Defining the Problem and Exploring Non Lethal Alternatives Including Land Management

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Thank you Dr. Meidinger. I would also like to thank Kathy Bennett and Marc Romanowski for organizing this day long event, and the BUFFALO ENVIRONMENTAL LAW JOURNAL for the opportunity to be here, as well as the other co-sponsors.

I'm going to start with an apology of sorts. I'm coming out of retirement to do some talking. I did work with deer for over ten years in the National Parks system and I have been involved in the past in activities as broad as chairing task force in Montgomery County that addressed increasing conflict between humans and animals. But when I came over to HSUS in 1995 one of the things that I tried most strongly to negotiate with my future boss was retirement from having to deal with deer issues. I was assured in 1995 that I wouldn't have to deal with deer because the issue is so big, so important, so profound that it virtually had our senior scientist, Dr. Alan Rutberg, up there working full time on it. Alan is our deer specialist. And it's only as a result of the conflict of schedules that has him somewhere else today, that brings me here instead of him.

So I'm going to start by saying that I'm a little bit behind times and haven't really bothered to keep current with the theoretical side of things involving deer for the last couple of years. Of course as an urban specialist I had tried to keep current with things that involve conflict resolution and the needs, methods, technologies and procedures that you use to deal with deer in the backyard or deer even at the landscape level. But I feel a little

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Mr. Hadidian is currently the Director of Urban Wildlife Protection for the Humane Society of the United States (HSUS). He has conducted field research on urban populations of raccoon, deer, red fox, opossum, gray squirrel, and pigeons. His current program responsibilities focus on areas ranging from humane resolution of human-wildlife conflicts to improving the public’s awareness, understanding and appreciation for the beneficial roles that wildlife plays in urban environments. He has a B.A. from the University of Arizona and an M.A. and Ph.D. in primatology from the Pennsylvania State University.
insecure in giving some aspects of this talk and I hope you will bear
with me to do that. Can we have the slides?

My job this morning is to kind of provide you with a
background to this issue as well as to provide you with the
perspective of it derived from animal welfare concerns, and our
current situation with white tail deer. I'm going to do both those
things and you may find, to your surprise that I will not emphasize
the animal welfare concern side of this issue as strongly as you
would think because I believe that part of the issue, part of the
discussion today, should lead to us deriving, pulling out, discussing
and sharing some of the particular issues that relate to the animal
welfare organization and the concerns over white-tail deer.

I want to start quite a while back ecologically contrary to
where we want to go, but if you think about what this landscape
here looked like ten thousand years ago, what we were dealing with
was really the end of the last great glacial period. Between ten and
twelve thousand years ago it was a whole heck of a lot colder, there
was a lot more snow if you can believe that. Conditions that existed
here were probably not appropriate for sustaining deer or many
other wildlife populations. Within the period from ten thousand
years to the present there have been, we are increasingly
recognizing, a series of rapidly oscillating climatic changes that
have affected greatly the landscape of this part of North America,
and led to successive changes in the types of forests and the types
of plant communities that have existed. With colder climates of
course you're going to find evergreen forests, you are going to find
spruce-fir associations and things that in general are not very good
for animals like deer. So probably ten thousand years ago and up
through the period of warming which led to another cooling period
several hundred years ago, there were not very many deer, at least
in this part of the country.

As the climate warmed, and as the forests changed from
evergreen to deciduous, conditions that were highly appropriate for
deer probably occurred. Early successional forest is excellent cover,
habitat, forage for deer and their populations thrived under these
associations, but as the forests grow older they tend to become less capacity for deer. The deer populations probably decreased in older forest association. So we have accomplished ecological history, the basis of which is to say that there have been rapid changes through climatic events in the past. And through other events that have affected forest communities in the northeast. And deer populations have undoubtedly waxed and waned within that context.

