new growth is eliminated and a grassy ground cover poorly suited to grouse develops. Snowshoe hares and cottontail rabbit populations can be limited in a similar way.

Some biologists have used the term "deer park" to describe the ferns and grass dominated areas that over-browsing creates. One study in Pennsylvania found that species diversity and abundance of nesting birds that use an intermediate-level canopy (between 2 and 20 feet high) for nesting sites declined dramatically where deer browsing was intense. And a long-term study of wood thrushes showed that even species that can still nest successfully may have poor survival of the fledglings if small openings end up too far apart because of over-browsing by deer.

One might think that deer would be unlikely to impact beavers, since the latter spends so much time in water. But beavers depend on young trees for food and over-browsing by deer can eliminate that food source near the edges of beaver ponds. Beavers may then be starved-out, or inclined to try to raise their dams to put water farther up slope toward more food. That sets off a chain reaction of impacts that affect numerous upland and wetland wildlife species.

High deer densities have also been linked to serious diseases such as brainworm, tuberculosis (TB), and chronic wasting disease (CWD). Deer are carriers of brainworm. That is, deer are relatively unaffected hosts for the parasite which is fatal in

larger members of the deer family. Because of this, the distribution of moose and elk in Michigan is restricted to areas where deer numbers are lower.

While the impact of brainworm has been well-documented for several decades, the threat of TB and its link to high deer numbers has been studied only recently. But we do know that TB can be spread from deer to a wide variety of wildlife, domestic livestock, and (rarely) to humans. CWD may be an even more ominous threat; state and federal officials have plans to eradicate local populations of deer when and where the disease turns up. That underscores the importance of fully understanding the risks involved with high deer numbers.

There are wildlife winners and losers whenever deer numbers increase. In the view of many conservationists, there are more losers, but a surprising number of citizens don't seem to notice or care. Most of the impacts are difficult to quantify and sometimes hard to see. Solutions are not simple. But since habitats don't recover from overbrowsing quickly and the threat of disease is a serious one, it is important that we begin to look closer at the far-reaching effects deer have on other wildlife

Dr. Patrick Rusz
Director of Wildlife Programs

Note:

Deer in the Headlights

There's a serious public safety problem when deer are too abundant in high traffic areas. Although car-deer accidents have declined a little since a peak in 2003, the risk of personal injury and property damage remains high. In 2004, there were 1,551 recorded car-deer accidents in Oakland County alone, 1,283 in Washtenaw, and 1,251 in Livingston. That's a daily average of almost 4 crashes per county. Based on the Michigan Department of Natural Resource's (MDNR) estimates of deer numbers in those three counties, almost 7% of the deer in Oakland County and 5% of the deer in Washtenaw and Livingston Counties are struck by cars each year. Since experts estimate that only about half of the actual deer-car collisions are reported, apparently 10 to 14 percent of the deer in those three southeast Michigan counties are struck by cars. Statewide there were 62,707 deer-related accidents in 2004, leading to three human deaths and car damages totaling \$125 million. Seventeen percent of car accidents in Michigan involved deer.

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