Westtown Township

Zoning Hearing Board Application

RECEIVED JUN 04 2018

PO Box 79
Westtown, PA 19395

P: 610.692.1930
F: 610.692.9651
www.westtownpa.org

Township Use Only

Date Received: 6/4/18 Date Accepted: ______

Project No.: 2018-4 Fee/Date Paid: $850.00

Parcel No.: 67-3-29.9 Acreage of Property: 1.8 AC

Zoning Dist. R1

Applicant & Owner Information

Property Owner Robert + Margaret Jackson **Phone** 610 308 9959 610 308 9067

Mailing Address 193 Pheasant Run City West Chester Zip 19380

E-mail mmjackson101@gmail.com

Applicant Robert + Margaret Jackson **Phone** 610 308 9067

Mailing Address 193 Pheasant Run City West Chester Zip 19380

E-mail mmjackson101@gmail.com

Request

Section 2104: Appeals from the Zoning Officer ______

Section 2105: Challenge to the validity of the Zoning Ordinance or Map ______

Section 2106: Challenge to the Flexible Development Procedure ______

Section 2107: Variances 170-1505C(3)

Section 2108: Special Exceptions ______

Description of request

Please provide below or attach a narrative of your request to enable the Zoning Hearing Board Solicitor to prepare a correct and true advertisement. As part of the narrative, please describe:

- ✓ * The property under consideration (size of lot, dimensions, etc.) and its physical location (e.g. nearby intersections, landmarks, etc.).
- ✓ * The present use of the property (residential, retail, office, etc.), and all existing improvements located on it (house, garage, and shed; office and parking lot; etc.).
- ✓ * The proposed improvements, additions and/or change of use. For physical changes to the lot or structures, indicate the size of all proposed improvements, materials to be used and general construction to be carried out. Attach a plan or sketch for illustration.
- ✓ * State the variance, special exception, or other relief requested and cite the appropriate section(s) of the Zoning Ordinance.
- ✓ * Provide the reasons why the relief you requested is needed and why the relief should be granted (Please see §2104-2108 of the Zoning Ordinance, as amended, where applicable).

See attached documentation

material to be 14 foot 5 inch diameter Treated posts

in ground > 3 feet - spaced

galvinized wire pro 30 fixed knot

3"-6" exposure

(Fence is existing) - WB

170-1505 C(3)

Applicant shall deposit with the Township a fee deemed sufficient to pay the Hearing expenses. These costs may include compensation for the secretary and members of the Zoning Hearing Baord, notice and advertising costs, and necessary administrative overhead connected with the Hearing. Funds deposited in excess of the actual cost of the requested hearing shall be returned to the applicant upon completion of the proceedings.

In the event that the costs of the hearing exceed the funds deposited, the Applicant shall pay to the Township funds equal to such excess costs within thirty (30) days of the Township's request. Failure to deposit the additional funds shall be just reasons for terminating the proceedings.

It is my understanding that the Zoning Officer and Zoning Hearing Board may request additional information and documentation to prepare for said hearing.

CERTIFICATION: I certify that the information presented in this application and all attachments is true and correct.

Signature of APPLICANT [signature] **Date** 6/4/18

Print Name MARGARET JACKSON

Signature of OWNER__________________ **Date**______
(If different from applicant)

Signature of ZONING OFFICER__________________ **Date**______

—OFFICIAL USE ONLY—

Mailed/faxed to Zoning Solicitor on: __________________

Hearing scheduled on: __________ Advertised on: __________

—FEE SCHEDULE—

Variance, Special Exception — $850
Appeal from the Zoning Officer, Challenge to the Flex Development Procedure — $850
Challenge to the Zoning Ordinance/Map — $2,500

The property is 193 Pheasant Run Road West Chester PA. 19380. It is a heavily wooded lot approximately 1.8 acres in size in a residential single family cul-de-sac. The property line is also the border of East Goshen Township to the north, and Willistown Township to the East.

The property has been our home since 1985. It is a single family home. An in ground pool and fence were installed as permitted by Westtown Township in May of 1991. We have maintained a fence in our back yard since the pool was installed.

This application is for a variance to increase the existing fence height greater than 6 feet to provide safety for our pool. Westtown Township Section 170-1505 Fences and Walls B and C1.

In recent years we have had a growing population of deer migrating through our back yard. The deer have aggressively compromised the fence. Ineffective remedies to this point have been re enforcement of the green 5 foot wire, increasing the number of steel posts, doubling the wire, and adding 6 foot poly mesh fencing. The deer have repeatedly knocked down portions of the fence and ripped through the poly mesh fencing. We have young children in our neighborhood, and it is our concern to keep an intact fence for their safety.

The US Department of Agriculture published a research study of Poly Mesh fencing that identified the same deer behavior that we have experienced in our backyard. Aggressive pushing on the fence, ripping the poly mesh to breach the fence. The fencing evaluated in this study was 2.3 meters or 6.9 feet with steel posts that are similar to the ones on our fence. (ref 1)

The Pennsylvania Game Commission released a bulletin that indicates a deer effective fence must be at least 8 feet high with opening no larger than 6 inches. (ref. #2) In our research, we have also found that a lower fence made of stronger wire is a risk to the deer as they can become entrapped when they try to breach the fence. (ref. # 3) In a research study published in the Journal of Wildlife Management, the only 100% effective height of a deer fence was 7.8 feet. Heights of 6 feet were only 14% effective in deterring deer. (ref. # 4) In a publication by Penn State on effective deer exclusion, 8 foot high woven wire fencing on 12 foot high posts effectively excludes deer. (ref. #5)

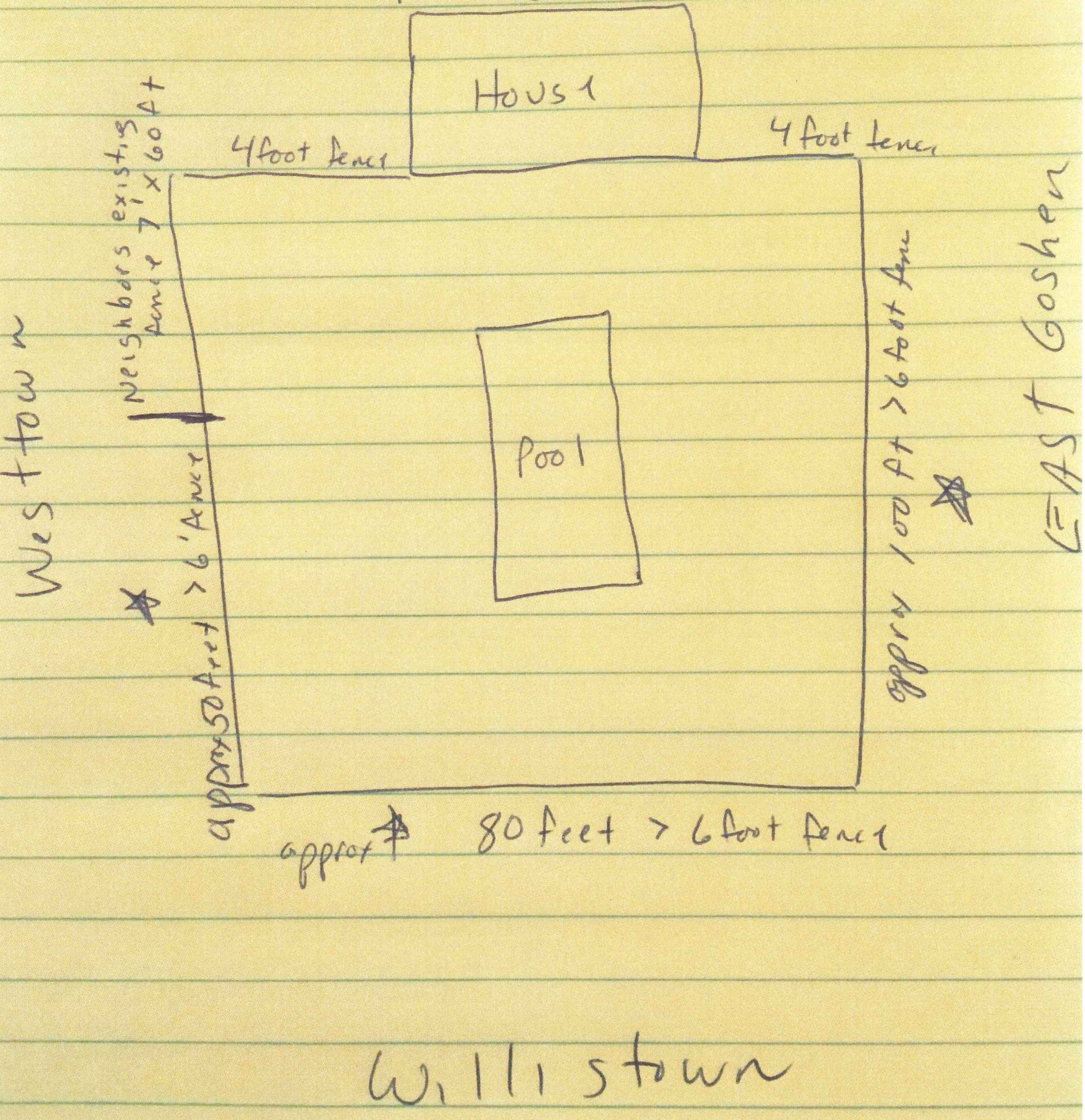
Applying for an 850.00 dollar variance is significantly off putting. In consideration of safety, we feel there is no other option to provide a safe environment then to conform to the researcher's findings, and pay the fee to ensure a safe pool setting for our neighborhood while providing a fence system that the deer will not become entrapped in.