We also had about ten thousand years ago the first arrival and impact by humans on deer, which is the other side of the equation. The ecological history is balanced by the social history that has to do with human/deer interaction and these began a long time ago. Deer were the basis of the subsistence economy of many of the peoples that originally inhabited this land. And they as well derived secondary benefit from the agricultural practices of these early people who opened forests, created clearings, used fire to maintain landscapes and undoubtedly through these activities created better habitat for these animals.

With the arrival of Europeans in the 1600s everything changed dramatically. Not only was forest clearing and agricultural practice increased exponentially, settling by these people, their agricultural pursuits, and their pursuit of deer as a means of both commercial and market support for their economy as well as their own subsistence, led to the decimation of deer populations in this part of the world. There may have been three distinct phases associated with this, the first occurring from about 1600 all the way up to the 1800s with a superior technology and with the market economy it was driving the removal of these animals at increasing rates every year. Deer populations probably, gradually at first, and then more rapidly, declined to the point where the animals became rare. For some reason around 1800 to 1860 there may have been a resurgence in some deer populations in the northeast and there are accounts of places like a city park in Baltimore that was 300 acres and had more than 200 deer on them. From 1860 to 1900 was not good for deer or for virtually all wildlife because of the conflict, the period of greatest human exploitation and many species were driven
to near extinction by human activities. Deer in the northeast probably were rare by 1790 and only locally found in between then and 1860 and beginning at about 1860 to 1900 the populations were completely decimated and the animals were very, very rare indeed.

This led of course to the rise of federal and state activities, legislative and otherwise, that created protections for these animals and the creation of organizations that were devoted to conservation and repatriation of over-exploited species. It also led to the rise of particular science that focused on the needs and methods to do this, culminating in 1930-33 with publication of the first text on the subject by its acknowledged father, Aldo Leopold. The field was called then, and I think this still a pretty appropriate name, Game Management. It is a science that focuses on the relationship between people and those species which they find are most utilitarian and of commercial value.

Couple things about the biology of deer, then I'll move into a discussion of deer/land relationship. The animals themselves are important for a variety of reasons; the things they do. I would say there are three things about deer that are important for us, this morning, to acknowledge and to understand. One is the relationship they have with plant communities which form their subsistence base. The other has to do with their reproductive capabilities and their sexual lives which I would talk about anyway because it would perhaps wake you up a little bit.

The third important thing is the way they use land. Deer are extremely catholic (that's with a small "c") in their feeding habits. Like raccoons they’re one of those animals that when you go to study their feeding you can probably do a lot better by just making a list of the things they don’t eat as opposed to a list of the things that they do. They will vary from one geographic area to another due to preferences, but they always have preferred plant species that they will go for first, and then marginal plant species that they will begin to utilize when they have seriously impacted the preferred. Finally, they move towards utilizing plant foods that may have absolutely no nutritive value to them or things like the
bark from these elm trees. Such behavior seems to indicative of highly stressed populations that are near or approaching starvation.

There is a lot of what I would, from an anthropological background, call culture in deer populations. They do tend to use foods in one geographic area and pretty much totally ignore them in others. We little understand the complex relationships between plants and deer. And we have even less understanding of the way plants vary from one area to another. They may be highly toxic, they may have phenols, they may have alkolites in a local population in one geographic area that are not present in another which leads deer to utilize them in one place and not somewhere else.

But there's a lot more that we need to learn about this but there are indicators and there is clearly an impact that these animals have on plant communities that is demonstrable and in some cases highly significant. Their reproductive capabilities lead them to be a population that have the capacity to rapidly increase. In good nutrition a female doe in the fall may conceive twins or even triplets. If she is in poor condition she will only conceive one or sometimes none, so when they have access to a bunch of food resources the populations can grow very rapidly.

The kind of land they like to birth in and will use preferentially is what we call edge habitat. This is the field behind my house. The woods to the right are about twelve acres, there is a field, there is another wooded lot about forty acres on the other side. This is perfect for these animals. It provides them with cover and it provides them with abundant food resources that they can utilize at different times of the year.

