

OFFICE OF FISH AND WILDLIFE HEALTH AND FORENSICS
MONTHLY REPORT
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Jan Lovy, Ph.D., Research Scientist II
Nicole Lewis, M.S., D.V.M, Research Scientist II
Sarah Friend, M.S., Environmental Specialist
Tesia Lin, B.S., Seasonal Technician

FISH AND WILDLIFE HEALTH PROJECT (FW-69-R20)

The 3-year grant cycle for our project ends June 30th, 2021. A grant narrative and budget for the next 3-year grant period was prepared.

Histology equipment purchasing:

The histology laboratory requires an autostainer and coverslipper to improve workflow in processing histology samples. Equipment was researched and bids have been requested for a certified refurbished Leica workstation (combined Autostainer ST5010/Coverslipper CV5030). Bids are being received until 20 March 2021, upon which a vendor will be selected, and the equipment will be processed for purchase.

Diagnosis of Diseases in Freshwater Fish (Job F-1)

Review of fish health records for private hatcheries:

Fish health records have been reviewed for all private hatcheries that have applied for approval in supplying fish for stocking in NJ. The final approval list has been completed and distributed to the private hatcheries and to the Bureau of Freshwater Fisheries.

Diagnosis and research of Diseases in Marine Fish (Job F-2)

A department seminar presented at Virginia Institute of Marine Science (VIMS):

Dr. Lovy provided a virtual department seminar via Zoom for VIMS on results of our federally funded marine fish health program. The name of the seminar was, “The Good, the Bad and the Ugly: Parasite Ecology in Wild Marine Fish Populations”.

Atlantic Menhaden mortality; update on molecular analysis:

Genetic analysis was completed on samples from the Atlantic Menhaden mortality that occurred around Liberty State Park in December 2020. Next generation sequencing (Illumina sequencing) was done to evaluate samples for bacterial pathogens. All brain samples had high levels of a *Vibrio* sp. bacterium. Based on short genetic sequence, the bacterium shared highest identity with *Vibrio anguillarum*. This is a known fish pathogen reported to cause mortality in wild and farmed marine fish. Further analysis is being pursued to better characterize this bacterium and better determine the levels in the brain of affected fish. This data is suggestive that the menhaden mortality was

associated with a neurologic infection with this *Vibrio* sp. A final report was produced to summarize these findings.

Wildlife Disease Surveillance and Investigations (Job W-1) and Wildlife Toxicology (Job W-2)

New Cases:

White-tailed deer, Wall, NJ:

A resident reached out stating 2 deer had died on their property within a couple days and now a third exhibiting neurologic signs was in their barn. CPO McManus euthanized the deer and transported it to the Clinton Pathology Lab for examination. The deer was a female fawn and had significant fecal staining. Internally there was evidence of hemorrhage in the intestinal and 4-stomach walls as well as white plaques on the internal aspect of the intestinal walls. A blood clot was also noted under the skull cap, suggestive of trauma. The deer was negative for rabies and Johne's disease (a mycobacteria that affects the intestinal tracts of ruminants) and fecal evaluation showed severe intestinal overburden. Histology is pending.

Raptors, multiple locations in NJ:

Raptor Trust contacted Dr. Lewis about multiple hawks (2 red-tails and 1 Cooper's hawk) that were suspected of having been poisoned by rodenticide. The three birds were transported to the Clinton Pathology Lab for necropsy. All had evidence of trauma on necropsy. Samples were sent for toxicology testing and all were found to have evidence of rodenticide poisoning.

Red-tail hawk, Franklin Lakes, NJ:

Raptor Trust contacted Dr. Lewis about an additional hawk they suspected to have rodenticide poisoning. On necropsy the lungs were bright red in color, but all other tissues appeared normal. Tissues were sent for rodenticide testing and was detected. Histology is pending.

White-tailed deer, Lambertville, NJ:

A resident contacted Dr. Lewis stating that 5 deer had died in her area over the past 2 weeks, with one dying that morning. CPO Driscoll responded and transported the deer to the Clinton Pathology Lab for necropsy. Externally there was blood noted in both nostrils and in the oral cavity and sclera of the left eye. Internally there was significant gas build up in the abdominal cavity and the tissues surrounding the kidneys. The doe was carrying 2 fawns in early development and the uterus had significant hemorrhage. The kidneys were friable, the lungs were hemorrhagic and there were blood clots in the cranial aspect of the thorax. The diagnosis was trauma.

Dovekie, NJ:

Dr. Cristin Kelley, the veterinarian for Tri-state wildlife rehabilitation had an additional dovekie found dead that originated from NJ. During her evaluation of the ones from Delaware she had noted that they had seemingly high levels of cadmium (a heavy metal

that at high levels can cause death in waterfowl). The dovekie was found to be emaciated and there was a thickening of the sac that surrounds the heart. Cadmium levels were found to be 11.9ppm (well below the clinical level). Cause of death was attributed to the similar wreck described with the previous dovekies on last month's report.

Red-tailed hawk, Hillsborough, NJ:

Resident reached out because she found a dead hawk in a field near her home and was concerned it had been shot. The hawk was collected and transported to the Clinton Pathology Lab for necropsy. A fracture to the sternum with internal hemorrhage and organ damage was noted on necropsy. No evidence of being illegally shot was found. Diagnosis was trauma.

Cooper's Hawk, Bergen Co, NJ:

Raptor Trust contacted about another dead Cooper's Hawk that was suspected of being poisoned. They noted that other dead birds had been found in the area. The hawk was transported to the Clinton Pathology Lab for necropsy and toxicological testing. Necropsy was unremarkable aside from the hawk being found to be extremely thin. Histology and toxicology testing are pending.

River otter sampling

Forty-three river otters from the yearly harvest were sampled for an ongoing microplastics study. Ovaries were also collected for evaluation of ovulation as part of ongoing collection of biological data in the population.

Meetings:

- Dr. Lewis attended the virtual Wildlife Disease Working Group TWS leadership meeting
- Dr. Lewis, Dr. Lovy, and Carole Stanko attended a meeting with Julie Ellis to discuss the Wildlife Futures Program at UPenn and the future of the Northeast Wildlife Disease Cooperative.
- Dr. Lovy virtually attended the monthly animal health meeting held by the NJ Department of Agriculture.

NON-PROJECT ACTIVITIES:

Bald Eagle, Clinton, NJ:

Resident contacted Kathy Clark and US F&W service that he found a deceased banded bald eagle near the train tracks by his house. The bird was transported to the Clinton Pathology Lab for necropsy. Externally there was blood coming from both nares and in the oral cavity but no other signs of trauma. Internally the coelomic cavity had significant hemorrhage and damage to internal organs suggestive of trauma. Liver was collected to rule out rodenticide but likely the eagle was hit by the train.

- Dr. Lovy has collaborated with the University of Florida and South Carolina with the identification of a pathogenic myxozoan parasite.
- Dr. Lovy virtually attended the Toxics in Biota Committee Meeting.

- Dr. Lewis attended a virtual symposium on One Health Approaches to Infectious Diseases
- Dr. Lewis was interviewed for a journalist writing a column on rodenticide poisonings in wildlife
- Dr. Lewis continues to participate in One Health COVID19 partners' call