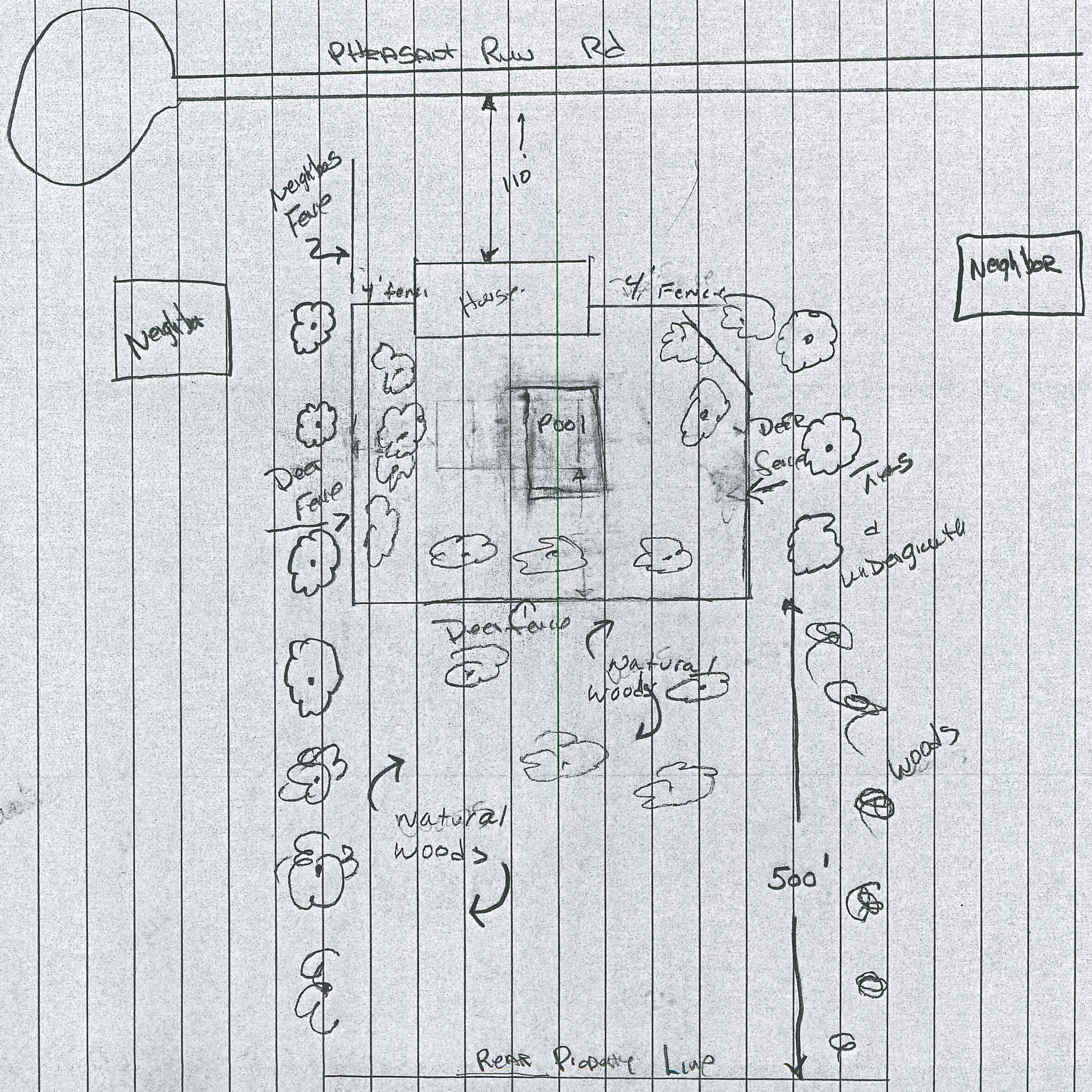
It is also noteworthy that the woven wire fence on wooden posts blends into the wooded area. See attached picture of the fence between our house and the Westtown neighbor house to the East. The fence is virtually undetectable and does not have any noxious visual impediment.

Sincerely,

Margaret and Robert Jackson

Robert + Margaret Jackson
193 Pheasant Run W.C. PA 193





PHEASANT Run Rd
110'
Neighbor
Neighbor
Neighbors Fence
4' fence
House
4' Fence
Pool
Deer Fence
Deer Fence
Deer Fence
Trees & Landscape
Natural Woods
Natural Woods
Woods
500'
Rear Property Line

Ref #1

Tools and Technology Note

Response of Deer to Containment by a Poly-Mesh Fence for Mitigating Disease Outbreaks

MICHAEL J. LAVELLE, *United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center, Fort Collins, CO 80521-2154, USA*

JUSTIN W. FISCHER, *United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center, Fort Collins, CO 80521-2154, USA*

SCOTT E. HYGNSTROM, *School of Natural Resources, University of Nebraska, Lincoln, NE 68583-0961, USA*

JOSHUA J. WHITE,[1] *Nebraska Game and Parks Commission, Lincoln, NE 68503, USA*

AARON M. HILDRETH, *School of Natural Resources, University of Nebraska, Lincoln, NE 68583-0961, USA*

GREGORY E. PHILLIPS, *United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center, Fort Collins, CO 80521-2154, USA*

KURT C. VERCAUTEREN,[2] *United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center, Fort Collins, CO 80521-2154, USA*

ABSTRACT Rapidly deployable and effective methods are needed to contain free-ranging deer (*Odocoileus* spp.) during acute disease outbreaks. We evaluated efficacy of a 2.1-m-tall polypropylene mesh (poly-mesh) fence for containing ≥15 free-ranging white-tailed deer (*O. virginianus*) within a 42-ha area in eastern Nebraska, USA. We observed a 99% decrease in deer leaving the enclosure area after we installed fencing (1 deer jumped; 0.02 deer/hr) compared with prefence rates (5.26 deer/hr). However, 8 deer (53% of censused population) escaped the enclosure during a census drive after our study. Poly-mesh fencing may be effective in temporarily containing free-ranging deer during minimally disruptive deer removal actions such as trapping or sharpshooting.

KEY WORDS containment, disease, fence, livestock, *Odocoileus virginianus*, white-tailed deer, wildlife damage management.

The livestock industry is a valuable component of United States agriculture, with an inventory valued >US$100 billion in 2008 (United States Census Bureau 2009). Livestock production remains vulnerable to the intentional or unintentional introduction and outbreak of disease because adequate biosecurity measures, naturally acquired immunity, and access to vaccines for foreign pathogens are lacking (Noah et al. 2002, Weller 2006). Thus, disease introduced into one livestock facility could spread rapidly within and among facilities, exacerbating economic losses (Blancou and Pearson 2003, Weller 2006, Rubira 2007). For example, an outbreak of foot-and-mouth disease (FMD) within one state such as Kansas, USA, could result in economic losses approaching US$1 billion (Pendell et al. 2007).

Many diseases (e.g., FMD, brucellosis, bovine tuberculosis) are transmissible between livestock and free-ranging wildlife species and wildlife can act as both vectors and reservoirs (Bengis et al. 2002, Dudley and Woodford 2002, Ward et al. 2009). Presence of susceptible wildlife complicates disease management because wildlife may freely move across the landscape and interact with conspecifics and individuals of other species (Weller 2006, Ward et al. 2009).

White-tailed deer (*Odocoileus virginianus*), because of their widespread distribution (Côté et al. 2004), could play a major role in spreading disease within wild populations and domestic livestock. This species can be affected by a variety of diseases transmissible to livestock, including FMD (McVicar et al. 1974). Emergence of an acute, highly contagious disease such as FMD involving deer in the United States would probably have devastating impacts on the livestock industry due to common use of space and resources (Dudley and Woodford 2002, Thomson et al. 2003, Ward et al. 2009).

