



Rural Development and Wildlife, Domestic Animal and Human Health Conflicts

James Fearer, DVM
Western Region Animal Health Veterinarian
Animal Health Section
Md. Dept. of Ag.



A Brief History

- Wildlife, domestic animal and human conflicts are not a new phenomenon.
- Approximately 2/3 of the infectious diseases that affect humans are of animal origin.
- Over the last three decades about 75% of new emerging human infectious diseases have been zoonotic.



Some of the Classics

- Bubonic Plague, Black Death
 - Constantinople 540-590 AD outbreak
 - Early 1330's outbreak in China, spreads via commerce channels to Europe
 - From 1347 – 1352 plague kills 1/3 of Europe's population, London outbreak in 1665



Some of the Classics

- Brucellosis, Bang's Disease, Undulant Fever
 - 1897 Bang isolated organism in cattle, Bruce isolates it in humans in 1887.
 - Historically was one of the major public health concerns for the veterinary profession
 - Still a problem today – Yellowstone and buffalo, elk



A Simple Formula

- More rural development = more wildlife, domestic animal, human interaction

Formula Results



Formula Results

following accidental fire

JEFFREY ALDERTON
TIMES-NEWS STAFF WRITER

CUMBERLAND — A week after an accidental fire heavily damaged the Cintas Corp. building at Bowling Green, the company is moving forward in its recovery with all of its employees already back to work.

Pam Lowe, vice president of Cintas corporate communications, said Monday the recovery is the result of "steps that businesses and individuals have taken to help us get back on line."

That recovery included on-site infrastructure repairs that have enabled the company's continuous roll towel processing plant to resume full operation. That operation is located in a second building that Cintas operates next to the building where the fire occurred.

"That's important because that facility supports all of our Cintas loca-

tions, some 40 to 50 plants, that are located east of the Mississippi River," said Joel Bell, Cintas director of engineering operations.

"The Cumberland plant depends on the infrastructure of the building where the fire occurred. A lot of local contractors have helped us, including Consolidated Electric, Columbia Gas, Allegheny Power, and Twigg Plumbing and Heating.

"Through the help of a lot of local vendors, we were able to get part of the plant back within 48 hours," said Bell.

The company official said cleanup work continues in the fire-damaged building.

"We expect to begin reconstruction within three weeks and to be fully operational in 12 to 16 weeks," said Bell.

SEE CINTAS — 2B



Cintas employee James (last name not provided by company official) unloads a delivery truck on Monday with uniforms and mats to be laundered as workers overcome the adversity of a recent fire to maintain constancy in services.

JOHN A. STONE/TIMES-NEWS

Lyme disease increasing problem in Maryland

EMILY NEWMAN
TIMES-NEWS STAFF WRITER

CUMBERLAND — With the arrival of warm weather and ticks, Lyme disease is an increasing problem in Maryland. The Department of Health and Mental Hygiene is helping to educate people through its Maryland Get Ticked Off campaign.

The campaign features educational brochures, posters, fact sheets and magnets that local health departments can distribute to residents to help raise an awareness about the disease. More information can be found at www.marylandgettickedorff.org.

"We need to remember to be careful because tick-borne diseases are on the rise, and ticks can be found throughout the state," said John Colner, DHMH secretary, in a news release.

According to the state department's Epidemiology and Disease Control Program, the number of cases has steadily risen to more than 2,200 in 2007, which is double the number of cases from 2006. Last year, approximately 10 cases of the disease were reported in Allegany County, but many cases continue to go unreported.

"It's hard to know exactly what is

causing the increase," said Katherine Feldman, state public health veterinarian. "People may be coming into contact with the environment more; recreational people may be exposed to more wooded and bushy areas and perhaps there is an increase in animals that carry ticks."

"She also said there is "no sign that Lyme disease is going away."

Lyme disease is the most commonly reported vector-borne disease in the United States. The disease is caused by a microscopic bacterial organism and spreads to people through a tick bite. The deer tick, also

known as the black-legged tick, is responsible for spreading the disease in the northeastern United States and is the smallest type of tick.

Deer ticks are approximately the size of a sesame seed and hard to spot. They are most commonly found in wooded or grassy areas and are carried by the white-footed mouse and white-tailed deer. Active tick season is considered to be from April to October, and ticks can be found within cities and urban areas. In order to pass the disease, a tick must be attached to the host for at least 24

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Piedmont's Back Street Festival

FELLOWS



WUI Expansion and Factors in Resurging and Emerging Diseases

- Emerging infectious diseases have been defined as follows:
 - Those diseases which have appeared in a population for the first time or
 - Those diseases which have existed but are rapidly increasing in prevalence or geographic range



Broadly, 3 Main Causes

- Ecosystem alterations due to human or natural events
- Movement of Pathogens
- Changes in Microbes



Ecosystem Alterations

- Natural – 1993 Southwest U.S. Hanta Virus Outbreak
- Human Actions
 - Agricultural practices
 - Wildlife management practices

Ecosystem Alterations

- Natural/Human Alterations
 - Introduction of Exotic Species
 - Climate Change

Northern Wilds
<http://www.northernwilds.com/pages/News/moose-decline-puzzles-experts.shtml>


Moose Decline Puzzles Experts

Some of the moose are emaciated, while some of the bulls have poor antler development. Researchers haven't put their finger on the cause, yet, but are working to narrow the possibilities as part of an ongoing study. And they're hoping to do it so the herd in the northeast doesn't turn out like the population in the northwest, which has dropped precipitously in recent years and now numbers fewer than 100 animals.