Every couple of years, for tax purposes, my neighbor comes and plants a couple of rows of corn in this field to maintain it as an agricultural land and that's great for them too because it's never harvested. It is just left there for the wildlife, and the deer are the first species to move in and use it.

All these conditions, in this peculiar history beginning about the 1920s or 1930s, led to the dramatic and rapid repatriation of
these animals on our landscapes. I don’t mean to say that deer populations have in many places in the northeast increased exponentially within the last few decades. This is a chart of harvest which is only an indicator of population, not a measure of it, that occurred in Fredericktown, Maryland from about 1940 to about 1985. And you can see it occurred at a time when technology was rapidly growing; growing at an exponential rate and even further continues to increase.

This population, or over-population of these animals leads to conflicts with humans, their interests and their activities. How do we resolve this? We are only now beginning to create solutions; to look at different ways of experimenting with resolution, to come together, to bring our differences to the table to discuss ways in which we will create programs to deal with human/deer conflicts. This is really what our relationship with deer is about today. It’s about how these animals occur across the landscape; on a landscape that we have profoundly influenced and continue to influence, and we will, in the foreseeable future, continue to do so. If we are going to come to grips with our problems with deer, we need to begin thinking about them at this level.

For purposes of this discussion I would recognize three major ecosystems. Everybody has their strong way of defining what an ecosystem is but we know at least there are three big ones: 1) agricultural ecosystems in which deer have a role, 2) natural ecosystems which are areas we set aside as spaces or preserves, and 3) urban ecosystems which run on a continuum from highly developed, plasticized and metallicized, concretized, and asphaltized environments to ourselves, the places we go to get away from that other stuff.

There special purpose lands as well which play a role in our comments on deer. These are areas set aside for special economic interests, for special recreational activities, or because they are tiny pieces of land on which the last remnants of the communities that we seek to preserve have been isolated in the need to protect. This is a commercial nursery set in a naturalized setting so that the
people who come to buy these plants see them as they would sit out in an open area. It unfortunately abuts a wonderful deer habitat and provides tremendous forage for deer and other things for them at different times of the year.

I’m not going to say much about agro-ecosystems. Farmers and deer worked out a relationship a long time ago. There are increasing problems; some of the regional, some of them local. But there is a general approach and methodology there that’s different from what we are talking about here today. I would make a point however, that with our agro-ecosystems we are supporting problems on a massive scale that dwarf anything that any wild animal could ever do to our landscapes. Cattle also have an impact on our landscape. They also take up land. They also affect water systems. They also affect our capacity to maintain bio-wildlife population and we shouldn’t be ignorant of that fact.

The other nature component of the agro ecosystem involvement with the deer is repatriation of retired farmlands. This is occurring at an increasing rate throughout the northeast. I read somewhere recently that Vermont is now 85% forested whereas in the 1920s to 1930s it had been only 15% forested. As this event occurs it’s going to create prime habitat for white-tail deer. It is only going to last so long, however, until these areas get out of the early successional phase and get into later and more mature forested types.

Natural areas are a conundrum for us. We seek to maintain in natural areas certain things that we consider to be of value and certain things that we establish as preferences in natural landscapes. These may be spring wild flowers, these may be associations and assemblages of plants that are diverse and animals that are diverse. We really haven’t clearly defined yet what it is about natural areas that we seek to preserve, maintain and create. Biodiversity is the current buzzword, and that’s great but what all the natural areas are going to have to deal with is that when the vast majority of them were created, biodiversity wasn’t being recognized. And acknowledgably the largest of our reserves that are set aside land,
except for a few places in Alaska, cannot be treated as integral biological units. They need other things in order to perform their biological function.

