



Julie C. Ellis

Director, Northeast Wildlife Disease Cooperative

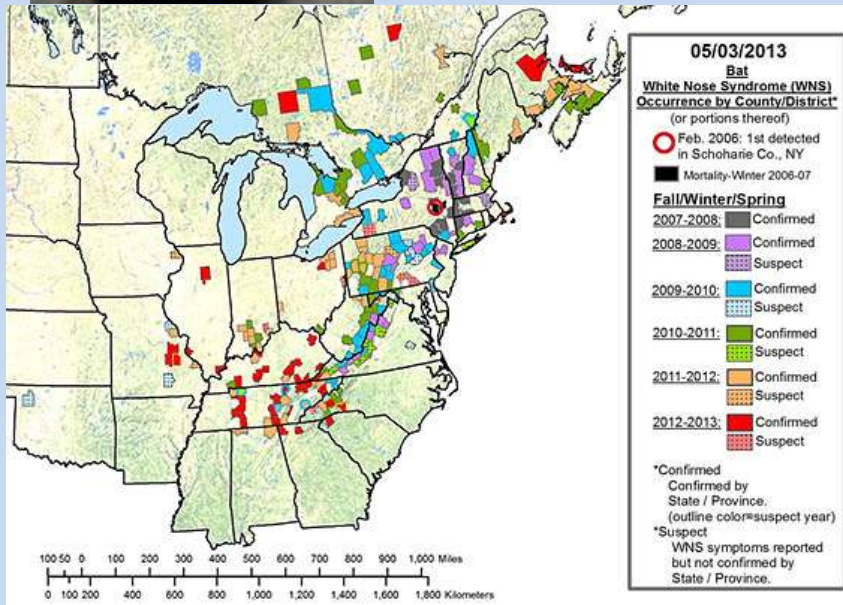
Research Assistant Professor

Cummings School of Veterinary Medicine

Tufts University

The Northeast: a “hotspot” for emerging infectious diseases

White-Nose Syndrome



Bat pops have declined by ~80%

Avian influenza A H3N8 virus in seals



Snake Fungal Disease



Timber rattlesnakes <50% in NH

But, addressing wildlife health has been a challenge in the Northeast

- Wildlife agencies have many other priorities
- Most states lack a wildlife health specialist
- No regional reporting/communications system
- Lack of shared, accessible disease database

Result:

- Low-level mortality or isolated events (possibly signaling an outbreak) often undiagnosed
- Response to disease reactive and sluggish rather than proactive



Needed: A Regional System For Wildlife Disease Response in the Northeast



The Northeast Wildlife Disease Cooperative

A proactive, regional approach to detecting and responding to wildlife disease would save species, taxpayer dollars and would safeguard human health.



Mission and Approach

Mission

To preserve healthy animals, humans, and ecosystems through wildlife health monitoring and diagnostics, cutting edge research, and education and outreach.

Approach

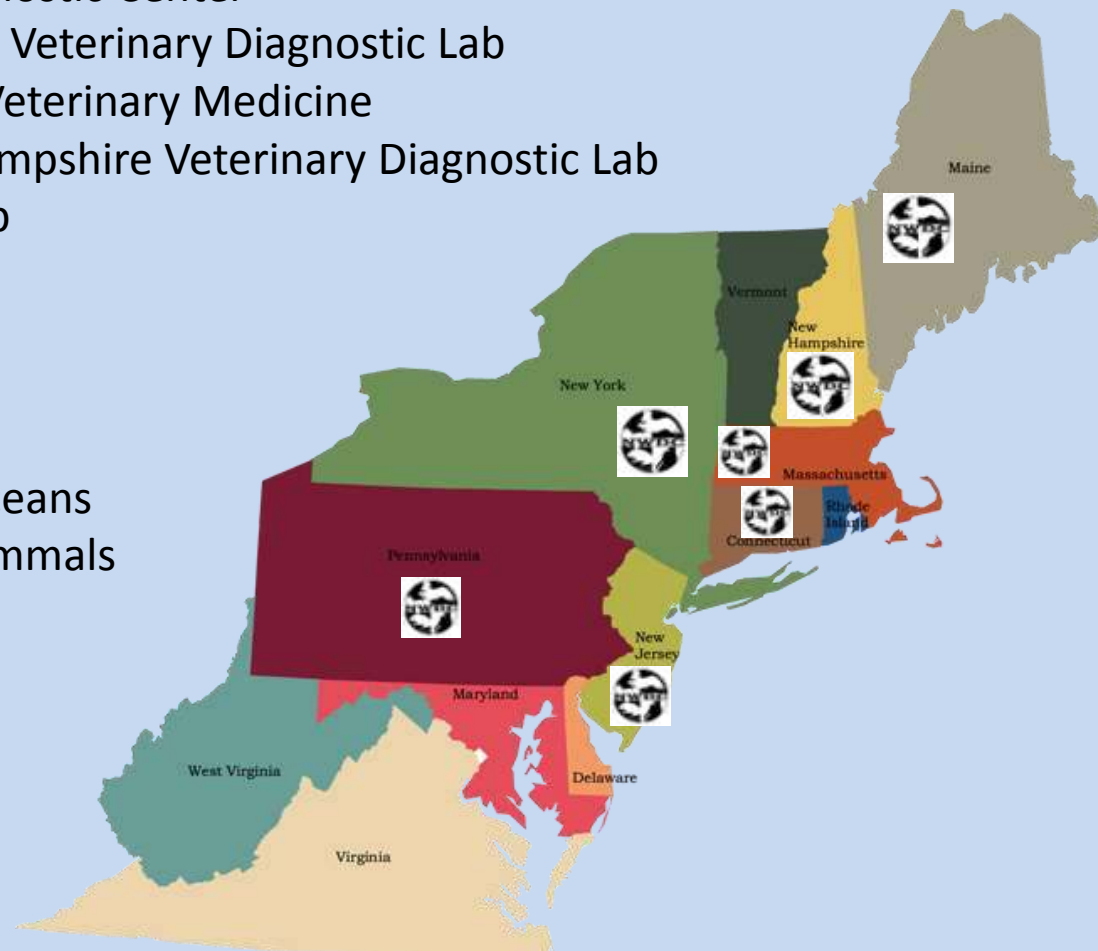
- Align multiple veterinary diagnostic laboratories to provide wildlife health services to members
- Membership by wildlife agencies
- Labs and members collaborate, share data & information