Management techniques used to mitigate spread of diseases between wild and domestic herbivores vary considerably (e.g., depopulation, vaccination, containment). Depopulation methods, although locally effective, may be unpopular among many stakeholders (Dudley and Woodford 2002, Holsman and Smail 2006). Vaccinations can be effective but may be impractical or socially unacceptable for use in free-ranging wildlife (Bengis et al. 2002). Wildlife managers have historically used fences for managing certain diseases. For example, in an attempt to prevent cattle fever-infected ticks (*Boophilus microplus*) from being spread by white-tailed deer in Florida, USA, in the 1930s, wildlife managers constructed 128 km of 6-strand electrified barbed-wire fence (McAtee 1939). Fences also have been reliable in controlling spread of FMD in Africa (Taylor and Martin 1987, Sutmoller et al. 1999, Thomson et al. 2003) and Lyme disease in the United States (Stafford 1993). Rapidly deployable techniques such as fencing are needed for containment and eradication of diseases spread via wildlife vectors from point-source occurrences (Jackson et al. 2009).

VerCauteren et al. (2006) reviewed literature on use of fencing to exclude deer and emphasized that a primary factor determining efficacy of a fence is level of motivation of targeted animals. For example, a high woven-wire mesh

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fence is necessary for impeding deer that are being pursued by humans (Falk et al. 1978), whereas a single-strand electric fence can be effective in protecting crops from deer (Hygnstrom and Craven 1988, Steger 1988). We conducted a preliminary study to evaluate efficacy of a rapidly deployable 2.1-m-high polypropylene mesh (poly-mesh) fence for containing white-tailed deer.

STUDY AREA

We conducted our study on the 3,385-ha DeSoto National Wildlife Refuge (NWR) in eastern Nebraska and western Iowa, USA (41°31′27″N, 96°0′58″W) in late spring and early summer 2008. DeSoto NWR consisted of 41% bottomland forest, 27% grassland, 15% wetland, and 17% agricultural fields. Crops grown on DeSoto NWR included alfalfa (*Medicago sativa*), soybean (*Glycine max*), wheat (*Triticum aestivum*), and corn (*Zea mays*). Mean annual precipitation was 73.6 cm, with mean annual maximum and minimum temperatures of 15.5° C and 5.3° C, respectively (Pearce and Smith 1990). Estimated minimum deer population during the study was 722 (25/km^2) based on January (2008) helicopter counts and data from fall (2007) deer harvest check stations on DeSoto NWR (G. M. Clements, University of Nebraska–Lincoln, unpublished data).

To conduct the evaluation, we selected a forested area within DeSoto NWR (Fig. 1) adjacent to crop fields (including wheat, soybean, and corn) that was a bedding area for deer (VerCauteren and Hygnstrom 1998, Walter et al. 2009). The 42-ha enclosure contained 65% eastern cottonwood (*Populus deltoides*) forest with an understory of primarily hackberry (*Celtis occidentalis*), mulberry (*Morus rubra*), and green ash (*Fraxinus pennsylvanica*). The forest ground layer was dominated by poison ivy (*Rhus radicans*) and common scouring rush (*Equisetum hyemale*). Grasses dominated by big bluestem (*Andropogon gerardii*) and smooth brome (*Bromus inermis*) made up 26% of the enclosure. Crop fields made up the remaining 9% of the enclosure area (north and south sides combined). Further description of specific vegetation characteristics can be found in Walter et al. (2009).

METHODS

We evaluated a 2.3-m-tall high-strength mesh (4.4-cm^2) fence composed of ultraviolet-stable black polypropylene (Benner's Gardens Heavy Perimeter Deer Netting, Benner's Gardens, Phoenixville, PA). We installed the fence at 2.1 m in height, leaving an inward-facing 0.16-m apron staked to the ground with 0.3-m galvanized-steel stakes at ≥3 locations between 3.0-m steel t-posts (e.g., GWP Industries Co., Ltd., Tianjin, China) installed every 6 m along the perimeter. We attached the fence to heavy-duty monofilament lines (200-kg breaking strength; one line at the top [2.1 m] and the second line 0.8 m from the ground) with a galvanized-steel hog ring every 1 m (Fig. 2). We attached monofilament lines to t-posts with heavy-duty plastic cable ties. To add rigidity to the fence, we installed H-braces constructed of closely spaced (3-m) vertical t-posts, connected by a horizontal t-post and diagonal wire strainers, at corners and every 75 m along the perimeter. We documented time and materials needed to construct the fence and incorporated labor costs of US$10.00/hour. Overall costs did not include site-specific items such as removing trees or installing gates.

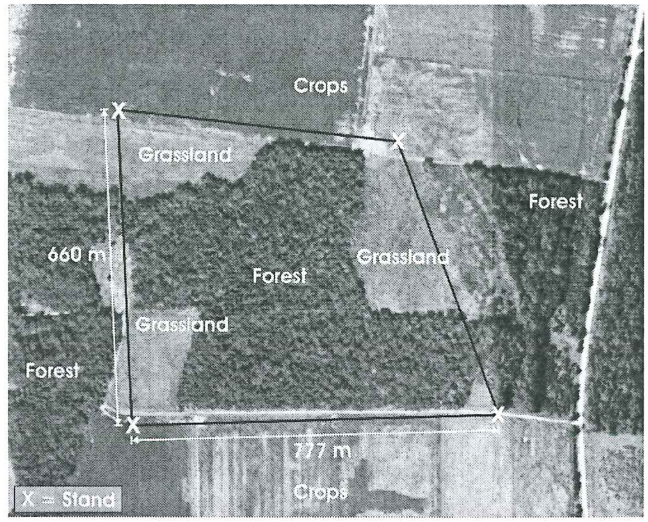


Figure 1. Layout of a 42-ha enclosure to evaluate efficacy of a polypropylene mesh fence for temporary containment of white-tailed deer in eastern Nebraska, USA, 2008.

We visually documented evening deer movements out of the designated enclosure area during precontainment (4–24 Jun) and containment periods (25 Jun–17 Jul). Before the precontainment period, we installed 3.0-m steel t-posts every 6 m along the entire perimeter of the enclosure. We anticipated northward and southward movements by deer to access adjacent crop fields; thus, we also attached the poly-mesh fence material on the east and west sections of the enclosure before the precontainment period. Installation of t-posts along the entire perimeter enabled observers to visualize the enclosure boundary for data collection during the precontainment period and reduced the time spent completing the enclosure and associated disturbance at the onset of the containment period. We completed the enclosure on 25 July by installing the poly-mesh fencing on north and south portions of the perimeter. While installing the fence, we worked as quickly and quietly as possible to minimize potential for driving animals out of the enclosure. To document potential effects of our disturbance during fence completion, observers monitored unfinished sections and documented deer movement as we progressed.

Before precontainment, we erected 4 4.6-m-tall tripod stands (StrongBuilt® Deluxe Magnum 14-foot Tripod Stand, StrongBuilt Inc., Waterproof, LA) topped with camouflaged blinds at the 4 corners of the enclosure. We conducted observations from 2 hours before sunset to 1 hour after on 5 evenings each week throughout the study. By observing from opposite corners, 2 individuals each evening were able to view the entire perimeter without overlapping coverage or double counting. Each successive evening, observers shifted to a blind that was unoccupied the

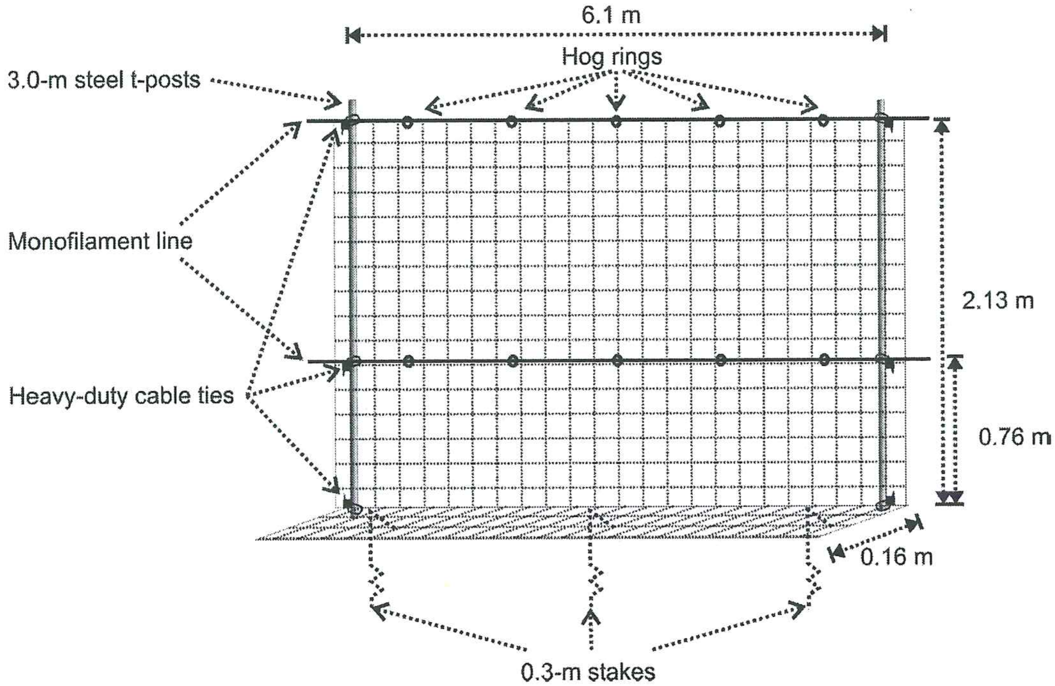


Figure 2. Components of temporary fence we used to construct experimental enclosure evaluated for containing white-tailed deer in eastern Nebraska, USA, 2008.