So as the manager of a natural area, let me give you a little case history here from the Catoctin Mountain Park, which is Maryland. Catoctin has to deal with the issue of over abundant deer population within the context of the policies and procedures, rules and regulations that guide the management of that land within the context of how that land is associated with other land units. Catoctin Mountain is only about an eight or nine square mile park. It's actually not a national park; it's a recreation and demonstration area which is another category of unit management in the national park system. There are really only about somewhere between 30 and 40 units in the national park system that are designated as national parks. The others all have other designations. It exists because of an accident. The accident was Harry Truman, who used to go up there, I guess we didn't call them accidents before, but he used to go up there to fish and there was a little cabin up there that he liked to stay in and he decided back in 1950s when this area was supposed to be returned, remitted to the state, that it was a great place for a presidential retreat and he opted to keep it. And he wrote the governor of Maryland said, "Joe, wouldn't it be a good idea if you just let us have this?" And Joe said, "OK." So they kept it and Camp David was created. And it has since been the area that surrounds and serves as a buffer for the presidential retreat. It is also surrounded itself by land that is used for many purposes. Some of it forested, some of it agricultural and some of it residential.

Back in the 1980s because of a particularly alert botanist in the park at that time we began to start determining in the early 1980s what could be considered serious impacts to the plant community in the park that probably could be attributed to white-tail deer. This led to an interest in creating further information and led to eyeballing with specific studies. Because the management objective of the park amongst everything else dictated that we understand what was going on between the deer and the plant
communities, and that we do things like protect rare, threatened or endangered plants like this orchid, of which at one point in the mid-1980s there were only 17 individuals in the entire park and these were being impacted by deer and at that point the managers felt it was necessary to learn more, and began to approach the issue. We went in and did all of the traditional deer stuff; we anesthetized animals, put radio collars on them, we collected biological information, we followed their movements, established some ranges and all of the great things you do when you want to study deer. We didn’t learn a whole heck of a lot. Some deer used the park, some deer left the park for an extended period of time, some were back and forth, some never the left park.

By about 1990 we began to know that we needed to know more and began to move away from studying deer to study in the plant community. It was really the integral part of this whole picture. So we established permanent vegetation monitoring. Much to our surprise we could not find a great deal of previous study of deer-plant interactions that focused on establishing permanent places that you could return to, year after year or decade after decade, in order to be able to measure what was going on in the plant communities. So our priority was to just get these things in to basically see what was going on with the plant community in the park and to begin what we knew would be a process that would continue for many years after we were gone.

With monitoring and evaluating what was going on in the park? I don’t know how well you can see this slide. This compares one critical aspect of that plant community with another park from downtown D.C. called Rock Creek that at the time this graph was drawn had absolutely no deer present. These are seedling heights for those two parks. Blue is Rock Creek, green is Catoctin. And you’ll see that when you get into the 25 to 50 centimeter height class at Catoctin, that’s three-year old seedlings, they’re virtually non-existent and there is nothing older than that. Some process, and it's probably deer, is not allowing regeneration in the forest in this park. No seedlings live beyond two or three years. Well, at this point you
think OK, the deer are to blame, let’s go in and take them out because we’re not going to have a forest here. But if that might happen, although it would take an extraordinary effort to change the legislative mandate of the park, it has to be. We have to look at this situation in the broader context, the ecological context within which it works, and that involves two things. It involves natural processes and their relationship not only to the deer, but to the ways the park will sustain itself and will look and will go through its own peculiar ecological history and the other impacts that have occurred in addition to those deriving from deer.

This is 1993, this is an ice storm that just about nailed everything above 1600 feet in the western side of the park. The forest which had been growing for fifty years was suddenly hit with a catastrophic but natural event that led to the death of numerable trees, the damaging of others, the dropping of a tremendous amount of available forage ground for the deer and then the creation of gaps through which enough light could come to kind of revive the understory communities and create situations again preferable and favorable to the deer.