Diagnostic Laboratories and Expertise

New Jersey Department of Agriculture , Animal Health Diagnostic Laboratory
University of Pennsylvania, School of Veterinary Medicine
Cornell University, Animal Health Diagnostic Center
University of Connecticut, Connecticut Veterinary Diagnostic Lab
Tufts University, Cummings School of Veterinary Medicine
University of New Hampshire, New Hampshire Veterinary Diagnostic Lab
University of Maine, Animal Health Lab

Taxonomic

Expertise: Fresh and saltwater fishes
Lobsters and other crustaceans
Marine and terrestrial mammals
Birds of all types
Amphibians and reptiles
Small carnivores
Cervids
Bivalves, cephalopods



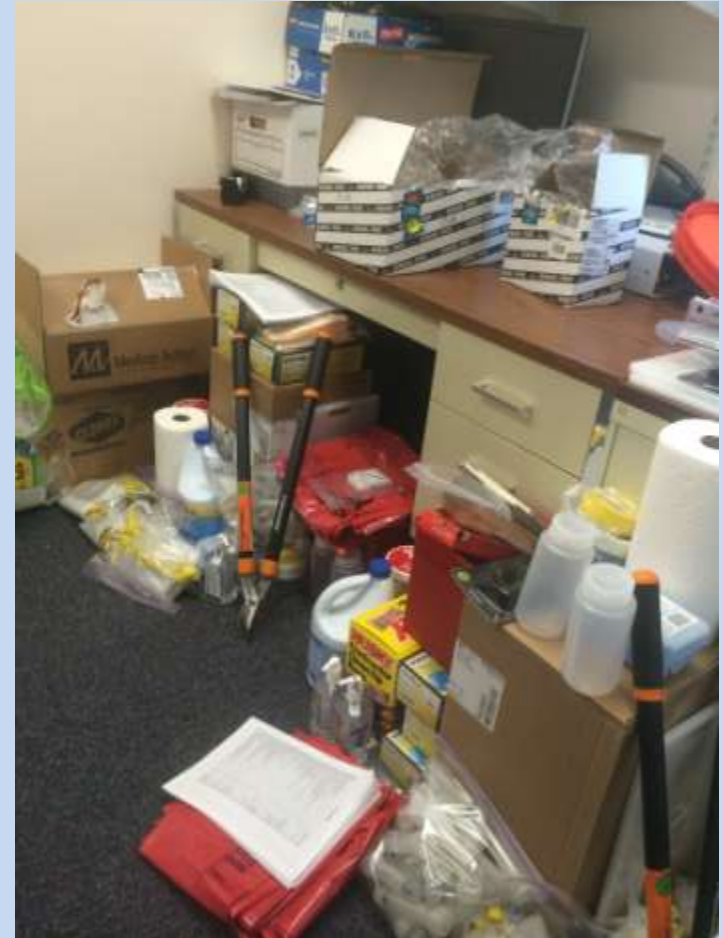
Organizational Structure

- Diagnostics provided to members by their nearest NWDC lab
Diagnostics are “pay-as-you-go”
- Specific disease testing done by NWDC lab with the expertise (e.g. CWD testing, herp diseases)
- Members pay annual fee for other services
- Diagnostic and other data entered into shared database