previous evening. We used 8 × 32-mm binoculars during daylight and forward-looking infrared thermal-imagers (PalmIR 250 Digital; Raytheon Commercial Infrared, Dallas, TX) after dark to observe deer.

We evaluated the fence using an unreplicated one-group pretest-posttest study design (Manly 1992). We monitored deer movement from inside to outside of the enclosure area during a precontainment period to provide a baseline measure of deer movement for comparison with movement data after the fence was completed (Guthrie 1987). We compared mean hourly outward movements across the enclosure's designated perimeter during the precontainment period ($\bar{x}_p$ deer/hr) to mean hourly escapes during the containment period ($\bar{x}_c$ deer/hr) as an index of efficacy of our fence. We weighted means by daily observation time. We also plotted daily movement rates to clarify trends in deer movement rates before and after the fence was completed.

To determine the minimum number of deer within the enclosure, we counted the maximum combined number of deer visible simultaneously during each evening observation period. Observers were in radio contact to ensure synchrony and independence of counts and that combined counts were maximums for each evening. We also conducted a deer drive after the containment period to evaluate fence performance when deer were being pursued to provide a second estimate of the number of deer remaining within the enclosure. We removed 120 m of perimeter fence at the southeastern corner and situated observers in stands on each side of the opening. We then used a crew of 32 individuals walking slowly from the north and west fencelines toward the opening to drive deer from the enclosure and count them.

To minimize disturbance during the precontainment and containment period, we limited our activity at the enclosure to routine observations, checking 2 water tanks once each week, and daily inspections of the perimeter to record any damage and maintain the fence. The Institutional Animal Care and Use Committees of the United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center (USDA APHIS WS NWRC; QA-1587) approved all procedures.

RESULTS

We monitored deer movements near the perimeter on 14 evenings during the precontainment period (mean daily observation time = 2.65 hr) and 16 evenings during the containment period (mean daily observation time = 2.73 hr). During the precontainment period, we monitored the perimeter for 37.1 hours and counted 195 outward perimeter crossings ($\bar{x}_p$ = 5.26 deer/hr; Fig. 3). During the containment period, we documented only one escape from the enclosure (by an ad F that jumped over the fence) in 43.7 hours of observation ($\bar{x}_c$ = 0.02 deer/hr), which corresponded to a >99% reduction in outward movements by deer across the designated boundary of the enclosure after completion of the containment fence. From our radio-coordinated nightly counts, we know ≥15 deer were contained (7 Jul).

While conducting daily inspections of the fence, we observed 5 deer run or jump into the fence, of which all were repelled upon impact without apparent harm to animal or fence. We also observed 4 occasions when deer stood erect on their hind legs and pushed on the fence with their front legs without escaping from the enclosure. Daily inspections revealed indirect evidence (i.e., broken cable ties at the top of the fence, tears in the poly-mesh, and bent fence posts) of

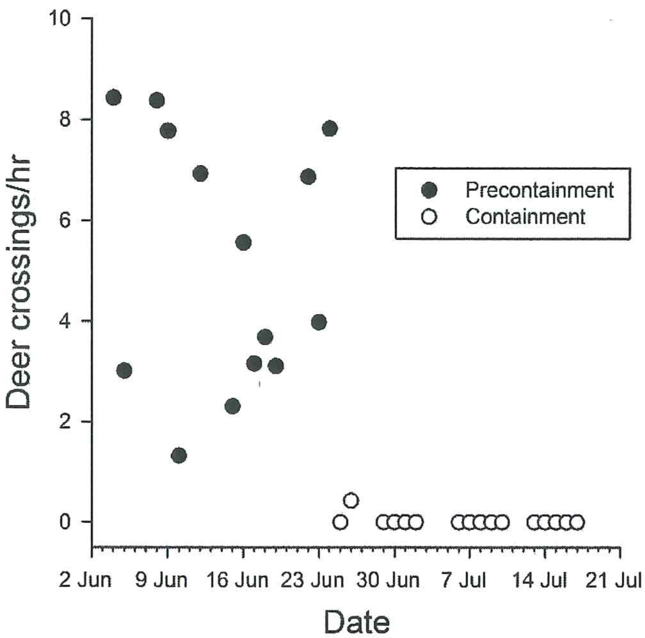


Figure 3. Mean hourly number of deer observed crossing the designated perimeter of an enclosure area before installation of a polypropylene mesh fence (precontainment) and after fence installation (containment) in eastern Nebraska, USA, 2008. Observations occurred from approximately 2 hours before sunset to 1 hour after sunset, and we only counted deer moving out of the enclosure area.

deer challenging the fence during both precontainment (7 occasions; east and west sections of fence only) and containment (17 occasions) periods. Damage to the fence was rarely substantial enough to suggest a perimeter crossing (during precontainment period) or an escape (during containment period) occurred, but we cannot dismiss the possibility that deer may have jumped the fence unobserved. However, on 2 occasions during the containment period we found tears in the fence approximately 0.5 m long, possibly large enough for a deer to pass through.

We did not obtain a reliable count of deer during the drive because none left the enclosure through the opening we created. However, motivation to escape from the enclosure was evidently high during the drive; as we observed 7 successful jumps of 11 attempts, one deer broke through the fence after jumping into and becoming entangled with it, and 3 deer were effectively repelled after running into the fence.

DISCUSSION

The poly-mesh fence design we tested in our preliminary study effectively minimized movements out of our enclosure area by free-ranging deer. Similar fencing of lower height (1.8 m) has proven effective for protecting specialty crops (e.g., truck farms, nurseries, orchards) from damage by deer in Wisconsin, USA (C. Lovell, USDA APHIS WS, personal communication). Although we did not know exact numbers of deer inside the enclosure area before or after the containment period, out of ≥15 deer, we observed only one escape during evening observations throughout the containment period compared with routine movement out of the enclosure area to forage throughout the precontainment period. We assume deer returned to the enclosure area after foraging.

Although our study was strengthened by premanipulation monitoring (Guthrie 1987), it cannot provide conclusive evidence that the difference between periods was caused by the fence (lack of spatial control), and it does not justify broad inference to similar fence installations at other sites (lack of replication). However, the abrupt change coinciding with completion of the enclosure is strong evidence that the fence reduced deer crossings (Fig. 3). We believe alternative factors that might reduce deer crossing (e.g., changes in deer movements resulting from fawn maturation or from changes in forage plant phenology) would cause gradual, rather than abrupt, declines.

At the conclusion of the containment period, upon being pursued by humans, several animals repeatedly attempted to escape from the enclosure by jumping or running into the fence. Of these, 8 successfully breached the fence. Thus, as motivation increased, efficacy of the fence decreased. Our results emphasize that fence selection needs to account for expected levels of deer motivation produced by postfencing management actions to ensure adequate containment. Provisioning highly palatable feed and, if necessary, fresh water within the enclosure may further reduce motivation to escape and facilitate removal of deer via stealth means, like suppressed sharpshooting. As with all fences, we recommend routine inspection of the fence to maintain integrity.