This is also occurring and deer impacts are also occurring within the context of a park that I mentioned was a recreation and demonstration area while it was so designated because back in the 1930s when President Roosevelt began to revive the country and its economy by creating projects for people to work on this was a WPA area. The area in the western side of the park had been farmed, hard scrabble farmed to the point where it had been destroyed ecologically. The farmers could not make it, they reclaimed the land from them, repaired it, restored it under WPA and began to create rather than farming, an appropriate place for recreational areas. The eastern part of the park had been completely logged and the timber used for a charcoal industry, and then repeatedly burned in order to create blueberries that people would go out and harvest in the summer. So humans had a drastic impact on it, not to mention that the dominant forest type there, the American chestnut, had been
completely destroyed prior to that by the arrival of the chestnut blight, which was a disease we imported from Europe.

In addition to that, ever since it became a presidential retreat area and had fallen under Park Service designation, fires have been suppressed so there was nothing going on there that would allow any kind of a fire to create the ecological conditions that fires do in these forests. Two other imported diseases moved in the late 1980s and completely killed that very valuable understory community. So there are no live dogwood in the park, and so on, and so on.

The context in which we have to interpret deer impacts to plant communities in this park, must be broad enough to recognize that there are many other things affecting this area ecologically and they all need to be taken into consideration together. The question for park managers, and I have been blessed in my dealing with white-tail deer, in that I’ve done a search on them and I’ve dealt with the task force, I’ve done this kind of stuff, but I never had to make a decision about it. So I’m not speaking from the position of a manager or the sorts of things that managers need to consider. But they do need to ask serious questions not only of themselves but of other scientists. What do we want, what are we looking for. What is it that we should be seeing when we have deer in natural areas. Remember that deer were gone probably by 1790 — had no ecological impact on any natural areas in the northeastern United States. The plant communities got 200 years of relief from the kind of herbivory that deer practice. So what we’re looking at in the 1980s and 1990s before the deer populations exploded are plant communities that are probably pretty unnatural. Should it look like this? This is another park that has deer, not as many as Catoctin, should it look like that? Here’s a park without any deer at all. Should it look like that? We’re no where near ready to make these kinds of decisions. We do not know toward what goal we manage our natural areas in order to seek the appropriate balance between plants and animals.

Now let’s move on the suburbia and deal with the kind of conflicts and issues we have in our own back yards. There are
basically in my mind three problems that we recognize deer as causing in suburban areas. One is the frequently claimed issue of lyme disease and the increase in that problem. Second are deer interactions with plants and the problems it can create in our backyards and gardens. The third would be deer/automobile collisions.

I've got very little to say about lyme disease. I really think that issue is kind of a red herring and that when you look at the ecology of lyme disease, the dependency that disease has on a couple of different hosts, the principal host in the early stages of its development are web footed mice and our efforts to address, you know from the narrow perspective of controlling deer populations rather than understanding the tick’s ecology and the things that we need to do in order to get at it at different life stages, and of course the possibility of managing big populations everywhere we have wooded environments then I think it rapidly drops out of consideration as an issue. Except that it would be really nice to have people that are educated about it that are able to diagnose it, be concerned about it, pay attention to having ticks on them when they come back in from the woods. Let’s work on that vaccine that’s going to protect people before they go out into the woods.

This again is my yard, this is a day lily, it’s in the front of my yard, and this is something I look at practically every spring. I’ve been there five years. This year coincidentally of course surprisingly this hasn’t happened yet, but because my plants are well fertilized and mulched they tend to green up sooner than the plants out in the woods, the deer come through, they target it, they know that this is good stuff to eat. And anyhow for a couple of weeks in the spring there are impacts like this. Now mind you, my wife usually ends up parking the car on top of these plants for part of the spring and the kids play basketball out there and constantly are trampling them and the neighborhood dogs run through there routinely. And they are day lilies and they’re tough plants. Within about three or four weeks, after the deer go back to their little lives in the woods and the fields next to the house because they’ve
greened up to the point where good stuff is there, and you don’t have the hassle of people, these plants recover, they are magnificent in August. And I don’t have a problem with deer or with the kinds of impacts that deer have to my yard.

