



# The Northeast Wildlife Disease Cooperative

Offering wildlife health and disease services in the Northeast U.S.

Phone: 508-887-4933

Email: [nwdc@tufts.edu](mailto:nwdc@tufts.edu)

<http://sites.tufts.edu/nwdc>

## NWDC NOTES

QUARTERLY NEWSLETTER FROM THE NORTHEAST WILDLIFE DISEASE COOPERATIVE

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### Program Updates from the Administrator



#### Webinar for USFWS Refuge Biologists in Region 5

We completed a 3-part webinar on diseases of wildlife, including mammals, birds, reptiles and amphibians, for staff of U.S. Fish and Wildlife refuges, Northeast region. We greatly appreciate the help of Laura Eaton (USFWS, Assistant Regional Biologist, Great Bay National Wildlife Refuge) in coordinating, hosting, and recording the sessions!

#### New Wildlife Pathologist at Cornell University

María J. Forzán was born and grew up in Mexico City. She obtained her MVZ (DVM) degree from the



*María J. Forzán, MVZ*

Universidad Nacional Autónoma de México and worked at a private zoo for a short time before moving to Prince Edward Island, where she obtained an MSC degree working on a parasitic disease of cormorants. Having acquired a taste for pathology during her Master's work, she followed up

with a residency in anatomic pathology, with a special emphasis on wildlife, that started at the University of Connecticut in Storrs, and finished back on Prince Edward Island, at the Atlantic Veterinary College. She became a Diplomate of the American College of Veterinary Pathologists in 2004, while working at Finn Pathologists, a private diagnostic laboratory in England.

After working in England for 3 years, María returned to the Atlantic Veterinary College as a diagnostic wildlife pathologist for the Canadian Wildlife Health Cooperative. As her work on surveillance and research of amphibian diseases grew, she decided to jump fully into the field by enrolling in a PhD program focused on establishing the pathogenesis of ranavirus in a native North American frog. Following completion of the PhD program, María returned to her role as a diagnostic wildlife pathologist at the AVC until, in January 2017, she joined Cornell's Wildlife Health Laboratory team. We are fortunate that María has joined the Wildlife Health Laboratory at Cornell, and the NWDC team so she can share her expertise in wildlife diagnostics, especially amphibian diseases.

#### Necropsy Training for Vermont Moose Mortality Study

In late January a special necropsy refresher training session was provided to the individuals most likely to respond to collared moose mortality events in the first year of Vermont's moose study. A very ripe hit-by-car moose calf was the specimen and in spite of some areas that were too devitalized, emphasizing the important points was possible.



*Photos: Cedric Alexander, VT FW Moose Project Leader*



Photos: Tony Smith, VT FW

A moose calf mortality in mid-March near Norton Vermont provided another opportunity for training in anatomy, necropsy techniques and tissue handling. This calf died without trauma, and was in fresh condition so the value (and working conditions, in

spite of heavy snow) for those present was much greater.

## From the Field

### Splintered Deer Hooves

History and observations relayed by a hunter and the Delaware deer biologist.

Hello again Walt,

Another question for you. Do you have any idea what would have caused the hooves of this deer to splinter like this? It was an adult female. I have this hunter's contact information, if you need any other details.

Thanks, Emily



Photos: Cedric Alexander, VT FW Moose Project Leader

Emily,

These feet are really a mess! There must be more to the story because the structure of the hoof is pretty resilient. The severity of the disruption of that structure makes trauma come to mind, but exactly what could happen does not. Another way this can happen would be a systemic disease, and the little bit I can see of the rest of the deer makes me curious about that since it appears to be thin and having a poor haircoat (these could be false impressions- but do we know if there any other abnormalities observed while it was processed?). Those things said, the connection between the hard horny tissue that covers the hoof and the interior structures is vulnerable to anything blood-borne. Those connections are called laminae (L. layer) and inflammation of them is called laminitis. It is a general term, but Infection by bacteria or fungi of the soft tissues of the sole can also undermine those connections. This is well described in cattle, and now is an emerging disease in elk in the west where *Treponema medium* and 2 other bacteria are believed to be the culprits. These are spirochete bacteria like the agents of Leptospirosis, Lyme disease, and Syphilis. I'm sorry, but much more than that I cannot say. Unless the moment has passed I would caution against consumption of this deer just because these are severe unexplained lesions that reflect the possibility of a disease that may be affecting other parts of the body. If another such case shows up I would definitely submit it to UPENN (Dr. Habeker).