Installation modifications may improve efficacy of the poly-mesh fence. Seven of 8 (88%) observed deer–fence collisions resulted in deer being repelled. In contrast, only 5 of 13 (38%) deer we observed trying to jump over the fence were deterred. Hence, the fence may not have been tall enough, or the monofilament used to support the top of the poly-mesh may have been too elastic to prevent pursued deer from jumping over the fence. For example, the one deer that jumped the fence during the containment period managed to exceed the height of the fence with only its head and neck; yet, elasticity of the top support allowed the momentum of the animal to carry it over. Elasticity of the fence top could be reduced by building corner and in-line H-braces with wood posts (less robust and costly than used for woven-wire fence construction) and by using steel support wire rather than monofilament. In addition, taller (2.4-m) and heavier-duty poly-mesh fence products that would probably perform better are now available. Woven-wire fence of 2.4-m height was found to prevent passage by even very highly motivated wild white-tailed deer in another fence evaluation (K. C. VerCauteren, USDA APHIS WS NWRC, unpublished report). In a disease response situation, poly-mesh fence could be erected more rapidly (and at a lower cost) by suspending it from trees where possible, but for research purposes (to be able to observe the fenceline) we used fence posts and made fencelines perfectly straight.

We were initially concerned that our fence installation activity would cause deer to leave the enclosure area, so we completed our most disruptive activities before the precontainment period. Causing deer to disperse also would be

Ref # 2

RULES AND REGULATIONS

[58 PA. CODE CH. 147]

Deer Control

[30 Pa.B. 2479]

To effectively manage the wildlife resources of this Commonwealth, the Game Commission (Commission), at its April 4, 2000, meeting, adopted the following change:

Amend Chapter 147 by adding §§ 147.661--147.668 (relating to forestry), to provide relief to persons whose land is open to public deer hunting.

This amendment is hereby adopted under the authority of 34 Pa.C.S. §§ 101--2965 (relating to Game and Wildlife Code) (code).

1. *Introduction*

To more effectively manage the wildlife resources of this Commonwealth, the Commission at its January 11, 2000, meeting proposed, and at its April 4, 2000, meeting finally adopted amendments adding a new category of permit, Forestry, to Chapter 147, Subchapter R. This change involves adding §§ 147.661--147.668 to the subchapter which would allow the issuance of permits to shoot deer inside deer exclosures on lands enrolled in the Commission's Forest Game or other public access programs. This change was adopted under authority contained in section 2901(b) of the code (relating to regulations for permits).

2. *Purpose and Authority*

A common practice in forestry operations is to erect deer "exclosure" fences to keep deer from eating tender seedlings. Deer are normally driven out when an exclosure fence is erected. Deer do manage to get inside these fences, however, and once growth regenerates it is very difficult to drive deer out. As a result, the Commission at its January 11, 2000, meeting proposed regulations which would allow the issuance of permits to qualified landowners and their "legitimate employes" to shoot deer within these exclosures. On final adoption, the Commission modified some of the language in § 147.663(2) relating to construction of the fence and also added a requirement to § 147.665 requiring forwarding of copies of activity reports to all Commissioners.

Section 2901(b) of the code (relating to regulations for permits), authorizes the

Commission to promulgate regulations for the issuance of any permit. Section 2902(c) of the code (relating to general categories of permits), authorizes the director to ". . . issue other permits, with or without charges, as required to control the taking of game or wildlife . . ." These sections provide authority for the amendment.

3. *Regulatory Requirements*

To obtain a permit, a landowner must be enrolled in a Commission Forest Game or other public access program, have a Commission approved exclosure fence, and make a reasonable effort to drive deer from the exclosure. Application requirements include submitting a deed or lease establishing control of the property, a map of the property and exclosure and a statement that the land within the exclosure is being managed on a sustained yield basis. Finally, harvested deer must be tagged, reported and properly handled.

4. *Persons Affected*

The new regulations will affect owners, managers and employes of commercial forest lands who have problems with deer.

5. *Comment and Response Summary*

No written comments were received with regard to the amendments.

6. *Cost and Paperwork Requirements*

The permits in question will be issued at no cost. As was outlined under "Regulatory Requirements" an application with copies showing control of the property and a map must be submitted.

7. *Effective Date*

The changes will be effective on final publication in the *Pennsylvania Bulletin* and will remain in effect until changed by the Commission.

8. *Contact Person*

For further information on the change, contact William L. Hutson, Director, Bureau of Law Enforcement, (717) 783-6526, 2001 Elmerton Avenue, Harrisburg, PA 17110-9797.

Findings

The Commission finds that:

(1) The public notice of intention to adopt the administrative amendments adopted by this order has been given under sections 201 and 202 of the act of July 31, 1968 (P. L. 769, No. 240) (45 P. S. §§ 1201 and 1202) and the regulations thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) The adoption of the amendments of the Commission in the manner provided in this order is necessary and appropriate for the administration and enforcement of the authorizing statute.

Orders

The Commission, acting under authorizing statute, orders that:

(a) The regulations of the Commission, 58 Pa. Code, Chapter 147, Subchapter R, is amended by adding §§ 147.661, 147.662, 147.664 and 147.666--147.668 to read as set forth at 30 Pa.B. 1269 (March 4, 2000) and adding §§ 147.663 and 147.665 to read as set forth in Annex A.

(b) The Executive Director of the Commission shall submit this order and Annex A, and deposit them with the Legislative Reference Bureau as required by law.

(c) This order amending Chapter 147, Subchapter R, §§ 147.661--147.668, shall become effective upon final publication in the *Pennsylvania Bulletin*.

VERNON R. ROSS,
Executive Director

Fiscal Note: Fiscal Note 48-118 remains valid for the final adoption of the subject regulations.

Annex A

TITLE 58. RECREATION

PART III. GAME COMMISSION

CHAPTER 147. SPECIAL PERMITS

Subchapter R. DEER CONTROL

FORESTRY

§ 147.663. Fencing.

Fences shall be inspected and approved by a Commission officer as part of the application.

(1) The fence shall form a complete exclosure. Buildings may form a part of the exclosure provided there are no gaps.

(2) The fence shall be constructed of woven wire at least 8 feet high with the bottom

edge maintained tight to the ground, and with openings no larger than 6 inches square, or high tensile electrified wire at least 5 feet high. Woven wire fencing may not have openings larger than 6 inches square. Individual wires on electrified fencing may not be spaced greater than 10 inches apart. Other designs of barrier-type fencing exclosures may be acceptable if the Commission is satisfied the design will exclude deer. Fences constructed after April 4, 2000, shall be woven wire as described in this paragraph to be eligible for a deer control forestry permit.

(3) The Commission officer will examine the entire perimeter of the exclosure. If the basic design of the fence, or its state of maintenance, is such that deer can enter the exclosure, the Commission officer will not approve the permit.

(4) Gates shall be closed except during actual times of ingress and egress.

(5) The applicant shall have made a reasonable effort to drive deer from the exclosure.

(6) There shall be a reasonable number of hunter access points along the exclosure. "Reasonable" means a minimum of one point for every 4,000 feet of fenceline or part thereof. Gates used as hunter access points shall have a self-closing mechanism.

§ 147.665. Reporting of deer taken.

In addition to the requirements of § 147.664(c) (relating to permit), the permittee shall report on a form provided by the Commission, the number of deer killed and other information the Commission deems necessary. The completed report shall be submitted to the district wildlife conservation officer within 5 days after the end of each month while the permit is valid. If no deer are killed, a negative report shall be submitted. Copies of all completed reports shall be forwarded to all Commissioners.

[Pa.B. Doc. No. 00-841. Filed for public inspection May 19, 2000, 9:00 a.m.]

Ref #5

HOME | WHITE-TAILED DEER IN HOME FRUIT PLANTINGS

White-tailed Deer in Home Fruit Plantings

Deer are most active during early morning and evening hours. They can have a home range of several square miles, but this varies with season, habitat, sex, and even individual characteristics.

ARTICLES

Whitetails are creatures of habit--most use the same home range year after year. They also tend to establish one part of their home range for feeding and another part for resting. For instance, if deer establish an orchard as a source of food, they will habitually move into the area a little before sunset to feed, and move back to the woods before dawn to rest.

The natural food habits of deer depend on the time of year and the plant species available. During the winter months, deer consume evergreen and dry leaves, as well as dormant buds. In the spring and summer, they eat new growth on woody and herbaceous plants. From late summer to early winter, fruits and nuts comprise a large part of a deer's diet.

Damage

Deer cause damage to fruit plants year-round, but the most serious damage occurs in the winter months when the availability of natural foods is limited. Dwarf, semidwarf, and young standard fruit trees are the most susceptible because most of the tree is within reach of the deer. In winter, browsing on dormant terminal buds may lead to stunted or misshapen growth in standard fruit trees less than 3 years old. Browsing on fruit buds of dwarf and semidwarf trees may lower fruit production. In either case, severe winter browsing can reduce tree vitality and even cause death.

During the spring and summer, natural sources of forage are readily available to whitetails; however, they still might browse new growth on fruit trees and eat ripening fruit. In autumn, deer might continue to browse and eat fruit within the planting. Additionally, bucks can cause severe damage by rubbing their antlers on trees, which can result in broken limbs and girdling of the trunk if the deer removes enough bark.

