With deer and fall turkey seasons rapidly approaching, it is time to dust off that gear, safety check those tree stands and harnesses, rig out the folding stools and overhaul our tackle.

This edition of the newsletter will visit deer anatomy and shot placement, delve into the color vision characteristics of deer, and will touch on the frightening subject of Chronic Wasting Disease. (CWD).

RI DEM, as of this writing reports no cases of CWD have been identified in our state herds.

The same was true in Arkansas’ deer population—until March of this year when a 2 1/2 year old doe found dead—changed all that.

What was thought to have been a clean herd had in fact been suffering CWD for over a decade undetected. Current figures from Arkansas indicate a 23% infection rate.

More frightening still, for Rhode Island’s white tails is that CWD is no longer limited to west-
Chronic Wasting Disease in Arkansas Deer...from 0% in 2015 to 23% in 2016

Chronic wasting disease was first detected in a 2½-year-old, hunter-harvested, female elk near Pruitt, about 12 miles east of Ponca. The elk was shot Oct. 6, 2015, but the samples from that annual testing group were not confirmed CWD positive until Feb. 23, 2016.

CWD was confirmed in Arkansas's white-tailed deer herd March 8, 2016, when a 2½-year-old female deer that was found dead near Boxley Valley tested positive for the disease.

The AGFC has completed its first phase of CWD monitoring, and has confirmed that the disease has a prevalence of 23 percent in Newton and Boone counties. Of 266 randomly collected wild deer, 62 were found to have the fatal disease.

Phase two of the CWD monitoring effort will be to determine how far the disease has spread in Arkansas. Wildlife biologists and wildlife officers across the state will collect road-killed deer and deer reported sick or dead from the public to test them for the disease.

<table>
<thead>
<tr>
<th>County</th>
<th>CWD-positive deer</th>
<th>CWD-positive elk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newton</td>
<td>90</td>
<td>5</td>
</tr>
<tr>
<td>Boone</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Carroll</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Madison</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Pope</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Recent outbreaks of Chronic Wasting Disease (CWD) in wild Cervids (deer) in other states has required Rhode Island to conduct monitoring of our wild deer herd in order to allow early detection and rapid response should we discover an outbreak here. Once the disease develops there is no treatment and it is always fatal in deer. No cases of human disease associate with CWD have been reported. Early detection and rapid response is critical if we are to keep our deer herd healthy and free of this disease. The ecological and economic importance of this surveillance effort is vital to all sportsmen, livestock owners and the general public who enjoy deer. All testing is coordinated by the RI DEM Division of Fish and Wildlife. See page 3.
HOW DEER SEE THEIR WORLD

According to research conducted from August 24 to 29, 1993, at the University of Georgia D. B. Warnell School of Forest Resources, in Athens, Georgia and summarized by Jay Neitz, PHD; Vision Scientist, deer have only two classes of cone photoreceptors and therefore, have only dichromatic (two-color) vision.

(In comparison, humans have three cone photoreceptors termed red, green and blue.)

One of the two cone photoreceptors detected in deer is similar to the human blue cones; the other is similar to human green cones. Thus, compared to humans, deer effectively lack red cone photoreceptors. Thus, the color vision capacities of deer are, at best, limited compared to humans as they lack the photoreceptor basis for seeing differences in the color of objects that reflect middle-to-long wavelength light, e.g., yellow-green, green, yellow, orange, and red.

For this newsletter I thought it would be interesting to see with a deer’s perspective.

Presented are several examples of scenes depicted with all three colors and then without the red. The ultraviolet aspects of a deer’s vision are not considered.

RI DEM CWD SURVEILLANCE GOAL

Our surveillance goal is to obtain fresh tissue samples from harvested or dead deer in all areas of Rhode Island to test for CWD. We will target samples that include hunter harvested deer, any “sick” deer reported and road kills.

We ask the public to report any sick deer (poor body condition with ribs showing, drooping head and ears and excessive drooling) immediately to the DEM Fish and Wildlife 789-0281 or Environmental Police at 222-3070. See page 6.
Bowhunters have a responsibility to make quick kills and recover all game. One complaint that members of the public who do not hunt have about hunters is "slow deaths, wounded and un-recovered animals." Accurate shot placement is the key to a quick kill and game recovery. Necessary ingredients of good shot placement are knowledge of how a hunting arm harvests game, shooting only within one’s ability, and knowing the game animal's internal anatomy. The future of hunting and a hunter's self-respect depend on his ability to efficiently harvest game.

**How an Arrow Works:** Arrows tipped with razor sharp broadheads are designed to cut. Arrows harvest game by cutting arteries and veins resulting in blood loss. In addition to severe bleeding, arrows shot through both lungs cause the lungs to collapse, causing rapid death through suffocation. Arrows can cut through softer bones like ribs, but arrows shot from even a very heavy bow will rarely penetrate heavy bones found in the shoulder, hips, head and neck. Thus, both razor sham broadheads and careful shot placement are crucial to game recovery.