Organizational Strategy

- Lean operation
- Distributed resources/effort
- Make use of everyone's strengths
- Multiple sources of funding



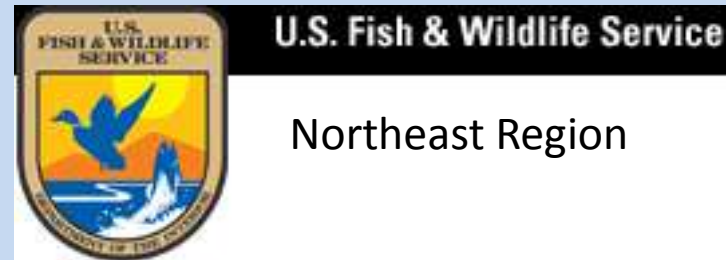
(NWDC headquarters)

Current membership

State Agencies:



And:



Member Services

Dr. Walt Cottrell, NWDC Field Veterinarian

- Advice (email or phone)
- Assistance with research studies
- Training workshops



Suppose you had a moose with head trauma/bacterial infection/potential encephalopathy would you recommend that consumption of muscle meat is ok or no way?

What's wrong with this squirrel?

What causes hair loss in deer?



Diagnostics

- New Jersey's first cases of Hemorrhagic Disease (HD) caused by Bluetongue Virus (BTV) in two deer



- Trichomoniasis (protozoa) in American Kestrels
- Endotoxemia in 12 deer in NH due to winter feeding
- First documented mass mortality of Wood frog tadpoles caused by ranavirus in NH



Field Kits for Wildlife Disease Investigation



Training workshops in wildlife health and disease

“Intro to the NWDC”

“How to Conduct a Field Investigation”

“How to do a Field Necropsy”

“Diseases of Northeast Wildlife”

“What is wrong with our (deer, squirrels, etc)?”

Massachusetts: May 12

Connecticut: May 13

New Hampshire: May 27

Vermont: June 2-3

New Jersey: June 15

Delaware: June 16

Maine: June 23



Shared Database for Diagnostic Results

CCWHC Wildlife Disease Database:

Custom-made solely for wildlife disease data

Data can be queried; exports in Excel

Read-only access across NWDC laboratories and members

Modules can be created for specific research projects

Online submission form (can be printed as PDF)



ONLINE SPECIMEN SUBMISSION FORM

Where is this submission going?
Connecticut Veterinary Medical Diagnostic Laboratory

People involved with submission

Person Submitting Case
Name
Address
City

Person Handling Animal
Name
Address
City

Webinars on Emerging Wildlife Diseases

Title: “Diseases of reptiles and amphibians in the Northeast, US”

Date: December 4, 2014

Start time: 1-3PM (eastern time)

Snake Fungal Disease – Jeff Lorch (Univ Wisconsin-Madison)

Ranavirus & Chytrid in amphibians – Maria Forzan (CCHWC)

Turtle diseases - Matt Allender (University Illinois)

Open Discussion



> 40 attendees

Support for research projects

- Provide support with health assessments/diagnostics/testing
- Facilitating regional & trans-regional projects
 - Alcid die-off
 - Turkey LPDV
 - Avian Bornavirus
 - Moose mortality

Unusual Winter Mortality Events in Multiple Atlantic Seabird Species



Photos: Mary Myers

Sara Schweitzer (NCWRC), Sarah Courchesne (Tufts U.), Samuel Jennings (Tufts U.), Mark Pokras (Tufts U.), Tony Diamond (ALAR), Doug McNair (ALAR), Justin Brown (SCWDS), Jennifer Ballard (SCWDS), Craig Harms (CMAST), Emily Christiansen (CMAST), Anne Ballmann (NWHC), D. Earl Green (NWHC), Megan Hines (WDIN), Joseph Okoniewski (NYSDEC), Mike P. Harris (CEH, Scotland), Daniel M. Turner (NEBBS, England), John Gallegos (USFWS), John Stanton (USFWS), Julie Ellis (Tufts U.)

Disease Fact Sheets



Avian Cholera

Other Names: Fowl Cholera, Avian Pasteurellosis, Avian Hemorrhagic Septicemia, Chicken Cholera

Cause

Avian cholera is an infectious disease of domestic and wild birds caused by the bacteria *Pasteurella multocida*. This disease has been recognized for over 200 years. There are many strains of *P. multocida* that infect different species of birds and mammals and cause varying degrees of disease; however, this description will focus primarily on avian species.

Significance

Avian cholera is the most significant infectious disease of wild waterfowl in North America. Single outbreaks can kill thousands of birds, and outbreaks occur annually and almost annually in some parts of the continent.