Monitoring

The extent of deer damage can be monitored through direct and indirect observation. Deer might be "caught in the act" during their active periods in the evening and early morning. Indirect observation involves recognizing signs that deer leave behind.

Lacking upper incisor teeth, deer characteristically tear off vegetation, leaving jagged edges that identify browsed trees. In comparison, browsing by rodents and rabbits leaves a clean-cut surface. The height of the damage, however, might be the only factor necessary to eliminate any mammal other than deer. Another method for determining the source of damage is to search for tracks. Deer leave a distinctive split-hoofed track that can easily be seen in damp soil or snow. Monitoring your fruit plantings for damage is an important, ongoing process and the first step in a successful management plan.

Legal Status

White-tailed deer are classified by the Pennsylvania Game Commission as a game mammal. As such, they are protected. Deer may be harassed throughout the year, but harming deer is prohibited outside of the legal hunting season, unless your livelihood comes from growing crops or fruit.

Damage Control

In Pennsylvania, the white-tailed deer is a protected game species. The game commission is authorized to manage the size of the deer herd through regulated hunting of antlered and antlerless deer.

Hunting

As a landowner, you should encourage hunting in your area, especially if your fruit plantings are subject to heavy deer damage. Posted areas serve as refuges for deer during the hunting season and might compound the damage to an orchard by concentrating the deer population. Before opening the area to hunters, make sure the orchard is a safe area for hunting. Consult your local wildlife conservation officer for information on opening your land to hunters, or on eligibility requirements for hunting.

Repellents

Repellents are most effective when integrated into a damage-control program that includes fencing, hunting, and several types of repellents. Apply repellents at the first sign of damage to prevent deer from establishing a feeding pattern at the site. Area repellents include tankage (putrefied meat scraps), ammonium soaps, bone tar oil, blood meal, and human hair. Contact repellents work by taste and must be applied directly to the plant. These repellents work best if you apply them in the dormant season on dry days when temperatures are above freezing. Examples of contact repellents are putrescent egg solids, thiram, and hot pepper sauce (capsaicin). Remember that whenever you apply a commercial repellent, you are required by law to comply strictly with the label. Home remedies often have limited success.

Human hair can be obtained from a local barber shop and placed in small bags (cloth or plastic--if plastic is used, punch three to four holes in the bottom). Tie up the tops and hang them around the garden or individually in trees. Soap bars can be placed in individual trees. Blood meal and tankage can be hung around the perimeter of the planting, initially 20 feet apart and then closer together if needed. Place these items about 30 inches off the ground, about the average height of a deer. Remember, success depends upon early preventative monitoring, as well as on alternation of materials.

Repellents containing denatonium saccharide, such as Ro-Pel, have been found to be less effective. There is little evidence to suggest that the bittering agent, denatonium saccharide, works as a mammal repellent. These products are taste repellents that may only be applied to plants during the dormant season. Because they are taste repellents, the new growth in the spring is not protected. Denatonium saccharide, including Ro-Pel, is not approved for rabbits. However, it is an approved deer repellent.

Repellents have variable results--what works for one grower might not work for another, and success differs from year to year. Some repellents do not weather well and require repeated applications during the season. Also, if deer are very hungry and the area lacks other more palatable food resources, they might ignore the repellents. Success must be measured by how much the damage has been reduced since it is rarely eliminated. In areas where deer density is low and damage is light, repellents may be a cost-effective part of your IPM strategy.

Fencing

Fencing deer out of the orchard is the most efficient way to reduce damage when deer density is high and damage is extensive. The conventional 8-foot woven-wire fence effectively excludes deer by forming a barrier around the orchard. The fence consists of two widths of 4-foot woven wire and 12-foot posts. To prevent deer from crawling under the fence, keep the wire close to ground level. Unfortunately, deer-proof fencing is expensive, but it is effective, long lasting, and requires little maintenance.

An alternative to barrier fencing is an electric fence. This type of fence is designed to change the deer's behavior. Although deer can easily jump an electric fence, they will instead try to go through or under it. An electric fence takes advantage of this behavior and successfully trains the deer to stay 3 to 4 feet away from the wires.

Researchers at Penn State have developed a low-cost, five-wire electric fence. Through tests conducted statewide, the design has shown to be an adequate means of deer control. The fence incorporates high-tensile steel wire; in-line wire strainers; and high-voltage, low-impedance energizers. High-tensile fence can absorb the impact of deer and tree limbs, thereby eliminating some of the problems associated with soft-wire fences. In addition to Penn State's five-wire fence, other high-tensile electric fence designs are available.

The disadvantages of electric fences include required high maintenance and regular inspections. You must maintain a 6- to 8-foot-wide mowed strip along the fence perimeter to discourage deer from jumping and to decrease the weed load on the fence. You must also regularly check the electric current to ensure that the shocking power is sufficient for turning the deer. The advantages include a relatively low cost and, when properly maintained, a long life.

Scare Tactics

Another method of deer control in orchards is the use of guard dogs. Deer quickly learn the extent of a dog's range if it is chained. But free-ranging dogs can deter deer from feeding in any part of the orchard. An electronic containment fence can be buried or placed on an existing fence. This will keep the dogs in the orchard but allow them free access to all areas. Most dogs will patrol the edge of their territory; therefore, a closely mowed strip along the fence line will enable them to patrol the entire area. Herding breeds are the most effective because of their natural tendencies to chase animals. Long-haired breeds may be more apt to patrol in colder weather and therefore come in contact with deer in more conditions than the shorter-haired breeds. Place dog houses and feeders near established deer trails if they exist in your orchard. This will increase the likelihood that the deer will come in contact with the dog. Place dogs in the containment approximately one month before damage is anticipated. This will allow the dogs to get used to the containment system and the area.

Summary

Deer damage management is a complicated issue with many alternatives that depend upon financial considerations and the amount of damage that can be tolerated. A combination of control methods such as fencing and repellents is most effective. If possible, opening your orchard to hunters after considering safety and zoning regulations is a good way to reduce the deer herd on your property.

Ref #3

Hard Numbers

Recently, researchers at Utah State University completed a study of wildlife mortality along more than 600 miles of fences in the rangelands of northeastern Utah and northwestern Colorado (Harrington 2005, Harrington and Conover 2006). By repeatedly driving and walking fencelines over two seasons, they tallied the number of mule deer, pronghorn and elk carcasses they found caught in fences and lying next to fences. They also studied which fence types caused the most problems. Here are their key findings:

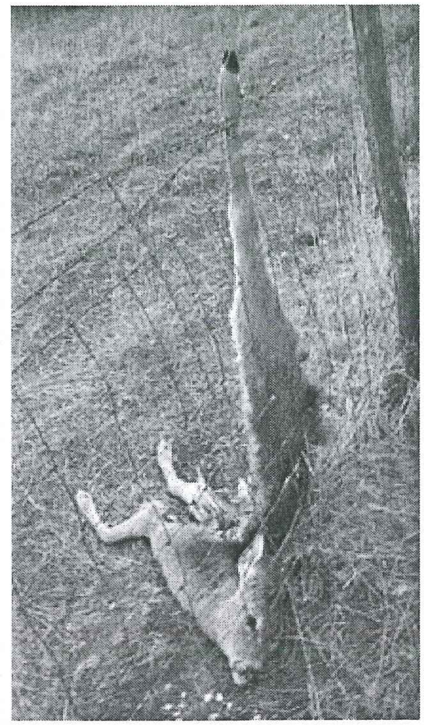
Snared and Entangled

- On average, one ungulate per year was found tangled for every 2.5 miles of fence.
- Most animals (69% of juveniles and 77% of adults) died by getting caught in the top two wires while trying to jump a fence.
- Juveniles are eight times more likely to die in fences than adults.
- Mortalities peaked during August, when fawns are weaned.
- Woven-wire fence topped with a single strand of barbed-wire was the most lethal fence type, as it more easily snared and tangled legs between the barbed-wire and rigid woven-wire.
- 70% of all mortalities were on fences higher than 40".

Blocked and Stranded

- Where ungulates were found dead next to, but not in fences, on average one ungulate per year died for every 1.2 miles of fence.
- 90% of these carcasses found near fences were fawns lying in a curled position – probably separated from their mothers when they could not cross.
- Most of these indirect mortalities were found next to woven-wire fences.

Rory Karhu



Randy Gazda

Bryce Andrews

Above: Elk, deer and other ungulates can suffer a terrible death if their legs tangle in fences. Landowners have the sad and frustrating job of clearing out carcasses and repairing wildlife damage to their fences.

Left: Antlered animals can become fatally tangled in poly rope fence and loose barbed wire. Maintaining fence tension and using high-tensile wire for electric fences prevents such tragedies.