By Joe Albert
Associate Editor, Isabella, Minn., Outdoor News

Mike Schrage has walked up to northeastern Minnesota moose that should have been in the prime of their lives. Instead, they're dead on the ground and, by all appearances, they just tipped over.

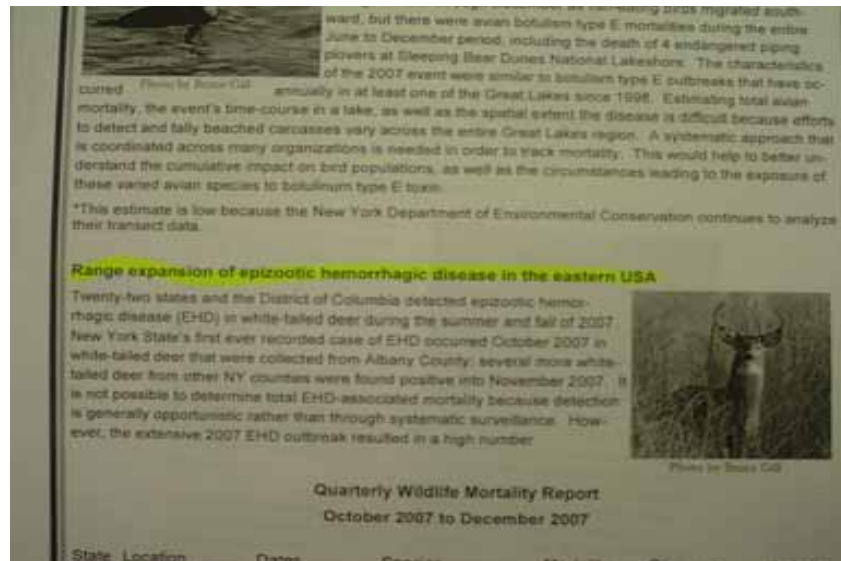
"You come up on these carcasses and it looks like they just laid



Research Biologist Mark Kevch (left) and

Ecosystem Alterations

- Movement of Pathogens
 - EHD
 - Rabies
 - CWD





Ecosystem Alterations

- Changes in Microbes
 - Avian Influenza
 - High path H5N1 has killed more than 240 people worldwide since late 2003.
 - Bird to human spread has been only by direct contact.
 - The fear is that the virus will mutate to enable human to human transmission and a world pandemic could result.

Avian Influenza





Economic Implications

- Cost of Disease Management
 - Direct costs
 - Control and Eradication
 - Depopulation and Disposal
 - Indemnity payments
 - Indirect Costs
 - Tourism
 - Related Industry



Economic Implications

- Deer and Bovine TB in Minnesota
 - The cattle side
 - More than \$3000,000 paid in indemnity on 3,554 animals
 - Increased testing
 - Tracing cattle movement from infected areas.
 - The deer side
 - Potential to disrupt the \$465 million from hunting and the \$535 million from tourism



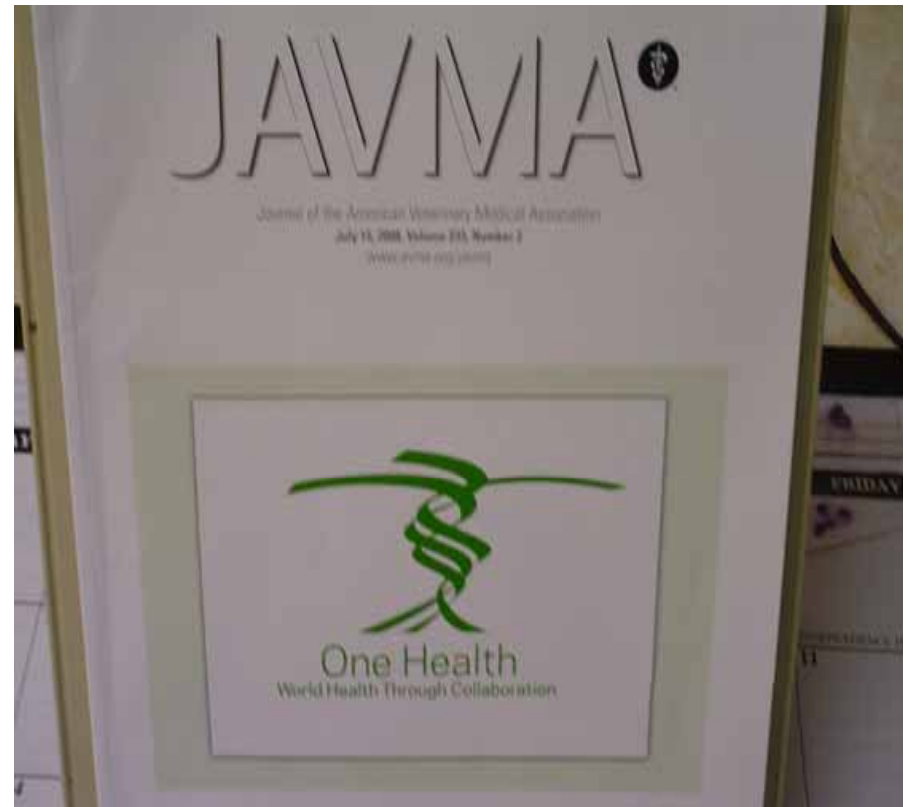
The Challenge of Solutions

- New Approaches in Ecosystem Management
 - Integrating ecological restoration and biological conversation



The Challenge of Solutions

- New approaches in collaboration





The Challenge of Solutions

- Continued Research
 - USGS National Wildlife Health Center
 - American Association of Wildlife Veterinarians
 - Southeastern Cooperative Wildlife Disease Study