

The photograph at left, generated by computer, shows what a deer would see when the Optifade pattern system is used by a hunter. The photo at right is what the human eye would see. Gore

# Technology gives hunters another edge

Gore looks to studies of deer to develop camouflage pattern

By KEN MAMMARELLA  
The News Journal

W.L. Gore & Associates' new camouflage technology for hunters is touted as "the science of nothing."

The creation of the revolutionary Optifade Concealment involved making an eye chart for deer, learning how deer perceive colors and shapes and having humans using computers calibrated for deer vision. All in all, lots of wow moments for the Newark-based firm.

It all began in August 2007 with a meeting, recalls David Dillon, a Newark resident who, as category leader for fishing and hunting, led the development with Brad Yeomans, who works for Gore in Georgia.

"There are a lot of requests that Gore get into the camouflage business," Dillon said. "Brad and I left a meeting where a customer had said that camouflage had become the fashion of hunting — looking good to fellow hunters rather than being effective camouflage."

That was enough to spur them to think about camouflage from the prey's perspective. Dillon said the core was about eight associates at Gore on a fast-paced project, and 75 or so involved at some point.

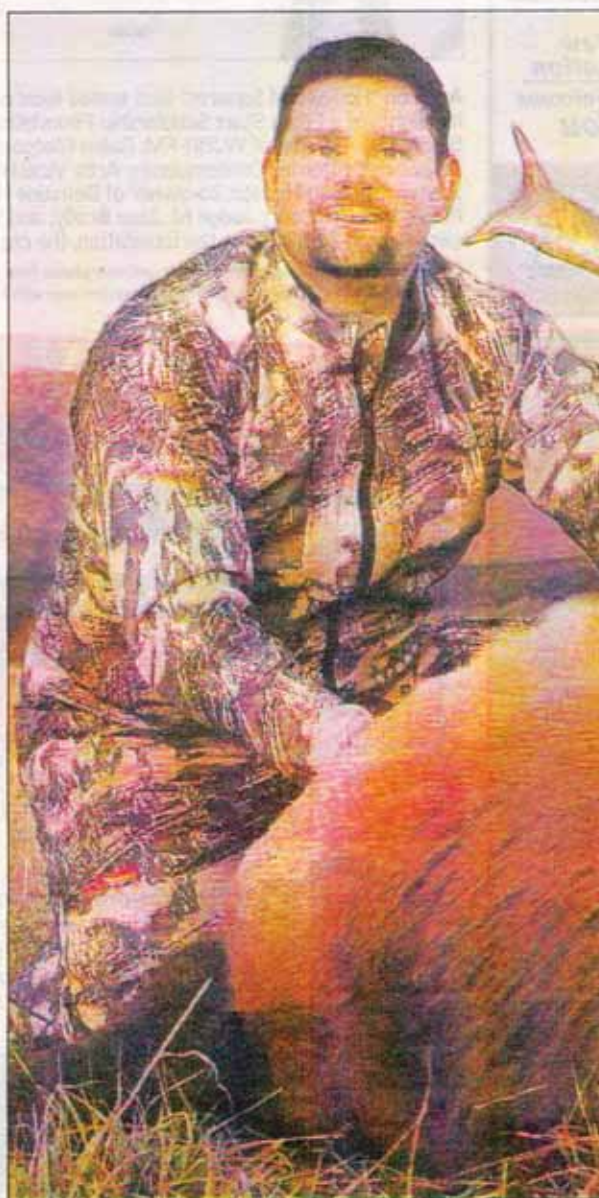
Work focused on what deer see — and don't:

- "Deer see color," Dillon said. "It's a common misconception that they don't. They just see less." One of the videos on [www.optifade.com](http://www.optifade.com) notes that deer see blue, yellow, white, black and gray. So, deer see the orange blaze that Delaware and other jurisdictions require for rifle hunters "as a big block of gray."

- Deer instinctually understand the shape of other animals, particularly ones that enjoy venison. Dillon noted that deer largely will ignore the blocky shapes of vehicles, no matter what's inside, but flee when people, with their distinctive leg and arm shapes, get out.

- To avoid being seen by prey, stalking carnivores, like tigers, use big swatches of color, like stripes, called macropatterns. Patient carnivores, like leopards, use smaller elements, like spots, called micropatterns. Optifade does both to break up the silhouette of hunters and have them fade into the terrain.

Here's how Gore literature describes it: "The unique micropattern considers the way a deer or other ungulate perceives color, the ratio of positive to negative space and other visual elements to create an effect that allows the hunter to blend with the animal's perception of the environment. The macropattern breaks up the symmetry of the human body so that, if a hunter is



Courtesy of David Dillon  
David Dillon, of Newark, recently bagged an elk while wearing an outfit using the Optifade pattern he helped develop.