Ref #4

WILDLIFE

List of Issues
Current Issue
Category: BioOne.1
Aims & Scope

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Online ISSN: 1937-2817
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37/162 - Zoology

Journal of Wildlife Management

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https://doi.org/10.2193/2008-463

Assessment of Abilities of White-Tailed Deer to Jump Fences

Kurt C. Vercauteren, Timothy R. Vandeelen, Michael J. Lavelle, and Wayne H. Hall

The Wildlife Society

[+] Author & Article Info

1.8 meters = 5.9 Feet
2.1 meters = 6.9 Feet
2.4 meters = 7.8 Feet

Abstract

There is a need for insight into fence heights required for impeding white-tailed deer (*Odocoileus virginianus*). We evaluated the ability of wild-caught deer to jump progressively taller fences and documented deterrence rates of 0% for fences ≤1.5 m followed by increasing deterrence rates of 14% at 1.8 m, 85% at 2.1 m, and 100% at 2.4 m. We documented 100% deterrence rates during 5 additional experiments with different deer and the test fence at 2.4 m, a common height of fences at captive deer facilities. Our results will be valuable to those managing spread of wildlife diseases, deer–vehicle collisions, and agricultural damage.

Keywords: containment, exclusion, fence, jumping, *Odocoileus virginianus*, white-tailed deer, Wisconsin

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Sent from my iPhone

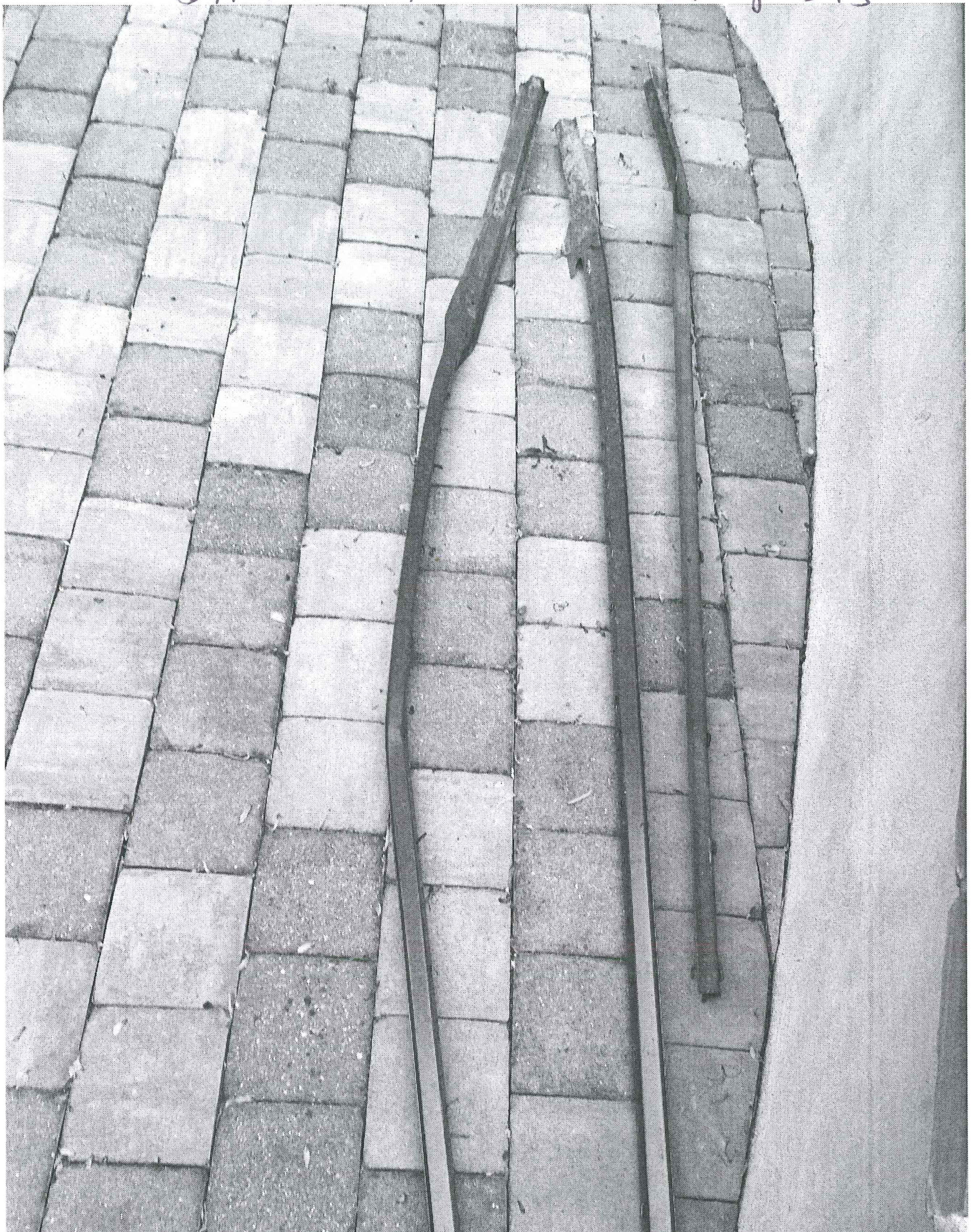
Although difficult to see
There are at least a half
dozen deer in our backyard
on a recent afternoon

Deer in our backyard including many bocks


08.20.2017 03:56:00


08.15.2017 08:32:22

DAMAGE TO our Steel posts



[EXTERNAL]

Margaret Jackson <mmjackson101@gmail.com>

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To:Jackson, Margaret <JacksonM@MLHS.ORG>;

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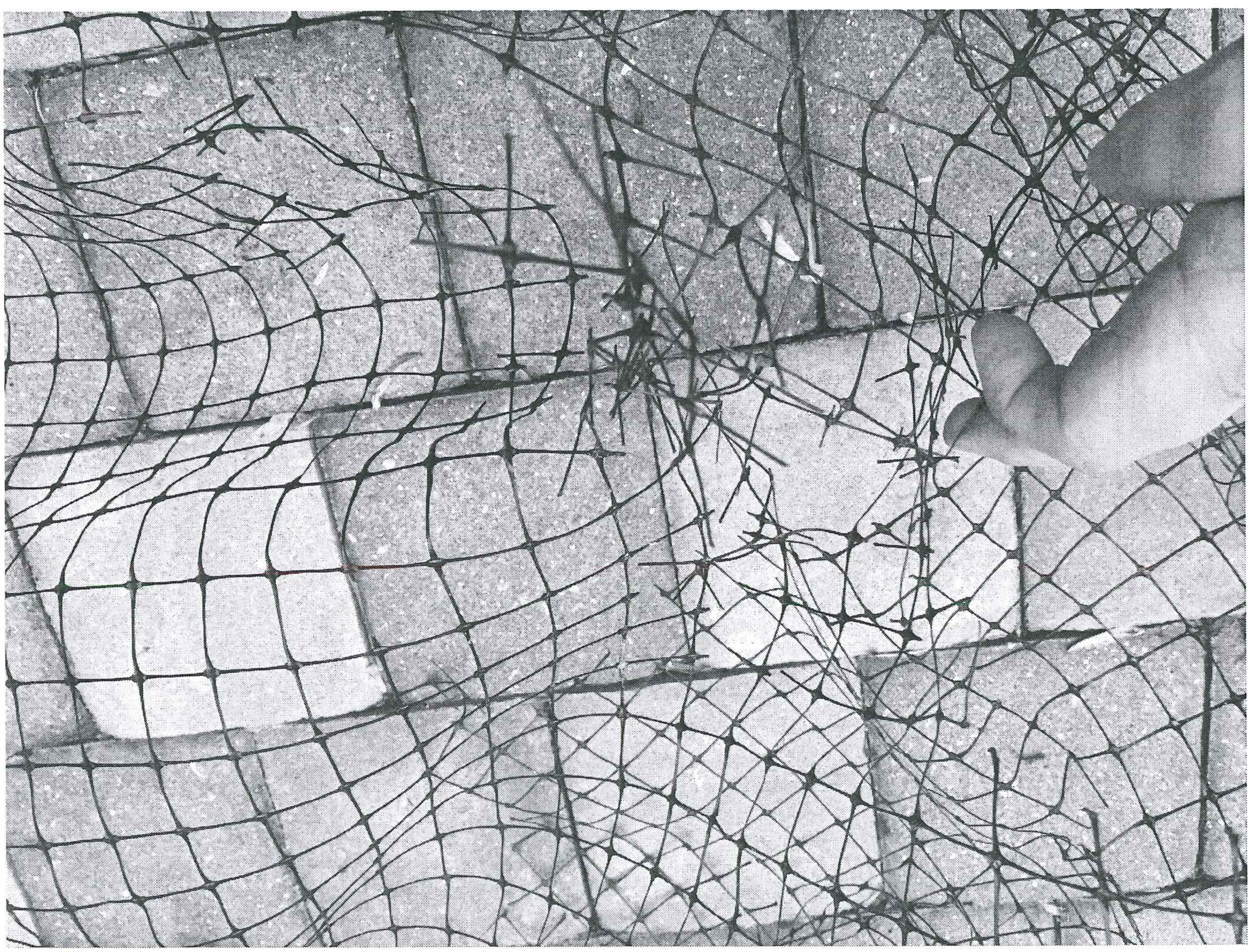
DAMAGE TO POLY MESH FROM DEER