Species Affected

P. multocida has been found in many species of birds and mammals. Avian cholera infections have been reported in over 190 species of birds, though most bird species are likely susceptible to this disease. Waterfowl and coots are the most commonly affected and they frequently experience major mortality events. Scavengers such as gulls, raptors, and crows are also affected with relative frequency, while other water birds and upland species are less commonly affected. In addition, domestic poultry and other captive species are affected by avian cholera. In general, adult and older birds are more susceptible to avian cholera than younger birds.

The various strains of *P. multocida* are more infectious in some species than others. For example the avian strains



Photo courtesy of USGS.gov

cause fatal disease in birds, rabbits, and mice, but not in other mammals. Some mammalian strains cause illness in birds, while others do not. Certain predatory mammals such as raccoons, foxes, and cats carry *P. multocida* in their mouths and can infect prey via a bite wound, while the predator itself does not suffer from disease. Many farm animals have been found to carry strains of avian cholera, but while strains carried by cows and sheep do not cause disease in birds, strains from pigs have shown to be very deadly for birds. Avian strains of *P. multocida* typically do not infect humans, though mammalian strains can infect humans via animal bites, scratches, or wound contamination.


Distribution

Avian cholera was first reported in wild waterfowl in North America in the winter of 1943-1944 in Texas and California. These outbreaks marked the beginning of the emergence of this disease in North American waterfowl, and by the early 1980's outbreaks had also

- 54 fact sheets
- 3 more in progress
- “living” documents

Quarterly Newsletter, “NWDC Notes”

- Program updates
- Diagnostic cases
- “From the Field” – observations by member agencies and labs
- Guidance on current events
- Announcements of educational opportunities



The Northeast Wildlife Disease Cooperative
Offering wildlife health and disease services in the Northeast U.S.
Phone: 508-887-4933
Email: nwdc@tufts.edu
<http://sites.tufts.edu/nwdc>

NWDC NOTES

QUARTERLY NEWSLETTER FROM THE NORTHEAST WILDLIFE DISEASE COOPERATIVE
Volume 2, Number 1, January 2015


Membership Update

The Vermont Fish and Wildlife Department and the Massachusetts Division of Fisheries and Wildlife will soon be the newest members of the NWDC, bringing our total membership to eight states. By working together throughout the region, we aim to detect and respond to diseases of wildlife in a proactive and timely manner. We are grateful to our members for their indispensable collaboration in this effort!



The Northeast region with NWDC member states shown in blue.

In MA/CT/RI, Wildlife Services is collaborating with state waterfowl biologists as well as waterfowl hunting enthusiasts to gain access to birds to sample. These samples aid in the early detection of HPAI in the United States. Such early detection can provide state veterinary and public health officials with valuable information to protect livestock and wildlife.



Other ideas for Services....

Wildlife Disease Investigation Mobile App

Speech to Text Software for Mobile Devices

Speech to text software will allow an agent to utilize the app without the need for a laptop and without taking away the use of his/her two free hands. Field notes, searches, and filing out of forms can all be accomplished with such software.



Tripod Adapter for Mounting Mobile Device in the Field

With a simple adapter, an agent can take advantage of any tripod to provide a hands-free, steady and secure solution at whatever height is desired.



Waterproof Case

Field Agent using Facetime or other video conferencing software without worries since device is now waterproof from the environment as well as disinfected.



My Cases

Case # [Date] Location [Animal] Agency [Agent]

- Case 24: Zymed Sores
10/02/2014
Barre, MA
Large Ruminant
Agency: NEFC
Agent: John Doe
- Case 25: Avian Ulcer
09/14/2014
Oxford, MA
Avian
Agency: NEFC
Agent: Jane Doe
- Case 22: Usano Climate Symptoms
09/01/2014

Date: 10/02/2014 Is Active:

Title: Avian Ulcer

Animal Type: **bovine**

Location: Oxford, MA

Agency: NEFC

Agent Name: Jane Doe

Notes:

Note 1: Necropsy Observations

Vivamus tempus, justo id pretium vestibulum, diam metus molestie magna, a pellentesque nibh pulvis non, neque. Quisque elementum libero vel molestie frutibus. Suscipitque rhoncus, turpis ad amet elesestiam egentes, torpis ligula varius dui, in effluam elit torpor ut juncos. Sed serra mollis, eumod ut amet elementum.


Note 2 Title

Note 3 Title

Note 4 Title

Note 5 Title

PHOTOS & VIDEOS



AVOID NOTES

Area Description 0:42

Wound Description 1:10

Concerns 0:56

CASE SEARCH

Case Number:

Key Word:


Date Range:

Town/State:

Animal Type:

Agency:

Agent:



To Learn More

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

Northeast Wildlife Disease Cooperative

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



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Email me:
Julie.ellis@tufts.edu

Questions?