## IN STORES NEXT YEAR

Gore associates are testing Optifade patterns in the field and expect "an entire system" to be available in catalogs around May and in stores next year in late spring. Sitka Gear, of Napa, Calif., has an exclusive deal for hats, gloves and outerwear. As part of the deal, Sitka items will use Gore-Tex and Windstopper fabrics.

Gore is working with BowTech of Eugene, Ore., on Optifade for bows and is researching Optifade for shoes for 2010.

For videos and eventually more information, go to [www.optifade.com](http://www.optifade.com).

detected, the animal will not be able to identify the hunter as a predator."

Gore contracted out some analysis to Tim O'Neill, whom the firm calls the "father of digital camouflage," and Dr. Jay Neitz, of the Medical College of Wisconsin, who has studied animal vision for 20 years.

Neitz's research for Gore concluded that deer vision is blurrier than human vision. Their 20/40 vision is a trade-off for their ability to see a wider range: 280 degrees vs. 120 for humans, he said on [www.optifade.com](http://www.optifade.com).

After software was developed to create "deer vision" on computer screens, associates who hunt were asked to find the hunter wearing Optifade. Some could, some couldn't. Gore also tested the design for its fashion appeal among shoppers and found it has "an instinctive, positive appeal," Dillon said.

The debut styles of Optifade were designed for deer, elk and similar hoofed animals that live in the rocky, sparsely vegetated terrain of the West, but Dillon is confident that it will be "effective everywhere." Still, Gore associates are analyzing variations for Northern European ungulates and for Eastern deer and waterfowl.

Dillon said local associates who were critical in development include: Dan Tursi, a new product development engineer from Landenberg, Pa.; Cyndy Murphy, an inside sales associate from Cecil County "who wore a lot of hats" in speeding the printing process; and Bill Foster, of Newark, the garments marketing leader.

Dillon estimated he spent eight weeks over the last year away from his family as he worked on the project. But they have their involvement, too: Son Christian has taken camouflage samples to show and tell; daughter Rebecca plays with it, and wife Shelly gardens in it.

Travel also included testing Optifade clothing in Colorado, where he bagged an elk. He was impressed.

"When I shot my bull 200 yards away, a cow 50 yards away didn't notice."

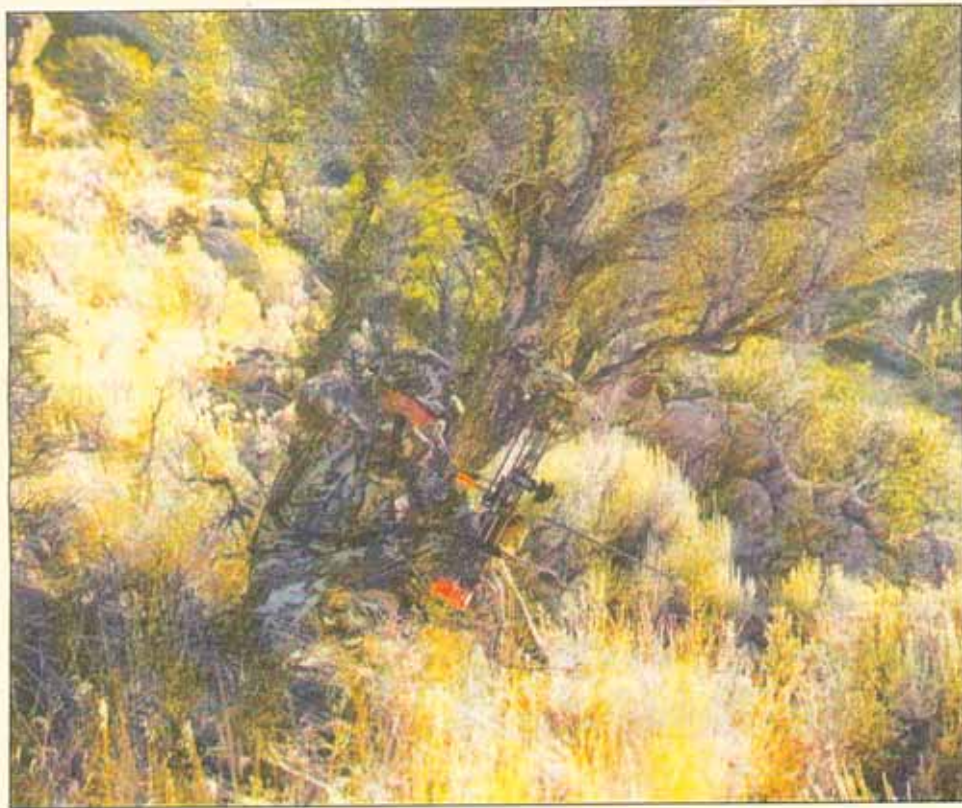
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NCCo

# Crossroads

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# Can you see me now?



W.L. Gore's Optifade Concealment pattern revolutionizes camouflage, as shown by these two photos – a human's-eye view at left and a computer-adjusted view in 'deer vision' at right.