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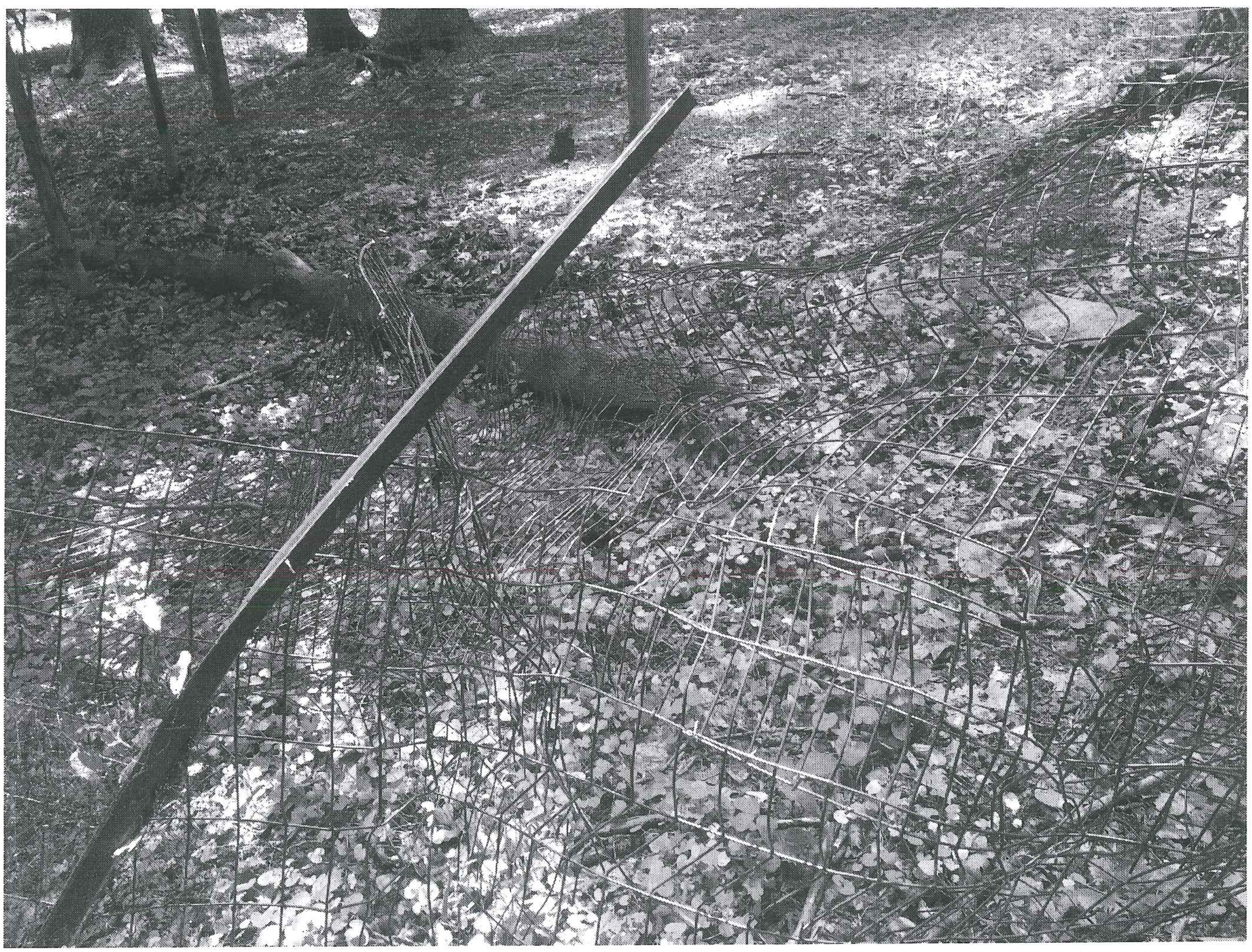
DAMAGE TO OUR Fence from Deer



[EXTERNAL]

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Mon 5/28/2018 8:40 PM

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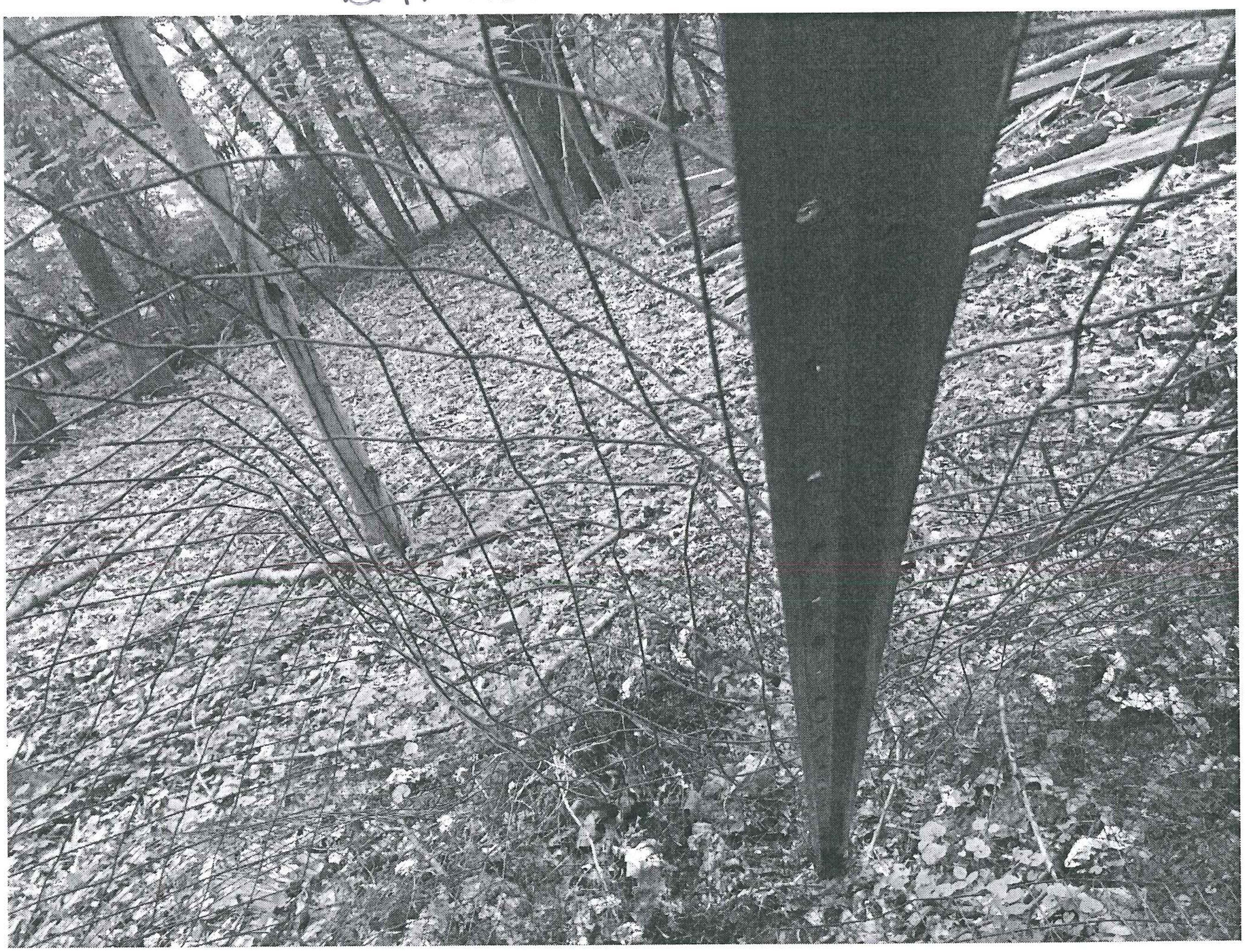
DAMAGE TO OUR FENCE FROM DEER



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Margaret Jackson <mmjackson101@gmail.com>

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View of Fence to EAST WESTTOWN neighbor