When I have problems with my vegetable garden I put up screening and a net or other kinds of plants to keep them out. And in doing this, here, this is not dealing with the problem because I don’t feel I do have a problem. I’m expressing the first step or the first thing in what we at the Humane Society call the humane approach and we are using that word probably for the first time in this talk. That is tolerance and understanding, simply recognizing that the idiosyncrasies, the peculiarities of the deer that live in my neighborhood, the things they will and won’t do, being curious enough not to press any panic buttons when I see a few bites taken out of a day lily, although my summer lilies a little bit more serious of a problem because if they eat them that makes them blind, but not doing anything to try and deal with this issue because it’s not an issue for me.

This is in back of our main headquarters. It’s an experiment on three different ways of dealing with deer damage to horticultural plants. The plant on the left is probably in the best shape, then the one in the middle next, then the one on the right seems to have been pretty heavily hit. The one on the right was treated only once with a commercial repellent, and there are many different kinds on the market now, in January and then he left it alone. Now repellents work. These two here are two of the better ones and they will prevent deer damage under certain circumstances and situations. But they have to be applied consistently. They come off in the rain, animals get used to them so you have to develop a strategy if you’re going to use repellent to protect your plants, that focuses on persistence, diligence and on monitoring. We should have been out here except that we’re experimenting at another lab. We should have been looking for new damage, looking for increased problems with this plant and reapplying whichever repellent we chose to use, depending on how much damage reoccurred. There are some
repellents obtained on the market that are in vogue but there's a caveat emptor that has to be applied to the use of any these products. You need to check the amount, you need to be aware of some of the circumstances surrounding them. This one we are very much against at the HSUS because we know the conditions under which this material was collected. But this stuff, bobcat urine, fox urine, is showing up increasingly in the plant community, in nurseries, hardware stores, and people are using this because predator urine contains sulfates, sulfates appear to be things that deer don't like and it deters them. My attitude towards these is that humans are carnivores too and if you have a plant you want to protect in your backyard, well go out there late at night so your neighbors don't get too upset about it, why not, save yourself some money.

This plant was protected with an area repellant, a little more effective perhaps on a long-term basis. You can see it in the middle of the tree there, and it's nothing more than a bar of soap with a hole through it and hung up on the plant. The smell, the broadcast smell of this particular substance is something that deters deer. And it can work locally and on a short term basis to create a deterrent to keep them away from individual plants. And once they learn to stay away from a plant they're likely to remember that. And as long as you're dealing with the same local population you may teach animals not to come around certain parts of your garden. Human hair is another substance. The trick is one treatment per tree. It's not something that works over 50 acres. So you can't put one of these out in the middle of your yard and expect deer will never come by. And there are even now these little capsules that you can buy that are loaded with a garlic substance that also acts as a pretty effective deterrent to deer.

The final and the ultimate when you do have high population or concentration of deer, and you must keep them away from your plants, the ultimate solution is exclusion. A fence, some sort of permanent barrier that keeps the animals away. In this case this fence is put up in the early fall and taken down in the spring because
these deer like my deer are not going to be hanging around, are not to be going after these plants in the summer because there are other things for them to eat. I understand that in some certain circumstance there is not enough for deer to eat in the weeds, and there may be situations where permanent protection is needed in your lawn, in which case this is not aesthetically pleasing.

This is the L.A. Arboretum and they fence their stuff against rabbits, and I guess they even have deer there too even though it’s on display for the public, you do what you have to do. This is an airport in the Midwest and this is a major fence, it’s chain link up to about six feet and then up to about 12 feet, it has some strand wire that permanently excludes deer because it is critical, absolutely necessary to keep deer off of this property entirely because there is a safety issue. There is no other way you could do that.