**Internal Anatomy of Common Game Animals:** The internal anatomy of other hooved big game animals (e.g. elk, moose, caribou, sheep, pronghorn and goat) are very similar to the deer except in size. A spot in the center of the lungs or slightly lower should be a bowhunter’s target every time. An arrow in the lungs will bring down the largest game, and the advantage of this shot is that the lungs are relatively large and surrounded by other vital organs: the heart is below, the spine Internal Anatomy White-Tailed Deer and aorta (a major artery) are above, and the liver and the spleen are behind. Hunters using firearms have many more choices than bowhunters. A bullet striking either the heart, shoulder, head, spine or lungs is fatal to big game animals due to the massive shock and tissue destruction involved. Once again, the chest area offers the best lethal target.

**Where to Aim - Broadside:** Broadside game represents the best bow shot because it requires the least amount of penetration to reach the vital organs, which is especially important in large big game animals. The broadside shot is also the best single angle for accomplishing a double-lung hit, resulting in the collapse of both lungs. Find the best aiming point on a deer or other hoofed big game by picking a spot halfway up the side of the animal and about a hand’s width behind the hollow of the shoulder. Or, in your mind’s eye, eliminate the head, neck and tail. Then, divide the animal equally both vertically and horizontally. Hold on the spot where these imaginary lines cross, then aim about six inches forward. This is called the "cross hairs" method of picking a spot. Both methods will help you put an arrow in the center of the vital area by enabling you to pick a spot rather than shooting at the whole animal. Remember, an arrow will penetrate the ribs, but be careful to avoid the shoulder bone. Wait until the near leg is forward and concentrate on a spot behind the shoulder. Avoid head and neck shots when bowhunting. The brain and spine are small targets protected by heavy bone. The only artery of any size in the neck is the carotid artery (which in a deer is only the size of your bowstring). Wait for the chest shot behind the shoulder!

**Where to Aim - Quartering Toward:** This is one of the poorest bow shots and should not be taken. Picking a spot behind the shoulder will result in the arrow barely missing the vital organs and angling back into the stomach and intestines. Heavy shoulder bones shield the majority of the vital organs from penetration by arrow. An error of only on inch or two will result in a miss or a non-fatal hit in the shoulder. Another disadvantage of this angle is the possibility that the animal will see the hunter drawing his bow. Wait for the animal to pass by and take a broadside or quartering-away shot.

**Where to Aim - Head-On Shots:** This is a very poor shot for the bow. The vital area is the chest between the shoulders, which is an extremely small target. The animal must have its head up to expose this small target area, and it will
Where to Aim - Rear-end Shots: This is a shot all responsible bow hunters will pass up. The only major target in the rear quarters is the femoral artery, which is smaller than your little finger and extremely well protected by heavy leg and hip bones. Also, the hindquarters have very heavy muscle tissue which, together with the heavy bone structure and viscera, make it a long, questionable journey for an arrow to get up front to the vital organs of even a small deer.

Where to Aim - Elevated Stands: Elevated stands, particularly tree stands, are commonly used by both firearms hunters and bowhunters. The change in the shot angle makes little difference to a hunter using firearms, but results in a smaller portion of the vital area being exposed to a bowhunter. Position of bones in relation to the vital organs changes more and more as you climb higher. The back bone and shoulder blade shield more and more of the chest cavity as the angle gets steeper. This causes the vital area to become narrower. To avoid the shoulder blade on a broadside animal when shooting from an elevated stand, aim farther behind the shoulder than you would from the ground. Many experienced bowhunters suggest that you wait for the animal to travel a few more feet and take a quartering-away shot. Complete penetration will result in a good blood trail, so avoid bones that could prevent the arrow from exiting low in the animal. Elevated stands also make it more difficult to make a double-lung hit. Consider the angle of the shot when deciding how high your stand should be. Bowhunters should be sure to practice from elevated stands before hunting. Shooting down at narrower targets is very different than shooting horizontally at targets on the ground. Always wear a full body harness when practicing and hunting from elevated stands.

TO PEE OR NOT TO PEE THAT IS THE QUESTION

Deer attractants using farm raised urine and byproducts (and all commercial products do) risk introducing CWD into regions heretofore CWD negative. This is why, in June 2016, the Archery Trade Association launched its new Deer Protection Program:

According to ATA (www.archerytrade.org) with help and advice from the nation’s top CWD experts and state wildlife agencies, the ATA spent the past two years working with its Scent Manufacturers and Urine Providers committee to self-impose protective restrictions on their products and the deer/elk facilities that provide urine for those products.

Scent manufacturers enrolled in the ATA program can display the ATA’s “Seal of Participation” label on scent products that originate from facilities participating in the program. “The seal demonstrates that the supplier and manufacturer are doing all they can to prevent CWD from harming our nation’s wild cervid populations,” said Mitch King, the ATA’s director of government relations.