### Abnormal Deer Lungs

History and observations relayed by a hunter and the Delaware deer biologists.

Joe and Emily, I have recently (in last couple of years) noticed quite a few deer which while field dressing, I have to actually cut the lungs from the rib cage, as if they had grown attached. At first I thought that it was from injuries that had healed, but this afternoon I shot a doe that had both lungs attached to the ribs in large areas. Have you heard of this occurring from other areas around the state?

Hi Walt,

Do you have any idea what could cause a deer's lungs to sometimes connect to the rib cage, but not always? I've never noticed this in the deer I've butchered and neither

has Joe. Joe did mention that he's had similar reports from other hunters in the past.

Thanks, Emily

Emily,

Yes, I do remember discussing these with Joe a couple of years ago. When we see these tissue connections anywhere in the body, either pinpoint or some degree of sheets of tissue, we can say with some certainty that the deer has had, or still has, a source of inflammation; an infection may or may not also be present. In the lung the classic source is the very common lungworm that between the larvae and the adult can elicit inflammation from the host that leads to a cascade of cellular events designed to kill the worms and heal any damage they have caused. Sometimes this is limited to the deeper lung tissue; sometimes it extends to the surface of the lung (the visceral pleura). When this happens these byproducts of the inflammatory response can damage the adjacent membrane the lines the interior of the thorax (the parietal pleura). Then, depending on the severity of the inciting cause and how long it lasts, a fibrous attachment can form, which ironically is part of the healing process. These are called adhesions. The longer they are in place the more secure and strong they become. I have seen them firmly attach the entire lung lobe (chronic), and others are small and easily broken down. So in summary, differing degrees of lung adhesions are common, and are the result of the host immune response to some primary inflammatory event. The usual culprits are lungworms, bacterial or fungal pneumonia, or trauma. Hunters may ask "Why have I noticed these lately?" The answer lies with the factors that contribute to exposure and transmission of the inciting cause. For example, if lungworms (these can be seen grossly in the deeper airways) are the cause it may be a result of the presence of conditions that favor the indirect life cycle of the worms, such as unusually moist conditions leading to an increase in the intermediate snail host, or a change in the deer's habitat preference favoring wetter environments, or both.

Let me know if there are additional questions that come up.

Regards, Walt

## Abnormal Rabbit Kidney

### History and observations related by a falconer and the Delaware small game biologist.

My hawk caught an adult rabbit today which had one very odd kidney. The other kidney was normal, nice dark color and surrounded by fat. The odd kidney, closer to the liver, was simply a cream-colored mass, also with fat around it. I cut it open and there was no kidney color, just the creamish, lumpy mass. I kept the kidney in a plastic bag and put it in my fridge if you're interested in it. The rest of the rabbit will be dachshund and hawk poop in the morning. The rabbit was healthy and gave my team a good race. There were some tapeworm segments in the lower g i tract; no surprise. The rabbit was a female. Any idea what that kidney was about? I've never seen that before. Thanks.



Photos: Tony Smith, VT FW

Good morning Walt,

One of our falconers noticed abnormal kidneys (cysts?) in a rabbit. Pictures of the kidneys are attached and messages from the falconer are below. Do you have any idea what would cause this abnormality?

Thanks, Emily

Emily,

Both Dr. Habecker (who I asked for an opinion) and I think this is lymphosarcoma, a malignant neoplasm. Is it possible to still submit the kidney to confirm the diagnosis?

Regards, Walt