This is a combination of a repellant or scaring device and a fence. This is at my sister’s house in Ipswich, Massachusetts. This is her neighbor’s hedge, and one year the local deer herd discovered it and found it to be very tasty and pretty much decimated it within a period of about three to four weeks. Of course, it would be nice if people were more attentive to what’s going on in their yards and caught the fact that this damage was occurring before it reached this stage. The man used to have goats and he has an electric fence in his garage which he put up, wired, charged up and kept going for a couple of weeks. The deer coming through this hedge in order to get this tasty meal, encountered this fence, and it was sufficiently enough of a deterrent and there were enough animals getting shocked, and my sister said there were a couple of nights when you could hear deer snorting and stomping around out there a lot, that they left it alone. They avoided it, he turned the electricity off after a couple of weeks and left the fence up, but no more deer damage occurred to this.

Electric fencing is also something that you can do, although there are precautions for its use in areas where people might come into contact with it. You can very effectively teach deer to stay away from areas by putting out single strand fences which ordinarily
animals as large as deer just walk through, but to which you bait the animal, either using peanut butter or a specific deer attractant. Now in a more sophisticated set ups they’ve got these aluminum foil cups in which you put a substance that works well to attract deer, bringing them into the fence. What they do is they touch these things with their nose which is a really good place to shock them and you teach them to avoid the area entirely by creating this negative condition. This is an example of using fencing or an exclosure in a national park of the type I showed you earlier, it can be used on a site-specific and topical basis in other areas as well.

And this is what I use in my garden every spring with deer coming through looking for snacks. I cut the bottom of this (gallon milk jug), put it over the lettuce, and it provides a nice warm environment, the plant grows faster and it’s protected from deer unless they want to come and knock the milk carton over, but they haven’t done that yet. It depends on the resource that you are protecting and the amount of damage you’re experiencing as to what you should do in order to provide protection.

This is that commercial nursery again. This is buckrubbing, this is when the male has approached and it tried to shine his antlers on these trees. These trees are worth a couple hundred bucks each and there is a row of about ten or fifteen. The man that is running this business experiences considerable economic loss when something like this occurs, and it is for sure that we have to protect this valuable resource or he’s out of business. The best way for him to do that is to put up a fence to exclude every deer. There is no other solution that could work possibly as well as that.

Briefly getting into the devices that scare, intimidate or threaten deer, these can work. We’re increasing our sophistication with these. We’re also using dogs under certain situations to patrol areas inside these invisible fences to keep the animal from free roaming and they will be able to chase a deer off a commercial nursery, they will chase deer off residential property if the proper invisible fencing material were used and the dog was monitored. This is high-tech device that combines an oscillating sprinkler with
a motion sensor I ran in my garden last summer. It seemed to work
great and used to go off all the time at night. It also went off in the
morning when I walked out there with coffee and forgot it was set
to a range of about 30 to 35 feet and it picked up motion. You can
adjust it to where it starts to pick up motion. It turns on every time
the animal approaches the resource you are trying to protect so there
is no way there’s a constant stimulus that the animal can
accommodate to as might be the case with some of the other
solutions we’ve tried to impose. It so far seems to work very well.

Deer/car collisions are a very complex controversial issue
for us and certainly is one of the issues that involves human safety,
and we have to take extra steps and have extra considerations as to
what it is we’re trying to achieve. My take on deer/automobile
accidents or deer/vehicle accidents, since deer can get hit by trucks
and trains and other things too, is that we need to learn more about
the habits of the animals, their traditional crossing patterns, sorts of
things that we can do to educate drivers in order to minimize the
possibilities that there might be a collision. We need definitely take
into account the fact that alcohol is a factor in some of these
accidents as is speed, as is the fact that we develop and put roads
through traditional deer movement areas, as well as the fact that we
don’t focus on these things. We don’t do enough public
announcements, we don’t do enough PSAs, we don’t do enough
education. I’m still looking for a driver education program in this
country that gives kids a 15-16 minute lecture on what it is when
deer cross the road, what to look for, how to understand the fact
that when you see one animal successfully cross the road that’s not
the end of it, there may be two or three more waiting to cross. You
need to slow down, you need to be alert and we need to work more
with devices like this. This is a streeter light which we call a square
light reflector that is a prism that creates what’s called an optical
fence. When an automobile, these things are mounted by the side of
the road, they extend a beam of very fine red light out, that’s
perceived by the deer probably a lot more than it is perceived by us,
and when an automobile approaches, the headlights reflect this beam
across the road and alert the deer to the fact that there is a vehicle coming. Where these have been installed they seem to work pretty well. There’s a lot more research that needs to be done on that sort of thing.