King said the original list of participating scent manufacturers and urine-providing facilities represents about 95 percent of the deer/elk scent-based products used by hunters. The initial list included 16 manufacturers: American Outdoors Inc./Mrs. Doe Pee, Buck Baits LLC, Buck Bomb/Hunter’s Specialties, Buck Stop Lures, Black Widow Deer Lures LLC, Code Blue Scents, Conquest Scents, Doc’s Deer Scents, Indianhead Elk, Indianhead Whitetails Inc., Killbuck Scents, Martine’s Deer Scents, Nationwide Scents, Portland Outdoors/Top Secret Scents, Robinson Outdoor Products, Tink’s, and Wildlife Research Center Inc.

Another goal of the ATA Deer Protection Program is to increase CWD awareness among hunters. “A sad reality is that agencies dealing with CWD have struggled to engage widespread interest and concern among the nation’s hunters,” King said. “This program’s success will depend on hunters recognizing the ATA Seal of Participation when buying scent products. That’s why this program also includes marketing and outreach efforts about CWD to help hunters understand how their buying decisions and actions afield can help control CWD’s spread. We will encourage hunters...
**SEPTEMBER 10TH VETERANS CHARITY SHOOT**

BOW HUNTER RELEASE: Women—Ginger Cann 257  
BOWHINTER FINGERS: Men—Mat D’Ilvea 172, Peter Perkins 167  
RECURVE: Men—Larry Whitford 204, Al Kisefica 189  
LONGBOW: Men—Steve Richard 232  
PRIMATIVE: Men—Mike Dmytryshyn 215  

**SEPTEMBER 11TH MONTHLY 3D SHOOT**

TOP GUN: Men—Peter Dyer 235; Women: Pia Perry 178  
BOW HUNTER RELEASE: Men—Chris Connolly 304, Bob Connolly 290, John Dexter 279  
LONGBOW: Men—Paul Fahlman 227, Bob Booth 202  
HUNTER CHALLENGE-Modern: Men—Darren Hill 328, Ben Wiitala 274, Damon Coleman 260

**EDITOR’S NOTE:** I first learned about CWD in 2012 when preparing for a CO elk hunt. Northern CO in particular has had CWD bad for 30 some years in the elk population and the CO big-game on line training site cautions about harvesting infected animals. Recently the problem in white tails was detailed in Bugle magazine from the Rocky Mountain Elk Foundation. They detailed the Arkansas findings; According to that article CWD can live in soil, attach to rocks and wait. After reading RMEF’s article I checked RI DEM data including the eastern CWD map on page 2. Interestingly considerable RI study result data I found on the RI CWD Alliance site was ten years old. Not a comfort considering the Arkansas issue. Check out http://cwd-info.org/cwd-overview for detailed information on CWD.

**CHRONIC WASTING DISEASE: INFORMATION FOR THE RHODE ISLAND HUNTER**

New regulations have been implemented regarding importing, releasing, feeding and baiting of cervids in Rhode Island due to the threat of chronic wasting disease. Although CWD has not been documented in Rhode Island, the disease was confirmed in New York in March 2005 and in West Virginia in September 2005. The new regulations are summarized here. For the complete text, see: www.dcmr.org/programs/4ntos/4ish/wildlife/cwdidx.htm.

| Cervids from CWD Endemic Areas (any state, or county bordering a state, where CWD has been diagnosed—see map on reverse) | PROHIBITED | Possessing or importing:  
|--------------------------------------------------|------------|-------------------------------|  
| Cervids from Non-CWD Areas: | PROHIBITED | Possessing or importing:  
| requirements for marking imported carcasses and parts:  
| All carcasses and parts of any cervid imported into Rhode Island must have a legible label bearing the following information: the species of animal, the State, Province or Country where the animal was taken or where the shipment originated, the name of the person who took the animal or the name of the shipper, the address of theailer or shipper and, for transport through the State, the destination of the shipment. Hunter harvested carcasses, parts or meat taken outside Rhode Island shall also bear the marking, tagging or labeling required by the State where the animal was taken.  
| Feeding and Baiting Cervids in Rhode Island: No person shall feed cervids at any time in Rhode Island except:  
| Under a license or permit issued by the Department of Environmental Management for scientific research within an enclosed pen;  
| By planting, cultivating, or harvesting of crops directly associated with agricultural practices, including planted wildlife feed plots;  
| By distribution of food materials for livestock directly associated with agricultural practices;  
| By distribution of food material for legally possessed captive cervids, pursuant to a permit;  
| By cutting of trees or brush;  
| By elevated bird/squirrel feeders providing seed, grain, fruit, worms, or dust for birds or squirrels located within 100 feet of an occupied dwelling.  
| Distribution of Certain Food Materials: No person shall feed wild or captive cervids with any material that contains protein derived from any mammalian tissues.  

**Rhode Island CWD Surveillance**

Deer heads will again be collected during the upcoming deer season. Your cooperation is essential. We cannot be declared CWD-free without meeting our quota for deer testing. Hunters submitting fresh deer heads must supply the following information: Name, address, location of harvest, date, sex & age of deer.