To kind of wrap up here I want to go back to this level to remind myself and you that it is at the landscape level that we need to address this issue, you need to think about how to use land, how to manage open space, what the habitat requirements are of the deer, what the minimum size area is that is necessary for them to sustain themselves as populations. The deer don’t own a house, they only have 12 acres of woods there, they don’t stay there. If the other 40 acre woodlots on the other side of that field is taken away, they won’t stay in that area. There is not enough room there to feel comfortable and safe, especially with me walking back there all the time and my neighbor’s dogs back there frequently.

Why do we manage lands? Why do we do things to landscapes the way we do, is something of a mystery to me. Biological purpose and function of this area, and even the aesthetic purpose of it is baffling to me sometimes, but we are getting into this. We are creating developments in which there must be five acre plots, there must be two acre plots. We need to think seriously about how this affects wildlife and how it influences deer distribution. And we need to take into consideration those special areas for management where particular interests come together to create situations in which various scenarios must take place.

This is Gettysburg National Battlefield Park just about fifteen miles north of Catoctin Mountain, and is an area in which the park service has conducted a fairly large scale experiment in direct reduction of the deer herd. This was done because according to the management objectives of this park it was necessary to maintain scenes that is authentic to detail to the day of the battle in 1863. Beyond the impossibility of doing that because July 4, 1863 only comes once a year, you know they try to maintain scenes that are authentic to the way the land was used at that time and it’s impossible, it was impossible under the density of deer that were
there to sustain agricultural pursuits. There was no possibility of growing corn or sorghum or any of the other agricultural products that were raised at the time of the battle. So they decided to create a culling program which they did, they implemented this back up for a time in court, it went on for a couple of years. I really don’t know what the current status of the battle there is, but I put this slide on to make a comment. Since I was with the National Park Service, I was involved with this from the point of reading the information, commenting on it, reviewing the plans, and having left that even though I was officially reviewer under the NEPA process once the program began the park did not issue any information, any follow up, any more work to, create information and educate the public about what was going on. So, the lesson here is once you start and then explain, don’t walk away from the responsibilities and need to further enlighten people about why the plan exists and what’s working and not working about it.

This is pretty much what the issue is to me. This is North America at night from outer space. A hundred years ago this slide would be completely dark. Within the last hundred years we have, as people, gone from being rural and agrarian, to almost entirely urban and cosmopolitan. Eight out of every ten people now live in what our census bureau defines as urban areas. One out of every two of us lives in one of the thirty-nine largest metropolitan areas in this country those being a million or more people. Some time around 1915 we went from 51% agrarian to 50%, and then 51% urban. In the year 2015 according to the latest suggestion, all of us, the entire human population on the planet will cross that boundary for the first time, and then we will truly be for the first time in our history an urban species rather than something else. We create problems. Problems, and this I guess would be the basis for what we call the humane approach, problems are not caused by the animals. They are caused by decisions that we make. Everything we do with deer derives from our value system, our preferences and the ways in which we interact with managing and maintaining landscapes. Not all of that is good of course. Some of it can be. We
have the ability to live harmoniously with animals like deer. We are going to live with them, there’s no question about it. There’s no turning back on this. These animals have moved into and accommodated themselves to and will be permanent residents of urban areas and will be permanent neighbors for us in our lives. And we need to maybe begin working on how we’re going to harmonize that relationship. Thank you very much.